



Future Efficient Costs of Royal Mail's Regulated Mail Activities

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Excised version

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Glossary

We use the following abbreviations in this report:

ADL	Arthur D Little
ADL Report	Technology and Innovation in the Postal Sector, A Competitive Market Review, Arthur D Little, June 2004
AI	Address Interpretation
BPC	Baseline Planning Costs
BPM	Royal Mail's Business Planning Model, which is used to forecast operating costs over the price control period
BPQ	2006 Royal Mail Price and Service Quality Control Review, Initial Business Plan Questionnaire
BT	British Telecom
CAA	Civil Aviation Authority
CAGR	Compound annual growth rate
Capex	Capital expenditure
CAS	Communications & Secretary's Office
CEPA	Cambridge Economic Policy Associates
CFC	Culler-facer-canceller sorting machine
COLS	Corrected Ordinary Least Squares
Consignia	Consignia Holdings plc. Now Royal Mail
CRS	Constant returns to scale. When the production of one additional unit of output yields a proportional increase in average costs.
CRT	Collection Routing Tool
DEA	Data Envelope Analysis. A quantitative non-parametric technique that optimises the number of inputs required for a particular output and vice versa.
DFA	Deterministic Frontier Analysis

Deutsche Post	Deutsche Post World Net
Deutsche Post Study	Letter prices in Europe – Current international letter price comparison, Deutsche Post World Net, January 2004
DNO	Distribution Network Operator
DO	Delivery office
EBIT	Earnings before interest and taxes
FERC	Federal Energy Regulatory Commission (U.S.)
Frontier Economics Report	Impact of Liberalisation on Efficiency: A Survey, Frontier Economics, January 2002
FSM	Flat sorting machine
HWDC	Heathrow Worldwide Distribution Centre
IMP	Integrated mail processors
LBS	London Business School
LRMC	Long run marginal costs
LSM	Letter sorting machines
Malmquist index	An index of productivity. The geometric mean of two index components that represent the distance from the frontier at two different points in time.
MC	Mail centre
MDECs	Manual Data Entry Centres
MNR	Mazar, Neville, Russell
NATS	National Air Traffic Services
NERA	National Economic Research Associates
NERA Report	Economics Of Postal Services: Final Report. A Report to the European Commission, DG-MARKT, NERA, July 2004
NGC	National Grid Company
NIESR	National Institute of Economic and Social Research

Non-letter services	Non-regulated activities such as The Post Office® and Parcelforce
Non-parametric	Non-parametric methods are mathematical procedures to estimate relationship among variables without knowledge of either the form or the parameters of the statistical distribution from which observations are drawn
OCR	Optical Character Recognition
OE	Office of Exchange
Ofcom	Office of Communications
Ofgas	Office of Gas Supply (former UK gas regulator)
Ofgem	Office of Gas and Electricity Markets
Oftel	Office of Telecommunications
Ofwat	Office of Water Services
OLS	Ordinary Least Squares. A statistical method of estimating a line of best fit through a particular set of data.
Opex	Operating Expenditure
OPPPA	Office of Public Private Partnership Arbiter
ORR	Office of the Rail Regulator (subsequently, Office of Rail Regulation)
Other Letter Products	Includes products and services that are non-USO and non-price controlled, such as door-to-door products.
P&OD	Personnel & Operational Development
Panel data	A dataset that contains observations on a number of units (e.g. mail centres) over a number of periods
Parametric	Parametric methods are mathematical procedures to estimate relationships among variables, which assume that the distributions of the variables being assessed have certain characteristics
PFP	Partial Factor Productivity
Postcomm	Postal Services Commission
Postcomm's initial	2006 Royal Mail Price and Service Quality Review, Initial Proposals, Postcomm, June 2005

proposals	
PSM	Packet Sorting Machines
PwC	PricewaterhouseCoopers
RDC	Regional Distribution Centre
Regulated activities	USO and the price-controlled services
RM	Royal Mail Holdings Group plc. Used to denote Royal Mail in tables and footnotes
RMG	Royal Mail Group
RML	Royal Mail's letters business.
RUOC	Real Unit Operating Cost ratio, including either depreciation or capital expenditure
RUOE	Real Unit Operating Expenditure. The ratio reflects total operating accounting costs divided by the most relevant unit of output. The ratio is expressed in real terms and is expressed before depreciation
SBP	Size Based Pricing
SDD	Single Daily Delivery
SFA	Stochastic Frontier Analysis
SPDO	Scale Payment Delivery Offices
Strategic Plan	The Royal Mail Letters Strategic Plan, Discussion Draft, 7 December 2004
TFP	Total Factor Productivity
Total Mails	Covers total USO, price control products and other letter products
Total Price Control Products	Includes all products and services covered by Condition 19 of Royal Mail's licence
Total USO	Includes all products and services covered by Condition 2 of Royal Mail's license
TSI	Technology, Services & Innovation

USO	Universal service obligation
USO factors	Indicate which products, or what proportion of individual products, are regulated in accordance with Conditions 2 and 19 of Royal Mail's license
VA	Volume adjusted (as in volume adjusted growth rate)
WaSC	Water and sewerage company
WS Atkins Report	An Efficiency Study of Consignia's Inland Letters Business. A report to Postcomm, WS Atkins, November 2002

1 Executive summary

Introduction

- 1.1 Postcomm is in the process of determining the regulatory arrangements that should apply to Royal Mail's regulated mail activities after the expiry of the current price and service quality control at the end of March 2006. A key input into this review is an assessment of the future efficient costs for Royal Mail's regulated mail activities. Postcomm has engaged LECG to provide this assessment.

Scope

- 1.2 Postcomm is in the process of determining which products should be price controlled from April 2006. As a first step, we have assessed efficient costs for Royal Mail's UK inland mails, outgoing international and downstream access products over the period 2005/06 to 2010/11. These products fall within the business described as "Total Mails" in Royal Mail's 2003/04 Regulatory Accounts. Henceforth this scope of products is referred to as Royal Mail's Letters business ("RML").
- 1.3 As a second step, we have considered efficient costs for the products and services Postcomm plans to regulate from 1 April 2006. Regulated activities are currently defined under Condition 2 and Condition 19 of Royal Mail's licence, and comprise a sub-set of the RML products, as set out in Appendix 1.
- 1.4 Postcomm does not believe it should price control products where competition is, or can be expected to be, providing choice and protecting the interests of customers. To this end, it has developed a competition-based test to guide its judgement on the appropriate scope of the price control. Following consultation, Postcomm believes it is also appropriate to take into account additional factors such as the prospects for competition, whether the product is a universal service product and whether related or substitutable products are price controlled, which effectively provide a safety net to other customers.
- 1.5 Postcomm proposes to remove Presstream products and Special Delivery products for large business users from the next price control. In both cases Postcomm is satisfied that competition has developed sufficiently or will develop to protect the interests of customers. In addition, downstream access products, as defined under Condition 9 of the licence, will also be regulated within the price

control¹ (Postcomm is consulting on the form of this regulation). A list of proposed regulated products is outlined in Appendix 4².

The process

- 1.6 Postcomm's Business Planning Questionnaire ("BPQ") sought information in two stages. The second stage requested information to be provided by the end of October 2004. Royal Mail completed its response to the BPQ in January 2005.
- 1.7 We worked with Postcomm to implement and operate within a process designed to gather appropriate and necessary information from Royal Mail in a manner that was efficient for Royal Mail and Postcomm. Notwithstanding this process, Royal Mail's responses to the BPQ were often significantly delayed; or of poor quality; or set out at too high a level to provide meaningful input to this study. In attempting to secure greater detail we generated over 500 formal supplementary questions.
- 1.8 The process was particularly problematic in respect of Royal Mail's Strategic Plan. The BPQ requested a copy of the plan by the end of 31 July 2004. A draft copy was finally provided on 7 December 2004³. The plan set out a forward view of Royal Mail's strategic and operational priorities, and a summary view of Royal Mail's expected profitability, but did not provide support for the initiatives that underpinned it. To ensure that the supporting information was provided on a timely basis, Postcomm issued a formal information order on 24 January 2005. Royal Mail provided additional support on 7 February 2005. At this point Royal Mail confirmed that it had provided all material information underpinning the draft Strategic Plan and that nothing else could be provided.
- 1.9 Very limited information has in fact been provided on the nature and purpose of each initiative, or the basis on which the investment or the related benefit have been calculated. Overall, the level of detail provided by Royal Mail has been low in comparison to other price control reviews on which we have worked. We would be surprised if the information provided to us were sufficient to allow Royal Mail's

¹ Access agreements were not reached by RM and UK Mail, TNT Post Group ("TPG") or Deutsche Post until early 2004 and therefore, there are no costs related specifically to Access in the 2003/04 cost base

² 2006 Royal Mail Price and Service Quality Review, Initial Proposals, Postcomm, June 2005. Hereafter referred to as Postcomm's initial proposals.

³ Document entitled "The Royal Mail Letters Strategic Plan, Discussion Draft" dated 7 December 2004. We refer to this document subsequently as the "Strategic Plan". We recognise that the plan provided to us is a discussion draft and not a finalised plan

own Board or Shareholder to approve the proposed strategy. The lack of detail provided has affected the nature and timing of our work, and we have had to adapt our approach accordingly.

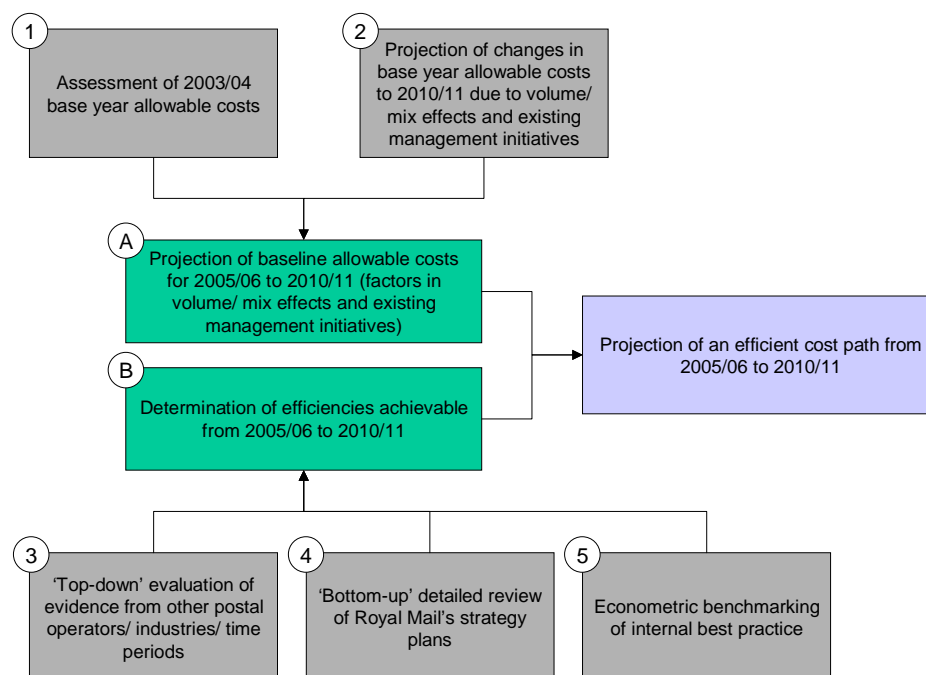
1.10 In developing the Strategic Plan, Royal Mail recognises that work is needed to further develop the initiative “concepts” into comprehensive business cases. We understand that this work is being progressed.

Methodology

1.11 The purpose of this study has been to arrive at an assessment of the efficient level of RML’s costs over the next price control period. In making our assessment we have had regard to Royal Mail’s requirement to deliver the universal postal service and to applicable quality of service targets. We have derived our estimates from a consideration of a wide range of evidence, relating both to Royal Mail and to comparable firms and industries. We have supported our cost estimates with evidence related directly to Royal Mail’s overall cost base.

1.12 Our overall methodology is outlined below.

Figure 1: LECG approach



1.13 As a first step to identifying total allowable efficient costs it is important to establish a robust assessment of actual operating costs in the Base Year – which

is used to build forward looking projections based on recently completed management initiatives and projected changes in volume and mix. We refer to the projection of costs from the Base Year as the Baseline estimate of efficient operating costs (box A in the figure above).

- 1.14 Adjustments to the Baseline are then required to take account of our top-down analysis and possible efficiency gains arising from *future* management initiatives – as determined through a bottom-up review of Royal Mail's activities (box B in the figure above).
- 1.15 The derivation of a Baseline projection of Royal Mail's allowable operating expenses over the period 2005/06 to 2010/11 requires:
- determining Royal Mail's allowable cash costs for the latest year for which we have audited information, 2003/04, which we refer to as the 'Base Year' (box 1 in the figure above); and
 - deriving a projection for allowable costs in subsequent years, taking into account changes in volume and product mix (box 2 in the figure above). In making this forecast we have relied upon volume projections made by Frontier Economics on behalf of Postcomm and Royal Mail's Business Planning Model ("BPM") which is used to forecast future costs by product and by cost activity (refer to paragraph 1.42 and following, and Section 8).
- 1.16 Baseline costs reflect only normal operating costs, and exclude one-off costs and capital expenditure. The second part of our study therefore involved an assessment of the level of efficiency savings, and associated one-off costs and capital expenditure, that Royal Mail could be expected to achieve between 2005/06 and 2010/11 – over and above the Baseline projection of costs.
- 1.17 We have considered the scope for efficiency savings using a variety of methods. None of these methods by itself provides a precise picture of the scope for savings during the forthcoming price control, and each requires us to exercise a degree of judgement when determining the implications for Royal Mail. However, by approaching the efficiency assessment from a number of different directions, we avoid placing undue weight on any one piece of analysis. Instead, we look at a broad range of evidence and set cost allowances based on the overall picture that emerges. This helps to minimise the extent to which our overall conclusions

might otherwise be subject to error. An overview of each type of method used is provided below.

Top down analysis

1.18 Top-down analysis (box 3 in the figure above) typically takes the form of comparisons with aggregate cost data of other companies, either nationally or internationally. We have considered:

- Royal Mail's historical cost trends, which we use to derive an underlying trend in the rate of productivity improvement. We compare Royal Mail's productivity over different periods and review the level of productivity growth that has been achieved over the current price control. The analysis suggests that economic regulation has had a positive impact on Royal Mail's performance – or at least that productivity growth has been faster during the period over which price controls have been in place;
- the level of efficiency that has been achieved in other regulated sectors, both in absolute terms and in comparison to the targets set by the relevant industry regulators. Comparisons with other regulated companies are commonly used to provide high-level indications of achievable trends in productivity growth;
- productivity trends in comparable industry sectors – using Total Factor Productivity (“TFP”) ratios. We have considered productivity trends across comparable sectors using TFP ratios, and used these to provide a composite picture of the productivity and efficiency gains potentially achievable by Royal Mail; and
- efficiency trends across other international postal operators. The results are difficult to interpret, given the different stages that other operators are at in the liberalisation of their markets, and the differing natures of regulatory frameworks in different countries. Therefore we use these estimates only to develop indicative trends as to what has been achieved elsewhere.

Internal benchmarking

1.19 Internal benchmarking (box 5 in the figure above) compares the cost performance (or efficiency) of similar units within the same company against each other. We

have reviewed the potential for Royal Mail to lower costs by applying its own best practices consistently across mail centres and delivery offices.

- 1.20 Internal benchmarking can be based on simple performance ratios such as mail volume, overall cost performance, labour productivity, overtime cost or absenteeism. The main weaknesses of single performance ratios are that they are susceptible to the bias of the observer and cannot reliably test the interaction of more than one efficiency driver. That is, simple ratio analysis cannot explain performance variations between operational areas due to, for example, traffic mix, technology/ equipment differences, building structure, the external labour market, or the local geography.
- 1.21 Simple ratio analysis can be extended, however, using advanced quantitative (i.e. econometric) techniques. For example, in the case of mail centre benchmarking, such techniques define the efficiency of a mail centre relative to an assessment of best performing mail centres at a particular point in time. This is referred to as the “efficiency frontier”. If the mail centre is operating on the frontier, it is defined as efficient. If it is operating away from the frontier it is defined as inefficient, and the level of inefficiency can be measured quantitatively relative to the frontier.
- 1.22 We have used two types of quantitative techniques (parametric and non parametric) to identify the current efficiency frontier for Royal Mail’s mail centres and delivery offices. Our findings provide us with an estimate of productivity improvements achievable through the propagation of existing best practice. This might be regarded as reflecting a lower estimate for achievable savings, as it is based on Royal Mail’s current internal best practice, as opposed to best practices defined more widely, or indeed on a forward basis. We have also used the results of our internal benchmarking exercise to help validate the level of cost savings put forward by Royal Mail, in respect of similar or related initiatives, in its Strategic Plan.

Bottom-up analysis

- 1.23 We have performed a detailed review of Royal Mail’s Strategic Plan (box 5 in the figure above). We have assessed whether Royal Mail’s efficiency assumptions are robust and internally consistent, as well as the extent to which the underlying assumptions are adequately supported. Specifically we have:

- assessed whether Royal Mail had identified the appropriate scope for cost savings and improvements in efficiency across the whole of the business. We reviewed whether there were potential areas of saving that Royal Mail had not addressed, whether Royal Mail's targets were sufficiently stretching and whether the scale of efficiency savings envisaged had been appropriately quantified, taking into account existing geographic differences in cost and efficiency;
- determined whether Royal Mail had identified and accounted for the inter-relationships between efficiency initiatives. We assessed whether Royal Mail had double-counted any of the initiatives or had failed to take full account of the linkage between initiatives and their impact on different parts of the business;
- considered whether Royal Mail had appropriately assessed the timing and level of capital and operating costs that will be incurred in achieving projected efficiency targets;
- considered the relationship between management and unions; and
- taken into account the need for Royal Mail to meet its licence, including universal service, and quality of service obligations.

1.24 Our work has been based on information provided to us by Royal Mail (e.g. answers to the BPQ and supplementary questions, board papers, the Strategic Plan, consultants' reports, etc). We have supplemented this information with other third party data. Where data quality has been poor, or supporting analysis has not been provided, we have documented this fact.

Summary of findings

1.25 The remainder of this section describes each element of our approach in more detail. Unless otherwise stated, all costs in this section are stated in real 2003/04 prices.

Costs over the current price control

1.26 In determining forward-looking costs, we have considered how Royal Mail is performing during the present price control. Under the terms of the current price control, Postcomm set a target for unit cash costs to fall by around 5.1% a year in constant volume terms (see paragraph 6.6). Royal Mail's programme for meeting Postcomm's targets was a collection of initiatives known as the Renewal Plan,

which was launched in May 2002. Our review of Royal Mail's performance under the current price control is set out in full in Section 6 of this report.

- 1.27 Royal Mail originally anticipated that the Renewal Plan would generate combined operating savings of £241m a year in current prices – whereas its latest estimate of ongoing savings is now approximately £53m a year. A detailed review of the limited information provided to us shows that, over the price control period, Royal Mail will spend around £230m less than was allowed for renewals one-off expenditure and £44m less than was allowed for capital expenditure.
- 1.28 Overall, it might therefore appear that implementation of the Renewal Plan in the letters business was not as successful as first planned, in terms of the net financial benefits achieved. This could raise concerns about Royal Mail's ability to manage "specific" large change and/ or investment programmes, both currently and in the future.
- 1.29 Nevertheless, to date, Royal Mail appears to have outperformed the financial projections set by Postcomm for the current price control. Revenue has been driven by stronger than anticipated volume growth. Royal Mail has also shown greater control over its costs – to the extent that, once we have adjusted for volume and product mix outturns, it appears that Royal Mail will exceed (i.e. underspend) the operating cost targets set by Postcomm by around £170m in 2005/06 and around £680m over the period of the current price control.
- 1.30 It therefore appears that Royal Mail has found very significant areas for cost savings, other than those identified in the Renewal Plan, over the period of the current price control. This finding is consistent with our review of other regulated sectors. When comparing efficiency performance in other regulated sectors with the assumptions and targets set by regulators, we find that regulators have generally underestimated the scope for efficiency gains. This need not imply any weakness in the regulatory process, as one of the original premises of RPI - X regulation is that it encourages companies to outperform against their efficiency targets by identifying and revealing additional opportunities to make efficiency savings.
- 1.31 It is notable that Royal Mail appears to have outperformed its efficiency targets without incurring the one-off costs initially identified as required, and for the most

part in ways other than the initiatives by which those targets were originally intended to be met.

- 1.32 Postcomm indicated in its September 2004 consultation that it was sceptical about the merits of a specific clawback of “excess” profits made during the current price control as this could undermine the incentive properties of RPI-X regulation, which is based on companies having an incentive to identify efficiency savings and revenue growth opportunities to “out perform” the price control.
- 1.33 Postcomm has indicated that it is important that customers benefit from Royal Mail’s out performance of the current price control, particularly where Royal Mail has identified additional efficiency opportunities not foreseen when the price control was set, which are expected to have ongoing benefits. Therefore, in line with Postcomm’s proposals for the next price control our cost forecasts for the new price control from April 2006 are based on the current level of efficient costs expected to be achieved by Royal Mail rather than what was expected to be achieved during the current price control. This means that Royal Mail will benefit from out performance of the current control until the end of March 2006, at which point customers will benefit for the period of the next control through lower prices.

Base year costs

- 1.34 In the absence of any requirement to make adjustments to Royal Mail’s allowable costs that might arise from its expenditure over the current price control, our first step in identifying total allowable efficient costs is to establish a robust assessment of actual operating costs for the latest year for which we have available information, 2003/04, which we refer to as the ‘Base Year’. We can then use this assessment as a starting point for building forward-looking cost projections based on management initiatives that are currently in place.
- 1.35 We have based our assessment of these Base Year costs on figures included in the Regulatory Accounts for 2003/04, which represent the most recent actual data to which we have access. We have made several adjustments to this level of costs, which we describe in the following paragraphs.
- 1.36 First, we have made adjustments for a number of non-cash costs, to avoid distortions arising from the application of accounting principles. We have eliminated *depreciation* and we have made adjustments to regular *pension* contribution charges to ensure that only cash costs are included within the

projection of costs. We have excluded any consideration of charges relating to *pension deficits*. Postcomm has commissioned Hymans Robertson to provide an independent assessment of Royal Mail's future cash pension deficit requirements over the coming price control.

- 1.37 Accounting for *provisions* involves recording an expense before there is certainty over the amounts required, and therefore inevitably involves a degree of judgement. Royal Mail has yet to provide information that would fully explain movements in provisions amounting to some £85m. We have not adjusted Base Year costs for this unexplained movement – but remain concerned that the Base Year may be overstated. We understand, that if further information is not forthcoming Postcomm may decide to reduce its assessment of allowable costs in the Base Year by this amount in its final conclusions.
- 1.38 Second, we have considered whether the methodologies used by Royal Mail to allocate *overhead* to the regulated business are appropriate. RML appears to receive an appropriate proportion of the total Royal Mail Group overhead costs, and we have accordingly made no adjustment for any under- or over-allocation of such costs to RML.
- 1.39 Third, we have also removed *exceptional items* and any *one-off costs or benefits* incurred in 2003/04, since these are costs that are not expected to be incurred in a normal year of operation and therefore should form no part of our Baseline projections. Although there may be other one-off costs that need to be taken into account in future years, we assess those separately as part of our assessment of future efficiencies (i.e. referred to as one-off costs below).
- 1.40 Finally, in determining a suitable level of Base Year costs, we believe that, as a general principle, it is inappropriate to include costs associated with *penalties and compensation* related to Royal Mail for failing to meet its quality of service targets. We anticipate that, in setting a price control, Postcomm will assume that the targets will be met.
- 1.41 We summarise our Base Year adjustments in the table below, and provide further detail on each adjustment in Section 7.

Table 1: RML Base Year operating costs in 2003/04

Adjustments	Total £m
Operating costs per Regulatory Accounts	6,095
Depreciation	(152)
Cash pensions	55
One-off costs	(77)
Bulk compensation and fines	(68)
Base Year cash operating costs	5,852

Source: LECG analysis

Baseline cost projection

1.42 From the assessment of costs in the 2003/04 Base Year we are able to build forward-looking projections of Royal Mail's operating expenditure, before one-off costs and capital expenditure, based on forecasts of volumes across Royal Mail's different products, and taking current management initiatives into account. We refer to this projection of costs from the Base Year as the Baseline estimate of operating expenditure. In determining our final view on an efficient cost path for Royal Mail's allowable regulated activities, we adjust this Baseline estimate for future efficiencies we believe are achievable by Royal Mail.

1.43 We show our assessment of RML's Baseline operating expenditure from 2005/06 to 2010/11 in the table below. We anticipate that over this period total Baseline costs will decline at a rate of 0.6% per annum, and that unit costs will fall by 1.4% per annum. We derived these figures using Royal Mail's BPM.

Table 2: LECG Baseline operating expenditure for RML, 2003/04

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	CAGR
LECG opex, £m	5,593	5,581	5,619	5,583	5,513	5,428	(0.6%)
LECG unit opex, £	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)

Source: Royal Mail and LECG analysis

1.44 In addition to our adjustments to the Base Year, discussed above, there are two key inputs to these figures where we have used assumptions different to those used by Royal Mail. First, we have used different assumptions relating to volumes and product mix. Our Baseline projection is based work performed for

Postcomm by Frontier Economics. We show the relevant assumptions at a high level in Table 3 below.

Table 3: Projected volumes in millions

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Royal Mail volumes	25,557	25,835	26,756	26,766	26,600	26,484
Postcomm volumes	25,068	25,230	26,103	26,346	26,196	26,090

Source: RM 2023a BPM2_v2.7 and Frontier Economics' volume submission of 22 March 2005

- 1.45 The second key difference relates to the time period over which costs respond to volume changes. Royal Mail assumes that costs take three years to respond fully to a change in volume, using a 0%, 50%, and 50% phasing. Royal Mail has provided virtually no support for this assumption. On balance, we believe that costs would respond more quickly to changes in volume. Based on the evidence that we have reviewed, we believe that it would be reasonable to assume that variable/ incremental costs change immediately with changes in volume. The table summarises the difference between these two sets of assumptions

Table 4: Difference in Baseline costs relating to cost phasing assumptions

2003/04 prices and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Impact of phasing assumptions	9	-15	8	-23	26	98	129

Source: RM 2023a BPM2_v2.7, Royal Mail phasing file RM 2014, Frontier Economics' volume submission of 22 March 2005, and LECG analysis

- 1.46 Over a four-year price control (as currently proposed by Postcomm), our phasing assumption lowers RML's total operating cost allowance by around £109m.

Top-down techniques

- 1.47 The first key input to our assessment of Royal Mail's future efficient cost path is a 'top-down' review of the performance of other postal operators, firms in other regulated industries, and of Royal Mail's own historic performance. Based on our review, we would expect Royal Mail to be able to achieve savings in Real Unit Operating Expenditure ("RUOE" - i.e. before one-off costs and capital costs) of between 3.0% and 4.0% a year over the forthcoming price control period. This range is stated in real and constant volume terms. The key points underpinning this conclusion are set out below.

Historical cost trends

- 1.48 We anticipate that RML's costs (adjusted for volume and mix differences) will be lower in 2005/06 than was envisaged by Postcomm at the time of setting the current price control. We estimate that the rate of improvement in efficiency, expressed here in RUOE terms, will be around 2.9% a year in constant volume terms over the current price control (refer to Section 6).
- 1.49 Prior to March 2001, when Postcomm was given responsibility for the independent economic regulation of the postal services market, Royal Mail's trend in RUOE improvement (adjusted for volume effects) was lower. Since the introduction of economic regulation, Royal Mail's rate of volume-adjusted operating efficiency growth has therefore increased, and Royal Mail's own projections anticipate a further increase in the period to 2005/06.
- 1.50 Royal Mail has faced limited competition since 2002/03 but will face greater levels of competition across its entire product range from January 2006. We anticipate an increasing focus on efficiency on the part of management as the scope of competitive pressure increases. As such, we believe that Royal Mail should *at least* be able to achieve savings, expressed in RUOE terms, of 2.9% (i.e. equivalent to what has been achieved over the current price control).

Summary of cross sector regulatory efficiency savings

- 1.51 Efficiency targets set by regulators tend on average to be lower than the cost reductions actually realised. We estimate that, across industries and across regulatory reviews, the efficiency targets incorporated into price controls have averaged some 2.5% per year in real constant volume terms. We estimate that actual cost reductions achieved, however, across the same periods and industries, have averaged between 4.0% and 4.8%, depending on precisely how they are measured.
- 1.52 It appears, therefore, that regulators have generally underestimated the scope for efficiency gains. This need not imply any weakness in the regulatory process – one of the original premises of RPI-X regulation is that it encourages companies to outperform against their efficiency targets.
- 1.53 In making comparisons between regulated companies it is necessary to consider the extent to which readily available efficiency gains have already been captured. The regulatory literature shows that significant catch-up efficiency gains have

been achieved by regulated companies in the first five to ten years post privatisation and/ or the introduction of regulatory and competitive price pressures.

- 1.54 This effect is (perhaps misleadingly) termed the “Privatisation Effect”, and has been estimated at between 1.25% and 3.5% a year in RUOE terms. Although it is referred to as an effect of privatisation, it can also be understood as an effect of reduced efficiency incentives for firms in public ownership and facing weak competitive pressures. It is the removal of the resulting embedded inefficiency that has allowed the gains to be achieved post privatisation and liberalisation. Overall, therefore, we see no reason to suppose that similar catch-up efficiency gains should not be available to Royal Mail, regardless of its ownership structure.
- 1.55 The results historically achieved in other regulated sectors, in conjunction with the more one-off gains generally achieved in the first 5 to 10 years of price controls, suggest that annual unit cost savings (in RUOE terms) of between 3% and 4% have typically been achievable in firms that are moving towards an efficient frontier after an extended period of public ownership and absence of competitive pressure.

Total factor productivity

- 1.56 Another form of top-down efficiency analysis commonly used in the regulatory context is to estimate operating efficiency trends by deriving TFP trends in different sectors of the economy and then making appropriate adjustments to those TFP trends.
- 1.57 Our TFP analysis indicates that in the short- to medium-term, Royal Mail might be able to achieve RUOE savings of between 1.1% and 4.1% a year, the average of which is 2.6% a year. For reasons set out in Section 24, on balance we expect that over the forthcoming price control, Royal Mail could achieve RUOE savings at or slightly above the average of this range.

International benchmarking

- 1.58 Due to the significant issues that influence data comparability, it is not possible to perform meaningful comparisons of the absolute level of unit costs across international postal operators. Consequently, our analysis has focused on unit cost trends instead.

- 1.59 Overall, the average rate of productivity improvement across postal operators appears low – but we believe that the figure is biased by a number of operators starting from a relatively high level of efficiency, such as Denmark Post and Deutsche Post, and by a number of operators experiencing reductions in efficiency, as is the case (in the figures set out in a recent NERA study) for France, Portugal and Greece.
- 1.60 Productivity trends are also influenced by the stage of liberalisation of the postal market in the country under consideration. Comparing Royal Mail to countries at similar stages in the development of a competitive market suggests greater scope for savings. Other research suggests that, in anticipation of competition, Sweden Post achieved savings of approximately 9% annually over a four-year period and Deutsche Post has achieved cost savings of around 2.5% in constant volume terms.

Summary of top down findings

- 1.61 Our top down conclusions are summarised in the table below. Numbers are expressed in constant volume and real terms.

Table 5: Summary of cross sector regulatory efficiency savings

Benchmark	RUOE trends
Royal Mail historical trends	2.9 %
Outturn regulated company savings	3.0% to 4.0%
Privatisation effect	1.25% to 3.5%
Total factor productivity	Above 2.6%
International cost trend evidence	2.5%

Source: LECG

- 1.62 Across all of the regulated industries, significant opportunities for productivity gains have emerged in the periods immediately following the onset of price regulation, and when the prospect of competition has started to become real. These “catch-up” gains reflect the early identification and elimination of embedded inefficiency built up during the periods when the companies were under public ownership.

- 1.63 Royal Mail is different from other regulated companies in that it faces potential competition while under public ownership. That does not mean, however, that the scope for increasing efficiency is any less. We would anticipate that the opportunities for “catch-up” gains in efficiency are as real for Royal Mail as they have been for other regulated companies. As such, we believe that Royal Mail’s performance over the current price control, which coincides with a period of competitive pressures and price regulation, provides a lower bound for the level of efficiencies that can be expected over the forthcoming price control.
- 1.64 Cost control targets imposed by regulators are rarely welcomed by the companies they regulate, and are often described publicly by the regulated companies as unachievable. Notwithstanding this, these targets are generally exceeded, as our analysis has shown. The average productivity gains achieved by other regulated companies are therefore instructive. We believe that this range should form the upper bound for the level of efficiencies that can be expected over the forthcoming price control.
- 1.65 On balance, the results of the comparative top-down analysis suggest an RUOE trend of between 3.0% and 4.0% a year in constant volume terms.

Bottom-up review

- 1.66 The second key element of our determination of future efficiencies available to Royal Mail is a detailed review of Royal Mail’s Strategic Plan, assessing whether Royal Mail’s efficiency assumptions are robust, internally consistent and well supported. Based on this review, we believe that identified efficiency initiatives at Royal Mail could achieve volume and mix-adjusted RUOE savings of at least 1.4% to 2.6% a year from 2005/06 to 2010/11.
- 1.67 The Strategic Plan describes a transformational strategy that is intended to affect not just the underlying efficiency of RML’s operations, but also the quality of interaction that the business has with its customers, and the degree of engagement of its workforce. We summarise the Strategic Plan in Section 9, and in Section 10 we provide our review of the plan.
- 1.68 Directionally, the operational aspects of the plan appear sound. Royal Mail is under-invested relative to its leading European contemporaries, such as TPG and Deutsche Post, and the plan seeks to address this issue – particularly through investment in automation and a re-engineering of delivery office operations.

1.69 The Strategic Plan incorporates some 46 separate operational initiatives. In general terms, however, we found that:

- the pace of change contemplated by Royal Mail is relatively slow. The length of time involved affects the financial profile of returns on the required investments, making the business case for the investment in automation weaker than it would be if roll out were more rapid;
- the proposed pace of change responds to a perception that the organisation's capacity for rapid change is limited. [>€]; and
- the overall financial consequences of the strategy, and the low level of support available for many of the initiatives, are of primary concern to us. This is particularly true in respect of the initiatives with the largest short-term investment requirements, for which in many cases the short-term benefits appear to us to be insufficient to justify the identified investment, and for which the longer-term benefits have not been either detailed or quantified.

1.70 Looked at in isolation, many of the initiatives are reported to generate significant benefits (in terms of reduced cost) from relatively small initial investments in either capital spending or other one-off up-front costs. For others, the relationship is the other way round: initial investments are relatively large, and identified savings are relatively small. Looked at across the total of 46 operational initiatives contained within the BPM, the financial impact can be disaggregated as follows:

Table 6: Summary of Strategic Plan initiatives, 2004/05 prices

Number of initiatives	One-off costs	2010/11 cost savings	Comments
20	£224m	£145m	Well founded initiatives, which have a positive impact on value or are key to reaching quality of service targets
10	£216m	£270m	Well founded initiatives that have understated net savings
16	£1,226m	(£212m)	Poorly supported initiatives that have a significantly negative impact on value. Financial case not made
46	£1,665m	£203m	

Source: Royal Mail BPM 2.7; LECG Analysis. Table stated in 2004/05 terms, consistent with the price base contained in RML's BPM

- 1.71 As can be seen in the table above, certain of the initiatives required significant investment, but lack the support to demonstrate that the resulting benefits were sufficient to justify that investment. These initiatives have had to be excluded from our projections.
- 1.72 We understand, however, that Postcomm is giving further consideration to regulating prices on the basis of a regulatory asset base. In principle, such an approach allows investment to be considered on an *ex-post* basis, and added to the regulatory asset base if appropriate. Investment built into the asset base in this way is in effect recovered through subsequent prices. The effect is to match the pricing consequences of investment to the period in which the associated benefits arise. Provided that the overall consequences of the investment are positive (i.e. over time the benefits outweigh the costs) the overall impact is a reduction in prices.
- 1.73 The practical consequence of such an approach, for the purposes of this study, is that investment that is financially negative in the coming price control period, but produces net cost savings in subsequent periods, need not be incorporated into cost projections. If the investment is made, and made efficiently, it can in effect be picked up in subsequent price reviews.
- 1.74 Our exclusion of these higher investment initiatives, together with any other initiatives that we judged were dependent on them, means that the resulting financial projections describe a period of incremental (rather than radical, investment-driven) change. That is not to say that the scale of change described

is small: the large majority of the initiatives described within Royal Mail's Strategic Plan have been incorporated, as have some additional initiatives that we believe have merit.

- 1.75 We have developed two sets of projections. In relation to certain initiatives, we have identified alternative estimates of either the costs or benefits associated with the individual initiatives put forward by Royal Mail. Where we have, we have typically aggregated these alternative estimates into a "higher case" scenario for the savings achievable by Royal Mail over the five years to 2010/11. For the "lower case" scenario, where we have incorporated specific initiatives we have calculated the impact of initiatives using conservative assumptions or have used Royal Mail's figures.
- 1.76 The table below summarises the results for the lower case scenario, combined with our Baseline projections.

Table 7: LECG bottom-up lower case scenario for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	5,593	5,581	5,619	5,583	5,513	5,428	(0.6%)
Net operating cost savings	(51)	(186)	(262)	(314)	(347)	(383)	
Operating costs before one-offs	5,542	5,394	5,357	5,269	5,165	5,044	(1.9%)
One-off costs	48	77	58	51	3	2	
Operating costs after one-offs	5,591	5,471	5,415	5,320	5,168	5,047	(2.0%)
Capital expenditure	200	179	183	185	185	185	
Total cash costs	5,791	5,651	5,599	5,506	5,354	5,232	(2.0%)

Source: LECG analysis. Operating costs and capital expenditure costs are slightly different from those reported in Postcomm's Initial Proposals. Due to the capitalisation of assets under £2,500, Postcomm reports slightly higher capital expenditure figures (i.e. by £3.6m) and correspondingly lower operating expenditure.

- 1.77 The table below converts our lower case scenario into unit cost terms.

Table 8: LECG bottom-up lower case scenario for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)
RUOE before one-offs	0.221	0.214	0.205	0.200	0.197	0.193	(2.6%)
RUOE after one-offs	0.223	0.217	0.207	0.202	0.197	0.193	(2.8%)
RUOC	0.231	0.224	0.214	0.209	0.204	0.201	(2.8%)

Source: LECG analysis. Note: RUOE stands for real unit operating expenditure (excluding capital expenditure or depreciation). RUOC stands for real unit operating costs, and includes capital expenditure.

- 1.78 Under our lower case scenario, unit cash costs decline at a rate of 2.8% per annum. Removing the impact of volume growth and changes in product mix (i.e. 1.4% per year) gives an underlying trend in RUOC growth of 1.4%, when measured by reference to total cash costs. In RUOE terms, before one-off expenditures, this is equivalent to an underlying volume- and mix-adjusted trend of 1.2% a year.
- 1.79 The table below summarises the results of the higher case scenario, combined with our Baseline conclusions.

Table 9: LECG bottom-up higher case scenario for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	5,593	5,581	5,619	5,583	5,513	5,428	(0.6%)
Net operating cost savings	(80)	(249)	(349)	(476)	(654)	(759)	
Operating costs before one-offs	5,513	5,332	5,269	5,107	4,858	4,669	(3.3%)
One-off costs	44	93	93	99	42	50	
Operating costs after one-offs	5,558	5,424	5,362	5,206	4,900	4,718	(3.2%)
Capital expenditure	200	179	183	185	185	185	
Total cash costs	5,758	5,604	5,546	5,392	5,086	4,903	(3.2%)

Source: LECG analysis. Operating costs and capital expenditure costs are slightly different from those reported in Postcomm's Initial Proposals. Due to the capitalisation of assets under £2,500, Postcomm reports slightly higher capital expenditure figures (i.e. by £3.6m) and correspondingly lower operating expenditure.

1.80 The table below converts our higher case scenario into unit cost terms.

Table 10: LECG bottom-up higher case scenario for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)
RUOE before one-offs	0.220	0.211	0.202	0.194	0.185	0.179	(4.0%)
RUOE after one-offs	0.222	0.215	0.205	0.198	0.187	0.181	(4.0%)
RUOC	0.230	0.222	0.212	0.205	0.194	0.188	(3.9%)

Source: LECG analysis.

1.81 Under our higher case scenario, unit cash costs decline at a rate of 3.9% per annum. Removing the impact of volume growth and changes in product mix gives an underlying trend in productivity growth of 2.5%, when measured by

reference to total cash costs. In RUOE terms, before one-off expenditures, this is equivalent to an underlying volume and mix-adjusted trend of 2.6% a year.

- 1.82 The analysis carried out on a bottom-up basis therefore supports a projection of forward RUOE savings, adjusted for changes in volume and product-mix, at between 1.2% and 2.6% a year. Even on the basis of this analysis alone, we would expect the scope for Royal Mail to generate improved productivity to lie closer to the top than to the bottom of this range. We believe that the assumptions underlying these figures are consistent with Royal Mail meeting or exceeding its current quality of service targets. Overall we believe that our conclusions are conservative⁴.

Internal benchmarking

- 1.83 Our internal benchmarking exercise involved using econometric techniques to determine the potential for Royal Mail to lower costs by applying its own best practices consistently across its mail centres and delivery offices. Based on this work, we believe that Royal Mail can achieve annual savings of £350m to £450m, as summarised below and described in further detail in Part D of our report. Such savings require changes in operational processes only, and as such have been calculated assuming no changes in the infrastructure or equipment available to Royal Mail staff. Any productive investment in infrastructure or equipment should result in higher savings.

Table 11: Conclusions from internal benchmarking of delivery offices and mail centres

	Annual savings available
Delivery offices	£250 – 300 million
Mail centres	£100 – 150 million
Total	£350 – 450 million

Source: LECG analysis

- 1.84 We do not regard these targets as ambitious: they are based on existing best practice only, benchmarked against the top decile, and have been discounted by a further 20% to account for any possible “residual error” relating to omitted

⁴ This view is shared by Postwatch, which, having reviewed a draft of this report, described some of our conclusions as “*excessively cautious*”⁴ (comments to Postcomm on draft efficiency report, Postwatch, 16 May 2005)

variables, poor proxies, sampling errors etc. Overall, however, we believe such residual errors are likely to be smaller than the discount applied.

- 1.85 It is also worth remembering that our internal benchmarking assesses the potential for Royal Mail to lower costs by achieving its *own current best performance* consistently across mail centres and delivery offices. It does not capture savings associated with moving Royal Mail's efficiency frontier by, for example, adopting international best practice, increasing the level of automation, [>], etc.
- 1.86 We have compared the results of our internal benchmarking against the proposed savings identified from specific initiatives set out within Royal Mail's Strategic Plan. We believe that the £350m to £450m savings identified by our internal benchmarking exercise are broadly comparable to the level of savings available from best practice initiatives identified by Royal Mail itself. On balance, we believe that this comparison supports the conclusion set out in our review of Royal Mail's Strategic Plan – that the scope for efficiency gains is more likely to be closer to the higher scenario than to the lower.
- 1.87 The outcome of converting the results of the internal benchmarking exercise into an efficiency trend depends on the time period over which the assumed efficiencies are achieved. The table below presents implied efficiency trends for different time periods:

Table 12: Internal benchmarking RUOE trends

Time period	Annual rate of improvement
3 years	3.6% to 4.6%
4 years	2.7% to 3.5%
5 years	2.2% to 2.8%

Source: LECG analysis

- 1.88 Clearly, achieving current best practice over a shorter period would increase the annual rate of growth in efficiency. The converse is also true. On balance, we believe that Royal Mail should be able to achieve the savings identified over a four to five-year period. We believe that Royal Mail would not be able to achieve these savings over a three-year period.

Conclusions

- 1.89 We have used three main inputs to determine the level of future *operating* expenditure efficiencies that Royal Mail can achieve. The table below shows our conclusions from each of these elements of work.

Table 13: Summary of findings relating to Royal Mail's future RUOE savings, assuming constant volume and mix

	Annual % decrease in RUOE
Top down assessment	3.0 % to 4.0%
Bottom up review of RML's Strategic Plan	1.4% to 2.6%
Internal benchmarking (assuming achieved over 4 years)*	2.7% to 3.5%
Internal benchmarking (assuming achieved over 5 years)*	2.2% to 2.8%
Conclusion	2.75% to 3.25%

Note: Figures are adjusted for volume and mix effects. * The internal benchmarking trend is not strictly an RUOE trend. The trend only relates to mail centre and delivery office labour costs. Other parts of RML's network and other types of costs (e.g. vehicles) were not included in the internal benchmarking exercise.

- 1.90 Top-down analysis is necessary in cost efficiency studies because not all of the mechanisms available to a company for raising efficiency, or reducing costs, over a forward period can normally be foreseen at the start of that period. Looking at the sum of initiatives that can be identified at the outset of the price control period (which is the nature of the "bottom-up" analysis that we have carried out) is therefore likely to understate the actual scope for forward efficiency gains.
- 1.91 Royal Mail's own experience in the current price control period bears this out, as discussed in Section 6. Although the original targets for the specific initiatives encapsulated in the Renewal Plan have not been met, the company has beaten the overall efficiency targets inherent in the price control. The implication is that additional initiatives, not specifically identified at the time the price control was set, have driven the additional efficiency gains.
- 1.92 The same phenomenon is also visible in the pattern of "one-off" costs in the tables above, which are high at the beginning of the period (reflecting the start of

a number of initiatives) but reduce steadily towards the end of the period (reflecting fewer initiatives starting). In practice we would anticipate additional initiatives, not currently foreseen, being developed after the start of the next price control period and implemented thereafter.

- 1.93 For these reasons, bottom-up estimates of the scope for efficiency gains are more likely to provide a lower limit to the actual scope. Even within our high bottom-up case we have not incorporated a number of best practice initiatives that we would expect Royal Mail to implement.
- 1.94 Taking the results of all of the analysis presented above together, we assess the scope for operating efficiency savings within Royal Mail at 2.75% to 3.25% (before volume and mix effects and in real terms) annually for the period covered by the next price control. For our initial conclusions we have selected the mid point for this range.
- 1.95 Incorporating the effects of volume and mix changes, this translates to an RUOE trend of 4.4%. This cost trend is stated before the impact of one-off costs and capital costs. Our forecast of one-costs and capital expenditure is based on our bottom-up assessment, under the high case.
- 1.96 The table below summarises our conclusions in total cost terms:

Table 14: LECG total cost conclusions for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline costs	5,593	5,581	5,619	5,583	5,513	5,428	(0.6%)
Net operating cost savings	(81)	(243)	(401)	(554)	(703)	(847)	
Operating costs before one-offs	5,513	5,338	5,218	5,029	4,810	4,581	(3.6%)
One-off costs	44	93	93	99	42	50	
Operating costs after one-offs	5,557	5,430	5,311	5,129	4,852	4,630	(3.6%)
Capital expenditure	200	179	183	185	185	185	
Total cash costs	5,757	5,610	5,494	5,314	5,037	4,815	(3.5%)

Source: LECG analysis. Costs stated before pension deficits. Operating costs and capital expenditure costs are slightly different from those reported in Postcomm's Initial Proposals. Due to the capitalisation of assets under £2,500, Postcomm reports slightly higher capital expenditure figures (i.e. by £3.6m) and correspondingly lower operating expenditure.

1.97 The table below summarises our conclusions in unit cost terms:

Table 15: LECG total cost conclusions for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)
RUOE before one-offs	0.220	0.212	0.200	0.191	0.184	0.176	(4.4%)
RUOE after one-offs	0.222	0.215	0.203	0.195	0.185	0.177	(4.4%)
RUOC	0.230	0.222	0.210	0.202	0.192	0.185	(4.3%)

Source: LECG analysis. Costs stated before pension deficits

1.98 In presenting an estimate of efficient operating and capital costs of Royal Mail, we do not suggest or prescribe the methods, areas or cost categories within which Royal Mail should reduce costs over the forthcoming price control period. We instead set out a view of the possible levels of operating and capital costs of an efficient postal operator in the UK over the price control period. Although our

bottom-up analysis does provide an indication of the types of initiatives we would expect to be implemented over the forthcoming price controlled period, it is ultimately for Royal Mail's management to decide how best to manage the business to meet its overall objectives.

- 1.99 Our approach to determining the profile of costs for Royal Mail's regulated activities is summarised in Sections 7 and 8. The table below sets out our initial conclusions for the efficient profile of regulated costs.

Table 16: LECG profile of regulated costs

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	5,065	5,059	5,095	5,055	5,007	4,925	(0.6%)
Net operating cost savings	(75)	(227)	(372)	(511)	(649)	(780)	
Operating costs before one-offs	4,990	4,832	4,723	4,544	4,358	4,145	(3.6%)
One-off costs	40	84	84	90	38	45	
Operating costs after one-offs	5,030	4,916	4,807	4,634	4,396	4,190	(3.6%)
Capital expenditure	181	162	166	167	168	167	
Total cash costs	5,211	5,078	4,973	4,801	4,564	4,357	(3.5%)

Source: LECG analysis. For the reasons outlined in Table 14 above note that capital and operating expenditures are slightly different to the figures reported in Postcomm's Initial Proposals.

- 1.100 The table below converts regulated costs into unit cost terms.

Table 17: LECG profile of Royal Mail's regulated unit costs

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	0.247	0.246	0.243	0.243	0.242	0.242	(0.4%)
RUOE before one-offs	0.243	0.235	0.225	0.218	0.211	0.204	(3.5%)
RUOE after one-offs	0.245	0.239	0.229	0.223	0.213	0.206	(3.4%)
RUOC	0.254	0.247	0.237	0.231	0.221	0.215	(3.3%)

Source: LECG analysis

- 1.101 The resulting RUOC reductions for the regulated business are slightly lower than those for RML as a whole. This is due to differences in Baseline cost trends, which in turn derive from different underlying mix and volume assumptions in relation to the regulated activities on the one hand and RML on the other.

2 Introduction and scope of work

Introduction

- 2.1 Postcomm is currently reviewing the price and service quality controls for Royal Mail's regulated mail activities to determine the regulatory arrangements that should apply from April 2006. A key input into this review will be an assessment of the future efficient costs for Royal Mail's regulated mail activities. LECG has been engaged by Postcomm to provide this assessment.
- 2.2 In this section, we first provide some context to the work we have been asked to perform. We then provide an overview of the LECG and our team, and summarise our terms of reference and provide details of the scope of and limitations to the work we have undertaken. Finally, we summarise the structure of this report.

Regulatory background

- 2.3 In March 2001, Postcomm was given responsibility, under the Postal Services Act 2000, for the independent economic regulation of the postal services market in the United Kingdom.
- 2.4 On the same date, The Post Office Group became a public limited company, with the Government as sole shareholder, under the new name of Consignia Holdings plc ("Consignia"). On 4 November 2002, Consignia changed its name to Royal Mail Holdings Group plc ("Royal Mail")⁵.
- 2.5 Before the Postal Services Act 2000 was enacted, Royal Mail had an exclusive monopoly over the provision of postal services within the UK for items weighing less than 350g and costing less than £1 to convey. The changes introduced by the Postal Services Act 2000 established Postcomm as the sector regulator with duties in relation to ensuring the provision of the universal service, and promoting consumers' interests, where appropriate by promoting competition. Postcomm's main power is the issuing of licences to operators within the former monopoly area.
- 2.6 On 10 June 2002 a new European Postal Services Directive 2002/39/EC was adopted. The Directive, which came into force on 5 July 2002, amended the

⁵ In tables and footnotes we shorten Royal Mail to "RM"

earlier Directive 97/67/EC. Member States were required to implement the Directive by 1 January 2003.

- 2.7 Postcomm's price and service quality review will take account of the provisions contained within the Directive, particularly with respect to EU liberalisation. On 1 January 2006, the maximum reserved area for the postal market in the European Union will be reduced from 100g (and 3 times the basic postal tariff) to 50g (and 2.5 times the basic postal tariff)⁶.
- 2.8 Postcomm's vision for the market is a range of reliable, innovative and efficient postal services, including the universal postal service, valued by customers, and delivered through a competitive market. Postcomm believes that a successful Royal Mail, the UK's only universal service provider, is central to the delivery of this vision. Given the economic and social importance of the postal industry, a competitive market should encourage innovation and benefit postal users.
- 2.9 To help achieve its vision, Postcomm proposes to bring forward the date for full market opening from 1 April 2007 to 1 January 2006. Postcomm proposes to do this in a single step, which also gives Royal Mail a nine-month extension compared to phased market opening. From 1 January 2006, which is also the date when the European Postal Services Directive reduces the reserved area from 100g to 50g, rival operators to Royal Mail will be able to operate anywhere within the UK postal services market.

Royal Mail's regulated business

- 2.10 Royal Mail comprises three core businesses:
- RML, which operates the regulated mail business;
 - Parcelforce Worldwide; which comprises the UK Parcelforce business and Royal Mail's international parcels business; and
 - Post Office Limited, which operates around 15,000 Post Offices⁷ throughout the country providing postal and counter services, but has no directly regulated activities.

⁶ Under EC Postal Services Directive (97/67/EC) as amended by Directive (2002/139/EC)

⁷ Royal Mail has registered the trademark 'The Post Office'

- 2.11 Within RML, the current price control covers 31 main products⁸ with a turnover of £5,850m and, according to Royal Mail, a profit from operations of £348m (before pension deficit payments and exceptional costs) in 2003/04. Products provided by Parcelforce or Post Office Limited are not price controlled.
- 2.12 When the *current* price control was set, the scope Postcomm considered, when assessing whether Royal Mail could finance its activities, included all of the universal service obligation (“USO”)⁹ and price-controlled services (as defined at that time), referred to in combination as the “regulated activities”. The price control scope is similar to the regulated activities scope, with around 97% revenues in common in 2003/04. Royal Mail has been required to report figures for its price control scope of business in its annual Regulatory Accounts since 2002/03. Historically, Postcomm used the USO plus the Presstream product as an approximation for the regulated activities scope. A list of USO and price-controlled services is provided in Appendix 1.

Postcomm's primary statutory duties

- 2.13 Postcomm's universal service duty is to exercise its functions in the manner it considers best calculated to ensure the provision of a universal postal service. This consists of the delivery and collection at least once every working day of mail (not exceeding 20Kg in weight) and the provision of a registered postal service, all at affordable prices that are geographically uniform throughout the UK.
- 2.14 Subject to this, Postcomm is charged with furthering the interests of users of postal services wherever appropriate by promoting effective competition between postal operators. In doing so, Postcomm must have regard to the interests of those who are disabled or chronically sick, are of pensionable age, are on low incomes, or reside in rural areas.
- 2.15 Subject to both the duties above, Postcomm has a further duty to exercise its functions in a manner to promote efficiency and economy on the part of postal operators. Finally, in performing all its duties, Postcomm must have regard to the

⁸ There are an additional eight “minor” price controlled products. Three services are classified as “Miscellaneous Services” which are limited to “RPI-1%” under provisions set out in Condition 19 of RM's licence. Five services under Paragraph 15 of Condition 19 are required to be provided free of charge

⁹ The definition of the USO in the 2002 Price Control is wider than that being proposed for the 2006 Price Control (see A Revised Market Opening Timetable – Proposals for consultation, Postcomm, September 2004)

need to ensure that licence holders are able to finance the activities authorised or required by their licences.

Terms of reference

- 2.16 Postcomm is in the process of determining which products should be price controlled from April 2006. As a first step, we have been asked to assess efficient costs for Royal Mail's UK inland mails, outgoing international and downstream access products over the period 2005/06 to 2010/11. These products fall within the business described as "Total Mails" in Royal Mail's 2003/04 Regulatory Accounts. Henceforth this scope of products is referred to as RML.
- 2.17 As a second step, we have been asked to consider the efficient costs for the products and services Postcomm plans to regulate from 1 April 2006¹⁰. Postcomm does not believe it should price control products where competition is providing choice and protecting the interests of customers. To this end, it has developed a competition-based test to guide its judgement on the appropriate scope of the price control. Following consultation, Postcomm believes it is also appropriate to take into account additional factors such as the prospects for competition, whether the product is a universal service product and whether related or substitutable products are price controlled, which effectively provide a safety net to other customers.
- 2.18 Postcomm proposes to remove Presstream products and Special Delivery products for large business users from the next price control. In both cases Postcomm is satisfied that competition is developing to protect the interests of customers. Customers' and operators' interests will also be safeguarded by general competition law, in particular Article 82 of the EU Treaty and Chapter 1 of the Competition Act 1998, which are administered for postal services principally by the Office of Fair Trading (OFT). A list of proposed regulated products is outlined in Appendix 4¹¹.
- 2.19 We have supported our cost estimates with evidence related directly to Royal Mail's overall cost base and underpinned this with robust analytical techniques.

¹⁰ Regulated activities are currently defined under Condition 2 and Condition 19 of Royal Mail's licence, as set out in Appendix 1

¹¹ Initial Proposals, Postcomm, June 2005

We have considered five main approaches to benchmarking Royal Mail's costs. These are:

- internal benchmarking of similar activities within Royal Mail (e.g. the comparative performance of different mail centres and delivery offices);
- benchmarking of relevant Royal Mail activities with similar activities carried out by other UK businesses (e.g. bulk transportation and property);
- benchmarking Royal Mail's support activities (e.g. management, finance, IT, etc) with appropriate companies;
- international benchmarking of Royal Mail's activities with the activities of postal operators in other countries; and
- benchmarking the efficiency savings projected to be achieved by Royal Mail with those achieved by other regulated companies in the UK at similar stages of development.

2.20 None of these approaches by itself provides a precise picture of the scope for cost savings during the forthcoming price control, and each requires us to exercise a degree of judgement when determining the implications for Royal Mail's expenditure. However, by approaching the efficiency assessment from a number of different directions, we avoid placing undue weight on any one piece of analysis. Instead, we have looked at a broad range of evidence and set cost allowances based on the overall story that has emerged. This helps to minimise the extent to which our overall conclusions are subject to error.

2.21 We have also reviewed the approaches adopted by other UK utility regulators in recent price control reviews, to ensure that our approach is consistent with current regulatory good practice. We have also established a robust assessment of actual costs in the Base Year on which to build forward-looking projections.

LECG team

2.22 LECG is a global economics and consulting firm, which provides independent and objective advice and analysis on matters of economics, finance, and strategy, to law firms, businesses, regulators, and governments. Founded in 1988, LECG has 675 professional staff, including over 275 experts, operating in 30 offices throughout the Americas, Europe, and Asia-Pacific.

- 2.23 The skills required for this work are embodied in the members of the team who have worked actively on the project. Members of the team have extensive first hand experience of regulation and in conducting efficiency reviews. The team contains a combination of economists, econometricians, accountants, postal experts and project managers. LECG has considerable efficiency assessment expertise. Our experts have advised a wide range of regulators and regulated companies in the UK, in Europe and in the US.
- 2.24 Our team has extensive experience of working with Postcomm and other international postal entities on a range of postal issues. Our postal experts have an in-depth knowledge of Royal Mail's operations, current postal issues and recent efficiency initiatives. Our experts have good access to international benchmark information.
- 2.25 Key members of our team include:
- Chris Osborne, the European Managing Director of LECG, had overall responsibility for project delivery. Prior to joining LECG, Chris was a partner in Andersen's Economic and Financial Consulting Group, and has over 20 years experience in bringing economic and financial analysis to complex regulatory and competition disputes. He is a Chartered Accountant
 - Greg Harman, an LECG Director, was responsible for day-to-day engagement management. Prior to joining LECG he was a Director in the Economic Consulting division of Deloitte & Touche in London and prior to this he was a senior manager at Andersen. During his 13 years in consultancy, Greg has undertaken a wide range of assignments in the UK and abroad specialising in the areas of regulation, economic analysis, pricing and costing. Greg has considerable price control experience and is a Chartered Accountant.
 - Professor John Cubbin acted as the Senior Technical Expert on the project and had overall charge of technical analysis work. He was responsible for relating realities of postal services to equation specification, work stream management, relating internal benchmarking work to other areas of study and ensuring technical analysis results are interpreted appropriately. Professor Cubbin is a renowned and published expert in Non-Parametric

Analysis. He is an affiliate of LECG, and a Professor of Economics at City University, London and Head of the Department of Economics.

- Professor Meloria Meschi managed our internal benchmarking work. Meloria teaches Applied Microeconomics and Industrial Organization at John Cabot University in Rome, and is a Professor at the Masters in Antitrust and Regulation at Tor Vergata University, Rome where she teaches “The Estimation of Cost Functions and Efficiency.” Meloria has designed and supervised the empirical analysis in more than 30 antitrust, regulatory and damages cases across a variety of industries.
- Peter Portnoi directed our work on collections, transport and delivery. Mr Portnoi left Royal Mail in 2003 and has 35 years of postal experience. During his time at Royal Mail, he held a number of senior positions, including time spent as a Delivery Area Manager, National Delivery Office Programme Manager, Asset Director, Head of Access & Delivery Deployment, and Head of Access. As Head of Access, Mr Portnoi was responsible for developing and implementing the national policy on all access-related issues including collections.
- Brian Thomson provided expertise on HR issues. He has over 25 years experience working at the most senior levels in both Human Resources and General Management. Mr Thomson was a former Personnel/Industrial Relations Director for British Shipbuilders, Royal Mail and The Post Office® and created and implemented numerous major people change programmes
- Derek Osborn provided key support to the international benchmarking team. Derek has over 23 years experience in a variety of senior management operational and project roles in Royal Mail in the UK and over 10 years of experience in international consultancy across the postal world.
- Gren Collings (BSc Estates Management, FRIS) directed our work on property related issues. Mr Collings was a former Managing Director of Royal Mail Property Holdings.
- Ian Bethel directed our work on mail centres and sorting. His career at Royal Mail spanned 35 years. During this time he held a number of senior positions including Mail Centre Manager at Chester, Glasgow, Manchester

and Preston, Divisional Operations Director, and Territory Head of Performance

Limitations to our work

- 2.26 We have checked the internal consistency of data supplied to us by Royal Mail. However, nothing in this report should be taken to imply that we have conducted any procedures or investigations in an attempt to verify or confirm, by means of reviewing source documentation or processes, the accuracy of the data underlying the BPQ or other supplementary information. Our work does not constitute an audit.
- 2.27 This report has been written solely for the use of Postcomm. We are aware that Postcomm will rely in part on our findings, as set out in this report, in its determination of price controlled revenues for Royal Mail over the price control period. We are also aware that this report will be provided to both Royal Mail and Postwatch before publication as part of the process of the determination of the price control and may be made publicly available by Postcomm¹².
- 2.28 The scope of our work has been limited due to the nature of our terms of reference with Postcomm. Specifically, we have not been asked to:
- review or comment on Royal Mail's volume projections or to develop an independent estimate of future volumes. LECG has been requested to provide projected cost information in a form that would allow Postcomm to test the sensitivity of projected cost levels to the separately developed volume projections. These volume projections are on a per product basis. Postcomm has engaged other consultants to perform this work; and
 - review Royal Mail's costing and cost attribution system, which would ensure that the attribution of costs is appropriate for pricing purposes. Postcomm has engaged other consultants to perform this work.
- 2.29 Royal Mail has developed a model for projecting future operating costs. The model is referred to as the Business Planning Model. This model is large, complex and reflects the complex nature of its business and the large number of activities that drive costs. We have not been asked to replicate this model, or to develop an alternative forecasting model.

¹² We understand that Postcomm may decide to excise commercially confidential information from the final report

- 2.30 To ensure that the model is working effectively and provides the required level of robustness for forecasting purposes, Royal Mail commissioned OXERA to provide an independent review and validation of the BPM. OXERA's review focused on the economic rationale and logic of the approach adopted, as well as on the resulting figures across the models. OXERA states that: "*overall, the sequence of the model is sound and well structured. The BPM2 could, as a result, provide a useful framework of analysis of Royal Mail's business plans in support of a relevant submission to Postcomm. The macros contained in the model are well written and presented clearly. No errors affecting the calculation procedure were found in the coding of the macros.*"¹³
- 2.31 In order to ensure our approach to forecasting costs is consistent with Royal Mail's, we have used the BPM to project our assessment of Royal Mail's efficient costs. As the BPM has been reviewed by OXERA, we have not performed a detailed audit of the model. Consequently, we express no opinion on the robustness of its resulting cost forecasts.

Structure of this report

- 2.32 In Section 3, we summarise the information we have relied upon in developing the conclusions contained within this report.
- 2.33 In Section 4, we provide a high-level overview of the approach we have adopted to projecting costs over the forthcoming price control period. Each element of our approach is then discussed in more detail in subsequent sections of this report. In Section 5, we provide a brief overview of the processes underlying postal service operations, intended to provide an introduction to subsequent more detailed sections and to the terminology used.
- 2.34 Part A of this report sets out our assessment of Baseline costs – which refers to the profile of future costs before any future efficiency gains are considered. In Section 6, we summarise how Royal Mail is expected to perform during the remainder of the current price control. In Section 7, we derive a properly stated Base Year cost against which operating cost projections are made. In Section 8, we describe our methodology for projecting Baseline operating costs. At the end of this section, we provide our estimate of Baseline costs.

¹³ Review of Royal Mail models: update, Oxera, January 28th 2005

- 2.35 Part B of this report provides a summary of Royal Mail's Strategic Plan. Section 9 provides an overview of Royal Mail's business strategy and provides a summary of its operating and capital cost projections to 2010/11. In Section 10, we comment on the Strategic Plan, and outline our approach to its evaluation, which is provided in Part C.
- 2.36 Part C provides our detailed review of the Strategic Plan, which we refer to as our bottom-up analysis. Section 11 provides an overview of our bottom-up approach. Sections 12 to 19 provide a detailed review of Royal Mail's pipeline or other functional costs. Each section provides a review of Royal Mail's submission and assesses the opportunity for additional efficiencies. The following areas are considered separately: collection costs; sorting costs; transport costs; delivery costs; human resources costs; property costs; overhead costs; and capital expenditure.
- 2.37 Part D summarises the results of our internal benchmarking – which uses quantitative techniques to benchmark the relative performance of Royal Mail's mail centres and delivery offices. Our analysis provides an indication of the level of savings that are achievable by applying existing best practices within Royal Mail. Our analysis is set out in Section 20.
- 2.38 Part E of this report sets out a series of top-down analyses – and is structured as follows. Section 21 summarises our approach to top-down analysis and presents our overall conclusions. Section 22 provides a summary of Royal Mail's historical cost trends. Section 23 provides a summary of the level of efficiency that has been achieved in other regulatory sectors, and compares this to the efficiency targets that have been set by other UK industry regulators. Section 24 compares productivity trends across comparable sectors using Total Factor Productivity and Real Unit Operating Expenditure ratios. Section 25 considers efficiency trends across other international postal operators.
- 2.39 In Part E, we summarise our overall findings. In Section 26, we provide our assessment of Royal Mail's future efficient costs – using the evidence outlined in Parts A to D of this report.

3 Information used

Introduction

- 3.1 As part of the efficiency study of Royal Mail's price-controlled area, it has been necessary for both Postcomm and LECG to request information from Royal Mail. This is normal in reviews of this nature.

Information sources

- 3.2 The findings presented in this report are based on our review and consideration of the information obtained from the following:
- Royal Mail's response to Postcomm's 2006 Royal Mail Price and Service Quality Control Review, Initial Business Plan Questionnaire. This sought information in two stages. Stage 1 requested a Strategic Plan for Royal Mail's business to 2011, including high-level financial forecasts, and historical cost, volume and revenue information by the end of July 2004. Stage 2 requested more detailed projected information to 2011 by the end of October 2004;
 - Royal Mail's response to Postcomm's formal Requirement to Furnish Information dated 24 January 2005;
 - Royal Mail's responses to additional supplementary questions raised over the period August 2004 to March 2005 and meetings with Royal Mail personnel to clarify issues;
 - site visits to four delivery offices, four mail centres and the National Distribution Centre. All LECG staff performed site visits¹⁴;
 - information provided to us by Postcomm; and
 - other stakeholders in the price control review, including Postwatch, the trade unions, other consumer representatives and other postal operators, both national and international.

¹⁴ We visited four delivery offices (West Kensington, South Coulsden, Rugby and Lutterworth), four mail centres (Gatwick, Croydon, Paddington and Birmingham) and the National Distribution Centre

3.3 To support the information provided to us by Royal Mail we have reviewed other third party data. For example, we have reviewed a number of third party reports, including but not limited to:

- Technology and Innovation in the Postal Sector, A Competitive Market Review, Arthur D Little, June 2004 (hereafter referred to as the ADL Report);
- Economics of Postal Services: Final Report. A Report to the European Commission”, DG-MARKT, NERA, July 2004 (hereafter referred to as the NERA Report)
- Impact of Liberalisation on Efficiency: A Survey, Frontier Economics, January 2002 (hereafter referred to as the Frontier Economics Report);
- Letter prices in Europe – Current international letter price comparison, Deutsche Post World Net, January 2004; and
- An Efficiency Study of Consignia’s Inland Letters Business, Postcomm, WS Atkins, October 2002 (hereafter referred to as the “WS Atkins Report”).

3.4 We have performed such analysis as we considered appropriate and as is set out in this report. We have provided our interim findings to Royal Mail, in order to verify the analysis underlying our interim report. Importantly, we have relied on extensive third party benchmarking data. A more detailed list of the information we have relied on is set out in Appendix 2.

Information quality and process

3.5 During our review, we worked with Postcomm to implement and operate within a process designed to gather appropriate and necessary information from Royal Mail in a manner that was efficient for Royal Mail and Postcomm. The key aspects of this process are highlighted below:

- all information requests were made on a timely and reasonable basis. Royal Mail was given sufficient time to provide thorough, high quality and internally consistent responses. For example, Postcomm submitted the BPQ to Royal Mail in April 2004, giving Royal Mail three and a half months to respond to Part 1 and six and a half months to supply the information requested in Part 2;

- Postcomm had also discussed drafts of the BPQ with Royal Mail prior to April 2004 to confirm that Royal Mail could provide the requested information;
- information requests were prioritised and the timing of provision agreed with Royal Mail;
- information requirements and expectations were discussed fully with Royal Mail and all information requests were formally recorded;
- Postcomm and LECG met with Royal Mail's regulatory affairs team on a regular basis to discuss responses to information requests; and
- Postcomm met regularly with Royal Mail's senior management to stress the importance of providing good information on a timely basis.

Information quality

- 3.6 Royal Mail provided us with good quality information in some important areas. Its Business Planning Model, which is used to allocate and project operating costs over the forthcoming price control was one example, and the data provided at a mail centre and delivery office level, used for the internal benchmarking exercise, was another. The response to the first part of the BPQ was delivered by 31 July 2004, and several hundred supplementary questions, put forward in August, were answered during the course of October.
- 3.7 A significant amount of data was requested from Royal Mail and we acknowledge that it does not currently have the informational processes that would allow it to respond to Postcomm's information requests as efficiently and to the same standard as other regulated companies, which have been subjected to regulatory processes for a longer period of time.
- 3.8 We also acknowledge that Royal Mail operates in a complex institutional framework and stakeholder process. Although there are also institutional framework issues in other regulated industries, such as Rail, they are not typically present in regulated industries to the same extent as is the case for Royal Mail.
- 3.9 Notwithstanding, however, there were other important areas in which responses were deficient. For example, Postcomm explicitly requested, in question 8.9 of the BPQ, that Royal Mail provide Postcomm with copies of all reports, papers and other evidence that Royal Mail may have produced or collected in the last five

years to measure its efficiency compared to other postal operators and businesses. In response, Royal Mail provided a small number of supporting studies. However, during the course of our work, it became apparent that Royal Mail had in fact engaged a number of consultants to review the efficiency of RML, including a comprehensive review of the mails business. Royal Mail refused to provide these studies¹⁵.

- 3.10 More generally, responses were often given in overly general terms, with little attempt made to proactively provide information that might have been relevant to the study. Our attempts to obtain more detailed, or more specifically relevant, information required the generation of some 500 formal supplementary questions. As of May 2005, many of these questions remain unanswered.

Strategic Plan

- 3.11 More importantly, the BPQ also requested, in question 2.17, a copy of the Strategic Plan that Royal Mail prepares for its shareholder. The plan is a key document for the purposes of this study as it sets the context for all of Royal Mail's projections of costs and volumes over the price control period.
- 3.12 The Strategic Plan was not provided in Royal Mail's 31 July 2004 submission, as originally requested¹⁶. A progress report was provided in August 2004, and a draft version was made available on 7 December 2004, with Royal Mail's supporting Business Planning Model being provided on 16 December 2004. Although the draft document provided important insights into the direction of Royal Mail's plans, the submissions did not include any support for the projected financial consequences of the 60 initiatives by which the strategy was intended to be delivered.
- 3.13 Royal Mail acknowledges¹⁷ that it underestimated the iterations and time required to finalise the draft delivered in December, which addressed a number of complex issues including industrial relations, profitability, pricing and keeping the shareholder informed. Ahead of December, Royal Mail informed Postcomm that,

¹⁵ [>]

¹⁶ Royal Mail argued that it did not wish to provide its draft Strategic Plan until after both its Board and its Shareholder had agreed it

¹⁷ Letter to Postcomm dated 13 May 2005, from Royal Mail's Director Regulatory Affairs & Wholesale

following the Strategic Plan it would take about six working weeks to prepare the detailed Business Plan necessary for the second part of the BPQ.

- 3.14 To ensure that Royal Mail provided this information on a timely basis, Postcomm issued a formal information order in January 2005¹⁸. Postcomm believed that a considerable amount of the information requested, and required, remained unprovided and that there was a risk that it would not be possible to introduce a revised version of Condition 19 in time for 1 April 2006 unless the information was provided promptly. Postcomm also stressed that Royal Mail needed to provide all information available to Royal Mail of relevance to the review.
- 3.15 Royal Mail provided additional support for the Strategic Plan initiatives on 31 January 2005 (RM 5045) and 7 February 2005 (RM5062 to RM5092). The additional information provided was, however, limited - each initiative is covered in one to two pages of information, covering the purpose of the initiative, some high-level background, fit with strategy, financials risks and assumptions. The majority of the information simply restates the financial information contained within the suite of models that support the BPQ (version RM 2023a BPM2_v2.7).
- 3.16 Royal Mail has confirmed to us that we: *“have all the material information underpinning the Strategic Plan initiatives which exists and there is nothing else material supporting the Strategic Plan that has not been supplied to Postcomm.”*¹⁹
- 3.17 Very limited information has been provided, however, as to the basis on which – for each initiative - the investment or the related benefits have been calculated. We would have expected the Strategic Plan to have been supported by the following:
- a clear set of calculations that show how the financial impacts have been calculated. In many instances Royal Mail simply asserts the profile of future costs;
 - full support for each assumption made, including internal analysis, comparable benchmark data, data to support equipment costs, etc;

¹⁸ Requirement to furnish information, Licence Granted to Royal Mail Group plc, Condition 16 Postal Services Act 2000, Sections 11-13, January 2005

¹⁹ Email from Royal Mail to Postcomm dated 8 February 2005

- a full set of financial projections showing the payback for each initiative. Many of the initiatives put forward by Royal Mail appear to be NPV negative over the period of financial projections (i.e. to 2010/11). Royal Mail provides no view of the financial impact of initiatives over longer periods.
- 3.18 Overall, the level of detail provided by Royal Mail has been unusually low compared to that provided on other price control reviews we have worked on. We would be surprised if the information provided to us were sufficient to allow Royal Mail's own Board or Shareholder to approve the proposed strategy.
- 3.19 We note that, in support of the last price control review, Royal Mail put forward much more detailed information to support the Renewal Plan. For example, the document that supports the transport review (CB0218) presents information provided to Royal Mail's Board. The paper is over 10 pages long, and provides a full description of the case, risks, sensitivities, timetable and a full summary of the financial impact. The paper clearly identifies the pre tax NPV over the project life and over 5 years.
- 3.20 The lack of detail provided has affected the nature and timing of our work, and we have had to adapt our approach accordingly. This work is explained in more detail in Sections 10 and 11 of this report.
- 3.21 Royal Mail acknowledges²⁰ *“having developed the Strategic Plan by December and detailed Business Plan by January, [it] recognised that work was needed to further develop the initiative “concepts” into comprehensive business cases. Indeed, this work is being progressed and Royal Mail would expect that the initiatives presently discounted in the LECG report will be considered in the forthcoming proposals document”.*

²⁰ Letter to Postcomm dated 13 May 2005, from Royal Mail's Director Regulatory Affairs & Wholesale

4 LECG approach

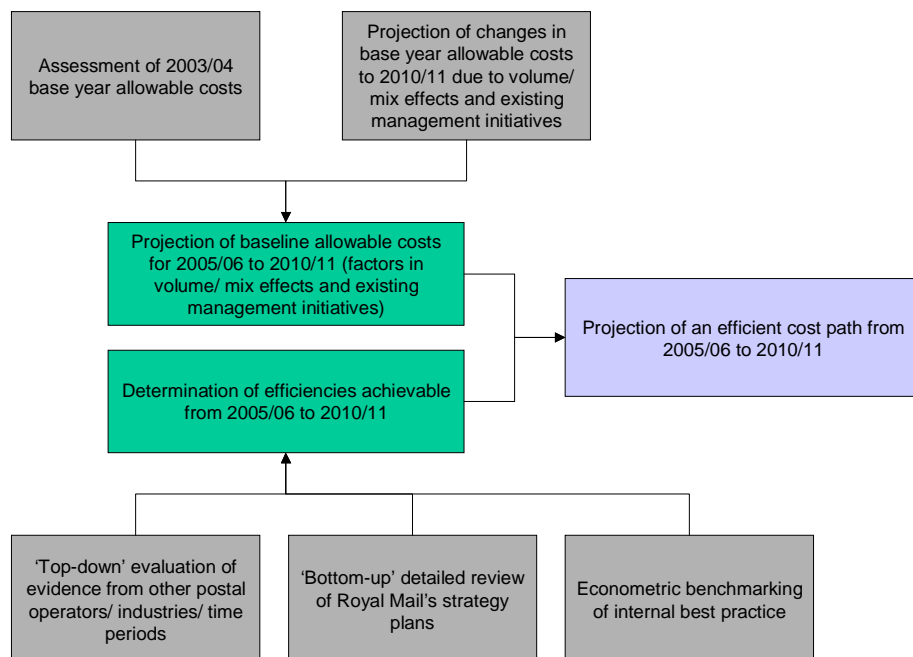
Introduction

4.1 In this section, we provide a high-level overview of the approach we have adopted to project costs over the forthcoming price control period. Each element of our approach is then discussed in more detail in subsequent sections of this report. At the end of this section, we compare our approach to the methods adopted by other UK regulators. We conclude that our approach is consistent with current regulatory best practice.

Overview

4.2 Our overall approach is summarised below.

Figure 2: LECG approach



4.3 As a first step to identifying total allowable efficient costs it is important to establish a robust assessment of actual operating costs in the Base Year - which is used to build forward looking projections based on recently completed management initiatives. We refer to the projection of costs from the Base Year as the Baseline estimate of efficient operating costs.

4.4 Baseline costs reflect only normal operating costs, and exclude one-off costs and capital expenditure. The second part of our study involves an assessment of the level of efficiency savings, and associated one-off costs and capital expenditure, that Royal Mail could be expected to achieve between 2005/06 and 2010/11 – over and above the Baseline projection of costs.

4.5 An overview of each type of method used is provided below.

Base year and Baseline costs

4.6 Postcomm set Royal Mail's current price control using a "cash" approach²¹. Under this approach Postcomm set a revenue allowance for Royal Mail so that on a net present value (NPV) basis, it equalled the projected cash outlays of Royal Mail over the price control period. Cash outlays covered operating and capital expenditure. This approach, with its focus on remunerating projected cash requirements, was driven in part by the concern at the time the control was set that Royal Mail would not have sufficient cash to maintain services over the control period.

4.7 Postcomm's current view²² is that a "regulatory value" approach to setting the price control might be more appropriate. Under a regulatory value approach the present value of allowed revenues is set to match the sum of the present value of cash operating and capital expenditure over the price control period and an allowance for profit.

4.8 Both approaches require operating costs and capital expenditure to be stated in cash terms. Our approach, therefore, is to set the Base Year on a cash basis - which is consistent with the requirements of both the cash approach and the regulatory value approach²³.

4.9 As indicated above, it is important to establish a robust assessment of actual operating costs in the Base Year - which is used to build forward looking projections based management initiatives that have already been implemented.

²¹ Initial Proposals, Postcomm, June 2005

²² Initial Proposals, Postcomm, June 2005

²³ The mechanics of the regulatory value approach also requires an estimate of depreciation and Royal Mail's regulated asset base. These components are considered in a separate report.

We refer to the projection of costs from the Base Year as the Baseline estimate of efficient operating costs²⁴.

- 4.10 Under this approach, in subsequent years, adjustments are required to take account of possible efficiency gains arising from future management initiatives. Consequently, Baseline costs form only the starting point to an assessment of future costs. Other elements include: cost savings arising from future efficiency initiatives; restructuring and one-off costs relating to future efficiency initiatives; and capital expenditure²⁵.
- 4.11 Each cost element above is considered separately in this report. As such, it is important to ensure that costs relating to these elements are excluded from the Base Year – to ensure costs are not double counted. In addition, further adjustments need to be made to the Base Year to ensure that costs are properly stated on a cash basis. Our approach to the derivation of Base Year costs is provided in Section 7. Our projection of the Baseline is provided in Section 8.

Costs over the current price control

- 4.12 In determining forward-looking costs, we have considered how Royal Mail has performed during the present control. To date, Royal Mail appears to have outperformed the financial projections set by Postcomm for the current price control. Revenue has been driven by stronger than anticipated volume growth and Royal Mail has shown greater control over its costs²⁶.
- 4.13 Prior to the beginning of the current price control, Royal Mail developed a “Renewal Plan”, which outlined how it was going to turn around the group from financial loss to sustainable on-going profitability. It included various initiatives such as Single Daily Delivery (“SDD”), the Transport Review and the Mail Centre Review. The Renewal Plan was a major input for Postcomm when it set the current price control.
- 4.14 We have reviewed the extent to which Royal Mail has fulfilled its Renewal Plan. For the years 2004/5 and 2005/6 we have assessed to what extent Royal Mail is on course to achieve the cost levels projected under the current price control,

²⁴ Projected Baseline costs are based on Postcomm’s forecast volume projections

²⁵ Additional costs, such as Royal Mail’s pension deficit, are outside the scope of this report

²⁶ Postcomm’s analysis of costs over the current price control is set out in Chapter 2 of the September Consultation Document

including the extent to which projects within the Renewal Plan are achieving their expected benefits. We have also evaluated whether Royal Mail has spent the money allowed within the last price control for implementation of the Renewal Plan to avoid double counting in the next price control. Our analysis of the Renewal Plan is provided in Section 6.

Bottom-up review

- 4.15 We have performed a detailed review of specific cost categories in order to build up a profile of overall allowable costs. We have considered in detail individual cost categories and activity costs to assess whether Royal Mail's planned expenditure is efficient and serves the requirements and obligations set out its licence and legislation.
- 4.16 Our approach to the bottom-up review comprises three components: a review of Royal Mail's cost projections, resulting, where appropriate, in adjustments to the timing and scale of the efficiency savings that it is forecasting; consideration of other initiatives which Royal Mail has itself investigated but not deployed; and development of alternative estimates of the scope for efficiency savings.
- 4.17 We have, in broad terms, looked at the net present value of the investments proposed by Royal Mail. This is only one input to our decisions whether to incorporate such investments and their implied benefits into our assessment of Royal Mail's efficient costs. This approach has the effect that proposed initiatives envisaging one-off costs in the short term that lead to ongoing long term savings are not necessarily excluded from our analysis, and will be included if the long-term benefits outweigh the short-term costs. Our bottom-up analysis is provided in Sections 11 to 19.

Internal benchmarking

- 4.18 Internal benchmarking compares the cost performance (or efficiency) of similar units within the same company against each other. We have reviewed the potential for Royal Mail to lower costs by applying its own best practices consistently across mail centres and delivery offices.
- 4.19 Internal benchmarking can be based on simple performance ratios such as mail volume, overall cost performance, labour productivity, overtime cost or absenteeism. The main weaknesses of single performance ratios are that they are susceptible to the bias of the observer and cannot reliably test the interaction

of more than one efficiency driver. That is, simple ratio analysis cannot explain performance variations between operational areas due to, for example, traffic mix, technology/equipment differences, building structure, the external labour market, or the local geography.

- 4.20 Simple ratio analysis can be extended, however, using advanced quantitative (i.e. econometric) techniques. For example, in the case of mail centre benchmarking, such techniques define the efficiency of a mail centre relative to an assessment of best performing mail centres at a particular point in time. This is referred to as the “efficiency frontier”. If the mail centre is operating on the frontier, it is defined as efficient. If it is operating away from the frontier it is defined as inefficient, and the level of inefficiency can be measured quantitatively relative to the frontier.
- 4.21 Quantitative techniques are divided into parametric and non-parametric techniques. Non-parametric approaches establish an efficient frontier relating outputs (e.g. labour costs) to inputs (e.g. mail centre operational characteristics, mail volumes, local wage rates, etc) without recourse to econometric estimation (which requires assumptions to be made about the form of the relationship between inputs and outputs). Data Envelopment Analysis (“DEA”) is the most widely used approach in this category, which uses linear programming to determine the efficient frontier.
- 4.22 Parametric techniques are essentially econometric techniques used to calculate the efficiency frontier. In contrast to DEA, these require a particular relationship to be assumed between inputs and outputs. Using this relationship, statistical estimates are made of the parameters of the relevant function. In regulatory efficiency reviews, the relationship assumed is often a linear one. There are two particular econometric methods used to estimate these parameters – the “deterministic frontier” method and the “stochastic frontier” method. In line with best practice, we have adopted both approaches. Our internal benchmarking analysis is provided in Section 20.

Other top-down techniques

- 4.23 Top-down analysis typically takes the form of comparisons with aggregate cost data of other companies, either nationally or internationally. We have considered Royal Mail’s historical cost trends – which provide a benchmark for the rate of future efficiency savings. We then considered the efficiency targets set by other UK industry regulators – and how they have changed over successive reviews.

We have compared factor productivity trends across regulated and other comparable sectors using total factor productivity measures. We have also considered the cost trends of international postal operators. Although this does not help to provide an absolute level of efficient costs, it does give a good indication of the scale and direction of cost improvements, which may be achievable. Our top-down analysis is summarised in Section 21 and provided in detail in Sections 22 to 25.

Output

- 4.24 Using third party evidence and indicators to determine a point estimate of efficient operating costs may not take into account the range and variability of factors that are relevant to an exercise of this sort. Therefore, it is more appropriate to reflect a range in our results, the bounds of which represent possible views as to the maximum and minimum levels of efficient operating and capital costs.
- 4.25 We have established the upper and lower limits of this range based on all of the available information and a judgement on the weighting that should be attached to the various different available pieces of evidence. In recommending the final range, no one type of analysis has been determinative.
- 4.26 In presenting an estimate of efficient operating and capital costs of Royal Mail, we do not suggest or prescribe the methods, areas or cost categories within which Royal Mail should reduce costs over the forthcoming price control period. Rather, we set out a view of the possible levels of operating and capital costs of an efficient postal operator in the UK over the price control period. We recognise, however, that our bottom-up analysis does provide an indication of the types of initiatives we would expect to be implemented over the forthcoming price controlled period.

Materiality

- 4.27 We have used judgement in deciding which cost categories should not be closely examined, either because Royal Mail has limited scope to control the costs or because the level of the costs is *de minimis*. It was agreed with Postcomm the materiality threshold should be £10m per annum.

Consistency of approach with regulatory best practice

- 4.28 The table below summarises the specific methodologies adopted by UK regulators in recent price control reviews:

Table 18: Regulatory approaches to selected efficiency reviews

Approach	Rail	Water	Elect Dist	Elect Trans	Gas Trans	NATS	Airports	Telecom
Internal B/marking	✓	✓		✓	✓			
International B/marking	✓	✓	✓	✓		✓	✓	✓
Bottom Up Reviews	✓	✓	✓	✓	✓	✓	✓	✓
TFP and top down	✓	✓	✓	✓	✓	✓		
Econometric Analysis	✓	✓	✓					✓
Corporate B/marking	✓		✓	✓	✓	✓		

Source: LECG research

4.29 Regulators have adopted a wide range of techniques to assess efficiency. Bottom-up reviews are typically complemented by top-down analysis. In its 2000 Review of Railtrack’s access charges, ORR²⁷ noted that bottom-up analysis should not be used on its own to inform conclusions on the scope for future efficiency gains. ORR noted, correctly, that bottom-up reviews tend to underestimate the scope for future efficiency savings, not least because assumptions are based on information available to date, and the past may not always be a good predictor of future efficiency possibilities. For these reasons the Rail Regulator decided to use top-down efficiency studies as well.

4.30 The same point is made by Europe Economics in their review for Ofwat in March 2003²⁸. They state: “*top-down and bottom-up approaches measure different things. A bottom-up approach focuses on potential improvements in working practices that can be foreseen at the time of the study and at the level of the individual processes studied. But a bottom-up approach does not take into account potential improvements in efficiency that cannot be specifically anticipated at the time of the study. The purpose of the top-down study is to address the gap using other sources of evidence*”.

²⁷ Periodic Review of Railtrack’s Access Charges – Final Conclusions, ORR, February 2000

²⁸ Office of Water Services, Scope for Efficiency Improvements in the Water and Sewerage Industries, Final Report, Europe Economics, March 2003

- 4.31 Emerging best practice is therefore to use the results from more than one technique to derive an overall range for potential efficiency gains in a price control review. In particular, bottom-up and top-down approaches are frequently used to complement each other. The approach adopted by Ofgem²⁹, in their recent electricity distribution price control review, incorporated: a review of actual costs to assess trends, anomalies, differences in categorisation or input mixes; bottom-up modelling; benchmarking of overall costs in particular categories (e.g. total operating costs) across companies on the basis of regression analysis and other comparative modelling techniques; and a review of companies' own forecasts of costs and the methods, processes and data used to derive them.
- 4.32 We believe that both bottom-up and top-down cost reviews are central to reaching efficiency conclusions. We believe that the approach we have adopted conforms to UK regulatory best practice.

²⁹ Ofgem website, Cost Assessment & Efficiency, 5 December 2003

5 Postal delivery chain

Introduction

- 5.1 This section provides a brief overview of the processes underlying postal service operations. It is intended to introduce the topic and the related terminology to readers unfamiliar with those operations.

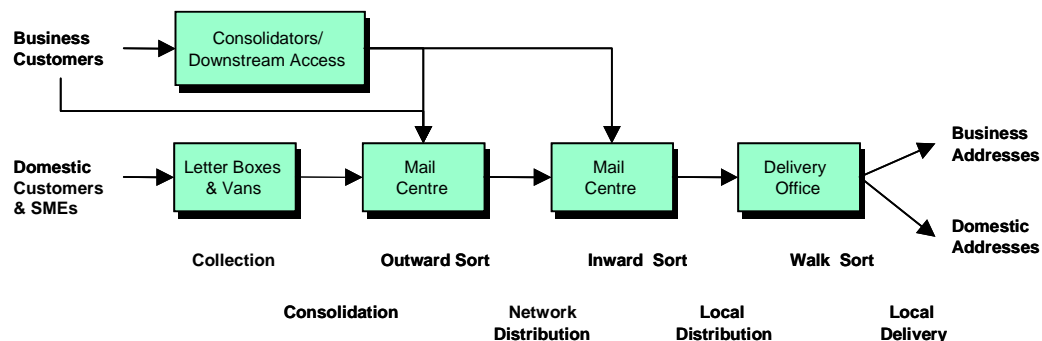
Overview of the postal market

- 5.2 Operators in the UK market handle approximately 28 billion items of mail per year. Given the statutory monopoly previously enjoyed by Royal Mail, it is by far the largest player in the market. Other providers of mail services operate mainly in areas outside the reserved sector. The largest of these is unaddressed mail distributors (the market is estimated to be around 4 billion items), document exchange services, document delivery services and internal delivery services.
- 5.3 Mailings from businesses dominate postal flows. Business customers currently send approximately 86% of all Royal Mail addressed mail. The largest recipients of mail are domestic customers, with 67% of all addressed mail received by them. Mail flows are heavily dominated by urban areas (reflecting the greater density of population and businesses). Approximately 81% of mail originates from urban areas (63% of which are sent to the same or other urban areas and 18% of which are sent to rural areas).
- 5.4 Postcomm's Market Report³⁰ provides a comprehensive overview of the UK postal market as it was in January 2004. Since that time, there have been a small number of developments in this market, including the development of competition to Royal Mail from Downstream Access providers, who collect and sort mail from customers and transport it to the inbound Royal Mail sorting office for final sorting and delivery.

Product pipeline

- 5.5 The basic processes involved in postal provision include the collection of mail, its sortation, trunking of the mail and its final delivery. The figure below sets out the processes in more detail.

³⁰ The UK Letters Market 2000 - 2003, A Market Report January 2004

Figure 3: The postal delivery chain

Source: Postcomm and "Economics Of Postal Services: Final Report. A Report to the European Commission", DG-MARKT, NERA, July 2004. SMEs stands for small or medium sized enterprises.

- 5.6 Royal Mail's operational pipeline can be thought of as a sequential process, commonly broken down into collection³¹, consolidation, outward processing, network distribution, inward processing, local distribution and delivery.
- 5.7 Mail is collected from post boxes³², post offices or mailers' premises and taken to the initial sorting offices. In the UK, mailers or their agents are able to take mail in bulk to the outward sorting office (potentially via consolidators) and to the inward sorting offices. In most cases, collected mail is consolidated at key locations before being transferred into the mail centres for processing.
- 5.8 Royal Mail has 69 mail centres, plus the Heathrow Worldwide Distribution Centre ("HWDC") that handles outbound international mail. A mail centre operates in two different modes (i.e. outward and inward) during a 24-hour period processing unsorted mail. The outward mail centre accepts the mail from the collections, and undertakes the first phase of processing of mail for despatch onto other mail centres or, in the case of local mail, to delivery offices. Activities at the mail centre during the outward phase of operations include: revenue protection; stamp cancellation; segregation of mail by format (e.g. letter, flat, packet) and by class; sorting of mail, by format, to inward mail centre selections; and containerisation and despatching of mail.

³¹ RM refers to this activity as Access. This is not to be confused with "downstream access". Postcomm refers to downstream access as the process by which other operators and competitors gain access to RM's local delivery network

³² Document PRC3003 states an exact figure of 116,273 post boxes at the end of March 2004

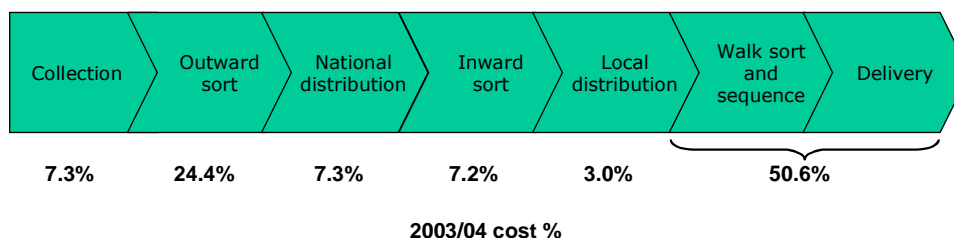
- 5.9 Mail can be sorted either manually or by automated machines. Royal Mail has made some investment in modern sorting equipment. Automated machines include: culler-facer-cancellers (“CFC”), which segregate letters and packets, separate 1st and 2nd class mail and orient the mail so it can be automatically read and sorted. The canceller part of the machine cancels the stamp (like a frank); optical character recognition (“OCR”) equipment which is used to read the postcode on the letter; letter sorting machines (“LSM”) which sort mail by postcode to their destination town; and integrated mail processors (“IMP”) which combine the three previous functions.
- 5.10 Manual sortation typically requires two sortation cycles primary and outward secondary sortation. The primary sort allows a breakdown to cities and towns. The secondary sort breaks the mail down into smaller postcode areas.
- 5.11 Regional distribution centres (“RDCs”) provide the equivalent operation of an outward mail centre for Royal Mail’s pre-sorted range of products. The pre-sorted products are collected from customer premises, and have already been pre-sorted and containerised. The level of pre-sorting varies. For example, mail could be sorted only to the inward mail centre or down to individual delivery office walks.
- 5.12 Mail is then transported by road, by air and/or rail to a mail centre for inward sorting. The Logistic Services Business Unit manages the network distribution phase of the product pipeline for all Royal Mail operational sites. The key activity for network distribution is the physical transfer of ‘containerised’ mail between operational sites.
- 5.13 The inward mail centre receives its mail from network distribution and from downstream access mail. The key activity is to perform the additional processing to sort mail to local delivery office level. Some of the mail that originated from the RDCs will require further sorting (Mailsort 120, 700 and any 1400 residues for example), but the Mailsort 1400 product arrives already sorted directly to the local delivery office.
- 5.14 In some cases, the inward mail centre will also “walk sort” machineable mail. This activity sorts the local delivery office mail into the individual delivery walks at that office. This reduces the amount of manual sorting required at the delivery office.

- 5.15 The local distribution network distributes mail from inward mail centres to local delivery offices via road, or by boat/ air (if the delivery office is on an island).
- 5.16 Mail received at a delivery office receives a final preparation for the postal delivery worker’s round. There are approximately 1,400 delivery offices. Some mail may be walk-sorted at an earlier stage in the process. The key activities at delivery offices are: sort mail to delivery route; prepare mail for delivery; deliver mail; and collect mail.
- 5.17 In addition to the delivery office network, there are around 1000 Scale Payment Delivery Offices (“SPDO”)³³. SPDOs are typically small, rural delivery offices where Royal Mail employees work on the premises of a Sub Postmaster (who hold a contract with Royal Mail for the work). The Sub Postmaster undertakes the day-to-day management of the SPDO, but there is a designated Royal Mail line manager for issues such as discipline.
- 5.18 Mail is delivered to residential and business customers by foot, bicycle, car or van. The delivery mode is dependent upon the density of delivery points and the volume of mail. Often, delivery to business customers is undertaken by van due to the quantity of mail involved. Royal Mail delivers to around 27m addresses.
- 5.19 Further details on each stage are provided in Sections 12 to 15.

Pipeline costs

- 5.20 Total pipeline operating costs, before exceptional items and excluding overheads, amounted to £4,417m in 2003/04. The percentage split of costs, excluding overheads, throughout the pipeline are given in Figure 4 below:

Figure 4: Breakdown of pipeline costs in 2003/04



Source: RM Baseline Planning Costs (RM 6003) and LECG analysis

³³ RM 3014

- 5.21 The majority of pipeline costs are incurred at the delivery stage, where the activities are geographically dispersed and highly labour intensive. The overall split between pipeline related costs and non-pipeline related costs and overheads is given in the following table.

Table 19: Split between pipeline and non pipeline and overheads

Type of cost	2003/04
Pipeline costs	£4,417m
Non pipeline and overhead costs ³⁴	£1,678m
Total RML	£6,095m

Source: RM Baseline Planning Costs (RM 6003) and LECG Analysis. Totals reconcile to Royal Mail's 2003/04 Regulatory Accounts.

- 5.22 The percentage split of costs has remained relatively constant through time – once changes to Royal Mail's cost allocation methodology have been accounted for. Appendix 3 provides a break down of pipeline costs, by activity, stated on a consistent basis (i.e. adjusting for changes in Royal Mail's cost allocation methodology).

³⁴ Non-pipeline and overheads costs include pipeline overheads, other overheads, marketing, product compensation and other miscellaneous items. Overhead costs include, *inter alia*, finance, HR, legal, IT and communications and other management administration expenses

Part A: Baseline projection

6 Performance under the current price control

Introduction

- 6.1 In determining forward-looking costs, we have considered how Royal Mail has performed during the present control. To date, Royal Mail appears to have outperformed the financial projections set by Postcomm for the current price control. Revenue has been driven by stronger than anticipated volume growth and Royal Mail has shown greater control over its costs³⁵.
- 6.2 Prior to the beginning of the current price control, Royal Mail developed a Renewal Plan, which outlined how it was going to turn around the group from financial loss to sustainable on-going profitability. It included various initiatives such as SDD, the Transport Review and the Mail Centre Review. The Renewal Plan was a major input for Postcomm when it set the current price control.
- 6.3 We have reviewed the extent to which Royal Mail has fulfilled its Renewal Plan. For the years 2004/5 and 2005/6, we have assessed the extent to which Royal Mail is on course to achieve the cost levels projected under the current price control, including the extent to which projects within the Renewal Plan are achieving their expected benefits. We have also evaluated whether Royal Mail has spent the money allowed within the last price control for implementation of the Renewal Plan to avoid double counting in the next price control.

The current price control

- 6.4 The table below summarises the total costs allowed under the current price control.

³⁵ Postcomm's analysis of costs over the current price control is set out in Chapter 2 of the September Consultation Document

Table 20: Allowed costs under the current price control in 2000/01 prices

	2002/03	2003/04	2004/05	2005/06	CAGR	Total 2003/06
Opex including pension deficit	6,007	5,528	5,414	5,158	(5.0%)	16,100
Capex	186	133	158	153	(6.3%)	444
Renewal costs	113	354	63	26	(38.7%)	443
Total cash cost	6,306	6,015	5,635	5,337	(5.4%)	16,987
Volumes (m)	20,500	20,423	20,423	20,185	(0.5%)	61,031

Source: "Review of Royal Mail Group's Price and Service Quality Regulation", Postcomm, February 2003, Tables 7.4 and 7.13, LECG calculations. Note that 2002/03 based on a projection of costs. It does not fall within the price control period.

- 6.5 Postcomm projected that Royal Mail's volumes and costs would decline in absolute terms over the three years of the control. Postcomm forecast total cash expenditure, including capital expenditure, falling by approximately 5.4% in real terms. The table below shows the implied unit cost savings Royal Mail was expected to achieve based on the forecast revenue requirements estimated by Postcomm for the current price control.

Table 21: Unit costs under the current price control in 2000/01 prices

Cash costs	2002/03	2003/04	2004/05	2005/06	CAGR	VA CAGR*
RUOE excluding renewals	0.293	0.271	0.265	0.256	-4.5%	-4.7%
Annual efficiency		-7.6%	-2.1%	-3.6%		
RUOE including renewals	0.299	0.288	0.268	0.257	-4.9%	-5.1%
Annual efficiency		-3.5%	-6.9%	-4.2%		
RUOC including renewals & capex	0.308	0.295	0.276	0.264	-4.9%	-5.1%
Annual efficiency		-4.3%	-6.4%	-4.2%		

Source: LECG analysis/ Postcomm analysis. Operating expenditure is stated at 2003/04 prices and excludes depreciation and pension deficit. Note * Volume adjusted CAGR

6.6 Under the current price control, unit-operating costs were expected to fall by around 4.7% in real terms, excluding restructuring charges, and 5.1% including restructuring charges, both in constant volume terms. Postcomm's forecast was for unit total cash expenditure (i.e. including capital expenditure and restructuring charges) to fall by approximately 5.1% per annum, in constant volume terms. Due to low forecast volume growth over the periods, scale effects do not affect the productivity estimates significantly.

6.7 The operating cost figures stated above include pension deficits as follows:

Table 22: Allowed pension deficit under the current price control

£m, 2000/01 prices	2002/03	2003/04	2004/05	2005/06
Opex including pension deficit but excluding renewals and capex	6,007	5,528	5,414	5,158
Pension deficit	0	77	75	72
Opex excluding pension deficit, renewals and capex	6,007	5,451	5,339	5,086
Volumes (m)	20,500	20,423	20,423	20,185
RUOE excluding pension deficit, renewals and capex	0.293	0.267	0.261	0.252

Source: "Review of Royal Mail Group's Price and Service Quality Regulation", Postcomm, February 2003, Tables 7.4 and 7.13, LECG calculations.

6.8 Excluding pension deficits, unit-operating costs were expected to fall by around 5.1% in real terms, excluding restructuring charges and capex in constant volume terms.

6.9 Even with increased renewals costs and capital expenditure costs in 2003/04 and 2004/05, the overall trend always declines. Taking cash RUOC as an example, the lowest *annual* reduction in unit costs is 4.2%. It should be noted that this is a net reduction – it includes an allowance for the additional restructuring costs associated with achieving savings.

6.10 Over the period of the price control, Postcomm allowed £443m for one-off costs associated with the delivery of the Renewal Plan and £444m in relation to capital expenditure (both in 2000/01 prices). We consider whether Royal Mail has spent the amounts allowed for renewals expenditure during the current price control.

We also consider whether Royal Mail will achieve the savings that were expected at the time of the current price control.

The Renewal Plan

- 6.11 Royal Mail's programme for meeting Postcomm's targets under the current price control was a collection of initiatives known as the Renewal Plan, which was launched in May 2002³⁶. There were three major initiatives that impacted Royal Mail's regulated business: Tailored Delivery Services, later known as SDD; the Multi Modal Review, later known as the Transport Review; and the Mail Centre Review. In addition to these initiatives, Royal Mail implemented a number of more minor initiatives, the two most prominent of which were Flats Automation and Address Interpretation.
- 6.12 In this section, we first provide an overview of each initiative and comment on performance to date – at an overall level. We then review Royal Mail's latest forecast of renewals expenditure and capital expenditure. Finally, we compare Royal Mail latest projection of operating costs to Postcomm's forecast.

Summary of initiatives

- 6.13 SDD aimed to change the number of daily deliveries from two to one. SDD started in November 2001. It was initially expected to be complete by October 2003. As of May 2004, full rollout was expected to be complete by the end of March 2005.
- 6.14 The Transport Review is a system-wide review of the road, rail, air, hubs, and Travelling Post Office activities within the letters business. Key achievements as of March 2004 have been the reduction of daily truck movements from 8,900 to 2,900, the reduction of daily train movements from 68 to 8, the reduction in the number of daily flights from 39 to 27, the closure of 7 out of 16 RDCs, the opening of two new hubs at the NDC and in East London, and the elimination of Travelling Post Offices³⁷. Further changes are anticipated over the remainder of 2004/05.
- 6.15 The Mail Centre Review is a productivity scheme aimed at reducing costs in mail centres. Mail centres were given a target reduction on staff costs of 10% (reduced to a minimum of 5% on the grounds of current performance). The

³⁶ Summary information relating to the Renewal Plan in this section from RM 5011

³⁷ Document TR-8. Provided to Postcomm in relation to the Quality of Service review in 2004

targets were not derived bottom-up – and no specific cost savings or initiatives were identified. Managers and employees were required to address blockages to high performance such as poor resourcing and restrictive practices. Implementation was anticipated to begin in 2004/05, with full implementation by March 2005. Royal Mail anticipates that the first full year of benefits from the Mail Centre Review will be achieved in 2005/06³⁸.

- 6.16 The Flats Automation project aimed to significantly reduce costs associated with sorting large flat format mail (“flats”) by introducing automatic flats sorting equipment into mail centres. As of December 2004, six such machines were in operation. The first full year of full benefits is expected to be 2005/06³⁹.
- 6.17 The Address Interpretation project aimed to develop a more efficient process for the automation of address information interpretation, through the introduction of centralised keying centres. The implementation of the technology underlying this project was completed in August 2003⁴⁰, although Royal Mail has informed us that since that time the technology has been through several rounds of improvement arising from software upgrades and optimisation of keying rates.

Renewal Plan performance

- 6.18 Royal Mail’s performance against the objectives of the Renewal Plan has some relevance to the question of rolling forward costs to the start of the next price control period. Postcomm has allowed Royal Mail revenues to cover operating and capital expenditure, and other one-off costs associated with the implementation of the Renewal Plan. Postcomm has asked us to assess whether Royal Mail has not spent this money, and/ or whether it has not achieved the anticipated cost savings.
- 6.19 Such considerations are also relevant to any assessment of Royal Mail’s ability to achieve large and timely savings while implementing large-scale change programmes.
- 6.20 The three major elements of the Renewal Plan have not met Royal Mail’s initial projections. The table below compares Royal Mail’s original estimate of steady-

³⁸ PCR 5011, Appendix I, page 1

³⁹ Document entitled “Rplan comms.doc”, sent by email by Salim Omar to Paul Smith on 24 December 2004

⁴⁰ Document named “Rplan comms.doc”, sent by email by Salim Omar to Paul Smith on 24 December 2004

state net benefits (at the date the Renewal Plan was approved) against its current estimate. The net benefit figures take into account any payback to staff that was tied to the implementation of the scheme. Royal Mail has not provided equivalent information relating to the Flats Automation and Address Interpretation projects – although we did request this information.

Table 23: Renewal Plan annual impact on opex once fully implemented

£m in current prices	Original Estimate	Latest Estimate	Difference	Source
SDD	118	(23)	(141)	TDS-2 (January 2003) TDS-6 (May 2004)
TR	89	45	(44)	TR-2, p1 (March 2002) Rplan comms.doc
MCR	34	31	(3)	MCR-1, p1 (Sept 2003) MCR-3 (May 2004)
Total	241	53	(188)	

Source: Royal Mail. We believe that the original estimates contained in the table above relate to the estimates sent to the Royal Mail Board of Directors for sign-off. We do not have an explicit statement from Royal Mail stating that these were the approved numbers.

- 6.21 Royal Mail originally anticipated combined savings of £241m a year in current prices – whereas its latest estimate of ongoing savings is now approximately £53m a year. We asked Royal Mail to provide a reconciliation of its Renewal Plan outturn figures to the projections made by Postcomm at the time of the last price control. Royal Mail responded: *“As stated previously in discussions with Postcomm, and again in Royal Mail’s December 2004 response to the 2006 Price and Service Quality Review, Royal Mail cannot comment in detail on the figures published in Postcomm’s February 2003 decision document.”*⁴¹
- 6.22 Royal Mail went on to point out that the Renewal Plan figures used during the 2003 price control were preliminary: *“... as discussed previously and also as acknowledged by Atkins in their November 2002 Efficiency Study Report most of the initiatives were at concept stage and before any pilot studies had been carried out. During 2002 and 2003 these were further developed as part of the Group-wide Renewal Plan and the budgeting processes for 2003-.”*

⁴¹ Email from Salim Omar (RM) to Paul Smith (Postcomm), 24 December 2004.

6.23 Overall, it might appear that implementation of the Renewal Plan in the letters business was not as successful as first planned, in terms of the net financial benefits that were planned. This could raise concerns about Royal Mail's ability to manage "specific" large change and/ or investment programmes – both currently and in the future. That said, Royal Mail do list a number of key achievements during the period⁴²:

- improved colleague engagement. All front-line colleagues will earn £300 for a five-day working week by April 2005. Days lost to strike action at the lowest level for a decade;
- restructuring the cost base. Headcount is down by nearly 27,000 direct employees to 165,000. Royal Mail indicates that £500 million of gross benefits⁴³ have been realised through the Renewal Plan. RML's USO operating profit has grown from £9 million in 2001/02 to £322 million in 2003/04 and is reportedly on target to achieve around £600 million in 2004/05; and
- improved quality of service. The number of lost letters has halved. First class quality of service improved from 90% in 2001/02 to over 92% between July and September 2004.

One-off renewals expenditure

6.24 Postcomm allowed Royal Mail a total of £472m in 2003/04 prices (£443m in 2000/01 prices) relating to one-off expenditure to deliver the Renewal Plan, as shown in the table below.

Table 24: One-off expenditure actual & latest forecast compared to plan

£m in 2003/04 price	2003/ 04	2004/ 05	2005/ 06	Total
Postcomm forecast	377	67	28	472
Actual and latest forecast	120	~30	~90	~240

Source: Total letters renewals costs from email between Salim Omar and Postcomm 24/12/04 and from BPM. Planned figures from "Review of Royal Mail Group's Price and Service Quality Regulation", Postcomm February 2003, Table 7.12. The figures above represent the regulated part of RML. Actual costs have been estimated based on the split of USO and price controlled costs compared to Total Mail's costs in the 2003/04 Regulatory Accounts (i.e. 93%)

⁴² RM Strategic Plan

⁴³ Gross benefits are stated before increase in wages and Share in Success. Net benefits are significantly lower as shown in the table above

- 6.25 We asked Royal Mail to provide us with an estimate of one-off renewals expenditure for each of the three years of the current price control. Royal Mail provided us with information that allowed us to estimate one-off costs relating to the Renewal Plan for the regulated part of Royal Mail's business in 2003/04, which came to £120m⁴⁴. However, Royal Mail has not directly provided us with information allowing us to determine the anticipated level of one-off expenditure in 2004/05 or 2005/06.
- 6.26 We have derived figures for Royal Mail's Renewal Plan spend in 2004/05 and 2005/06 from the BPM and Strategic Plan, which include forecast implementation and redundancy costs (restated in 2003/04 prices and pro rated to the regulated part of RML) of around £30m in 2004/05 and £90m in 2005/06, a total of some £120m. Although this expenditure is not strictly labelled as relating to the Renewal Plan, it does correspond to one-off expenditure aimed at reducing operating costs on an ongoing basis. Adding this £120m to the £120m incurred in 2003/04 provides an estimate of around £240m over the price control period. This leaves an unexplained shortfall in one-off Renewal Plan spend of around £230m in 2003/04 prices⁴⁵.
- 6.27 Without further information for both 2004/05 and 2005/06 it is impossible to conclude whether Royal Mail has incurred the expenditure it was allowed. However, based on the information we have received to date it appears that Royal Mail's Renewal Plan expenditure will fall short of what was allowed under the current price control.

Capital expenditure

- 6.28 In this section, we consider Royal Mail's capital expenditure levels over the current price control period. Postcomm allowed Royal Mail's regulated business capital expenditure of £473m in 2003/04 prices (i.e. £444m in 2000/01 prices). Information provided by Royal Mail indicates that it plans to spend a total of £430m (in 2003/04 prices) on capital expenditure over the same period. The table below summarises this position.

⁴⁴ Total letters renewals costs from email between Salim Omar and Postcomm 24/12/04. This figure includes £34.3m of capital expenditure relating to renewals activities

⁴⁵ In 2002/03 Postcomm also allowed £113m for renewals expenditure and £186m for capital expenditure. From the information provided by Royal Mail, it would also appear that it has also under spent in 2002/03. Royal Mail incurred £46.6m in one-off expenditure and £61.7m in capital expenditure relating to Renewal Plan costs in 2002/03

Table 25: RM's regulated business capital expenditure over the current price control

2003/04 prices - £m	2003/ 04	2004/ 05	2005/ 06	Total
Actual and latest forecast	112	125	193	429
Postcomm forecast	142	168	163	473

Source: Letters actual/ forecast based on RM 6097, RM4054, RM 9049 and RM 9050. Postcomm forecast derived from "Review of Royal Mail Group's Price and Service Quality Regulation", Postcomm, February 2003, Table 7.13, restated at 2003/04 prices. The figures above represent the regulated part of letters business only. Actual costs have been estimated based on the split of USO and price controlled costs compared to RML's costs in the 2003/04 Regulatory Accounts (i.e. 93%).

6.29 Based on the information that has been provided to us, it would appear that Royal Mail is anticipated to spend £44m less than was allowed on capital expenditure over the price control period. Up to 2004/05, Royal Mail *actually* under spent by around £73m.

Operating costs

6.30 The third key input into the current price control is operating costs. In this section, we compare the most recent forecast of operating costs between 2003/04 and 2005/06 to the expenditure anticipated by Postcomm at the start of the current price control. There are at least three key factors that complicate this comparison:

- actual volumes differ significantly from the volumes assumed by Postcomm in setting the current price control – both in terms of mix and level;
- the financial information contained in Royal Mail's cost forecasting model (i.e. the BPM) relates to RML. Postcomm's forecasts relate to Royal Mail's regulated activities; and
- the financial information contained in the BPM is expressed in both 2003/04 prices and in current prices. Postcomm's' forecasts are stated in 2000/01 prices.

6.31 In addition, Postcomm's forecast of Royal Mail's regulated activities operating expenditure in 2002/03 of £6,397m in 2003/04 prices, turned out to be £628m higher than actual operating expenditure of £5,769m in 2003/04 prices⁴⁶. Postcomm's estimate of operating expenditure for 2002/03 was based on a WS

⁴⁶ Based on Postcomm's analysis

Atkins forecast made in October 2002. Based on the information that has been provided to us, we have been unable to determine the cause of this material difference. Two plausible explanations exist, as follows:

- the information provided to Postcomm and WS Atkins was, at the time of the forecast, materially overstated, and reflects a forecasting error. If this was the case, the difference would not reflect an unanticipated efficiency gain; or
- the information was accurately stated at the time of the forecast, but Royal Mail managed to outperform the forecast. If this were the case, the difference would represent an unanticipated efficiency improvement of around 9%.

6.32 Without further information, it is not possible to determine whether this difference represents a genuine efficiency gain or not. In this section, we assume that the difference represents a forecasting error, not an unanticipated efficiency gain. Restating the Base Year (i.e. 2002/03) to actual costs lowers the unit cost trend. As such, our assumption is a conservative one.

6.33 We have used Royal Mail's cost forecasting model to compare operating costs under common assumptions. We have used Royal Mail's BPM to forecast costs over the remaining period of the price control, based on the volumes that Postcomm was projecting at the time of the last price control. The forecast is based on Royal Mail's 2003/04 actual unit costs (referred to as the LECG opex). The numbers in the following table are stated in 2003/04 prices, exclude pension deficit payments and exclude non-regulated products.

Table 26: Comparison of operating costs over the current price control

	2002/03	2003/04	2004/05	2005/06	CAGR	VA CAGR
Postcomm opex excluding pension deficit, renewals and capex in 2000/01 prices	6,007	5,451	5,339	5,086	(5.4%)	(5.6%)
Postcomm opex excluding pension deficit, renewals and capex in 2003/04 prices	6,400 Forecast	5,807 Forecast	5,688 Forecast	5,419 Forecast	(5.4%)	(5.6%)
LECG opex excluding pension deficit, renewals and capex in 2003/04 prices	5,769 Actual	5,596 Actual	5,389 Forecast	5,246 Forecast	(3.1%)	(3.3%)
Outperformance	631	211	299	173		

Source: Postcomm, BPM and LECG analysis. LECG 2002/03 based on actual costs adjusted for the scope of the regulated business (see paragraph 6.31). LECG 2003/04 based Regulatory Accounts (refer to Table 234). Postcomm and LECG forecasts based on Postcomm's volume and mix projections at the time of the last price control (refer to Table 20).

6.34 On a like-for-like basis, it appears that Royal Mail may have beaten the operating cost savings targets set by Postcomm, by around £680m over the period. In addition to beating operating cost targets over the price control period, it also appears that Royal Mail beat Postcomm's cost forecast in 2002/03 by some £630m.

6.35 The table below converts each forecast into unit cost terms. All forecasts are converted into RUOE terms using the volumes shown in Table 20. Actual costs are converted into RUOE terms using volumes shown in Table 235.

Table 27: Comparison of RUOE over the current price control

	2002/03	2003/04	2004/05	2005/06	CAGR	VA CAGR
Postcomm RUOE excluding pension deficit, renewals and capex in 2003/04 prices	0.312	0.284	0.278	0.268	(4.9%)	(5.1%)
LECG RUOE excluding pension deficit, renewals and capex in 2003/04 prices	0.282	0.268	0.264	0.260	(2.7%)	(2.9%)

Source: Postcomm, BPM, LECG analysis

6.36 Due to the lower starting base in 2002/03, total unit operating costs are expected to fall by 2.9% in constant volume terms, as opposed to the 5.1% forecast originally by Postcomm.

6.37 Given that the Renewal Plan appears to returned lower savings than planned, clearly Royal Mail has been able to make greater savings in other areas. The existence of unanticipated savings is a positive aspect of RPI-X regulation, however care must be taken to ensure that initiatives funded in one price control, but not executed, are not funded again in the following price control. As explained above, Royal Mail has not provided a reconciliation between what was originally planned and current expectations.

Conclusions

6.38 Based on our review of Royal Mail's performance over the current price control period we conclude the following:

- under the terms of the current price control, Postcomm determined that RUOE would fall by around 5.1% in constant volume terms;
- it would appear that implementation of the Renewal Plan in the letters business was not as successful as first planned. This could raise concerns about Royal Mail's ability to manage "specific" large change and/or investment programmes – both currently and in the future;
- based on the information that has been provided to us, it would appear that Royal Mail plans to spend £44m less than was allowed on capital expenditure over the price control period. Up to 2004/05 Royal Mail *actually* under spent by £73m;
- based on the information that has been provided to us, it would appear that Royal Mail plans to spend around £230m less than what was allowed on one-off renewals expenditure over the price control period;
- on a like-for-like basis, it appears that Royal Mail will beat (underspend against) the operating cost targets set by Postcomm, by around £170m in 2005/06 and by around £680m over the entire price control period, when the figures have been restated to a comparable basis. This has been achieved using lower levels of capital and renewals expenditure than anticipated at the time of the last price control; and
- in addition to beating operating cost targets over the price control period, it also appears that Royal Mail beat Postcomm's cost forecast in 2002/03 by some £630m.

- 6.39 This final point is consistent with our review of outcomes in other regulatory sectors (refer to Section 22). When comparing these productivity figures with the assumptions and targets set by regulators, we find companies have generally outperformed their regulatory targets. This need not imply any weakness in the regulatory process – one of the original premises of RPI - X regulation is that it encourages companies to outperform in this way.
- 6.40 Moreover, it is notable that Royal Mail appears to have outperformed its efficiency targets without incurring either the capital or other one-off costs initially identified as required, and for the most part in ways other than the initiatives by which those targets were originally intended to be met.
- 6.41 Postcomm indicated in its September 2004 consultation that it was sceptical about the merits of a specific clawback of “excess” profits made during the current price control as this could undermine the incentive properties of RPI-X regulation, which is based on companies having an incentive to identify efficiency savings and revenue growth opportunities to “outperform” the price control.
- 6.42 Postcomm has indicated that it is important that customers benefit from Royal Mail’s out performance of the current price control, particularly where Royal Mail has identified additional efficiency opportunities not foreseen when the price control was set, which are expected to have ongoing benefits. Therefore, in line with Postcomm’s proposals for the next price control our cost forecasts for the new price control from April 2006 is based on the current level of efficient costs expected to be achieved by Royal Mail rather than what was expected to be achieved during the current price control. This means that Royal Mail will benefit from out performance of the current control until the end of March 2006, at which point customers will benefit for the period of the next control through lower prices.

7 Base Year costs

Introduction

- 7.1 The focus of this section is to derive a properly stated Base Year cost against which operating cost projections will be made. We have based the opening level of costs on those included in the Regulatory Accounts for 2003/04, which represent the most recent actual data. In this section, we first define the coverage of costs that we are seeking to review. We then summarise our approach to assessing Base Year operating costs and summarise the cost adjustments we propose to make to Royal Mail's operating cost base in 2003/04, as reported in its Regulatory Accounts. Finally, we conclude with an estimate of Base Year operating costs for RML. We then summarise how the costs for Royal Mail's regulated business will be determined.

Scope

- 7.2 Postcomm is in the process of determining which products should be price controlled from April 2006. As a first step, we have been asked to assess efficient costs for Royal Mail's UK inland mails, outgoing international and downstream access products over the period 2005/06 to 2010/11⁴⁷. These products fall within the business described as "Total Mails" in Royal Mail's 2003/04 Regulatory Accounts⁴⁸. This scope of products is referred to as RML.
- 7.3 As a second step, we have been asked to consider the efficient costs for the products and services Postcomm plans to regulate from 1 April 2006⁴⁹. Postcomm does not believe it should price control products where competition is providing choice and protecting the interests of customers. To this end, it has developed a competition-based test to guide its judgement on the appropriate scope of the price control. Following consultation, Postcomm believes it is also appropriate to take into account additional factors such as the prospects for competition, whether the product is a universal service product and whether related or substitutable products are price controlled, which effectively provide a safety net to other customers.

⁴⁷ Our approach to forecasting operating costs is consistent with RM's approach. Most of the information that it has provided covers RML. RM recognises that costs relating to the regulated activities will need to be derived (RM 5030)

⁴⁸ We understand that Total Mails includes total USO, price control and other letter products.

⁴⁹ RML total costs are allocated to the regulated business using product-costing information

- 7.4 Postcomm proposes to remove Presstream products and Special Delivery products for large business users from the next price control. Postcomm is satisfied that competition has developed sufficiently or will develop to protect the interests of customers. Customers' and operators' interests will also be safeguarded by general competition law, in particular Article 82 of the EU Treaty and Chapter 1 of the Competition Act 1998, which are administered for postal services principally by the Office of Fair Trading (OFT). In addition, downstream access products, as defined under Condition 9 of the licence, will also be regulated within the price control⁵⁰ (Postcomm is consulting on the form of this regulation). A list of proposed regulated products is outlined in Appendix 4⁵¹.

Approach and coverage

- 7.5 Postcomm set Royal Mail's current price control using a "cash" approach⁵². Under this approach Postcomm set a revenue allowance for Royal Mail so that on a net present value (NPV) basis, it equalled the projected cash outlays of Royal Mail over the price control period. Cash outlays covered operating and capital expenditure. This approach, with its focus on remunerating projected cash requirements, was driven in part by the concern at the time the control was set that Royal Mail would not have sufficient cash to maintain services over the control period.
- 7.6 Postcomm's current view⁵³ is that a "regulatory value" approach to setting the price control might be more appropriate. Under a regulatory value approach the present value of allowed revenues is set to match the sum of the present value of cash operating and capital expenditure over the price control period and an allowance for profit.
- 7.7 Both approaches require operating costs and capital expenditure to be stated in cash terms. Our approach, therefore, is to set the Base Year on a cash basis -

⁵⁰ Access agreements were not reached by RM and UK Mail, TNT Post Group ("TPG") or Deutsche Post until early 2004 and therefore, there are no costs related specifically to Access in the 2003/04 cost base

⁵¹ Initial Proposals, Postcomm, June 2005

⁵² Initial Proposals, Postcomm, June 2005

⁵³ Initial Proposals, Postcomm, June 2005

which is consistent with the requirements of both the cash approach and the regulatory value approach⁵⁴.

7.8 A robust assessment of actual operating costs in the Base Year is required so that we can develop forward-looking projections. We refer to the projection of costs from the Base Year, subject to any accounting adjustments we believe are necessary, as the Baseline estimate of future operating costs⁵⁵. Adjustments to the Baseline will be required to take account of our top-down analysis and possible efficiency gains arising from *future* management initiatives – as determined through our bottom-up review. Accordingly, Baseline costs form only one aspect of the profile of total efficient costs. Other elements of this cost profile will include:

- investment and operating expenditure cost savings arising from future efficiency initiatives;
- restructuring and one-off costs relating to the implementation of future management initiatives;
- capital expenditure relating to both normal operating conditions and the implementation of future management initiatives; and
- costs relating to pension deficits (or surpluses).

7.9 Each of the cost elements identified above needs to be considered separately⁵⁶. For the purposes of projecting Baseline costs, however, these elements must be excluded from the Base Year – to ensure operating and capital costs are not double counted, and to reflect the assumption that costs identified as “one-off” are treated as non-recurring. In addition, further adjustments are required to ensure that costs are properly stated on a cash basis.

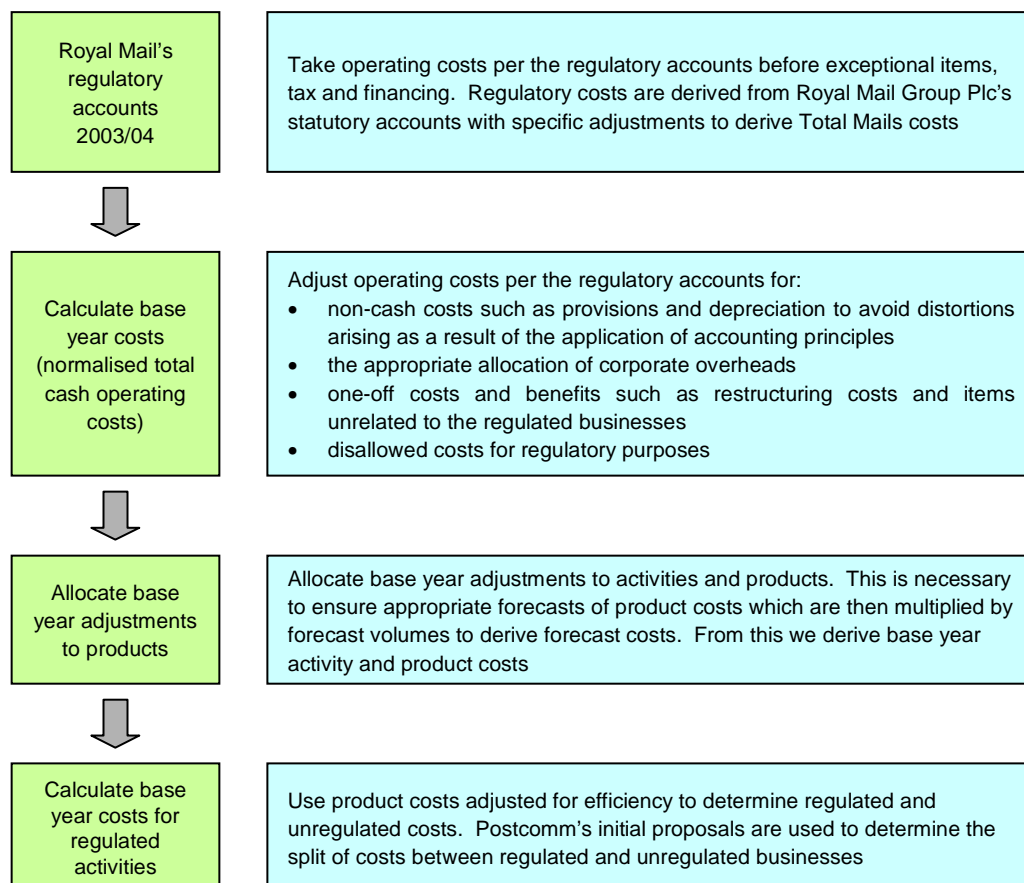
7.10 Our approach to estimating the relevant costs in the Base Year is summarised in the table below:

⁵⁴ The mechanics of the regulatory value approach also requires an estimate of depreciation and the regulated asset base. These components are considered in a separate report.

⁵⁵ Projected Baseline costs will be based on Postcomm’s forecast volume projections

⁵⁶ Future costs savings, capital expenditure and the costs of implementing future initiatives are considered in Parts B and C of this report. Postcomm has engaged separate consultants to advise on the appropriate level of RM’s pension deficit. The regulated asset base and depreciation are also covered in a separate report

Figure 5: Base Year approach



7.11 We discuss each of the first three steps in detail below. The final step is summarised in Section 26.

Costs in the Regulatory Accounts

7.12 The starting point for our assessment of Base Year costs, for Royal Mail's letters business, is the Total Mails operating cost figure provided in the 2003/04 Regulatory Accounts, as summarised in the table below.

Table 28: Operating costs per RM's 2003/04 Regulatory Accounts

Scope	Operating Costs (£m)
Total USO	5,480
Total Price Control Products	5,502
Other Letter Products	414
Total USO Non Price Control	179
Total Mails	6,095

Source: Royal Mail Group, Regulatory Financial Statements 2003-04.

- 7.13 “Total USO” products include all products and services covered by Condition 2 of Royal Mail’s license. “Total Price Control Products” include all products and services covered by Condition 19 of Royal Mail’s licence. There is a high degree of overlap between the two⁵⁷. “Other Letter Products” includes products and services that are non-USO and non-price controlled, such as door-to-door products. “Total Mails” covers total USO, price control products and other letter products⁵⁸. Appendix 1 identifies the products defined under USO, price control, and other letter products.
- 7.14 The cost data in the table above is expressed before (i.e. excluding) exceptional items, interest and taxation. Exceptional items include redundancy provisions, restructuring costs, property provisions and impairment write-downs. Such costs are all excluded from the assessment of the Base Year. Redundancy provisions and restructuring costs are one-off in nature and relate to the implementation of the Renewal Plan. One-off costs are excluded from the Base Year, as they would not be expected to occur in a “normal” year of operation. Property provisions and impairment write-downs are accounting provisions and do not give rise to an actual cash flow.
- 7.15 Tax and interest (i.e. debt financing costs) are not normally included within the consideration of efficient *operating* costs. Postcomm will consider such costs separately in its assessment of allowable revenues. Under a regulatory value

⁵⁷ Certain products are included in both Condition 2 and 19 and therefore, the Total Mails total is not derived through the simple addition of Total USO and Total Price Control

⁵⁸ Total Mails operating costs includes Total USO (£5,480m), Price Control Non-USO (£201m), and Other Letter Products (£414m)

approach an allowance for tax and interest can be provided by setting profit on a pre tax weighted average cost of capital basis.

7.16 The Regulatory Accounts are derived, via a number of adjustments, from the Royal Mail Group (“RMG”) Statutory Accounts. We have considered the nature of these adjustments, to assess whether any costs excluded from the Regulatory Accounts, but included in the Statutory Accounts, should be included in the Base Year. The table below provides an accounting reconciliation between the Statutory and Regulatory Accounts.

Table 29: Reconciliation of Statutory and Regulatory Accounts (2003/04)

All figures £m	Staff costs	Depreciation & Impairment	Net operating charges	Total costs
RMG Stat Accounts	4,888	195	3,499	8,582
Non-letter services	(1,113)	(18)	(555)	(1,686)
SSAP 24 pension	(132)	-	-	(132)
Overseas	(166)	(25)	(617)	(808)
Reclassification	375	(62)	(337)	(24)
Inter business	-	-	163	163
Regulatory Accounts	3,852	90	2,153	6,095

Source: Royal Mail Group and Regulatory Financial Statements 2003-04

7.17 This reconciliation has been audited by Ernst and Young⁵⁹. For that reason, we have not performed any verification of the reconciling items. Each reconciling item is summarised below.

7.18 “Non-letter services” represent non-regulated activities such as the Post Office® and Parcelforce. Overseas costs (e.g. which relate to, for example, Global Logistics Solutions) are also unregulated. Consequently, these activities are outside the scope of the efficiency review, and are not included in our assessment of Base Year costs.

⁵⁹ RMG Regulatory Accounts 2003/04

- 7.19 The SSAP 24 adjustment relates to a pensions accounting amendment for disclosure in the Regulatory Accounts. The Statutory Accounts include all pension costs within staff costs, however for regulatory accounting purposes, costs relating to pensions surpluses or deficits are separately disclosed. For that reason, the £132m adjustment reflects the total pensions deficit charge in 2003/04 included within staff costs in the Statutory Accounts. Of that £132m, Royal Mail estimates that £102m relates to the Total Mails business. The £102m appears as a separate item in the Regulatory Accounts⁶⁰.
- 7.20 Royal Mail has informed LECG that in using total staff costs to allocate pension related charges, they included Post Office® agent costs, which are not in fact pensionable. For that reason, Royal Mail has advised LECG that a more appropriate method of allocating pension costs would be on a headcount basis⁶¹. We concur with this view, consequently, for the remainder of this report we have allocated group pension costs to RML based on head count. Our allocation assumes that 87% of Royal Mail's staff works within the letters business⁶², in the Base Year.
- 7.21 Reclassifications represent differences in the reporting of costs (i.e. between account codes). For instance, within the Regulatory Accounts all staff costs are included under the account code "staff cost", however, in the Statutory Accounts temporary staff are recorded under net operating charges. The overall adjustment of £24m can be explained as follows. Around £9m relates to external income and around £15m relates to profits/losses from joint ventures and associates. Both elements have been excluded from the regulatory cost base.
- 7.22 Royal Mail has indicated that inter business adjustments represent internal recharges to the Business Units. Such recharges cancel out in the Statutory Accounts, but should be included in the Regulatory Accounts. For instance, a recharge between the Letters business and the Post Office® cancels out in the Statutory Accounts. However, a charge or receipt would arise in the Regulatory

⁶⁰ The pension deficit is allocated to the Total Mails business based on staff costs. The calculation can be summarised as follows: £102m = £132m x 77%

⁶¹ RM email response of 23 November 2004

⁶² Review of Royal Mail Group plc's Price and Service Quality Regulation - Second Price Control, Quality Service Targets and Compensation - Final Proposals Document, Postcomm, February 2003

Accounts, as the Post Office® does not form part of the Regulatory Accounts. Such costs should be included in the Base Year.

Business planning costs

- 7.23 To support our analysis of operating costs (as stated in the Regulatory Accounts), Royal Mail has provided us with operating costs by cost type, activity and product for the financial year ending 31 March 2004. We refer to this information as the Baseline Planning Costs (“BPC”) dataset⁶³.
- 7.24 The BPC dataset is used by Royal Mail to forecast operating costs over the forthcoming price control period. A schematic illustrating the structure of the BPC dataset is provided in Appendix 4.
- 7.25 The BPC dataset reconciles in aggregate to the level of operating costs stated in the 2003/04 Regulatory Accounts. A breakdown of costs by activity is provided in Appendix 6. A breakdown of operating costs by cost type is provided in the following table.

Table 30: RM’s BPC costs by cost type in 2003/04

Cost Type	Operating costs £m
Staff	3,929
Accommodation	396
Vehicles	425
Depreciation	91
Other	1,254
Total Mails	6,095

Source: Royal Mail, Baseline Planning Costs (RM 6003)

- 7.26 At an aggregate level, the BPC dataset reconciles with the Regulatory Accounts, however, there is a difference of £76m between the recorded values of staff cost (i.e. £3,929m in the BPC versus £3,852m in the Regulatory Accounts). We understand that BPC staff costs include uniform, travel and subsistence costs whereas the Regulatory Accounts include these as “Other costs”. Royal Mail has

⁶³ 2003/04 Baseline Planning Costs, RM 6003, 14 September 2004. BPC costs are stated before exceptional items, financing and tax. Due to the size of the dataset, it is impractical to reproduce the information contained within the BPC in this report

provided a cost reconciliation between staff costs and there is no associated impact on the assessment of the Base Year.

- 7.27 This BPC dataset also allows us to derive costs relating to Royal Mail's *current* regulated activities. The split between regulated and non-regulated products is determined by applying "USO factors" to individual product costs⁶⁴. USO factors indicate which products, or what proportion of individual products, are regulated in accordance with Conditions 2 and 19 of Royal Mail's license⁶⁵.
- 7.28 Using the USO factors that have been provided by Royal Mail⁶⁶, we have split costs between regulated and non-regulated activities. We find, however, based on the information that has been provided, that the resulting split does not reconcile exactly to the Regulatory Accounts, as shown in the table below.

Table 31: Opex by current regulated and non-regulated activities 2003/04

Business split	Regulatory Accounts £m	BPC £m
Regulated activities	5,681	5,673
Non-regulated activities	414	422
Total Mails	6,095	6,095

Source: Royal Mail Baseline Planning Costs (RM 6003) and USO Matrix File Update (RM 6088), LECG analysis. Scope refers to the current definition of regulated activities as define in Appendix 1

- 7.29 We have asked Royal Mail to explain this minor difference. Royal Mail has explained that the discrepancy is because the operating costs in the Regulatory Accounts figures are derived from the Operational traffic basis and that the BPC figures arise from the Revenue Equated traffic basis. These two volume measures derive different volumes and consequently different operating costs.
- 7.30 In the next section, we consider further Base Year adjustments.

⁶⁴ USO factors relating to individual products lie within the range 0% to 100%

⁶⁵ For example, Presstream products, which are Price Control products, have a USO factor of 100% relating to Condition 19

⁶⁶ USO Matrix File Update, RM 6088

Base Year adjustments

- 7.31 Base Year adjustments are required for the following items:
- non-cash costs, such as provisions and depreciation, to avoid distortions arising as a result of the application of accounting principles;
 - the appropriate allocation of group overheads;
 - one-off costs and benefits, such as restructuring costs and items unrelated to the regulated businesses; and
 - costs that are disallowed for price control purposes (i.e. should not be included in the calculation of allowable revenues).
- 7.32 Each type of adjustment is discussed in more detail below.

Adjustments for non-cash costs

- 7.33 Focusing on cash helps to avoid distortions arising from the application of accounting principles and policies. To adjust the operating cost figures from an accounting profit and loss basis we have considered adjusting operating costs for provisions, depreciation and pensions. Each adjustment is summarised below.

Provisions

- 7.34 Accounts are most commonly drawn up on an “accruals” basis, in which income is reported when earned, and expenses when incurred, as opposed to cash based accounting, in which income is reported when received and expenses when paid. Under FRS 12, an accounting standard, a provision is defined as a liability of uncertain timing or amount. The standard further defines a liability as an obligation of an entity to transfer economic benefits because of past transactions or events. FRS 12 distinguishes provisions from other liabilities, such as money owing to trade creditors, on the basis that, for a provision, there is uncertainty about the timing or amount of the future expenditure.
- 7.35 As such, accounting for provisions involves recording an expense before there is certainty over the amounts required, and therefore inevitably involves a degree of judgement. Such charges may be overly prudent, overstating the actual charge that will be paid. Provisions set in one accounting period can be reversed in future periods, if the obligation to pay no longer exists or if the provision was initially overstated.

- 7.36 To determine the significance of provisions within the BPC dataset, we have reviewed balance sheet movements in Royal Mail's financial accounts. In addition, we asked Royal Mail to specifically identify any movement in provisions included within the BPC. For the year 2003/04, we observe a significant increase in provisions on Royal Mail's balance sheet, as shown in the following table.

Table 32: Movement in creditors

Creditor caption	2002/03 £m	2003/04 £m	Movement £m
Trade creditors < 1 year	278	552	274
Internal creditors	12	0	-12
Short-term capital creditor	15	22	7
Other external creditors < 1 year	524	511	-13
Total	829	1,085	256

Source: Royal Mail creditor analysis (RM 6103)

- 7.37 We have requested from Royal Mail a full breakdown of the movement in creditors, together with an explanation of each major item. At the time of submitting this report, Royal Mail had not provided any additional information on the costs in this category. However, from the information made available to us to date, we have identified from the Regulatory Accounts provisions of £89m recorded as exceptional items in the profit and loss account. Additionally, from our review of Royal Mail's Business Planning Model⁶⁷ (BPM) we have identified that Baseline operating expenditure includes an expense of £83m of which Royal Mail has confirmed includes an accrual for product compensation and fines of £68m⁶⁸. We comment on product compensation as a separate adjustment to Base Year operating costs from paragraph 7.73 below.
- 7.38 Based on our findings above, any further adjustment to derive Base Year costs will relate only to the remaining movement in provisions of £99m (i.e. £256m - £89m - £68m). Royal Mail has not provided any information to allow us to confirm the nature of this movement. At this preliminary stage, we have not adjusted Base Year costs for this unexplained movement. We understand, however, that if

⁶⁷ The Business Planning Model is the tool used by RM to forecast future operating costs

⁶⁸ We understand that £68m relates to the Bulk Compensation Scheme and the remaining £15m for expenditure relating to the Retail Compensation Scheme. Source: Royal Mail review of Factual Accuracies as of 13 May 2005

further information is not forthcoming Postcomm may decide to include this adjustment in its assessment of the Base Year.

Depreciation

- 7.39 Depreciation is an accounting convention that recognises that the benefits of investing in an asset are often spread over several years. Through the depreciation charge, the cost of an asset is spread over the life of the asset in the profit and loss account. Depreciation is not a cash expense. Consequently, depreciation should be excluded from Base Year costs. Cash capital expenditure costs are accounted for separately.
- 7.40 In 2003/04, a depreciation charge of £90m is separately identifiable on the face of the profit and loss account within the Regulatory Accounts. The BPC also explicitly identifies the depreciation charge that has been allocated to each activity and product. The depreciation charge included in the BPC is £91m, with the difference compared to the Regulatory Accounts of £1m being immaterial.
- 7.41 We have also identified that property and logistics related costs within the BPC contain an element of depreciation that is not included in the £91m charge. Royal Mail is charged for its use of property and vehicles by Property Holdings and Royal Mail Logistics respectively. Our review of the management accounts, and Royal Mail's recharge methodology, identified that the internal charge included an element of depreciation. Royal Mail confirmed that an additional depreciation charge of £62m (£36m relating to property and £26m relating to logistics) is included within the BPC⁶⁹. This amount corresponds to the "Depreciation and Impairment" reclassification identified in Table 29 above.
- 7.42 In summary, therefore, our Base Year adjustment relating to depreciation amounts to £153m⁷⁰. Royal Mail's review of the factual accuracy of LECG's report⁷¹ indicated that the figure of £62m is a reconciling adjustment from the Regulated Accounts to the Group Accounts and as such it includes some depreciation that does not relate to the Letters Business. This would imply that removing £62m from the Base Year would overstate the required adjustment.

⁶⁹ RM 6097 and email correspondence dated 15 November 2004

⁷⁰ Within Royal Mail's cost forecasting model (which is explained in Section 8), one initiative is referred to as Additional Depreciation. This is not an initiative as such, and refers to "an adjustment to the BPM's 2003/04 baseline".

⁷¹ Royal Mail review of Factual Accuracies as of 13 May 2005

Royal Mail indicates that the actual level of depreciation for 2003/04 is stated in document RM 9056. However, this document indicates that total depreciation in the BPM (and relating to RML) was £158m, which compares to our proposed adjustment of £153m (i.e. £91m identified in the Regulatory Accounts and £62m of additional depreciation as detailed in the BPC). Adjusting for this would lower the assessment of Base Year costs by a further £5m. We have not made this adjustment at this stage due to time constraints. However we note that the adjustment is below our materiality threshold. It is also offset by a potential change in our pension conclusions, which are detailed below. We will update our conclusions in our final report.

Pensions

- 7.43 The profit and loss account of the Royal Mail Group Regulatory Accounts includes charges relating to “regular” pension contribution costs and a pension deficit. In this subsection, we review the regular pension contribution. We have not been requested to calculate a forecast of Royal Mail’s pension deficit. Royal Mail Group currently operates three pension schemes, as detailed below.

Table 33: RM’s pension schemes

Pension scheme	Eligibility	Type
Royal Mail Pension Plan (RMPP)	UK employees	Defined benefit
Royal Mail Senior Executive Pension Plan (RMSEPP)	UK Senior Executives	Defined benefit
Royal Mail Retirement Saving Plan (RMRSP)	UK employees	Defined contribution

Source: Royal Mail Holdings plc Report and Accounts Year Ended 28 March 2004

- 7.44 Scheme pension costs included within RMG accounts are provided below:

Table 34: RMG pension costs charged to profit before tax

	RMPP	RMSEPP	RMRSP	Total
Regular pensions cost	242	5	1	248
Deficit/surplus	188	0	0	188
Interest on pension assets	(56)	0	0	(56)
Charges relating to redundancy	54	0	0	54
Total net charge before tax	428	5	1	434

Source: Royal Mail's response to LECG's questions submitted on 19 October 2004

- 7.45 Pensions costs included within the BPC are calculated using the approach prescribed under the accounting standard SSAP 24. Royal Mail also reports pension costs using SSAP 24 within its 2003/04 Statutory and Regulatory Accounts. Pension costs are apportioned to the regulatory business in proportion to staff costs, excluding pension related costs. Regular pension costs are included in total staff costs and the pension deficit is disclosed separately after profit/loss from operations. Within the Base Year, only regular cash pension costs should be included. Costs relating to pension deficits and special contributions due to redundancies will be treated separately.
- 7.46 Under SSAP 24, accounting charges are adjusted to reflect Royal Mail's "best estimate" of future returns on assets. Royal Mail's best estimate results in an accounting regular pensions cost accrual of 10% of total pensionable pay, in the financial accounts. The regular pension cost charge to the Royal Mail Group profit and loss account was £248m in 2003/04⁷². Within the BPC the pension accrual is captured, which needs to be adjusted from an accounting basis to a cash cost basis.
- 7.47 Regular pension costs, which are included within total staff costs, are not separately disclosed in the Regulatory Accounts or the BPC. We have estimated the level of pension costs in the BPC, using headcount to allocate between Royal Mail's business units⁷³. On the basis that 87% of Royal Mail's staff work within the

⁷² Regular contributions are based on pensionable pay of approximately £2,476m

⁷³ RM advised us that this was an appropriate approach (email of 23 November 2004)

letters business⁷⁴ we estimate the level of regular pension costs contained within the BPC dataset, in the table below.

Table 35: RML regular pension costs in the BPC

	RMPP	RMSEPP	RMRSP	Total
Regular pensions cost	211	4	1	216

Source: LECG analysis

- 7.48 We have deducted £216m from the BPC, but we add back regular cash funding costs. Pension schemes are funded at the rate agreed between the company and the trustees of the scheme in accordance with the provisions of the scheme. Royal Mail has provided LECG with Watson Wyatt LLP Actuaries and Consultants' triennial review of Royal Mail's pension schemes. This assessed Royal Mail's regular employer contribution payments at 12.6% of pensionable pay to fund the scheme. Royal Mail has provided an analysis of cash pension costs compared to accounting regular pension costs for 2003/04, which is replicated in the table below.

Table 36: RMG pension cash costs 2003/04

	RMPP	RMSEPP	RMRSP	Total
Accounting regular pensions cost at 10%	242	5	1	248
Independent actuaries funding adjustment	64	0	0	64
Regular cash pensions cost at 12.6%	306	5	1	312

Source: Royal Mail's response to LECG's questions submitted on 19th October 2004. Note: Ernst and Young have audited the accounting charges included within the profit and loss account and LECG analysis

- 7.49 RMG has regular cash funding pension costs of £312m per year, as derived by the Independent Plan actuary. Based on headcount this would imply a cash cost

⁷⁴ Review of Royal Mail Group plc's Price and Service Quality Regulation - Second Price Control, Quality Service Targets and Compensation - Final Proposals Document, Postcomm, February 2003

for RML of £271m, which is broadly consistent with the information detailed in Royal Mail's Strategic Plan⁷⁵.

7.50 In summary, we have adjusted our assessment of Royal Mail's Base Year operating expenditure by deducting pension accruals of £216m, and adding back pension cash contributions of £271m.

7.51 Royal Mail's review of the factual accuracy of LECG's report⁷⁶ indicated that the numbers in this section are based on an old document that was subsequently updated at a pensions meeting held on 26 November 2004. We have reviewed the numbers presented in this report and note that incorporating them would increase our assessment of Base Year costs by around £5m. The adjustment arises as Regular pensions costs should be shown as £243m, not £248m as stated above. We have not made this adjustment at this stage due to time constraints. In addition, we note that the adjustment is below our materiality threshold, and is offset by a potential change in our depreciation conclusions, which are detailed above. We will update our conclusions for this point in our final report.

Allocation of RMG overheads

7.52 It is important to ensure that only a fair allocation of overhead costs from business units within RMG are included within the allowance for operating costs for the purposes of the price control. Any overhead costs relating to RMG's non-regulated businesses must be excluded. We have reviewed the methodologies used by RMG to allocate overhead costs to ensure that the costs allocated to the regulated business are appropriate.

7.53 Five business units perform the majority of overhead functions for the whole Royal Mail Group. These overhead business units are Finance; Personnel & Operational Development ("P&OD"); Property Holdings; Technology, Services & Innovation ("TSI"); and Communications & Secretary's Office ("CAS"). In 2003/04, overhead costs allocated from the five overhead business units to RML amounted to £686m, which accounts for approximately 11% of total letters operating costs. The table below provides a breakdown of overhead costs.

⁷⁵ RM Strategic Plan. We estimate pension cash costs of £284m using the FRS 17 adjustments detailed in the plan, assuming regular pension contribution accruals of £216m

⁷⁶ Royal Mail review of Factual Accuracies as of 13 May 2005

Table 37: RMG's overhead business unit costs 2003/04

Business unit	RML £m	Other business units £m	Total £m
Finance	68	39	108
P&OD	105	36	141
Property Holdings	351	179	530
TSI	163	121	284
CAS	28	18	46
Other ⁷⁷	(30)	(5)	(35)
Total	686	388	1,074

Source: RM 3036, RM 3038, RM 3060, RM 3062, RM 3065, RM 6050 and LECG analysis

- 7.54 Royal Mail has provided a large amount of information relating to the allocation of group overhead costs⁷⁸. We have performed an extensive review of this information. At a high level, Royal Mail's methodology for allocating costs to business units is based on both direct and indirect allocations.
- 7.55 A high proportion of overhead costs (£920m or 86% of total overhead costs) are directly attributed to business units through one of two mechanisms. The first mechanism is through internal recharges, which, for the most part, are based on the volume of transactions performed by the overhead business unit (e.g. the number of invoices and receipts processed by the Finance business unit). Internal recharges are applied on a consistent basis between RMG business units⁷⁹, and in many cases, the transaction price applied by the overhead business unit is based on an observable market price.

⁷⁷ "Other" relates to overhead costs incurred by the Royal Mail Group Holding Company. These costs include the Long Term Incentive Plan costs, "Direct" costs and adjustments due to the funding of the Group pension. In 2003/04, the Holding Company distributed a pension contribution surplus (of £64m) back to the business units, which offset other costs of £29m. We requested additional detail about the costs in the other overhead cost category (including the level of Long Term Incentive Plan and "Direct" costs). At the time of writing RM had not provided any additional information on the costs in this category

⁷⁸ This information, which includes details of its inter-business charges and common cost allocations, is set out within, *inter alia*, RM 3030, RM 3034 to RM 3068, RM 6031 and RM 6050

⁷⁹ RM 6033, RM 6047 and RM 6049. While in most cases unit prices charged for the services provided by the overhead business units are the same for all Royal Mail Group business units, there are a few exceptions. Charges from Finance to PFW and TSI for revenue cycle services are at rates different from those that apply to other business units to reflect the different IT system used. Charges from P&OD to POL and CHD for HR transactions are at rates different from those that apply to other business units to reflect the different HR systems used

- 7.56 The second mechanism is direct allocation, where the overhead cost is directly attributed to a particular business unit. For example, Finance has separate teams that provide services exclusively to the Letters, Logistics, International, PFW and TSI business units. The cost of each team is allocated directly to each business unit.
- 7.57 The remaining overhead costs (£153m or 14% of total overhead costs), which cannot be directly attributed, are regarded as “common” across business units, and are allocated to business units based on drivers that Royal Mail considers appropriate for each cost (e.g. the level of directly attributable costs, staff costs or total expenditure). This is an indirect cost allocation method.
- 7.58 The table below sets out, for each of the overhead business units, the level of costs allocated to Royal Mail’s letters business and to other Royal Mail Group business units, as well as the method used to allocate those costs.

Table 38: Allocation of overhead costs – 2003/04

Type of overhead cost	RM Letters £m	Other RMG £m	Total RMG £m	Allocation methodology
Finance				
Transaction costs	23	17	40	Direct via internal recharge
Consultancy costs	4	4	8	Direct allocation
Unit team costs	19	7	26	Direct allocation
Finance overhead	23	11	34	EPMU on total business unit costs
P&OD				
Transaction costs	48	25	73	Direct via internal recharge
P&OD transfer costs	25	1	26	Direct allocation
P&OD overhead	32	10	42	EPMU on total staff costs
CAS				
External legal costs	9	8	17	Direct via internal recharge
CAS overhead	19	10	29	EPMU on total business unit costs
TSI				
TSI / ES recharges	105	93	198	Direct via internal recharge
ES overhead	(3)	(2)	(5)	EPMU on ES recharge
TSI overhead	61	30	91	EPMU on TSI recharge
Property				
Property and FM	351	179	533	Direct via internal recharge
Property overhead	(3)	(0)	(3)	EPMU on property recharge ⁸⁰
Other				
	(30)	(5)	(35)	
Total Overheads	686	388	1,073	

Source: RM 6031, RM 6050. EPMU stands for equi-proportional mark up

7.59 Each overhead business unit operates as a stand-alone profit centre. The overhead business units receive “revenue” from the other business units through the internal recharge mechanism. As the table above shows this mechanism is used to attribute a high proportion of overhead business unit costs to the business

⁸⁰ We requested a clarification of the apparent inconsistency between the amount of property overhead recharged to RM Letters (as set out in RM 6050) and the description of the methodology used to allocate property overhead between business units (as set out in RM 6031). At the time of writing, RM had not provided additional information on this issue

units. We have reviewed this mechanism in some detail, and based on the information that has been provided, find no material cost allocation issues.

- 7.60 The profit or loss from operations for the overhead business units is the difference between the charges levied through the internal recharge mechanism and the level of total costs incurred in providing the overhead functions. Most overhead business units have an operating loss, which is comprised of the costs that are not directly charged for through internal recharges. These remaining costs are allocated to other business units directly, or using a form of equi-proportional mark-ups if direct allocation is not possible⁸¹. Those costs that are attributable to a particular business unit are directly allocated to that business unit, while those “common” costs that cannot be directly attributed are allocated to the operational business units (i.e. Letters, Logistics, International, PFW and Post Office®) on an equi-proportional basis.
- 7.61 Royal Mail does not use a single equi-proportional method, but considers the most appropriate methodology, given the nature of each overhead business unit. For example, the allocation of P&OD overhead costs is based on staff costs (which are seen as the driver of P&OD central costs), while the TSI overhead costs are allocated based on TSI recharges (e.g. IT costs). The Postal Directive⁸² provides specific guidance with respect to the allocation of joint and common costs. Article 14(3)(b)(iii) provides that when costs cannot be directly or indirectly allocated, they should be allocated using the ratio of all expenses previously directly or indirectly assigned. This is, however, only one of a number of methods generally applied.
- 7.62 It may be more appropriate for Royal Mail to allocate remaining overheads on a consistent basis, using the approach put forward in the Postal Directive. We would not expect, however, the adoption of this approach to give rise to materially different cost allocations. To test this, we have compared the proportion of overhead costs allocated to RML to the proportion of total RMG revenue, operating cost and FTEs included in the letters business. This provides an overall sense check on the reasonableness of the overhead allocations. The table below

⁸¹ The allocation of each overhead business unit's profit (or loss) to the operational business units will net off any profits that the overhead business unit may have accrued through the internal recharge mechanism. To the extent that some internal recharges are based on prices that are greater than costs, the associated profit would reduce the level of residual operating loss or “overhead”, and reduce the allocation to the operational business units

⁸² Directive 97/67/EC and the Amended Postal Directive 2002/39/EC

summarises RML's share of RMG revenue, operating cost and headcount, and directly attributed, indirectly attributed and total overhead costs.

Table 39: Analysis of overhead costs allocated to RML

Metric	RML	Other RMG
RMG revenue	73.4%	26.6%
RMG operating cost	71.0%	29.0%
RMG headcount	87.0%	13.0%
Average	77.1%	22.9%
Directly attributed overhead costs	62.9%	37.1%
Indirectly attributed overhead costs	68.6%	31.4%
Total overhead costs – actual allocation	63.9%	36.1%

Source: RM 6050, Royal Mail Group statutory accounts 2003/04, Royal Mail Regulatory Accounts 2003/04, and LECG analysis

7.63 Royal Mail's Letters business does not appear to receive a disproportionately high level of the total Royal Mail Group overhead costs. Overall, we believe that Royal Mail's methodology results in a fair allocation of costs to the regulated business. The allocation methodologies appear to be applied to all RMG business units on a consistent basis, and, in many cases, internal transaction prices are benchmarked to market prices.

7.64 In summary, we do not propose any adjustments to Royal Mail's Base Year operating expenditure in respect of allocations of overhead costs.

One-off costs and benefits

7.65 In order to make forward looking cost projections, it is necessary to remove exceptional items and any one-off costs or benefits, since these are costs that are not expected to be incurred in a normal year of operation. Although there may be other one-off costs that need to be taken into account in future years, we assess those separately.

7.66 Our analysis has included a review of historical operating cost trends by pipeline activity as detailed in Sections 11 to 15. Royal Mail has provided underlying pipeline cost movements for the time period 2000/01 to 2003/04 (these are summarised in Appendix 3). Royal Mail was asked to provide detailed explanations for material movements, identifying one-off costs where appropriate.

Additionally, we have reviewed Royal Mail's monthly management accounts for disclosure of any one-off costs included within the BPC. We have asked specific questions to Royal Mail regarding the identification of one-off costs.

- 7.67 In accordance with current Financial Reporting Standards (FRS), one-off items are normally recorded under "Exceptional Items". FRS 3 requires such items to be disclosed separately on the face of the profit and loss account after the calculation of operating profit or loss. As indicated above the BPC is stated before exceptional items. Accordingly, the majority of one-off costs are already excluded from our assessment of costs.
- 7.68 We have, however, identified a number of costs - relating to Royal Mail's current Renewal Plan and other initiatives - which are included within the BPC dataset, and which appear to us to be non-recurring in nature. These costs are summarised in the following table:

Table 40: Summary of one-off costs included within the BPC

Project costs	Total £m	Description
Transport Review	23	A study to facilitate the feasibility of withdrawing its entire rail network for mail distribution by March 2004
SDD	14	Costs associated with the removal of second deliveries
WAND	5	Deployment of the international distribution centre
Address Interpretation	6	Costs relating to the transfer of mails coding activities from mail centres to 3 dedicated sites.
Flat Sorting	3	Deployment of flat sorting machines
SPICE	5	Marketing activity supporting the goal to be the customers' leading supplier. Includes a new database of customer information
ESP	17	Enterprise Systems Programme represents the development of a replacement accounts payable ledger
STP and Sized Based Pricing	1	Sales Transformation Programme represents a marketing initiative to improve the group's sales techniques and an internal review of the current pricing structure and approach to pricing
Mail Centre Review	9	Involved a review of internal mail centre operational processes to identify areas for improvement
Home shopping and sales channels	1	Field research looking at 'Convenient Home Delivery' options and trials reviewing alternative sales channel options
Other employee investment	3	No supporting information provided by Royal Mail
Local initiatives and sized based pricing	4	Local projects on an individual office basis looking at efficiency initiatives
Managing service performance	1	Costs associated with a study to assess how the company can address meeting quality of service targets
Total	92	

Source: Royal Mail submission RM 6097

7.69 Royal Mail has confirmed that the costs identified above are one-off in nature, and that they would not be expected in a normal year of operation⁸³. However, care

⁸³ Verbal confirmation has been provided by Garry Carter and Andrew Lovell (Royal Mail) during a meeting of 28 October 2004. We requested written confirmation but this has yet to be provided

needs to be taken before an adjustment is made, because some costs may reflect the kinds of activities that could recur. For example, the field research for “Convenient Home Delivery” might not itself be repeated, but similar field research might. For this reason we have limited the adjustment to exclude only costs that appear to us to be truly one-off in nature. Such costs might either relate to the Renewal Plan or to the types of expenditure that are likely to be separately identified by Royal Mail as requirements over and above their baseline projections (e.g. new IT requirements and expenditures relating to the implementation of new initiatives).

7.70 Royal Mail has questioned this approach and has subsequently stated, “*this level of one off costs is typical in any year*”.⁸⁴ This statement appears to be inconsistent with previous Royal Mail statements made to us and is at odds with our understanding of the definition of ‘one-off costs’. It is important to recognise that for the implementation of future management initiatives we do allow additional one-off and implementation costs – based on a bottom-up review of requirements (refer to Part D for further details).

7.71 We proposed to make the following adjustments to the Base Year. Overall, we think our adjustment is conservative – given that the actual level of one-off costs identified above.

Table 41: Summary LECG one-off cost adjustments

Project costs	Total £m
Transport review	23
SDD	14
WAND	5
Address Interpretation	6
Flat sorting	3
ESP	17
Mail Centre Review	9
Total	77

Source: LECG analysis

⁸⁴ Royal Mail review of Factual Accuracies as of 13 May 2005

7.72 To allow us to remove one-off costs from the BPC dataset, Royal Mail provided LECG with a mapping of each one-off cost to individual pipeline areas. We have allocated one-off costs to products on an equi-proportional basis. Appendix 7 shows the breakdown of project costs by pipeline activity and cost type. In summary, we have identified one-off costs of £77m, which have been deducted from our assessment of Royal Mail's Base Year operating expenditure.

Disallowed costs

7.73 The final category of adjustments relates to cost items that should be excluded based on regulatory policy, and to a degree on economic efficiency grounds. We have considered whether each cost item is required for the purposes of operating a postal delivery business, and whether sufficient allowance has been given to meet quality of service conditions. Specifically we have considered costs relating to compensation and penalties.

7.74 Condition 4 of Royal Mail's licence ("Services standards of service and compensation") requires it to use reasonable endeavours to meet the quality of service targets in Condition 4 and to implement the domestic scheme (as of 1 January 2004) and the business compensation scheme (as of 1 April 2004) that are both currently in place.

7.75 The provisions of Royal Mail's compensation schemes for domestic and business mailers are explained in detail in "A Compensation Scheme for Delays by Royal Mail – Determination by Postcomm, A Decision Document and Determination", published by Postcomm in October 2003. Royal Mail's licence identifies three financial incentives to meet the targets set forth in the current price control⁸⁵.

7.76 The Bulk Compensation Scheme is tied to Royal Mail's ability to achieve its quality of service targets for its bulk mail services. It returns to the customer 0.1% of Royal Mail's income from each regulated product for every 0.1% that it fails the target, from a minimum of 1% up to a maximum of 5%.

⁸⁵ The three financial incentives under the Licence to meet targets are: C Factor, Bulk Compensation and fines. Retail compensation is not a financial incentive to meet targets. The "C" factor is an allowable revenue incentive. The "C" factor is a mechanism, which provides for automatic adjustments to the allowed revenue in the price control where RM fails its non-bulk mail quality of service targets. Postcomm allows a total revenue of £30m in relation to the "C" factor, however under this mechanism any failures to meet quality of service targets translate into a deduction from the full revenue entitlement that RM is able to recover. As the "C" factor is a revenue mechanism that does not affect costs, it is excluded from our assessment of RM's Base Year operating expenditure

- 7.77 The Retail Compensation Scheme allows individuals to seek compensation directly from Royal Mail where individual items of first or second-class post, Special Delivery or Standard Parcel mail are delayed. Where Royal Mail has failed to meet a “target”, Postcomm can consider whether Royal Mail had used “all reasonable endeavours” to meet the target and, if not, whether a fine should be imposed, the level of which is at Postcomm’s discretion.
- 7.78 Royal Mail indicates that the Retail Compensation Scheme does not relate to the achievement of targets but to individual claims for items arriving over 3 working days late or after the guaranteed time in the case of Special Delivery. It is possible for Royal Mail to meet its targets and still pay out large amounts of retail compensation. Consequently, Royal Mail argues that the Retail Compensation figures should not be taken from the Base Year on the basis that they are linked to performance against targets. We agree with this, and have not adjusted the Base Year for Retail Compensation payments.
- 7.79 In determining a suitable level of Base Year costs, we believe that, as a general principle, it is inappropriate to include costs associated with penalties and compensation related to Royal Mail not meeting its quality of service targets. We anticipate that, in setting a price control, Postcomm will assume that the targets will be met. As such, it seems inappropriate to base cost projections on an implicit assumption that penalties will be incurred.
- 7.80 Royal Mail has confirmed that the 2003/04 Regulatory Accounts and consequently the BPC include an allowance for costs relating to the three schemes above. However, this allowance includes provisions both for a potential fine, which Postcomm has decided will not be imposed⁸⁶, and for disputed payments under the Bulk Compensation scheme – and Royal Mail is, understandably, reluctant to disclose the extent of these provisions.
- 7.81 Postcomm has provided details of compensation payments made by Royal Mail during 2003/04⁸⁷. These cash payments are summarised in the table below.

⁸⁶ Postcomm press release 22 March 2005 - Royal Mail's Quality of Service Performance 2003/04

⁸⁷ Compensation – Weekly payment updates, Royal Mail Obligations Team, 18 November 2004, COD/RMG/FW/20

Table 42: RM compensation cash payments 2003/04

Compensation scheme	Cash payments £m
Bulk compensation	35
Retail compensation	15
Total	50

Source: "2006 Royal Mail Price and Service Quality Review", Postcomm, September 2004

7.82 As noted in paragraph 7.37, Royal Mail's Business Planning Model (BPM) includes a separate category of costs labelled "Product Compensation" totalling £83m (in 2003/04 prices). We understand that £68m relates to a provision for bulk products. This was the first year that the scheme had operated and whilst an exercise was underway to establish customers who would be eligible for compensation, Royal Mail provided for the full theoretical amount. We conclude that of the £83m of costs included in the BPM, £68m (i.e. £83m minus £15m for Retail Compensation) relates to accruals for Bulk Compensation and potential fines. As such, we have deducted costs of £68m from our assessment of Royal Mail's Base Year operating expenditure.

7.83 Whilst we believe that it is correct to make this adjustment in the Base Year, we note that Royal Mail actually assumes that improved quality and customer focus will significantly reduce the level of product compensation in later years. The table below shows the level of savings in the year 2004/05 and 2005/06⁸⁸.

Table 43: RML forecast reduction in compensation

Initiative	04/05	05/06
Compensation	£24m	£83m

Source: Royal Mail L2019a (Supercedes 2019). All figures are stated in 2003/04 prices.

7.84 By 2005/06 Royal Mail assumes that it will have reduced product compensation by £83m. Given that we have already adjusted the Base Year, we assume that a further reduction in product compensation of £15m is achieved in the year 2005/06.

⁸⁸ Other initiatives affect costs, particularly in 2005/06. Including these initiatives does not materially affect the net savings proposed in the table. The remaining initiatives are explained in full in Part C of this report

Summary of adjustments

7.85 The table below identifies the adjustments we have made to derive our total Base Year operating cost figure.

Table 44: Derivation of estimate of Base Year operating costs

Adjustments	Adjustment	Total £m
Operating costs per BPC		6,095
Depreciation	Cash costs	(91)
Property depreciation	Cash costs	(36)
Logistics depreciation	Cash costs	(26)
Provisions	Cash costs	0
Pension accruals	Cash costs	(216)
Cash pension costs	Cash costs	271
Allocation of costs	Cost allocation	(0)
Project costs	One-off costs	(77)
Bulk compensation scheme	Disallowed	(68)
Base Year cash operating costs		5,852

Source: LECG analysis

7.86 Based on our analysis, we believe that Base Year operating costs for Royal Mail's Letters business should be assessed at £5,852m. The table below shows how this amount is broken down by cost type.

Table 45: Adjusted BPC by cost type

Type of Cost	BPC Total Mails £m	Adjustments £m	Adjusted BPC £m
Staff	3,929	15	3,944
Accommodation	396	(8)	388
Vehicles	425	(1)	424
Depreciation	91	(91)	0
Other	1,254	(158)	1,096
Total	6,095	(243)	5,852

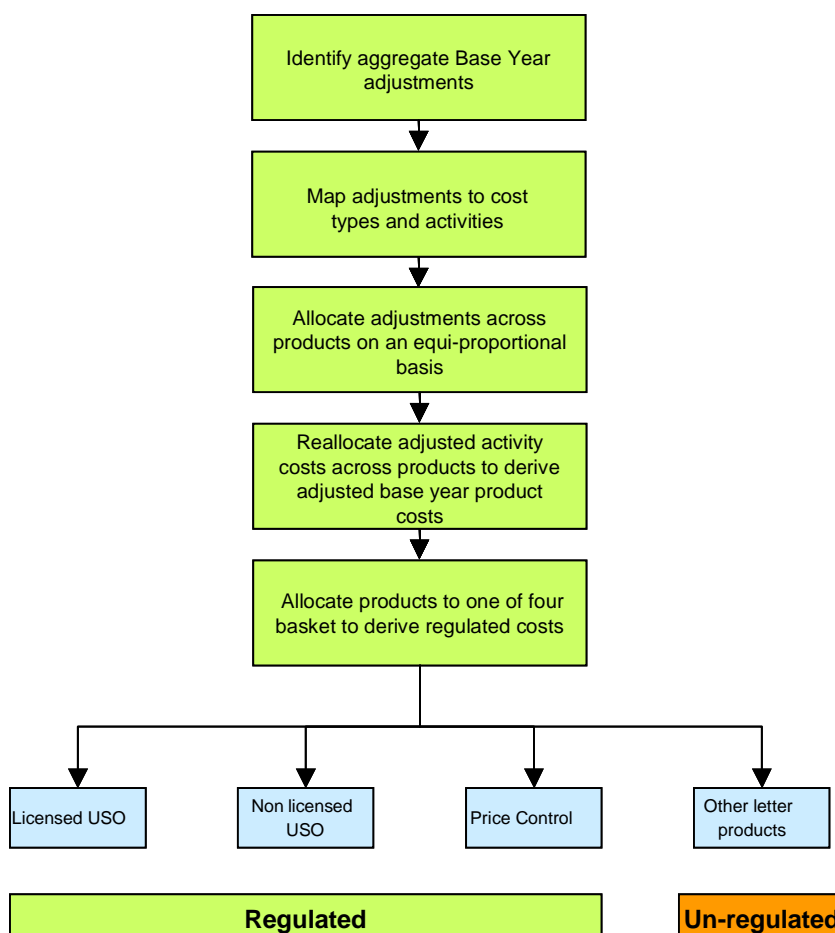
Source: LECG analysis. 'Other' costs include overheads, marketing and compensation expenses.

7.87 The impact of these adjustments is also shown in Appendix 8, which shows total adjusted Base Year operating costs, by pipeline activity. We have used these adjusted figures to project Baseline operating costs (refer to Section 8).

Base Year costs for regulated activities

7.88 The cost figures above are for RML. We also need to identify the proportion of these costs that relate to regulated, rather than unregulated products. The figure below depicts the methodology we have undertaken to derive costs for the regulated business.

Figure 6: Process to derive Royal Mail’s regulated costs



7.89 Royal Mail’s forecasting model, which is explained in the next section, requires us to allocate Base Year adjustments to cost types (e.g. staff, accommodation, vehicles). For the most part, this allocation is relatively straightforward. To

facilitate the allocation of adjustments to pipeline activities, Royal Mail has provided a mapping of activity costs to cost types⁸⁹. To adjust product costs, we have assumed that activity level adjustments should be applied to products on an equi-proportional basis⁹⁰.

7.90 Using information provided to us by Royal Mail, we have allocated the adjustments identified above to specific activities and cost types. The table below shows how each adjustment has been allocated.

Table 46: Allocation of adjustments to cost types and activity

Adjustment	Value £m	Cost Type	Pipeline activity
Depreciation: excl. property & logistics	91	Depreciation	All 21 activities
Depreciation: property	36	Other	Other
Depreciation: logistics	26	Other	Other
Pensions accruals	216	Operational staff Managerial staff	All 21 activities equi-proportionally
Pensions cash costs	(271)	Operational staff Managerial staff	All 21 activities equi-proportionally
One-off costs	77	Operational staff Managerial staff Accommodation Network Transport Vehicles Other	Delivery Outdoors Delivery Indoors Outward Foreign MC Outward sorting MC Inward sorting MC Network RDC Network Other overheads
Bulk compensation & fines	68	Other	Product Compensation

Source: LECG analysis. A more detailed breakdown of how one-off costs have been allocated is provided in Appendix 7

7.91 We have allocated adjusted activity costs to individual product costs on an equi-proportional basis. We have used Postcomm's initial proposals on which

⁸⁹ RM Cost categories document RM 6016

⁹⁰ That is, we assume that if Activity A is allocated to two products in the ratio 1:3, then any adjustment to Activity A will be applied to the two products in the ratio 1:3

products should be “regulated” – to determine total regulated costs (i.e. the sum of regulated product costs)⁹¹. The table below sets out adjusted Base Year Costs for Royal Mail’s regulated and unregulated activities – based on Postcomm’s current proposed definition of regulated activities (refer to Appendix 4)⁹².

Table 47: Base Year costs for RM’s regulated activities based on Postcomm’s proposed price control scope

Business split	Total Mails £m	Adjustments £m	Base Year £m
Total regulated activities	5,381	(216)	5,165
Total unregulated activities	714	(27)	687
Total Mails	6,095	(243)	5,852

Source: Royal Mail Baseline Planning Costs (RM 6003), and LECG analysis

7.92 Based on our analysis, we believe that Base Year operating costs for Royal Mail’s regulated activities should be assessed at £5,165m.

⁹¹ In effect, each regulated product is assigned a USO factor of 1.0

⁹² Initial Proposals, Postcomm, June 2005

8 Baseline forecast

Introduction

- 8.1 It is important to develop a robust methodology for projecting a baseline level of operating costs. In Section 7, we assessed an appropriate level of costs in the Base Year. This section focuses on how we have projected the Base Year forward to derive a Baseline level of costs, and how this forecast interacts with the cost initiatives put forward by Royal Mail in its Strategic Plan.
- 8.2 In this section, we first explain our starting point for forecasting the Baseline level of operating costs. We then provide an overview of the financial model we have used to develop our projections for Royal Mail's total letters business. In providing a forecast of Baseline costs, we explain the key assumptions we have adopted. We then explain how we derive operating costs for Royal Mail's regulated business – as currently defined.

Our approach

- 8.3 We have used Royal Mail's Business Planning Model (BPM) to project our assessment of future efficient costs for RML⁹³. The BPM is a macro-driven suite of spreadsheet models, used by Royal Mail to forecast future profitability at a product level. The model uses Base Year volumes, revenues and costs and, together with a number of run-time assumptions and input files, forecasts revenues and costs over the length of a ten-year business plan. Taking inputs from a number of other models and systems, the BPM projects costs and revenues at the level of twenty two activities and seven cost types.
- 8.4 The basic functionality of the model is to produce a Baseline projection of costs given assumptions on volume and the number of delivery points. Baseline costs are stated before efficiency gains arising from future management initiatives. Net cost savings arising from such initiatives are deducted from the projected Baseline in the BPM. Such savings are assumed to be independent of volume assumptions.
- 8.5 Royal Mail has provided a reconciliation between the version of the BPM that we have used to project costs and the level of operating costs presented in the

⁹³ The model we have used is contained within RM 2023a and is labelled BPM2_v2.7RR Updated 05-02-02.xls

Strategic Plan⁹⁴. We understand that the BPM contains the most up to date assumptions. Key differences between the Strategic Plan and the BPM include, *inter alia*: a restatement of volume projections; an adjustment to costs in 2004/05 to reflect the latest operating cost forecast and the latest Renewal Plan forecast; and strategic initiatives that have been abandoned.

- 8.6 We have reviewed Royal Mail's reconciliation and have gained an understanding of the key differences between the BPM and the Strategic Plan. Given that the BPM represents Royal Mail's current view of costs, we have used the data contained in the BPM as the basis of our cost projections. Royal Mail confirmed verbally that the appropriate base from which to project future efficient costs is the BPM.
- 8.7 To ensure that the model is working effectively and provides the required level of robustness for forecasting purposes, Royal Mail commissioned OXERA to provide an independent review and validation of the BPM. OXERA's review focused on the economic rationale and logic of the approach adopted, as well as on the resulting figures across the models. OXERA states that: "*overall, the sequence of the model is sound and well structured. The BPM2 could, as a result, provide a useful framework of analysis of Royal Mail's business plans in support of a relevant submission to Postcomm. The macros contained in the model are well written and presented clearly. No errors affecting the calculation procedure were found in the coding of the macros.*"⁹⁵
- 8.8 In order to ensure our approach to forecasting costs is consistent with Royal Mail's, we have used the BPM to project our assessment of Royal Mail's efficient costs. As the BPM has been reviewed by OXERA, we have not performed a detailed audit of the model. Consequently, we express no opinion on the robustness of the ability of the BPM to appropriately generate cost forecasts from a set of inputs.

Overview of the BPM

- 8.9 Postal companies provide a range of different products and services, each of which will typically have a separate tariff structure. For the purposes of analysis

⁹⁴ Operating profit in RM 2023a BPM2_v2.7RR, reconciles to Operating profit before exceptions and pension deficit in the RM's Strategic Plan. BPM costs are stated before Share of Success, pension deficit, redundancy and capital expenditure payments

⁹⁵ Review of Royal Mail models: update, Oxera, January 28 2005

and price control modelling, it is helpful to group these according to a number of characteristics, principally the nature of the services provided and the underlying activity drivers in the level of costs.

8.10 The BPM forecasts operating costs at a level known as the SPHCC level, which provides the granular breakdown of operating expenditure required to allow individual cost drivers to be modelled. The SPHCC level breaks cost down by product type, format, and handling characteristics (e.g. 1st class letters which are machineable). In total, 1174 separate sub-categories are modelled. Product costs are consolidated into seven cost types and 22 activities. We summarise the basic mechanics contained within the model to forecast costs below:

- Base Year costs are entered by SPHCC level, by cost type and by activity. The BPM forecasts costs at the SPHCC level by cost type and by activity level;
- volumes at the SPHCC level are an input into the model. The BPM disaggregates forecast volume data from inland and international forecasts. These volumes are then applied to Base Year expenditure to derive a Baseline cost profile⁹⁶;
- Base Year costs are also split between long run marginal costs (i.e. “LRMC” or variable costs) and fixed costs. Fully allocated costs (i.e. “FAC”) are calculated each year by summing LRMC and fixed costs components. The LRMC is used as the basis for flexing costs with volumes;
- the BPM first projects Base Year costs for changes in volumes, in real terms. Costs from specific efficiency initiatives are overlaid later. The model allows for both generic and manual inflation and efficiency factors. Manual factors allow specific adjustments to be made at the activity/ cost type level. Efficiency factors are in addition to specific initiatives. Inflation factors reflect the rate of change in costs above RPI (such as wage costs increasing by 1% per annum above RPI);
- total fixed costs are calculated, assuming no change in volume, as follows:

$$\text{Forecast FAC} = \text{FAC} \times (1 + \text{generic inflation}) \times (1 + \text{generic efficiency}) \times (1 + \text{manual inflation}) \times (1 + \text{manual efficiency})$$

⁹⁶ The inland file is RM 2015 9, RPI-X template_central case RR.xls, and the International file is RM 2016, International bpm input_130105 RR.xls

Forecast LRMC (at constant volume) = LRMC x (1 + generic inflation) x (1 + generic efficiency) x (1 + manual inflation) x (1 + manual efficiency) x manual change in LRMC factor (explained below)

Fixed costs = Forecast FAC – Forecast LRMC

- Royal Mail does not assume that fixed costs per product remain constant. Whilst the overall cost is calculated as above, the allocation of costs to products are scaled to reflect a) the allocation of fixed costs in the prior year and b) the change in volume. In effect, this is a form of equi proportional mark-up. The effective adjustment is given as follows (where t stands for the year):

Product unweighted fixed cost (t) = Product fixed cost (t- 1) / Product volume (t-1) * Product volume (t)

Total weights = sum (Product unweighted fixed cost (t)) (summed over all products)

Product weighted fixed cost (t) = Product unweighted fixed cost (t)/Total weights * Actual fixed cost

- the BPM allows the user to incorporate a manual adjustment to the LRMC rate. The adjustment is at a cost activity level rather than a product level. If this does not take place, the percentage in the Base Year is used to derive opening average LRMC costs – which are then used throughout the model. The overall cost variability is 57%;
- the BPM allows assumptions to be made with respect to the phasing of cost variability, namely how costs change over time given a change in volume. The BPM that supports the Strategic Plan assumes that for a given change in volume, the variable element of costs will change over three years (see below for a further explanation of this assumption);
- the BPM accounts for changes in any zonal distribution of mail. Output is not sensitive to changes in this assumption;
- some costs, for example, those for delivery staff, are driven by delivery point growth in addition to volume change. Where delivery point growth is a cost driver, the BPM allows the user to input an annual rate of delivery

point growth, and to assume the extent to which costs are variable, accounting for both delivery growth and volume change; and

- Baseline operating costs stated in real terms are converted to nominal terms, and cost savings are subtracted from the Baseline forecast.

8.11 Once Baseline costs have been projected, the BPM overlays the cost impacts of the strategic initiatives. These impacts are generated in a separate model and are input into the BPM. The “initiatives model” has four simple categories: Operational Savings, Operational Increases, Redundancy Costs and Implementation Costs by year⁹⁷. Operational Savings and Increases can be allocated to specific activities and cost types. The initiative model allocates savings and increases to activities and cost types, but not to products. The BPM overlays any additional costs or savings onto the Baseline, allocating to products on an equi-proportional basis. Redundancy Costs and Implementation Costs are not allocated to activities, cost types or products and are simply added to costs, post operational initiatives in the BPM.

8.12 The BPM’s final output is operational costs by product and cost type, for each year in both real and nominal terms. Redundancy costs and Implementation costs are then included in nominal terms as a separate line to provide total Royal Mail operating expenditure.

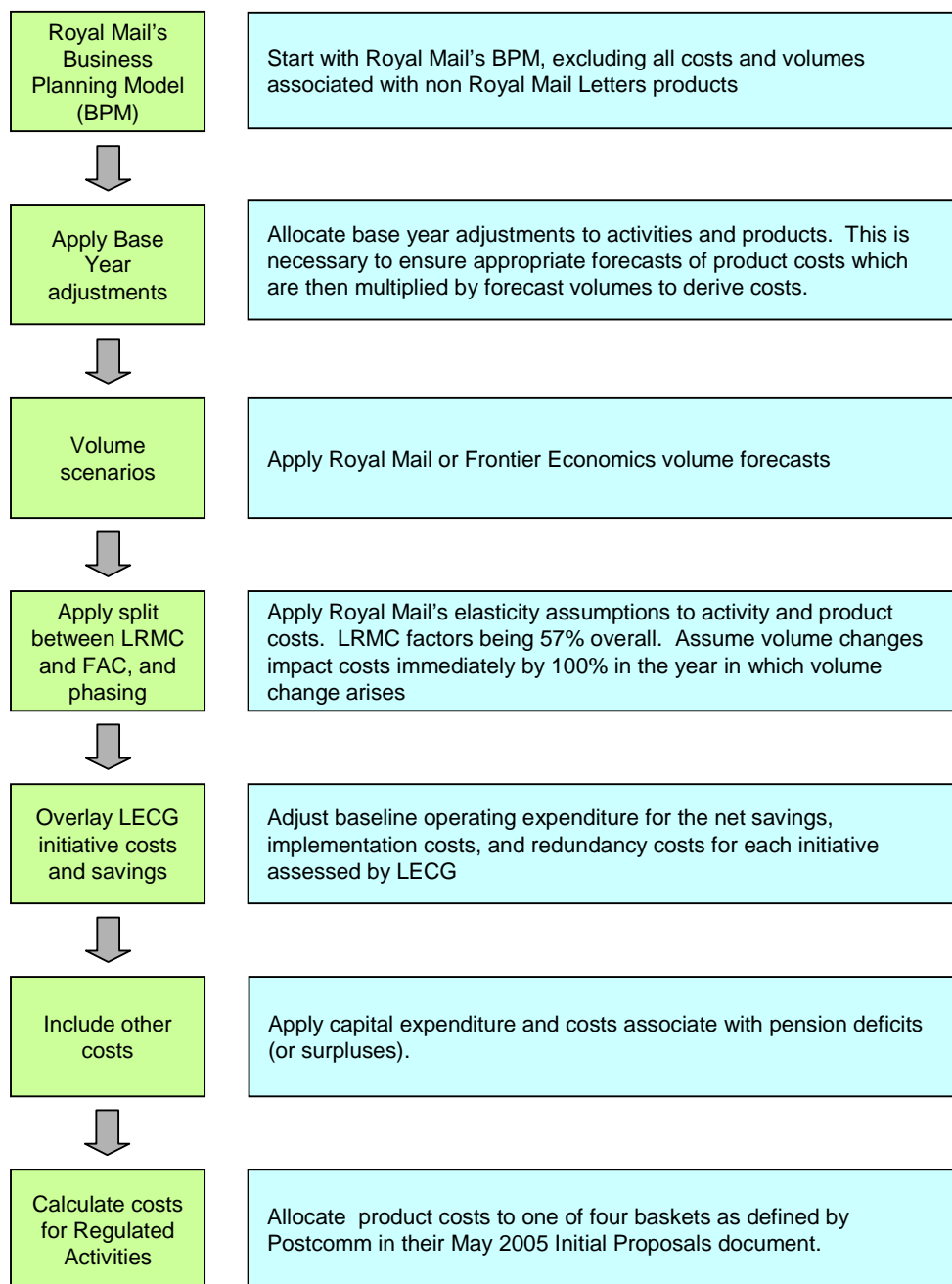
8.13 The BPM can generate both a Baseline cost forecast, capturing the effects of volume and mix changes and existing management initiatives only, and a forecast that takes account of various proposed future initiatives. Later in this report, we describe how we have used the BPM to make our own projections of Royal Mail’s future costs, based on our own detailed review of the initiatives that Royal Mail may be able to implement over the coming price control. This ‘bottom-up’ analysis is one of the elements feeding in to our assessment of Royal Mail’s future efficient allowable costs.

Our approach

8.14 LECG’s approach to forecasting Royal Mail’s future efficient level of costs is summarised in the table below.

⁹⁷ The initiatives input files are RM 2020 initiatives data_v140105 PART 1 RR.xls, RM 2021 initiatives data_v140105 PART 2 RR.xls, and RM 2022 initiatives data_v140105 PART 3 RR.xls. These three files are consolidated into the initiatives model, PCR3 2019a 9.7 initiatives_Base Year 2003_2004_v050201 RR.xls, which feeds into the BPM

Figure 7: Cost forecasting approach



8.15 Each element is summarised below.

Non letters business, wage inflation and step changes

8.16 Royal Mail has identified a number of “step changes” to 2004/05 costs, to ensure that total costs align with current forecasts for the remaining years of the current

price control. Royal Mail explain that these adjustments are for modelling purposes only and do not constitute plans or “initiatives”. As such, Royal Mail provides no supporting backup for these adjustments. We have included step changes within our Baseline forecast of operating costs. The table below summarises the impact of these adjustments over the relevant period.

Table 48: RM step changes

Initiative	04/05	05/06	06/07	07/08	08/09	09/10	10/11
Flowthrough	0	31	31	31	31	31	31
04/05 Balancing Figure	251	235	235	235	235	235	235
Compensation	24	83	83	83	83	83	83
Total	275	349	349	349	349	349	349

Source: Royal Mail L2019a (Supercedes 2019). All figures stated in 2003/04 prices.

8.17 Our assessment of operating costs is based on the operating costs included within the BPM model version 2.7. We have removed costs relating to non-letters products. This gives a starting point of £6,095m in 2003/04 - the same starting point for our assessment of Base Year costs, as outlined in Section 7.

8.18 In forecasting the Baseline, we have made an assumption to remove Royal Mail’s assumption of wage inflation [>€]. The BPM assumes that operational and managerial staff costs [>€] at a rate of [>€] of inflation each year to 2006/07 and at a rate of [>€] of inflation in each year thereafter. To ensure transparency, we have assumed that staff costs do not [>€] in real terms within the Baseline. Any additional [>€] in pay has been treated separately as an HR cost initiative. We discuss our conclusions on labour related costs in Section 16. The table below summarises the impact these assumptions have on real costs over the period.

Table 49: Real cost of wage inflation

2003/04 prices	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Cost associated with real wage inflation	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]

Source: RM 2023a BPM2_v2.7 and LECG analysis. Calculated after adjusting for step changes and non RML

8.19 The table below adjusts Royal Mail's forecasts for non-letters products, step changes and then wage inflation.

Table 50: Baseline costs using RM's central case volume forecast adjusted for non letters products and wage inflation

2003/04 prices and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Royal Mail BPM 2.7 *	6,266	6,301	6,340	6,336	6,322	6,326	6,301
Baseline adjusted for non letters business	6,101	6,143	6,190	6,184	6,169	6,173	6,147
Baseline adjusted for step changes & non letters business	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Baseline adjusted for wage inflation, non letters business & step changes	[>]	[>]	[>]	[>]	[>]	[>]	[>]

Source: RM 2023a BPM2_v2.7 and LECG analysis. * Royal Mail figures have been calculated by converting nominal costs into 2003/04 prices using Postcomm's forecast of RPI but include real wage inflation costs. Assumes depreciation increases in nominal terms by the rate of inflation

Base Year adjustments

8.20 For modelling purposes operating costs must be stated in cash terms. The table below adjusts Royal Mail's forecasts for wage inflation, step changes, non-letters products and for Base Year adjustments (as set out in Section 7).

Table 51: Baseline adjusted for non RML, wage inflation, step changes and Base Year

2003/04 prices and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Adjusted Baseline (from Table 50)	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Baseline after Base Year adjustments	[>]	[>]	[>]	[>]	[>]	[>]	[>]

Source: RM 2023a BPM2_v2.7 and LECG analysis. Base Year includes compensation adjustments as outlined in paragraphs 7.82 and 7.84. Compensation is also included in the Step Change adjustment. We have amended our adjustments accordingly to ensure no double counting.

Volumes

8.21 In order to derive an independent assessment of Royal Mail's future product volumes, Postcomm engaged Frontier Economics to undertake a volume projection of Royal Mail's inland product volumes at the SPHCC level over the price control period. Frontier Economics has provided LECG with a replica template of Royal Mail inland volumes for inclusion in the BPM. We have forecast operating costs based on two different volume scenarios: Royal Mail's projection of volumes, and Frontier Economics' projections of volumes.

8.22 The table below summarises the two volume scenarios – at the letters business level. Whilst total volumes are similar, Frontier Economics’ volumes are slightly lower in each year. However, there are significant differences in product mix.

Table 52: Projected volumes in millions

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Royal Mail BPM 2.7 volumes	25,557	25,835	26,756	26,766	26,600	26,484
Postcomm/Frontier Economics volumes	25,068	25,230	26,103	26,346	26,196	26,090

Source: RM 2023a BPM2_v2.7 and Frontier Economics’ volume submission of 18 April 2005

8.23 The table below summarises Baseline costs adjusted for wage inflation, non-letters products and for Base Year adjustments under the two volume scenarios.

Table 53: Adjusted Baseline costs using RM’s central case volume forecast and Postcomm’s forecasts

2003/04 prices and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Adjusted Baseline assuming RM volumes (from Table 51)	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Adjusted Baseline assuming Postcomm/Frontier Economics volumes	5,622	5,578	5,589	5,596	5,609	5,611	5,557

Source: RM 2023a BPM2_v2.7 adjusted by LECG

8.24 Using Postcomm’s/ Frontier Economics’ volumes results in higher costs by 2010/11, even though total volumes are lower. This result is driven by differences in product mix - most notably, downstream access products. Both projections assume growing downstream access volumes. Royal Mail forecasts that downstream access will reach 4,000m items by 2010/11 and Frontier Economics assumes that it will reach 2,000m items by 2010/11. Downstream access products have lower unit costs than the average product.

Cost elasticity and phasing

8.25 In a number of documents, Royal Mail indicates that it has a cost elasticity equal to 60%⁹⁸. A cost elasticity of 60% implies, for example, that for a 10% increase in volumes, operating costs would change only by 6%. Royal Mail states that its cost elasticity “*factors have been developed over time and during a period of*

⁹⁸ Comparative analysis and trend analysis efficiency paper, RM, page 14, reference 3106

growth” but believes “*that the validity of these factors remain... but within reasonable limits of volume movement, either increase or decrease*”⁹⁹.

The BPM actually assumes an average cost elasticity of 57%¹⁰⁰ in 2003/04, and that this falls to around 55% by 2010/11. LECG has not been requested by Postcomm to review Royal Mail’s cost elasticity assumptions in detail. However, we have compared Royal Mail’s assumptions to a range of comparable benchmarks. Work performed by NERA on the economics of European Postal Services concludes that a 10% increase in traffic on a fixed network would be expected to increase total postal costs by 6.5%¹⁰¹. Royal Mail’s cost elasticity estimate is slightly lower than the findings of PRC who have indicated that they have “*found all Postal Service costs to be about 62% variable*”¹⁰². Against these benchmarks, Royal Mail’s cost elasticity assumption appears to be slightly below the lower end of the range. Our internal benchmarking, however, indicates that delivery offices have a *labour* cost elasticity of 67%. This is consistent with the implied cost elasticity for delivery staff in the BPM. The equivalent estimate is 66%.

- 8.26 Royal Mail also assumes that costs take three years to fully respond to a change in volume, using a 0%, 50%, and 50% phasing. That is, for a volume decrease of 10%, Royal Mail assumes that there will be no cost reduction within the year of the volume change. In the following year, Royal Mail assumes that costs fall by 3%, (i.e. 10% volume change x 60% cost elasticity x 50% phasing), and in year three, costs fall by a further 3%. When volume changes are forecast to be significant, this assumption has a material impact on costs compared to an assumption that costs change immediately in response to volume changes¹⁰³.
- 8.27 In document RM 2049 Royal Mail confirms that no detailed studies have been carried out to underpin this assumption. The assumption is based on the specific experience of operational managers – and reflects a pragmatic approach based

⁹⁹ RM 9003. RM refers to cost elasticity in terms of LRMC factors. We note that further support/ explanation is provided in document RM 2049

¹⁰⁰ RM 2023a

¹⁰¹ The NERA Report

¹⁰² John Waller, PRC, 15 October 2004

¹⁰³ At the “margin” (i.e. for an increment/ decrement of one mail item) costs are unlikely to respond in this manner. We focus on incremental changes rather than marginal changes

on “*it is believed, realistic and prudent assumptions*”. Royal Mail put forward a number of factors in support of its assumptions, including:

- it takes time to recognise that a volume change is real and permanent. Volume changes may also be sporadic. Royal Mail explains that there is a margin of error on traffic volume measurement and that there is uncertainty in short-term volume predictions;
- it takes time to change working practices, as any change has to be negotiated with unions;
- the opportunities to implement revisions are limited due to operational and other constraints; and
- changes to some types of cost may be more difficult or take longer than others (e.g. accommodation). Resources such as sorting machines have to be considered in whole numbers.

8.28 To determine whether there are any precedents for Royal Mail’s assumptions we have performed a limited benchmarking exercise across other regulatory determinations. Our findings are as follows:

- the PRC¹⁰⁴ uses time econometrics to estimate cost elasticity with respect to volume. From this analysis, the PRC argues that it is reasonable to assume that costs change in the same year as the volume change. It also assumes that volume increases have the same proportional impact on costs as volume decreases¹⁰⁵;
- Ofcom uses financial models of British Telecom (“BT”) to set its network and retail price controls. The models project costs over a five or six year period. Costs are linked to volumes by means of cost and asset-volume elasticity that generally take effect within the year of the volume change or in the case of additional capital expenditure with a short lag¹⁰⁶; and
- during the 1997 price control review, British Gas Trading estimated that its costs were 44% variable within the year, 40% semi-variable within 18 months and 16% fixed. Ofgas revised this estimated split to 75% variable,

¹⁰⁴ The US Postal Rate Commission

¹⁰⁵ PRC, 13 January 2005

¹⁰⁶ Ofcom, 14 January 2005

19% semi-variable and 6% fixed in its final conclusions. In February 2000, Ofgem concluded that the proportion of costs, which BGT deemed to be variable within the year, appeared very low. Ofgem concluded that a more appropriate variable and fixed split would be 75:25. Ofgem assumed that changes in costs would take effect within the year of the volume change.

8.29 Overall, we do not find Royal Mail's arguments to be compelling and believe that the combined assumptions on cost elasticity and phasing result in costs that have too high a level of fixity for the following reasons:

- Royal Mail reports a higher level of fixed costs (i.e. 43%) than other postal operator benchmarks. As shown above, NERA estimates fixed costs of 35%, PRC estimates fixed costs of 37% and our internal benchmarking work suggests fixed costs of 34%. It is also higher than analysis performed by Christensen et al. (1993) who estimated that a 10% increase in volumes for the United States Postal Service would increase costs by 7.8% - which implies fixed costs of 22%;
- a review of Royal Mail's LRMC factors shows that certain activities have an unreasonably high levels of fixity. For example, Royal Mail assumes that marketing spend of around £350m per year is 75% fixed. In reality such costs are likely to be significantly more variable than this; and
- the PRC assumes that costs change immediately with changes in volume. Ofcom makes the same assumption when modelling the costs of BT.

8.30 We recognise that it is also important to consider the size of the volume increment or decrement, and whether the change could be foreseen or not. We accept that for significant and unforeseen changes in volume, it might take Royal Mail a longer period to change costs. For smaller changes that can be foreseen, however, we would expect costs to be more variable in nature (i.e. planning for change can happen in advance, as opposed to in response to the change). Royal Mail appears to fall into the latter category for the following reasons:

- Royal Mail has presented three volume scenarios for the forthcoming price control period. Under the high case Royal Mail predicts addressed delivered volumes for regulated activities to increase by 2.2% per annum. Under the central case, volumes increase by 0.6% per annum and under

the low case, volumes decrease by 1.8% per annum. Overall, therefore, Royal Mail is forecasting relatively small changes in total volume¹⁰⁷; and

- Royal Mail is a labour intensive business – with staff costs accounting for approximately 65% of total costs and a high level of overtime, at around 10% of total labour costs. It faces high staff turnover at 16.5%¹⁰⁸. Such costs, by their nature, are variable and provide Royal Mail with some flexibility to control costs when volumes are changing. If there were no overtime and staff turnover was low, then costs might have a higher level of fixity. In RM 2049, Royal Mail actually recognises that some minor changes may be relatively easy to carry out - such as changing the level of overtime.

8.31 On balance, we believe that costs would respond more quickly to changes in volume. Based on the evidence that we have reviewed, we believe that it would be reasonable to assume that costs change immediately with changes in volume. We have assumed that Royal Mail's cost elasticity is 57%.

8.32 We have considered the sensitivity of Baseline costs to different assumptions on cost variability. In our first scenario, we assume that cost changes would be phased 50:50. That is, cost savings would occur one year earlier than Royal Mail's assumption. Under the second scenario, we assume cost changes occur immediately. Under both scenarios, we assume a cost elasticity of 57%. The table below shows the impact of our assumptions on our Baseline projection assuming Royal Mail's central case volumes. The Baseline includes the cumulative adjustments made above and shows both phasing scenarios.

¹⁰⁷ RM 2032

¹⁰⁸ Overtime costs as identified in RM 3124. Staff turnover results taken from RM5044

Table 54: Adjusted Baseline costs for phasing using RM's central case volume forecast

2003/04 prices and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Adjusted Baseline assuming RM volumes and phasing (from Table 53)	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Adjusted Baseline assuming 50:50 phasing	5,640	5,621	5,576	5,523	5,489	5,428	5,366
Adjusted Baseline assuming immediate phasing	5,655	5,624	5,522	5,518	5,453	5,396	5,330

Source: RM 2023a BPM2_v2.7, Royal Mail phasing file RM 2014, RPI-X template Central Case RM 2015, and LECG analysis, adopting different cost elasticity phasing assumptions

8.33 The table below shows the impact of our assumptions on our Baseline projection assuming Postcomm's central case volumes. The Baseline includes the cumulative adjustments made above and shows both phasing scenarios

Table 55: Adjusted Baseline costs for phasing using Postcomm's central case volume forecast

2003/04 prices and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Adjusted Baseline assuming Postcomm volumes and RM phasing (from Table 53)	5,622	5,578	5,589	5,596	5,609	5,611	5,557
Adjusted Baseline assuming 50:50 phasing	5,618	5,583	5,590	5,603	5,604	5,551	5,473
Adjusted Baseline assuming immediate phasing	5,613	5,593	5,581	5,619	5,583	5,513	5,428

Source: RM 2023a BPM2_v2.7, Royal Mail phasing file RM 2014, Frontier Economics' volume submission of 18 April 2005, and LECG analysis, adopting different cost elasticity phasing and volume assumptions

8.34 The impact of the phasing assumptions depends on the direction of volume changes. When volumes are increasing, the immediate phasing allows Royal Mail greater costs than the 50:50 phasing, and visa versa. Under Frontier Economics' volume projections, the difference between the two scenarios is small, at £19m per year over the period 2006/07 to 2010/11. Under Royal Mail's volume projections, the difference between the two scenarios is higher at £33m per year over the period 2006/07 to 2010/11.

Initiatives

8.35 We have reviewed Royal Mail's operating cost increases, savings, redundancy costs and implementation costs, relating to initiatives included in the BPM. We

have adjusted Royal Mail's assessment of initiatives where our view has differed, and have additionally included other initiatives we feel are appropriate. Our overall conclusions on bottom-up savings are summarised in Section 11.

- 8.36 Our conclusions are not the product of a mechanistic process of addition and subtraction of individual cost categories or items of expenditure. Our adjustments to Royal Mail's projections are the result of the consideration of a number of different indicators both bottom-up and top-down. In establishing our conclusions, no one type of analysis has been determinative.

Other costs

- 8.37 In deriving the efficient level of costs, it is also important to consider other costs and saving which are not included in the BPM, such as capital expenditure and pension deficits. Our review of capital expenditure is set out in Section 19. An additional cost relates to Royal Mail's pension deficit. Postcomm has commissioned Hymans Robertson¹⁰⁹ to provide an independent assessment of Royal Mail's future cash pension deficit requirements over the price control. This cost is not included within this report.

Baseline conclusions

- 8.38 The Baseline adopted in this report is summarised below. The forecast is based on Frontier Economics' central volume case. We have adjusted costs in the Base Year, and have excluded staff cost increases in real terms. We have assumed that costs change immediately with respect to changes in volume.

Table 56: LECG Baseline operating costs for RML

2003/04 prices and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
LECG Baseline operating costs	5,613	5,593	5,581	5,619	5,583	5,513	5,428

Source: RM 2023a BPM2_v2.7, Royal Mail phasing file RM 2014, Frontier Economics' volume submission of 18 April 2005, and LECG analysis

- 8.39 The overall trend in costs can be assessed in unit cost terms as follows.

¹⁰⁹ Report to the Postal Services Commission: Assessment of the funding of the Royal Mail Pension Plan for the purposes of the 2006 price review, Hymans Robertson, February 2005

Table 57: LECG Baseline unit operating costs for RML

2003/04 prices	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	CAGR
Base line	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)

Source: LECG analysis

- 8.40 The profile suggests that unit costs will fall by 1.4% per year in real terms over the period of the price control. This change does not relate to a change in productivity (because the Baseline is stated before initiative savings – see above). Changes in volume (“the volume effect”) and changes in product mix (“the mix effect”) explain the reduction in unit costs¹¹⁰. In Section 26, we consider total operating and total cash cost movements. To assess the overall level of “productivity” the volume and mix effects must be removed from the analysis.
- 8.41 The cost profile above provides a projection of Baseline costs for RML. This forecast provides a direct comparison with the costs included in Royal Mail’s Strategic Plan, which is presented at the RML level. We have allocated individual product costs between four baskets as defined by Postcomm in its May 2005 Initial Proposals document. These baskets split products between regulated and unregulated business, in accordance with Postcomm’s current proposals of regulated products (refer to Appendix 1).
- 8.42 Baseline costs for the regulated business are stated below.

Table 58: LECG Baseline operating costs for the regulated business – current scope

2003/04 prices and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
LECG Baseline operating costs	5,035	5,031	5,025	5,061	5,021	4,973	4,891

Source: RM 2023a BPM2_v2.7, Royal Mail phasing file RM 2014, Frontier Economics’ volume submission of 18 April 2005, and LECG analysis

¹¹⁰ In other words, on a volume and mix-adjusted basis the Baseline would show no change in unit costs over the price control period

Part B: Royal Mail's Strategic Plan

9 Royal Mail's Strategic Plan

Introduction

- 9.1 This section provides a brief overview of the cost projections contained within Royal Mail's document entitled "The Royal Mail Letters Strategic Plan, Discussion Draft" dated 7 December 2004¹¹¹.
- 9.2 The Strategic Plan builds on the premise that despite recent initiatives, RML still has an underinvested network and a disengaged workforce. The introductory section says that: *"without fundamentally changing its business strategy as the market deregulates, [Royal Mail] faces the prospect of being trapped in a vicious circle of declining volumes, insufficient profitability to invest in its people, continuing low colleague engagement, at best modest productivity growth and poor quality of service resulting in continuing further volumes declines"*¹¹².
- 9.3 The Plan then sets out an overall strategy to transform the letters business. Its overall mission is: *"Our strategy to win in what will be the world's most competitive postal market, including making an attractive return for our shareholder, is to become demonstrably the world's best and most trusted mail company by transforming the quality and dependability of our service to customers through automation and colleague engagement, although for this to deliver attractive shareholder returns we will require a substantial change to the structure and level of our prices and a major cultural change among our colleagues"*¹¹³.
- 9.4 Within the overall plan are a number of initiatives grouped into three main programmes, which can be summarised as follows:
- building a great brand and excellent products to win, keep and develop profitable customers (referred to as "transforming the customer offer");
 - collecting and delivering on time every time at a low cost (referred to as "transforming the operations"); and

¹¹¹ We refer to this document subsequently as the "Strategic Plan". We recognise that the plan provided to us is a discussion draft and not a finalised plan

¹¹² RM's Strategic Plan

¹¹³ RM's Strategic Plan

- recruiting, equipping, developing, including and leading our people (referred to as “engaging people and transforming working practices”).

- 9.5 This section provides an overview of each programme and summarises Royal Mail’s implementation plans. At the end of the section, we set out a summary of the overall financial impact that implementation of the strategy is intended to have. Within this section, that financial impact is reported uncritically – the numbers we present are Royal Mail’s own. The following section sets out our assessment of the plan, and the way in which we have used such detail as exists in preparing our own projections.
- 9.6 In presenting its strategy, Royal Mail also provides an alternative “business-as-usual” scenario. We first provide an overview of this scenario below. We then summarise Royal Mail’s strategy to transform the letters business.

Business-as-usual scenario

- 9.7 The business-as-usual scenario described within the plan assumes that there is no increase in investment and that, as a consequence, customers’ perceptions of quality of service relative to competitors worsens.
- 9.8 Royal Mail asserts that continued failure to achieve quality targets would have a significant impact on its competitiveness. Consequently, more mail would move from Royal Mail retail to access products and from Royal Mail delivery to third party delivery. Overall, Royal Mail forecasts a loss of 13% of delivered volume and a further 24% of end-to-end volume (i.e. to access-based competitors) by 2010/11.
- 9.9 Under this scenario, Royal Mail assumes that the business would continue to achieve historical underlying levels of productivity improvement, beyond that driven by volume increases, of approximately 0.8% per annum¹¹⁴. Costs are projected to fall, as a result, by around £290m by 2010/11.
- 9.10 In addition to these costs, Royal Mail includes additional costs for depreciation relating to obsolescence spend, additional marketing for greater competitiveness (e.g. relating to increased spending on brand and the introduction of size-based pricing) and IT systems and technology spend to allow for timely and accurate invoicing and collection of access revenue.

¹¹⁴ Historic productivity growth from the Consigna 6 papers for 2002 price control

9.11 Further, Royal Mail assumes higher people related costs. It assumes pay increases at [>€], and [>€] of £[>€] per person per annum to reflect expectations based on historical precedent. Royal Mail assumes that the [>€] payments continue even in years of falling profitability so as not to increase risk of disruption.

9.12 Royal Mail's cost projections under the business-as-usual scenario are presented in the following table:

Table 59: Nominal cost projections under the business-as-usual scenario

£m	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Accounting costs						
Base line costs	6,293	6,470	6,601	6,721	6,837	6,890
Operational cost savings	(41)	(85)	(131)	(180)	(232)	(286)
Additional depreciation	5	8	11	15	18	21
Additional marketing	30	39	46	50	50	51
IT and technology	19	24	28	17	14	13
[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
FRS17 pension adjustment	227	233	238	244	250	257
Total operating costs	6,674	6,830	6,934	7,006	7,073	7,083
Cash Costs						
Total operating costs	6,762	6,832	6,936	7,008	7,075	7,085
Depreciation	(96)	(98)	(101)	(104)	(105)	(106)
Non cash pension costs	(153)	(137)	(140)	(143)	(147)	(151)
Capital expenditure	92	94	123	99	102	104
Total cash costs	6,605	6,691	6,818	6,860	6,925	6,932

Source: Royal Mail's Strategic Plan, page 18. Costs stated before pension deficit.

9.13 Within this scenario, Royal Mail argues that a combination of volume reductions and an inability to drive substantial performance improvement limits productivity gains and increases unit costs. The table below summarises key metrics under the business-as-usual scenario.

Table 60: Business-as-usual scenario key metrics in nominal terms

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	CAGR
Frontline FTE	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Delivered address volumes	20.7bn	20.9bn	21.3bn	20.8bn	20.0bn	19.7bn	-1.0%
Volumes per FTE	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Unit cost bf exceptional & pensions	31.1p	31.6p	31.4p	32.5p	34.1p	34.6p	2.1%
Unit cost after exceptional & pension	32.2p	32.7p	32.6p	33.7p	35.4p	36.0p	2.2%
Unit cash costs	31.9p	32.0p	32.0p	33.0p	34.6p	35.2p	2.0%

Source: Royal Mail's Strategic Plan, page 18. Costs stated before pension deficit and in nominal terms. The Strategic Plan appears to misstate unit costs – as the calculation is based on total inland mail costs and regulated addressed mail volumes. Adjusting the calculation to ensure consistency in scope would lower unit costs by around 5.4 pence in 2005/06. The overall trend in unit costs is comparable.

- 9.14 As shown in the table above, within the business-as-usual scenario Royal Mail projects unit cash costs increasing at 2% per annum in nominal terms. In constant prices, this is equivalent to real cash cost *savings* of approximately 0.5% per annum, assuming an annual inflation rate of 2.5% per annum.

Overview of Royal Mail strategy

- 9.15 The vision described within the Strategic Plan is for Royal Mail to be demonstrably the best and most trusted mail company in the world, and the mission is to provide consistently high quality dependable mail services. Both are intended to be achieved through three programmes: building a great brand and excellent products to win, keep and develop profitable customers; collecting and delivering on time every time at low cost; and recruiting, equipping, developing, including and leading its people. We set out below an overview of each of the three programmes put forward by Royal Mail in its Strategic Plan.

Transforming the customer offer

- 9.16 The core of Royal Mail's strategy is to strengthen its market position by introducing better products, more cost reflective pricing and rebuilding its brand attributes, while transforming the way in which it serves customers based on best in class insight into their needs. Under this programme, Royal Mail identifies five core initiatives: 1) best at customer insight; 2) competitive products and services which meet customer needs; 3) easy to do business with and excellent customer

service; 4) strengthen and exploit the Royal Mail brand; and 5) engage the regulator to support transformation. A summary of each initiative is provided below.

Best at customer insight

- 9.17 Royal Mail's own assessment is that it [>]. Royal Mail's objective is to develop a full, coherent, consistent and trusted understanding of the needs of its customers, segments and business sectors. Royal Mail suggests that "*the foundation of our customer proposition will be a market-leading set of products and services defined around customer needs rather than our operational requirements*".

Competitive products and services meeting customer needs

- 9.18 Royal Mail defines its current situation as: products and services are not designed around the needs of customers; the top 100 customers are at risk from competition; prices are not competitive with those of new entrants and do not sufficiently incentivise customers to use lower cost to provide products.
- 9.19 Royal Mail's objective is to design market leading products and services around the needs of customers. They suggest that tailored solutions should be available for larger customers; and that prices need to be rebalanced to ensure competitive and cost reflective structures, differentiated by payment channel, delivery density, speed, format and volume. The expectation is that price signals could be used to provide incentives for customers to use less expensive formats, such as machineable rather than non-machineable mail. Royal Mail indicates that new products might include [>].

Easy to do business with and excellent customer service

- 9.20 Royal Mail believes that sales execution needs to be improved, [>] and there are an unacceptable number of complaints. Royal Mail's objective is to improve both sales execution and invoicing, and to reduce the level of complaints. Royal Mail also intends to broaden the range of channels to market, including web-enabled channels with integrated billing.

Strengthen and exploit the Royal Mail brand

- 9.21 Royal Mail believes that it has a high degree of public trust relative to other big service organisations but that confidence has been eroded recently. Royal Mail also believes that its top customers see competitors as having a better reputation

for reliability and ease of doing business. Royal Mail plans therefore to strengthen its brand, with the objective of being trusted by customers to deliver on time, rapidly and efficiently.

Engage the regulator to support transformation

- 9.22 Royal Mail believes that the USO is overly widely defined and that by 2010, the USO and price control and quality regulation should apply only to 1C stamped mail. All other products should by then be fully deregulated. In addition, Royal Mail believes that it requires greater commercial flexibility to rebalance prices.

Overall impact of transforming the customer offer programme

- 9.23 Royal Mail states that the combination of transforming the customer offer and moving towards more cost reflective pricing will strengthen its market position, reducing market share losses in 2010/11 to [>€] for downstream access and [>€] for bypass, compared to [>€] and [>€] respectively under the business-as-usual case.

Transforming the operations

- 9.24 Royal Mail's strategy is to modernise its network through a phased investment programme that automates the pipeline and introduces uniform best practice processes to transform the capability and efficiency of the collections, sortation and delivery operations. Under this programme, Royal Mail identifies the following core initiatives: 1) ensure uniform operating procedures and best practices; 2) simplify the network; 3) move towards full automation and materials handling; and 4) introduce a new outdoor delivery model. A summary of each initiative is provided below.

Uniform operating procedures

- 9.25 [>€]
- 9.26 [>€]. [We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "Royal Mail will continue to deploy standard operating procedures and best practice in order to improve efficiency and drive up productivity."]

Simplified network

- 9.27 The plan suggests that the current network, with 69 mail centres, the Heathrow Worldwide Distribution Centre, and 12 RDCs of varying size and layout, is not

optimal: the network is stretched to meet quality time windows and compromised by volume surges at peak periods. Historically changes have been made to one part of the network without adequate consideration for their impact on the rest of the pipeline. [>✉]. [We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "The objective of this initiative is to standardise the mail centre design and operating procedures and ensure that the business has the right number of sites in the right places."] The end state network will be designed to achieve consistent quality performance with capacity to meet surges in volume during peak periods. The operations will be enhanced to ensure that the pipeline is flexible enough to accommodate future pressures (such as customer demand for later collections or significant volume loss to competition). This initiative will also influence delivery operations. Royal Mail's objective is to reduce the level of indoor sorting and preparation expenditures significantly over the plans period.

Full automation and materials handling

- 9.28 [>✉] that it has an underinvested pipeline and that it is significantly behind best practice postal benchmarks, in terms of the deployment of the latest automation techniques. Further, it notes that there is heavy reliance on manpower to undertake bag opening, tipping and conveyance tasks resulting in low productivity [>✉]. The purpose of this initiative is to develop a best in class automated pipeline. Royal Mail plans to overhaul the materials handling environment to industry best practice standards with bags eradicated from mail centres and distribution networks. Royal Mail plans to create a safer working environment with controlled workflow and reduced mail piece damage.

New outdoor delivery model

- 9.29 Royal Mail has about 1,400 delivery offices achieving different levels of cost and delivery efficiency. There is a high level of manual sortation at delivery offices. Delivery offices suffer from incomplete and inaccurate delivery databases. Commercial and employee goals are poorly aligned. [>✉]. [We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "The primary objective of this initiative is to reduce the burden of sortation on delivery employees and focus them on providing an excellent delivery service to receiving customers."] In addition, delivery offices will have fully integrated delivery databases owned and maintained locally. Royal Mail will introduce a new output based efficiency

measure, which will be integrated into a local productivity bonus. Royal Mail will reduce weight as a cause of accidents, absence and poor morale.

Overall impact of transforming the operations programme

- 9.30 Royal Mail's stated objective is to modernise its network. The modernisation programme is estimated to require capital investment in automation and mail centre rationalisation amounting to approximately £1.4 billion over the plan period. This compares to £600m under the business-as-usual scenario. The objective is to drive lower costs and improved quality.
- 9.31 Automation and materials handling are intended to reduce costs by removing workload in manual processing (letter, flat and packet sorting in mail centres) and in manual indoor delivery (letter and flat walk sorting and letter walk sequencing). Investment in automation and rationalising the mail centre network will also improve the consistency of quality of service by reducing missorts, allowing mail to be better tracked, and lengthening time windows for network distribution and delivery.
- 9.32 [>€]. *[We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "The introduction of the 3.5 hours span has highlighted the need for further development of improved delivery methods and better equipment for transporting the mail whilst on delivery. Royal Mail plans to review the existing delivery model and look at introducing a portfolio of approaches including better tools for the job (e.g. trolleys)."]*
- 9.33 Royal Mail forecasts that the operational programme will deliver improved consistency in quality of service and approximately £[>€]m of cost savings, before implementation and people costs, by 2010/11. This is compared to a lower perception of quality, and approximately £[>€]m of cost savings under the business-as-usual scenario.

Engaging people and transforming working practices

- 9.34 Royal Mail believes that it will only succeed with the transformation if its people are appropriately engaged and rewarded. Under this programme, Royal Mail identifies the following core initiatives: 1) engage people to achieve a high performance culture; 2) enhance leadership capability; 3) reduce headcount; 4) agree one simple national union agreement; 5) increase the flexibility of staff; and

6) create a fair and equitable organisation. A summary of each initiative is provided below.

Engage people to achieve a high performance culture

- 9.35 Royal Mail indicates that rewards are not currently aligned to organisational goals and existing agreements require [>€] of benefits to be paid to colleagues as “gainshare”.¹¹⁵ Royal Mail intends to move to a performance culture where up to [>€] of total earnings are output related. A [>€] scheme will replace the current gainshare agreement. [>€]. At present, there are no standard operating procedures. Royal Mail intends to introduce new best practices and to embed standard operating procedures. To support this initiative, the current average number of training days per employee per annum (i.e. 0.5) will be increased to six. In addition, it intends to create a continuous improvement culture with a “Royal Mail Way” for processing and delivery. Work-based coaches will be introduced to develop operational capability.

Leadership capability

- 9.36 Royal Mail believes that it has a “*command and ignore culture*”. [>€]. Generally managers do not have the skills required in the new commercial environment or the capability to lead their teams through the changes required. The purpose of this initiative is to engage and empower the workforce. High calibre managers, who can lead teams, be accountable and take commercial decisions will be introduced – through employment and retraining.

Headcount

- 9.37 Royal Mail currently employs 165,000 people. It aims to reduce frontline FTEs by over 30,000 by 2010/11. [>€]. [We have excised our original text here at Royal Mail’s request. Royal Mail has suggested alternative wording, as follows: “The changing demographics of the employee market and the desire to get greater diversity into the workforce will require Royal Mail to re-shape many of its jobs to ensure it can attract different sections of the population – in particular more women.”]

¹¹⁵ We understand that gainshare was a scheme used by Royal Mail to share efficiency savings with employees. Gainshare payments were made to employees of a mail centre and delivery office subject to the achievement of productivity and/ or quality of service targets. Royal Mail has confirmed that it no longer operates the Gainshare scheme (RM 6078)

Simplify national union agreements

- 9.38 Royal Mail currently has 88 different union agreements with hundreds of local variations and restrictive practices. Royal Mail aims to reduce the number of agreements and intends to work in partnership with employee representatives.

Flexibility of staff

- 9.39 Royal Mail has an inflexible resourcing model, which uses overtime, casuals and agency staff to react to fluctuations in demand. [>€]. [We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "Royal Mail recognises that it needs to introduce more flexibility into the workplace and ensure the removal of all restrictive practices. A wider range of contracts and working conditions will also allow the business to tap into a wider recruitment pool."]

Fair and equitable organisation

- 9.40 Royal Mail acknowledges some weaknesses in the current state of its workforce: only 58% of its people say that they enjoy working there; 15% of people feel bullied or harassed; there is a lack of diversity within the management population; benefits have historically been associated with seniority rather than skills and performance; and the absence rate is high at 6.4%. The plan contains an objective of creating an environment in which: at least 75% of its people think that Royal Mail is "a great place to work"; no more than 7% of people suffer bullying or harassment; the employee profile is representative of the diverse community within which it works; it is a single status organisation with salary being the only differentiator, based on skills and performance; and the absence rate is no more than 4.4%.

Overall impact of engaging people and transforming working practices

- 9.41 Royal Mail indicates that currently almost half of its staff say they do not enjoy working at Royal Mail [>€]. Consequently, in order to support the transformation [>€], Royal Mail believes that it needs to make a major investment in its people. This investment includes increasing base pay from £300 per week today to [>€] per week by 2010/11, offering bonuses on a "pay for change, not before change" basis and increasing training provisions – together costing approximately £[>€]m per annum by 2010/11. Engaging the workforce is seen as necessary to the implementation of its operational plan to modernise the network and change working practices, and also to achieve savings through

reduced absence rates, which should in total yield net savings of approximately £ [>€]m in 2010/11 before [>€], or £[>€]m after [>€].

Implementation plan

9.42 [>€]. [We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "Royal Mail's plan is to implement new ways of working in a limited number of operational sites and test them in a 'live' environment before rolling them out across the whole network."] It believes that its people engagement plans are supported by clear change leadership roles and performance metrics. Royal Mail is proposing the following phased implementation plan – which will not be fully rolled out by 2010/11.

- Phase 1: [>€]. [We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "Preparing and testing – now to 2006/07. During the first phase, Royal Mail will implement some new machinery, new materials handling and different approaches to working in some 'test-bed' sites, while its commercial operations will focus on redesigning the product range and introducing competitive pricing and its leadership capabilities will be upgraded."];
- Phase 2: Rollout – 2006/07-2008/09. The second phase will see wider rollout of these [>€] initiatives and best practices together with mail centre new builds, while customer service continues to be upgraded; and
- Phase 3: Continuing rollout and benefits capture – 2008/09 onwards. In the final phase Royal Mail will continue to rollout core operations programmes [>€], while involving its customers on an ongoing basis in product and service enhancements and engaging its workforce in best practice improvement.

Financial implications

9.43 Royal Mail's strategy is projected to generate earnings before interest and tax of £651m by 2010/11 in nominal terms¹¹⁶. Royal Mail forecasts this to be a broadly cash neutral position over the plan period after making pension deficit payments. Royal Mail states, however, that for the business to provide an attractive return to the shareholder, after funding the pension deficit and taxation, stamp prices will

¹¹⁶ RM's Strategic Plan

have to rise significantly. Royal Mail's cost projections under the integrated strategy scenario are presented in the following table:

Table 61: RM's view of costs under the integrated strategy scenario

In nominal terms	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Accounting costs						
Base line costs	6,295	6,479	6,621	6,762	6,914	7,016
Operational cost savings	(190)	(347)	(480)	(587)	(645)	(727)
[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]
FRS17 pension adjustment	227	233	238	244	250	257
Total operating costs	6,684	6,841	6,970	7,054	7,047	7,135
Cash Costs						
Total operating costs	6,748	6,836	6,966	7,050	7,044	7,132
Depreciation	(108)	(136)	(168)	(178)	(195)	(205)
Non cash pension costs	(153)	(137)	(140)	(143)	(147)	(151)
Capital expenditure	127	239	334	250	269	179
Total cash costs	6,614	6,802	6,992	6,979	6,971	6,955

Source: Royal Mail's Strategic Plan, page 55

9.44 The table below summarises key metrics under the integrated strategy scenario.

Table 62: Integrated strategy scenario key metrics

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	CAGR
Frontline FTE	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Delivered address volumes	20.8bn	21.1bn	21.6bn	21.2bn	20.9bn	20.7bn	-0.1%
Delivered volumes per FTE	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Unit cost bf exceptional & pensions (p, nominal)	30.9	31.0	30.8	31.7	32.4	33.1	1.4%
Unit cost after exceptional & pension (p, nominal)	32.1	32.4	32.3	33.3	33.7	34.5	1.4%
Unit cash costs (p, nominal)	31.2	32.2	32.4	32.9	33.4	33.6	1.1%

Source: Royal Mail's Strategic Plan, page 54. Costs stated before pension deficit and in nominal terms. The Strategic Plan appears to misstate unit costs – as the calculation is based on total inland mail costs and regulated addressed mail volumes. Adjusting the calculation to ensure consistency in scope would lower unit costs by around 5.4 pence in 2005/06. The overall trend in unit costs is then comparable after the restatement.

- 9.45 Royal Mail's investment in automation and people, which will aim to modernise the business and embed a culture of continuous improvement, is forecast to drive productivity growth (in terms of delivered volumes per FTE) averaging [>€] over the period and to reduce costs by £267m in 2010/11 compared to the Baseline.
- 9.46 The revised scenario has increasing unit cash costs of 1.1% per annum, in nominal terms. In constant prices, this is equivalent to real cash cost *decreases* of approximately 1.4% per annum, assuming an annual inflation rate of 2.5% per annum. In Section 8, we show that unit costs fall over the period due to both changes in mix and volume. We estimate the combined impact of both mix and volume equates to a fall in unit costs of around 1.4% per annum¹¹⁷. In constant volume and mix terms, therefore, Royal Mail does not appear to forecast real unit cost cash savings over the period.
- 9.47 The figures above are stated before pension deficits, which have been valued by Royal Mail's advisors at between approximately £2.5 billion (87% of the actuarial valuation of the Group pension deficit of £2.6 billion plus £0.3 billion to reflect the

¹¹⁷ Refer to Table 50. Unit costs calculated after removing wage increases. We note that whilst volumes do not change significantly over the period, there is a mix change, with significant Access volume growth

new pay deal) and £4.1 billion (87% of the FRS 17 valuation of the Group pension deficit of £4.7 billion)¹¹⁸.

High and low case scenarios

- 9.48 Postcomm’s BPQ required Royal Mail to provide a best and worst case cost forecast, with an explanation of the main assumptions made about the features of the best and worst cases compared to the central case.
- 9.49 Royal Mail’s central cost projections are based on a central volume scenario, the high cost projections on a high volume scenario and the low case cost projections on a low volume scenario. All other assumptions, such as RPI, pay rates, cost saving initiatives, remain unchanged for each cost projection.
- 9.50 The following table summarises projected Royal Mail addressed inland delivered mail volumes by scenario.

Table 63: Addressed delivered volumes for Regulated Activities in £m

Case	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	CAGR
High	19,808	20,358	21,214	21,766	22,618	22,866	22,965	23,138	2.2%
Central	19,808	20,272	20,932	21,247	21,739	21,360	20,938	20,643	0.6%
Low	19,808	20,161	20,376	20,297	20,210	18,951	18,045	17,409	-1.8%

Source: Royal Mail reference 2032

- 9.51 The following tables provide Royal Mail’s projection of costs under each scenario.

Table 64: RM’s projection of opex under different scenarios in £m

Case	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	CAGR
High	6,260	6,181	6,333	6,483	6,666	6,839	6,991	7,181	2.0%
Central	6,260	6,181	6,326	6,441	6,563	6,670	6,748	6,860	1.3%
Low	6,260	6,181	6,317	6,375	6,393	6,382	6,338	6,353	0.2%

Source: Royal Mail reference 3116a, 3117a and 3118a. Costs are stated in nominal terms before exceptional items, implementation costs and pension deficits. Costs include depreciation and exclude capital expenditure.

¹¹⁸ These figures are put forward by Royal Mail in the Strategic Plan – and do not reflect Postcomm’s estimates, as determined by Hymans Robertson.

- 9.52 Under the central case scenario Royal Mail projects that volumes will increase by 4% over the period and that total operating costs will increase by 10%. This represents an absolute unit cost increase of around 5% over the period in nominal terms. Under the high case scenario Royal Mail projects that volumes will increase by 17% in over the period and that total operating costs will increase by 15%. This represents an absolute unit cost decrease of about 2% over the period in nominal terms. Under the low case scenario Royal Mail projects that volumes will fall by 12% over the period and that total operating costs will increase by about 1%. This represents an absolute unit cost increase of about 15% over the period in nominal terms.
- 9.53 The implication of this analysis is that Royal Mail requires increasing volumes to offset decreases in total factor productivity over the period. Under any declining volume scenario, decreases in total factor productivity and a high degree of cost fixity combine to increase unit costs significantly.

10 LECG's review of the Strategic Plan

Introduction

- 10.1 This section builds on the previous section – which described at a high level the contents of Royal Mail's Strategic Plan. In this section, we set out some comments on the contents of the plan, and discuss the implications for our assessment of an efficient level of future costs.
- 10.2 Our review of the Strategic Plan is not, and should not be taken as, any form of assessment of Royal Mail's overall strategic intent. It is primarily the cost consequences of the strategy that are relevant to this report. The document is, however, an important component of Royal Mail's submissions on its forward costs and provides an overall context within which other more detailed submissions can be assessed.
- 10.3 As has been noted above, the plan describes a transformational strategy for Royal Mail's Letters business. That transformation is intended to affect not just the underlying efficiency of operations, but also the quality of interaction that the business has with its customers, and the degree of engagement of its workforce. The wider purpose of the plan is to position Royal Mail as an effective competitor in what is identified as an increasingly competitive industry.
- 10.4 Directionally, the plan appears sound. Royal Mail is under-invested relative to its leading European contemporaries, such as TPG and Deutsche Post. Our own analysis shows that:
- even the adoption of current internal best practice should yield significant benefits;
 - increasing customer focus is a general theme of all of the privatised network utilities; and
 - large-scale change management initiatives necessarily require a workforce that is prepared to engage in the change process.

Components of the plan

- 10.5 The investment components of the plan deal with streamlining operations: [>] improving and extending automated sorting of letters, flats and packets; and adding walk sequencing machines to allow a reduction in the time taken for indoor

work at delivery offices. This is a path already taken by TPG and Deutsche Post, where the results have been demonstrably positive.

Table 65: Comparative automation and productivity figures

Company	% letters automatically walk sorted	% letters walk sequenced	1,000 addressed letters per FTE
TPG	90-95	40	156
Deutsche Post	95	80	130
Royal Mail	50	-	117

Source: Royal Mail Strategic Plan; LECG Analysis

10.6 [>]

10.7 [>]

10.8 [>]

10.9 [>]

10.10 Our primary concerns, therefore, are with the overall financial consequences of the strategy as set out, and with the level of support available for many of the initiatives. These concerns are most acute in respect of the initiatives with the largest short-term investment requirements, for which in many cases the short-term benefits appear to us to be insufficient to justify the identified investment, and for which the longer-term benefits have not been either detailed or quantified.

10.11 The parts of the plan dealing with customer related issues, such as the importance of price rebalancing, as well as those dealing with the suggested need for price rises to support shareholder returns, and the impact of pension deficits, are not of direct relevance to this report. Much of rest of the plan, however, does have implications for the forward costs of the business. It is on those aspects that we have focused.

Financial consequences of the plan

10.12 The plan presents projections of profitability and some estimates of overall business value. In those terms the combined impact of the various initiatives covered in the plan, together with the price rises that are asserted to be required, is strongly positive. At the level of earnings before interest and taxes ("EBIT"), for

example, there is an aggregate improvement¹¹⁹ of some £1.4 billion over the period that the plan covers. The equivalent figure in cash flow terms is lower, at some £1.1 billion, because of the investment requirements that the plan sets out.

- 10.13 These improvements, however, are essentially driven by improved revenues - arising both from assumed price increases and from an assumed improvement in the retention of market share compared to the business-as-usual scenario. At a cost level, the combined impact of the various initiatives covered by the plan is negative. This is true both for costs expressed on a cash basis, and for costs measured in accounting terms.
- 10.14 The cost increases are visible in the tables set out in Section 9 above. Comparing costs on an accounting basis:

Table 66: Strategic Plan accounting cost projections

£m in nominal terms	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Business-as-usual total operating costs	6,674	6,831	6,934	7,006	7,074	7,083
Strategic Plan total operating costs	6,683	6,841	6,970	7,054	7,048	7,137

Source: Royal Mail's Strategic Plan, pages 18, 55. Notes: Costs stated before pension deficit.

- 10.15 The relationship is similar when looked at in terms of cash costs over the period – ignoring accounting costs such as depreciation and some elements of pensions, but including capital expenditure in full in the year in which it is incurred.

Table 67: Strategic Plan cash cost projections

£m in nominal terms	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Business-as-usual total cash costs	6,605	6,692	6,818	6,860	6,926	6,932
Strategic Plan total cash costs	6,493	6,802	6,992	6,979	6,972	6,957

Source: Royal Mail's Strategic Plan, pages 18, 55. Notes: Costs stated before pension deficit.

- 10.16 Part of the reason for the higher costs under the scenario laid out in the Strategic Plan is that volumes are higher than is the case in the business-as-usual scenario. Royal Mail assumes that the combined effect of the various initiatives identified will be to constrain market share losses that would otherwise occur.

¹¹⁹ The improvement is measured relative to the financial projections set out under the business-as-usual scenario

Looked at in unit cost terms the Strategic Plan delivers cumulative benefits from 2009/10 onwards.

Table 68: Strategic Plan unit cash cost projections

Pence – in nominal terms	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Business-as-usual unit cash costs	31.9	32.0	32.0	33.0	34.6	35.2
Strategic Plan unit cash costs	31.2	32.2	32.4	32.9	33.4	33.6

Source: Royal Mail's Strategic Plan, pages 18, 55. The Strategic Plan appears to misstate unit costs – as the calculation is based on total inland mail costs and regulated addressed mail volumes. Adjusting the calculation to ensure consistency in scope would lower unit costs by around 5.4 pence in 2005/06. The overall trend in unit costs is then comparable after the restatement.

- 10.17 The impact of those benefits, measured on a like-for-like basis, is a reduction of some £203 million (in 2004/05 prices) in operating costs in the year 2010/11. This figure is taken from Royal Mail's BPM, within which the forward impact of the various initiatives incorporated into the Strategic Plan are modelled; and is measured against the Baseline cost projections¹²⁰. The figures in the BPM are not in all cases identical to those within the Strategic Plan. As noted above, we have adopted those contained within the BPM as the later estimates.
- 10.18 That £203 million (in 2004/05 prices) impact, however, is an aggregate number, which conflates a range of disparate results from some 46 different initiatives. Those initiatives have associated investment or other one-off costs amounting to £1,665 million (in 2004/05 prices) over the five years covered by the plan. This latter amount is significantly greater than the total of some £500 million assumed under the business-as-usual scenario¹²¹.
- 10.19 Looked at in isolation, many of the initiatives are reported to generate significant benefits (in terms of reduced cost) from relatively small initial investments in either capital spending or other one-off up-front costs. For others, the relationship is the other way round: initial investments are relatively large, and identified savings are relatively small.

¹²⁰ The Baseline cost projections are similar but not identical to the figures in the business-as-usual scenario. The BPM is used by RM to model the impact of the initiatives contained within the Strategic Plan.

¹²¹ Strategic Plan

- 10.20 By way of example, one of the suggested initiatives – “Obsolescence Investment” – is the complete refurbishment of mail centre technology during the two-year period 2006/7 and 2007/8. Aggregate costs are £[>€] million, based on an assumption of £[>€]k per LSM/ CFC¹²²; £[>€]k per OCR/ MTT; and additional software related spending of £[>€] million. Support for this initiative is extremely thin – there is no support for the required costs, no identification of benefits, and no quantification of alternative options. Royal Mail has confirmed to us formally that no further support exists¹²³.
- 10.21 While it appears likely that some amount of equipment refurbishment will be carried out on an annual basis, we have seen nothing to suggest that there is an immediate need for a complete refurbishment. Even if there were such a need, we would expect to see a quantified business case put forward for spending of this magnitude. Absent such a case, and in the context of a regulatory price determination, we cannot incorporate the associated costs into our own projections.
- 10.22 Conversely, and also by way of example, another of the initiatives – “Delivery Best Practice” – is targeted at raising productivity in less efficient delivery offices by spreading best practices identified from the more efficient offices. We concur, for reasons discussed later in this report¹²⁴, that significant savings should be available from best practice initiatives at the delivery office level. Royal Mail’s own figures suggest that annual savings of £62 million should be available by 2010/2011, with required one-off costs of only £3.5 million in 2005/06.
- 10.23 Looked at across the total of 46 operational initiatives contained within the BPM, the financial impact can be disaggregated as follows:

¹²² Letter Sorting Machine or Culler Facer Cancellers; OCR’s are Optical Character Recognition systems, and an MTT is a type of OCR. Fuller descriptions are provided in Section 5

¹²³ Email from Royal Mail to Postcomm dated 8 February 2005


¹²⁴ See Part D, Internal Benchmarking

Table 69: Summary of Strategic Plan operational initiatives

Number of initiatives	One-off costs	2010/11 cost savings	Comments
20	£224m	£145m	Well founded initiatives, which have a positive impact on value or are required to meet QoS targets
10	£216m	£270m	Well founded initiatives that have understated net savings
16	£1,226m	(£212m)	Poorly supported initiatives that have a significantly negative impact on value. Financial case not made
46	£1,665m	£203m	

Source: Royal Mail BPM 2.7; LECG Analysis. Table stated in 2004/05 terms, as this is consistent with the price base contained in the BPM

Implications of regulatory framework

- 10.24 Those initiatives for which the impact on costs are negative are also the initiatives that involve the largest investments. Looked at across the period covered by the forthcoming price control, the savings generated by these initiatives are significantly lower than the investment identified as required. That is so even before [].
- 10.25 The shortfall does not in itself mean that the initiatives are not worthwhile, but it does cause problems in an environment in which, as is the case at present, regulated prices are set to cover all costs incurred by the company within the period covered by the price control. In effect, current customers would be asked to cover the costs of investment for which the associated savings were distant in time, uncertain, and unquantified. The standard of proof required, in such an environment, would necessarily be very high. It is certainly not met, in our judgement, by the submissions from Royal Mail that we have seen¹²⁵.
- 10.26 We understand that Postcomm intends to give further consideration to regulating prices on the basis of a regulatory asset base. It is beyond the scope of this report to describe the mechanics of the regulatory process under this approach,

¹²⁵ Royal Mail argues that a number of the initiatives also improve the consistency of quality. This position is not support/ proved, rather it is merely stated. It is not clear whether such initiatives would lead to the "gold plating" quality of service or whether the associated volume impacts have been properly accounted for. Postcomm/ Frontier Economics' volume forecasts do not assume, implicitly, a step change in quality standards over and above those anticipated in relation too new entrants.

but in principle, it does allow investment to be considered on an *ex-post* basis, and added to the regulatory asset base if appropriate.

- 10.27 Investment built into the asset base in this way is in effect recovered through subsequent prices. The effect is to match the pricing consequences of investment to the period in which the associated benefits arise. Provided that the overall consequences of the investment are positive (i.e. over time the benefits outweigh the costs) the overall impact is a reduction in prices.
- 10.28 The practical consequence of such an approach, for the purposes of this study, is that investment that produces net cost savings only in subsequent periods need not be incorporated into cost projections. If the investment is made, and made efficiently, it can in effect be picked up in subsequent price reviews.
- 10.29 Whether prices are set as a present, however, or using a regulatory asset base approach, the higher investment initiatives identified above are insufficiently well supported to be incorporated *ex-ante* into our bottom-up cost projections. We have therefore excluded them. Under a regulatory asset base approach, this exclusion need not have any implications for whether or not Royal Mail actually makes the related investments - if they believe that the investments will be valuable, and believe that they can demonstrate that value subsequently.
- 10.30 Royal Mail would, however, need to borrow money in order to do so, rather than being able to fund the investment programme out of revenues. This is not unusual for any commercial company facing a major investment programme intended to provide benefits into the future. We have not assumed that an implied borrowing requirement would constrain Royal Mail's ability to fund investment.
- 10.31 A further consequence of excluding these initiatives is that the related savings are also excluded. Depending on the precise mechanism adopted for the roll forward of any regulatory asset base, the exclusion from our projections of savings that can be made within the price control period might, in principle, prove overly generous. There is a potential mismatch between investment costs picked up in a regulatory value and related efficiency gains within the price control period ignored for price setting purposes.

- 10.32 There is also a similar issue in respect of the one-off costs associated with the investments. These might not all be treated as capital spending for either accounting or regulatory purposes, and therefore might not all be incorporated into a subsequent regulatory value. Royal Mail has identified some £206 million of implementation and redundancy costs associated with these initiatives that would normally be treated as operating rather capital spending.
- 10.33 How these potential issues are dealt with in subsequent reviews is a matter for Postcomm. We calculate, however, that as currently projected, the cumulative savings associated with the high investment initiatives that we have excluded are larger (at £464 million) than the associated one-off costs (£206 million). If Royal Mail were to carry out the investment, therefore, and to achieve its own projections for associated one-off costs and efficiency savings, the overall financial impact would be positive.
- 10.34 Royal Mail does not as yet have a solid track record of delivering projected cost savings associated with major investment programmes (as noted in our review of the Renewal Plan in Section 6 above). In these circumstances, we regard the implied target as adequately challenging.

Our approach

- 10.35 In respect of each of the initiatives, we have, where possible, reviewed and assessed the underlying detail. That review has been carried out in conjunction with experienced industry specialists, each of whom has experience specifically relevant to the topics being addressed. The lack of detailed evidence provided by Royal Mail has meant that many of the reviews have necessarily involved the exercise of judgement. The reviews are contained within Sections 11 to 19.
- 10.36 In some cases, we have identified alternative estimates of either the costs or benefits associated with the individual initiatives. Where we have, we have aggregated these alternative estimates into a “higher case” scenario for the savings achievable by Royal Mail over the five years to 2010/11. The “lower case” scenario generally comprises Royal Mail’s own figures.
- 10.37 Because of the exclusion of the major investment initiatives from these scenarios we refer to them as “incremental change scenarios”. This title is arguably misleading, in that the initiatives that are incorporated, together constitute a significant programme of change, even if they do not require investment at above

historical levels. It will be noted from Table 69 above that the incremental change scenarios incorporate the large majority of all of the initiatives identified by Royal Mail.

- 10.38 Under the regulatory asset base approach to price setting, investment at above normal levels is more normally recovered over the future periods in which the benefits arise, rather than funded in advance. Price controls for a particular period often incorporate an allowance for “normal” capital expenditure levels, typically based on accounting charges for depreciation. We consider the appropriate level for that allowance in Section 19.
- 10.39 The two incremental change scenarios define a range for the projection of forward costs built up from the identification of specific cost saving initiatives. In combination, this range represents the results of the analysis that we refer to as bottom-up. In order to complete this analysis, we also compare the aggregate results of specific initiatives that relate to the propagation of best practice with our own estimates derived from internal benchmarking. The related analysis is described in Section 20.
- 10.40 The nature of progressive efficiency gains is that not all of the opportunities that actually exist can generally be identified at the beginning of the period covered by the analysis: companies find additional, unforeseen, ways to raise their efficiency during the period itself. This is borne out by regulated companies generally, who tend to outperform against the efficiency targets set by their regulators¹²⁶, and by Royal Mail’s own experience under the current price control, as described in Section 6 above.
- 10.41 The range of potential cost projections defined by our bottom-up analysis is therefore compared with alternative estimates derived on a top-down basis. The derivation of these estimates is described in Sections 21 to 25. The comparisons are made in Section 26, where we derive final estimates for the projection of efficient costs.

¹²⁶ See the analysis in Section 22.38

Part C: Bottom-up analysis

11 Bottom-up approach

Introduction

- 11.1 This section provides a summary of our approach to analysis on a bottom-up basis. The bottom-up approach “builds up” estimates of aggregate efficient costs by considering in detail individual cost categories, activities and projects. The term generally refers to techniques that address the efficient level of costs through expert assessment of companies’ disaggregated cost data.
- 11.2 It is standard regulatory practice to use the results from more than one technique to derive an overall range for potential efficiency gains in a price control review. In addition to the bottom-up analysis described here, regulators typically also perform a review on a top-down basis.
- 11.3 Neither of these two generic approaches (top-down and bottom-up) will by itself generate a precise picture of the scope for cost savings over the relevant period, and each requires the exercise of a degree of judgement when determining the implications for the relevant company’s expenditure. However, by approaching the efficiency assessment from a number of different directions, regulators avoid placing undue weight on any one piece of analysis. In this efficiency review, we look at a broad range of evidence and set cost allowances based on the overall picture that has emerged. This helps to minimise the extent to which our overall conclusions are subject to error.
- 11.4 Bottom-up analysis involves a detailed examination of the levels of efficiency associated with the major activities within a company¹²⁷. The purpose of this section is to explain our approach to this examination in more detail. Before explaining our approach, however, we first provide some background to the structure of Royal Mail’s costs – which will help to explain the structure of this part of the report.
- 11.5 Our final conclusions are expressed in real terms, in 2003/04 prices, and the BPM is expressed either in 2003/04 prices or in nominal terms. However, Royal Mail’s

¹²⁷ Our approach is consistent with best practice. For example, refer to the approach summarised by CEPA in its reports covering: Background to work on assessing efficiency for the 2005 Distribution Price Control Review, CEPA, September 2003 and Report to the London Underground PPP Arbiter: Approaches to benchmarking Infracore efficiency and performance, CEPA, July 2003

initiatives are expressed in 2004/05 prices, and as a result we have also stated our quantification of any figures for new or amended initiatives in these prices. As such, many of the values in Part C are stated in 2004/05 prices. Where numbers are expressed on a different basis, we clearly label this fact. In this section we convert our bottom-up conclusions back into 2003/04 prices.

Structure of costs

- 11.6 At a high level, Royal Mail's operating costs can be categorised into five sets of activities – collections, sorting, transport, delivery, and other¹²⁸. The trend of these costs is shown in the table below¹²⁹.

Table 70: RM's historical pipeline costs, 2000/01 to 2003/04

2003/04 £m	00/01	01/02	02/03	03/04	03/04 % of total
Collection	318	305	274	321	5%
Sorting	1,670	1,712	1,670	1,533	25%
Transport	434	467	456	453	7%
Delivery	2,457	2,428	2,485	2,443	40%
Other	1,293	1,323	1,313	1,345	22%
Total	6,171	6,236	6,167	6,095	100%

Source: RM 6079: Review of Royal Mail pipeline costs for 2001 to 2004, LECG analysis

- 11.7 The most significant cost category is delivery, which accounts for some 40% of the cost base. The second-largest group of activities relates to sorting, which accounts for around 25%. Transport and collection activities, although key to the operational success of the pipeline, form a relatively smaller component of Royal Mail's total costs, at 5% and 7% respectively. Overheads and product compensation account for 22% of total costs.
- 11.8 Royal Mail also breaks costs down by cost type as shown in the table below for 2003/04.

¹²⁸ "Other", for the most part, relates to overhead costs, marketing and product compensation

¹²⁹ We discuss the historical cost trends for each major pipeline activity in the relevant sections that follow

Table 71: RML 2003/04 total operating costs by cost type

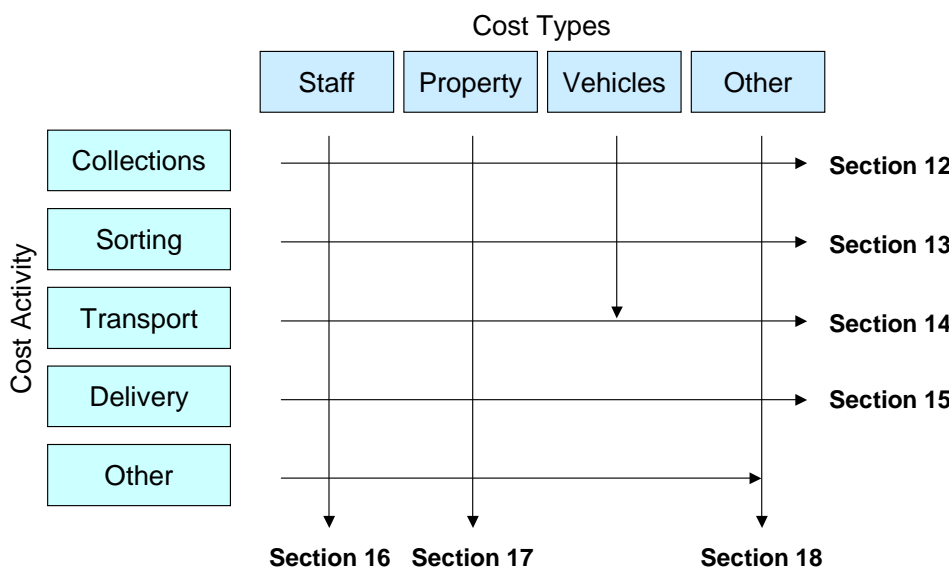
Type of Cost	Total operating costs £m	Percentage of total operating costs
Staff	3,929	65%
Accommodation	396	7%
Vehicles	425	7%
Depreciation	91	2%
Other	1,254	21%
Total	6,095	100%

Source: RM, Baseline Planning costs, RM 6003. Numbers are stated before Base Year adjustments reported in Section 7.

- 11.9 Staff costs cover both operational and managerial staff and represent some 65% of Royal Mail's total operating costs of £6,095m in 2003/04¹³⁰. Accommodation or property costs relate to rental and maintenance recharges from Property Holdings to Royal Mail. Vehicles charges relate to vehicles operated by RML directly, and network transport costs recharged to Royal Mail by the Logistics Services division. Other costs relate to overhead, marketing, finance, and costs relating to product compensation.
- 11.10 We have reviewed Royal Mail's costs on an activity basis first. In Sections 12 to 15 we review collections, sorting, transport and delivery, respectively. In Section 18 we review Royal Mail's other costs – focusing mainly on overheads, such as HR function costs, finance function costs and marketing. For reasons discussed in Section 7 we have excluded depreciation and product compensation costs from our analysis.
- 11.11 We have also reviewed two of the major costs types: staff costs in Section 16 and accommodation (i.e. property) costs in Section 17. We note that there is a high degree of overlap between the “transport” activity and the “vehicles” cost type and “other” activity and the “other” cost type – and as such, further sections to cover these areas are not required.
- 11.12 The overall structure of this part of the report is illustrated below.

¹³⁰ It is the case that postal operators are highly labour-intensive even if highly invested

Figure 8: Overview of bottom-up structure



11.13 We are clearly aware that cost activities and cost types overlap. We have been careful, in bringing together the quantification of our detailed review of Royal Mail’s activities and costs, to ensure we take account of such overlaps – to avoid double counting.

Our review of Royal Mail’s submissions

11.14 We have performed a detailed review of Royal Mail’s Strategic Plan and other supporting information. We have assessed whether Royal Mail’s efficiency assumptions are robust, internally consistent and supported. A key feature of our work has been to consider whether the initiatives proposed by Royal Mail are appropriately targeted to address the areas of greatest inefficiency.

11.15 Our work has been based on information provided to us by Royal Mail (e.g. answers to the BPQ and supplementary questions, board papers, the Strategic Plan, consultants’ reports, etc). Where data quality has been poor, or supporting analysis not been provided, we have documented this fact. An important source of information, however, is Royal Mail’s Strategic Plan.

Strategic Plan

11.16 As discussed in Sections 9 and 10, Royal Mail has proposed a far-reaching programme of strategic change for the period of the coming price control. The plan is expressed both in a 60-page Strategic Plan PowerPoint presentation, the BPM and in a set of around 50 short supporting documents. Each document

covers a proposed initiative, which we collectively refer to as “initiative support” documents¹³¹.

- 11.17 The original Strategic Plan contained 60 initiatives. Royal Mail states that 45 “blueprint” operational initiatives underpin the plan. Since the Strategic Plan Royal Mail has either ceased or incorporated into other initiatives six programmes, including Access Handshake, Delivery Handshake, Flats Automation (Phase 2), Mailsort Automation, Optimised Delivery Model and Productivity Measurement. Royal Mail has not provided any further information on these initiatives.
- 11.18 In addition to the “blueprint” initiatives there are a further 10 central strategy and HR initiatives that are represented in the BPM. A further 5 initiatives are described as follows:
- Royal Mail includes four step change adjustments to the 2004/05 costs to ensure that total costs align with current forecasts for the year. These adjustments are for modelling purposes and do not constitute Strategic Plans that Royal Mail would class as initiatives. We accept that three of these adjustments are step changes and have accepted them as stated. We have considered the related costs of one of the initiatives further (e.g. TSI business-as-usual); and
 - one further initiative is referred to as “additional depreciation” which refers to an the depreciation expense on new capital expenditure. As this report focuses on cash costs, we have ignored this initiative.
- 11.19 Royal Mail assumes a further two initiatives – even though they have not been labelled as such. The first relates to an increase in wages [>€]. We have treated this cost as a separate initiative¹³². In addition, the Strategic Plan includes [>€], which are not included in the BPM.

¹³¹ RM 5045 and 5062 to 5092

¹³² [>€]

11.20 Overall, therefore, we consider some 46 initiatives¹³³ in this section of the report. We have allocated each initiative either to a set of activities (e.g. collections, sorting, etc) or to one of the HR or Property cost types. We have further split HR-related initiatives into pay-related and non-pay-related initiatives. We have done this using our best judgement – some initiatives affect more than one activity, and many affect both an activity and at least one of HR or Property. Part C shows in detail how we have made these distinctions.

11.21 The table below summarises the impact of these initiatives at a high level.

Table 72: RM's proposed initiatives in 2004/05 prices and £m

Initiative	Number of initiatives	One-off costs 2006 to 2011*	Opex impact 2010/11
Collections	9	36	37
Sorting	16	965	318
Transport	2	27	3
Delivery	7	315	157
Overhead	3	87	(9)
HR (non-pay)	[>€]	[>€]	[>€]
HR (pay)	[>€]	[>€]	[>€]
Property	-	-	-
Total	46	1,665	203

Source: RM 4054, Strategic Plan and BPM. Excludes 'Additional capex not in plan' identified in document 9050. *Includes capital expenditure, implementation costs and redundancy costs.

Our review of Royal Mail's Strategic Plan

11.22 The starting point for our detailed review of Royal Mail's plans is the set of initiatives described above, which we have subjected to a systematic review. In reviewing these initiatives, our primary purpose was to assess whether Royal Mail's efficiency assumptions were robust, internally consistent and well supported by the evidence provided. Based on Royal Mail's submissions we assessed four aspects of the proposed set of initiatives.

¹³³ This has been derived as follows: Royal Mail initially proposed 60 initiatives. LECG has added one initiative representing the impact of real wage changes and a second to capture the impact of other one-off implementation costs. Of the resulting 62 initiatives, 13 have no financial impact or have been withdrawn, and three are excluded on principle (additional depreciation, compensation and TSI BAU)

- 11.23 First, we assessed whether Royal Mail had identified the appropriate scope for cost savings and improvements in efficiency across the whole of the business. We reviewed whether there were potential areas of saving that Royal Mail had not addressed, whether Royal Mail had missed opportunities for value-creating substitution of capital in place of labour, whether Royal Mail's targets were sufficiently stretching and whether the scale of efficiency savings envisaged had been appropriately quantified, taking into account existing geographic differences in cost and efficiency.
- 11.24 Second, we determined whether Royal Mail had identified and accounted for the inter-relationships between efficiency initiatives. We assessed whether Royal Mail had double-counted any of the initiatives or had failed to take full account of the linkage between initiatives and their impact on different parts of the business.
- 11.25 Third, we considered whether Royal Mail had appropriately assessed the timing and level of capital and operating costs that will be incurred in achieving projected efficiency targets. We also assessed whether Royal Mail's efficiency targets were achievable within the specified timetable and whether all of the likely barriers to implementation had been identified and appropriately addressed.
- 11.26 Fourth, we assessed whether Royal Mail was planning to implement its initiatives in a sequence that was optimal for the achievement of targets at the lowest cost and over the shortest period. Overall, we considered whether the assumptions used by Royal Mail were reasonable and justified.
- 11.27 In respect of each of the initiatives, we have where possible reviewed and assessed the underlying detail. That review has been carried out in conjunction with experienced industry specialists, each of whom has experience specifically relevant to the topics being addressed.
- 11.28 It is clear that Royal Mail operates in a union environment. The relationship between management and unions has often been adversarial, [>]. Rather than taking this into account in our treatment of each specific initiative, we have taken the approach of identifying the savings that would be available to Royal Mail before considering the unionised environment. In Section 16, we consider the impact of the union environment more explicitly.

- 11.29 In addition we have taken into account the need for Royal Mail to meet its licence and quality of service obligations. We note in our discussion of particular initiatives where these factors have been a particular consideration.
- 11.30 In Section 10 we noted that, looked at in isolation, many of the initiatives are projected to generate significant benefits (in terms of reduced cost) from relatively small initial investments in either capital spending or other one-off up-front costs. For others, the relationship is the other way round: initial investments are relatively large, and identified savings are relatively small. Although there are clearly linkages between many of the initiatives, we believe that it is not the case that the proposed strategy must be accepted on an all-or-nothing basis – there are initiatives and/ or groups of initiatives that can be excluded from the plan without damaging its overall coherence. For many of the initiatives, support is extremely thin – there is no support for the required costs, no identification of benefits, and no quantification of alternative options.
- 11.31 As a result of our findings we have adopted two scenarios. In some cases, we have identified alternative estimates of either the costs or benefits associated with the individual initiatives. Where we have, we have aggregated these alternative estimates into a higher case scenario for the savings achievable by Royal Mail over the five years to 2010/11. The lower case scenario generally comprises Royal Mail's own figures. As explained in the preceding section, we refer to these scenarios as incremental change scenarios.
- 11.32 Where initiatives have large initial investments, and identified savings are relatively small, we have excluded them from our analysis¹³⁴. Our rationale for this was explained above in Section 10 and our review is contained in Section 19.
- 11.33 It remains possible that we have rejected initiatives that would in fact be value-creating through maintaining Royal Mail's market share, rather than reducing its cost base. Royal Mail has provided no quantification of the anticipated market share or volume impact of its specific initiatives, and has provided only very vague commentary on such supposed links. We have attempted to take such potential links into account in our detailed review of initiatives, but unless and until Royal Mail provides us with a more comprehensive articulation of its view of the connection between its initiatives and its market share forecasts, we will be

¹³⁴ We have excluded initiatives that are clearly NPV negative over the period

unable to say that we have identified all such links with any degree of certainty. We understand in any case that the work carried out by Frontier on Postcomm's behalf to prepare volume projections has not included any assumption of increased customer focus on Royal Mail's part. On that basis, we conclude that any related costs are properly excluded from our own projections.

Information sources

- 11.34 The key input to our work has been the information provided to us by Royal Mail (e.g. answers to the BPQ and supplementary questions, board papers, the Strategic Plan, consultants' reports, etc). We have documented where data quality has been poor or supporting analysis not been provided.
- 11.35 To support our review of Royal Mail's plans we have undertaken a comprehensive international benchmarking exercise. The aim of this exercise has not been solely to compare international ratios or other mail metrics, as it is often hard to derive conclusions from such comparisons due to comparability issues. Rather, we have sought also to identify areas of best practice, and the range of efficiency savings that have been achieved from implementing new processes.
- 11.36 This international benchmarking exercise comprised three elements: a survey of international postal operators; in-depth case studies on selected topics as addressed by specific postal operators; and a survey of postal regulators in other countries. The identification of the issues addressed in the survey of international postal operators was based on our experience, our understanding of RML, and discussions with Postcomm. The final questionnaires are shown in Appendix 9 and Appendix 10. The survey of postal regulators yielded some useful background information, but the response rate was low and we have not relied on the information provided directly in the development of our conclusions for this efficiency review.
- 11.37 In interpreting the results of this survey, we have recognised several potential pitfalls. First, it is not always possible to obtain directly comparable information from other postal operators, particularly as terminology and methods of measuring vary widely. As a result, a comparison of methods, systems and processes is more reliable than a pure comparison of numerical indicators. Second, comparisons are further complicated by the different environments in which different postal organisations operate, such as widely differing geography, population density, degree of economic development, degree of deregulation/

competition, and other factors. However, notwithstanding these points, we believe that, if information resulting from such surveys is handled with care, useful comparisons can be made. The results of our benchmarking work are presented in Appendix 11. In addition:

- Appendix 12 provides a summary of our findings gained from attendance at the International Delivery Workshop in Rome which was held on 14-15 October 2004;
- Appendix 13 provides a summary of our findings gained from attendance at the Change Management Conference in Stockholm, which was held on 8-10 September 2003; and
- Appendix 14 provides a summary of our findings from a site visit to TPG on the 8-9 November 2004. The visit consisted of a tour of the Amsterdam Mail Centre at Sloterdijk together with a presentation on the programme that TPG has undertaken to modernise its operations, followed by a tour of the delivery office at Leiden.

11.38 The limitations of each benchmarking exercise are summarised in the relevant appendices.

11.39 We have also performed extensive functional benchmarking in relation to Royal Mail's overheads. Regulators have accepted the use of aggregate functional benchmarks to set the efficiency frontiers for overhead costs that are not specific to the business of the regulated company. Such areas include legal, administrative, finance, and HR costs, among others. The metrics used are usually aggregate performance metrics from large already-established global surveys of companies. Regulators usually obtain these benchmarks from the regulated companies themselves.

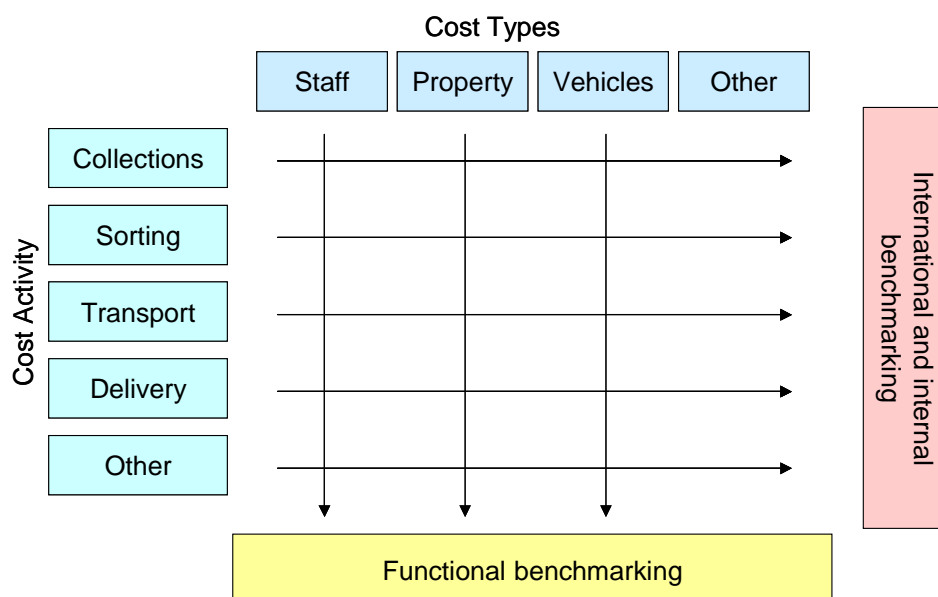
11.40 We have performed a functional benchmarking exercise on the following overhead costs: staff costs, finance, human resource function, legal, marketing, communications, strategy, and regulation activities. Our analysis is set out in Sections 16 and 18.

11.41 The two incremental change scenarios define a range for the projection of forward costs built up from the identification of specific cost saving initiatives. In combination, this range represents the results of the analysis that we refer to as bottom-up. In order to complete this analysis, we also compare the aggregate

results of specific initiatives that relate to the propagation of best practice with our own estimates derived from internal benchmarking. The related analysis is described in Section 20.

11.42 The diagram below illustrates how our international, internal and functional benchmarking relates to our review of Royal Mail's activities and costs.

Figure 9: Role of international, internal and functional benchmarking



Source: LECG

11.43 To assess whether there is scope for further efficiency within Royal Mail, beyond that identified in Royal Mail's Strategic Plan, we used a wide range of sources in addition to those described above. We identified a range of initiatives/ processes based on, among others:

- the work performed by WS Atkins for the current price control (i.e. initiatives identified but not implemented by Royal Mail);
- studies undertaken internally by Royal Mail, and its consultants, but which have not been implemented;
- the NERA Report;
- the ADL Report; and
- the combined expertise of Postcomm, Sirius Solutions and LECG.

Conclusions

- 11.44 We have, in this part of our efficiency review, performed a detailed assessment of Royal Mail's plans for RML over the period of the coming price control. We have found that, although many of Royal Mail's proposed initiatives appear sensible and appropriately quantified, there are others that are under-supported, appear value-destructive, or for which Royal Mail's quantification appears pessimistic.
- 11.45 For our lower case quantification of the savings available to Royal Mail, we have attempted to be particularly conservative in identifying additional savings that may be available. Our findings have either come directly from Royal Mail, or have been calculated by us using conservative assumptions. We believe that this represents the minimum that Royal Mail should be able to achieve over the period of the coming price control. We saw in Section 8 that the Baseline projection, using Frontier Economics' volumes, is equivalent to an annual decline in real unit operating costs of 1.4% a year due to volume and mix effects. The lower case savings give rise to additional efficiencies equivalent to mix- and volume-adjusted unit operating cost savings of 1.2% a year. The table below summarises our lower case savings by activity.

Table 73: RML's cost savings by activity – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Collections	4	23	33	35	35	37	163
Sorting	10	50	161	218	234	247	910
Transport	3	7	7	7	7	7	33
Delivery	7	34	57	70	78	89	329
Overhead	12	23	35	47	58	70	233
Property*	6	17	20	21	23	23	105
HR (non-pay)	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
HR (pay)	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Initiative impact	(55)	23	173	252	337	377	1,162
Additional capex**	(157)	(101)	(154)	(172)	(173)	(175)	(775)
Property disposal	9	5	2	0	0	0	7
Total cost impact	(202)	(72)	21	80	164	202	394

Note: Positive figures represent savings. Negative figures represent costs. *Excludes property disposal proceeds. **Not tied to specific initiatives. 2005/06 figure includes capex relating to projects proposed by Royal Mail that we exclude from our bottom-up review in 2006/07 and after.

11.46 The table below summarises our lower case savings by cost category.

Table 74: RML savings by cost category – LECG lower case

2004/05 prices £m	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	Total 06-11
Opex	53	192	270	323	358	395	1,537
Implementation	(50)	(79)	(60)	(53)	(3)	(2)	(197)
Capex*	(215)	(191)	(191)	(191)	(191)	(191)	(953)
Property proceeds	9	5	2	0	0	0	7
Total	(202)	(72)	21	80	164	202	394

Note: Positive figures represent savings. Negative figures represent costs. *2005/06 figure includes capex relating to projects proposed by Royal Mail that we exclude from our bottom-up review in 2006/07 and after.

11.47 Converting to 2003/04 prices, the equivalent figures are shown in the table below.

Table 75: RML savings by cost category – LECG lower case

2003/04 prices £m	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	Total 06-11
Opex	51	186	262	314	347	383	1,492
Implementation	(48)	(77)	(58)	(51)	(3)	(2)	(192)
Capex*	(208)	(185)	(185)	(185)	(185)	(185)	(925)
Property proceeds	9	5	2	0	0	0	7
Total	(197)	(70)	20	78	159	196	383

Note: Positive figures represent savings. Negative figures represent costs. Operating costs and capital expenditure costs are slightly different from those reported in Postcomm's Initial Proposals. Due to the capitalisation of assets under £2,500, Postcomm reports slightly higher capital expenditure figures (i.e. by £3.6m) and correspondingly lower operating expenditure. *2005/06 figure includes capex relating to projects proposed by Royal Mail that we exclude from our bottom-up review in 2006/07 and after.

11.48 By contrast, in developing our higher case we took a slightly less cautious, but still conservative, approach to assessing the efficiencies available to Royal Mail over the coming price control. Our higher case savings give rise to additional efficiencies equivalent to mix- and volume-adjusted unit operating cost savings of 2.6% a year.

Table 76: RML's cost savings by activity – LECG higher case

2004/05 prices £m	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	Total 06-11
Collections	4	25	37	41	43	47	193
Sorting	29	96	238	323	349	372	1,379
Transport	3	14	17	18	18	18	86
Delivery	7	35	68	145	225	314	787
Overhead	33	65	98	131	163	196	653
Property*	6	17	20	21	23	23	105
HR (non-pay)	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
HR (pay)	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Initiative impact	(21)	71	227	370	614	715	1,997
Additional capex**	(92)	(101)	(154)	(172)	(173)	(175)	(775)
Property disposal	9	5	2	0	0	0	7
Total cost impact	(103)	(24)	75	198	440	540	1,229

Note: Positive figures represent savings. Negative figures represent costs. * Excluding property disposals. ** Not tied to specific initiatives. 2005/06 figure includes capex relating to projects proposed by Royal Mail that we exclude from our bottom-up review in 2006/07 and after.

11.49 The table below summarises our higher case savings by cost category.

Table 77: RML savings by cost category – LECG higher case

2004/05 prices £m	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	Total 06-11
Opex	83	257	360	491	674	782	2,562
Implementation	(46)	(95)	(96)	(102)	(43)	(51)	(388)
Capex	(215)	(191)	(191)	(191)	(191)	(191)	(953)
Property proceeds	9	5	2	0	0	0	7
Total	(169)	(24)	75	198	440	540	1,229

Note: Positive figures represent savings. Negative figures represent costs. *2005/06 figure includes capex relating to projects proposed by Royal Mail that we exclude from our bottom-up review in 2006/07 and after.

11.50 Converting this to 2003/04 prices, the equivalent figures for our higher case are shown below.

Table 78: RML savings by cost category – LECG higher case

2003/04 prices £m	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	Total 06-11
Opex	80	249	349	476	654	759	2,488
Implementation	(44)	(93)	(93)	(99)	(42)	(50)	(376)
Capex*	(208)	(185)	(185)	(185)	(185)	(185)	(925)
Property proceeds	9	5	2	0	0	0	7
Total	(164)	(23)	73	192	427	524	1,194

Note: Positive figures represent savings. Negative figures represent costs. *2005/06 figure includes capex relating to projects proposed by Royal Mail that we exclude from our bottom-up review in 2006/07 and after.

11.51 We do not believe that these figures represent a ceiling to what Royal Mail should be able to achieve over the coming price control, for three reasons:

- the figures have been calculated on a conservative basis;
- Royal Mail is likely to be able to benefit from further, currently unknown, efficiency savings that will emerge over the course of the coming price control; and
- as noted in Section 22, regulated companies have typically been able significantly to outperform the efficiency paths identified by regulators in reviews such as this one, and we see no reason why this should not apply to Royal Mail for the period of the coming price control.

11.52 The figures translate into an annual average productivity factor of 1.2% for our lower case and 2.6% for our higher case, over the period 2006/07 to 2010/11 (both numbers are stated in constant volume terms). We should stress that these figures represent the outcome of our bottom-up review only. In Section 26, we consider these figures in conjunction with our top-down findings, which are presented in Part E.

11.53 In our conclusions in Sections 1 and 26, we pick up the sum of the capital expenditure net of property proceeds. In the table below we show how we derive the figures we use in these sections.

Table 79: RML capital expenditure net of property proceeds – LECG lower and higher cases

2003/04 prices £m	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	Total 06-11
Capex	(208)	(185)	(185)	(185)	(185)	(185)	(925)
Property proceeds	9	5	2	0	0	0	7
Total	(200)	(179)	(183)	(185)	(185)	(185)	(917)

Note: Positive figures represent savings. Negative figures represent costs.

12 Review of collection costs

Introduction

- 12.1 This section provides a bottom-up review of Royal Mail's collection and consolidation activities. We first provide an overview of the collections and consolidation stage of the pipeline, and summarise historical cost trends. For background purposes, we then summarise the collection-related efficiency opportunities identified in the WS Atkins Report. We then summarise the initiatives that Royal Mail has undertaken to improve collections productivity during the current price control.
- 12.2 The remaining part of the section contains our review of Royal Mail's submission on the costs of collection and consolidation over the forthcoming price control period. We then identify and comment on any additional opportunities that have not been included in the Strategic Plan, but, potentially, could be implemented by Royal Mail over the forthcoming price control. At the end of the section, we summarise our conclusions in relation to the collections and consolidation stage of the pipeline.
- 12.3 This section has been prepared with and under the direction of Peter Portnoi. Mr Portnoi left Royal Mail in 2003 and has 35 years of postal experience. During his time at Royal Mail, he held a number of senior positions, including time spent as a Delivery Area Manager, National Delivery Office Programme Manager, Asset Director, Head of Access & Delivery Deployment, and Head of Access. As Head of Access, Mr Portnoi was responsible for developing and implementing the national policy on all access-related issues including collections¹³⁵.

Overview of collection operations

- 12.4 Mail is collected from post boxes, post offices and mailers' premises and taken to the relevant mail centre or RDC. In the UK, mailers or their agents are able to take mail in bulk to outward sorting offices (potentially via consolidators) and to inward sorting offices. This is referred to as downstream access. In some cases, collected mail is consolidated at key locations before being transferred into the mail centres for processing.

¹³⁵ 'Access' in this context refers to inserting mail into the mail pipeline, though collections, as well as through upstream and downstream access arrangements

- 12.5 Mail channelled through a mail centre is processed differently to that channelled through an RDC. Mail centre collections are gathered from post boxes, small businesses and the Post Office®. Mail is delivered by vehicle to the local mail centre. Where collections are made from distant locations, they may be consolidated into larger vehicles at Royal Mail facilities, e.g. large delivery offices, before being delivered on to the relevant mail centre.
- 12.6 For large business customers, bulk mail is collected for entry to the network via RDCs. The operational management of the RDC collection activity transferred to Logistic Services during 2001.

Historic costs

- 12.7 Collection and consolidation costs totalled £321m in 2003/04 – which is equivalent to approximately 5% of total pipeline costs of £6,095m. Some 96% of collection spend is co-ordinated by mail centres. The table below summarises recent trends in Royal Mail's collection costs for the period 2000/01 to 2003/04. An overview of each activity is provided in Appendix 15 together with a summary of activity costs by cost type.

Table 80: Historical collection cost trends

2003/04 prices £m	00/01	01/02	02/03	03/04	CAGR
MC collection	304	291	261	307	0.3%
RDC collection	14	14	13	14	0.7%
Total	318	305	274	321	0.3%

Source: RM 6079: Review of Royal Mail pipeline costs for 2001 to 2004, LECG analysis, and Postcomm volume data

- 12.8 Overall, collection costs increased by 0.3% a year in real terms between 2000/01 and 2003/04. The overall cost of collections rose sharply in 2004. We understand that Royal Mail reviewed its collection policy during this period, and the total number of collections has been reduced. However, the level of vehicle running costs assigned by Royal Mail's models to this process in 2004 has increased substantially, causing total costs to rise¹³⁶. At this stage it is unclear to us whether this increase represents a real rise in collection, or simply the product of cost allocation.

¹³⁶ RM 5027

Current price control

- 12.9 At the beginning of the 2003 price control review, Royal Mail argued that potential cost savings could be made in the collections area by reducing the number of early morning collections. Royal Mail's estimate of the potential cost savings from this initiative was £2m a year¹³⁷.
- 12.10 WS Atkins put forward a more radical approach to rationalising the number of collections from post boxes, which involved removing all pre-midday and post-6pm collections. WS Atkins was unable to identify the savings from eliminating pre-midday collections directly, but made assumptions with respect to the savings arising from eliminating collections made after 6pm. WS Atkins' estimate of the potential cost savings was £14m in 2002/03 and £72m a year thereafter¹³⁸.
- 12.11 WS Atkins acknowledged that the removal of post-6pm collections would require the implementation of some operational changes. In particular, removing post-6pm collections would require a clear definition of the latest posting time for first class mail, which currently does not exist. Nevertheless, WS Atkins believed that Royal Mail could implement this scheme within two years.
- 12.12 Royal Mail has undertaken only limited changes to collection times over the current price control, but is planning again to implement the initiative during the next price control. Royal Mail intends to complete town collections by 18.30 and to have those final collections in rural areas that currently take place after 16.00 performed by delivery staff as they pass by on their delivery routes¹³⁹. Royal Mail anticipates that savings of £12m a year will arise from these initiatives, accruing from 2006/07, of which £11m relates to the changes to arrangements in rural areas¹⁴⁰. We discuss this initiative further from paragraph **Error! Reference source not found.** below.

¹³⁷ WS Atkins Report, Table 14-6: Savings from Rationalisation of Post Box Collections, page 14-9

¹³⁸ WS Atkins Report, Table 14-6: Savings from Rationalisation of Post Box Collections, page 14-9. WS Atkins' estimate of the potential cost savings was based on the assumption that collections after 6pm contribute 30% of the cost of post-midday collections. We believe that a figure of 30% is too high, which led WS Atkins to overestimate the savings available from that initiative

¹³⁹ RM 5062-5092

¹⁴⁰ According to comments on an earlier draft provided by Royal Mail on 13 May 2005

Review of Royal Mail's submissions

- 12.13 Royal Mail states that its strategy is to modernise its network through a phased investment programme that automates the pipeline and introduces uniform best practice processes to transform the capability and efficiency of the collections activities. The financial implications year-by-year of Royal Mail's proposed collections-related initiatives are shown in the table below.

Table 81: Financial impact of proposed collections initiatives – RM

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	22	33	36	36	37	37	179
Implementation	(15)	(10)	(5)	(1)	(6)	0	(22)
Capex	(4)	(2)	(5)	(1)	(6)	0	(14)
Total	3	21	26	34	25	37	143

Source: RM 5045 and 5062-92. Positive figures represent savings. Negative figures represent costs.

- 12.14 This programme is made up of eight initiatives, as summarised below.

Table 82: Cash impact of collections-related initiatives – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Optimise collection efficiency	7	8	9	9	8	11	44
Optimise collection times	(4)	12	12	12	12	12	58
[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Collection handshake	(1)	(1)	(6)	0	0	0	(8)
Predictability	0	(2)	(2)	(1)	0	0	(4)
Information rich environment	0	(1)	(1)	(1)	(10)	0	(13)
Training collection staff	0	(2)	0	0	0	0	(2)
Total	3	21	26	34	25	37	143

Source: RM 4054, 5045 and 5062-92. Cash costs include operating cost savings, operating cost increases, one-off implementation costs, redundancies and capital expenditure. Totals may not appear to sum up exactly due to rounding

- 12.15 The Optimise Collection Efficiency, Optimise Collection Times and [>€] initiatives generate operating cost savings greater than £10m a year by 2010/11. In this section, we review these three initiatives first. We then discuss [>€] and

Information Rich Environment, which have cumulative one-off costs greater than £5m. We then briefly review Royal Mail's other proposed initiatives.

Optimise collection efficiency

- 12.16 Royal Mail proposes to implement a tool that will enable collection route planning. This will allow collection managers to redesign collection routes with the objective of reducing operational costs. Royal Mail also believes there is potential to review collection boundaries, and identify synergies between RDC and mail centre collections. The table below summarises Royal Mail's financial projections relating to this initiative.

Table 83: Financial impact of Optimise Collection Efficiency – RM

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	8	9	9	10	10	11	48
Implementation	0	0	0	0	(1)	0	(2)
Capex	0	0	0	0	(1)	0	(2)
Total	7	8	9	9	8	11	44

Source: RM 5045, 'Collection Efficiency'. Positive figures represent savings. Negative figures represent costs.

- 12.17 This initiative is consistent with an investment plan summary provided by Royal Mail entitled 'Collection Routing Tool – a replacement for TRANDOS'¹⁴¹. TRANDOS was a tool used by Royal Mail that became obsolete due to year 2000 software issues. This investment plan provides a consistent financial estimate to the current plan provided by Royal Mail above. Royal Mail states that the suppliers of the proposed software claim that potential savings of 5% to 10% are achievable based on similar experiences at TPG and Deutsche Post.
- 12.18 Our own international benchmarking suggests that this proposal might put Royal Mail ahead of current best practice. Both Canada Post Corporation and Belgium Post are extending their delivery route optimisation projects to cover collection routing, although neither organisation anticipates large cost reduction opportunities.

¹⁴¹ CRT Business Case, embedded in RM 6073

- 12.19 Royal Mail assumes that this initiative will target £145m of collection staff costs¹⁴². Trials of the Collection Routing Tool (“CRT”) identified cost saving opportunities of 11%, although Royal Mail has based its estimated savings above on a figure of 5.5%. Royal Mail states [>] . Royal Mail contend that there are some locations where there are insufficient routes to generate significant savings from the CRT. Royal Mail argues¹⁴⁵ that these savings include a reduction in the number of collections made to the minimum number required in the trial sites.
- 12.20 Royal Mail further assumes ongoing savings of £500k a year arising from “*continuous improvement gained by having greater knowledge of collection requirements*”. This may in part arise from information generated by the Access Bar Coding initiative that Royal Mail has in place, which will generate information on the volumes and timing of collections on a daily basis. Moreover, a further benefit of £500k arising from “RDC/ MC Collection synergy”, which Royal Mail describes as being unscoped, is also incorporated into the figures above.¹⁴⁶
- 12.21 This initiative appears value creating and we agree with Royal Mail that it should be implemented as soon as possible. We have reviewed the basis of Royal Mail’s calculation of the financial impact of this initiative and these calculations appear appropriate. We have therefore incorporated the savings identified by Royal Mail arising from this initiative into our assessment of Royal Mail’s efficient costs.

Optimise collection times

- 12.22 Royal Mail proposes to perform a national revision in collection times, to reduce the pressure on mail centres arising from current mail arrival profiles, which in turn result from the current collection schedule for rural and some town collections. Royal Mail aims to have final rural collections performed by delivery staff throughout the rural delivery round, while town collections would be completed by 18.30. As a result, the arrival profile of mail at mail centres would be smoothed, which in turn would assist mail centres in meeting their targets for the latest despatch of mail to other mail centres.

¹⁴² RM 5045

¹⁴³ RM 5045

¹⁴⁴ RM 2023a (BPM)

¹⁴⁵ Schedule dated 13 May 2005

¹⁴⁶ All assumptions from RM 5062-5092

12.23 Royal Mail also indicates [>£], but would also release additional non-staff savings such as fuel. Royal Mail has not yet assessed the level of these benefits. The table below summarises Royal Mail's financial projections relating to this initiative.

Table 84: Financial impact of Optimise Collection Times – RM

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	6	12	12	12	12	12	58
Implementation	(7)	0	0	0	0	0	0
Capex	(3)	0	0	0	0	0	0
Total	(4)	12	12	12	12	12	58

Source: RM 5062-92, 'Optimal collection times'. Positive figures represent savings. Negative figures represent costs.

12.24 Royal Mail does not provide any direct support for its projections, apart from noting that although changes to the collection specification would primarily reduce operational staff costs, such changes would also release additional non-staff savings such as fuel. The key assumption in Royal Mail's proposed financials is that savings of £12m a year are achievable from revising collection times, of which £11m relates to the changes in rural collection arrangements. We have been unable to verify Royal Mail's projection using other information that has been made available to us during the course of our review.

12.25 In 2002, WS Atkins put forward a more radical approach to optimising collection times, which involved removing all pre-midday and post-6pm collections. WS Atkins' estimate of the potential cost savings from this more radical rationalisation of collections was £14m in 2002/03 and £72m a year thereafter. WS Atkins arrived at the £72m a year saving by taking 30% of Royal Mail's collections-related costs that arose after midday, and assuming that these occurred after 6pm¹⁴⁷. We do not have information to check this assumption, but our postal experts believe based on their experience within Royal Mail that the available saving from such a change would be a significantly lower proportion of Royal Mail's collections costs incurred after midday than the 30% assumed by WS

¹⁴⁷ WS Atkins Report, Table 14-5: Savings from Rationalisation of Post Box Collections, page 14-9

Atkins. Royal Mail has not implemented these suggestions from AS Atkins during the current price control, although it states that these saving were “very speculative”¹⁴⁸

12.26 In order to be conservative we have not made any adjustment for WS Atkins’ more aggressive assumptions, or made an adjustment for the non-staff savings referenced by Royal Mail in its initiative write-up. We have instead incorporated Royal Mail’s assessment of the financial impact of this initiative into our figures, both for our lower case and for our higher case.

[>]

12.27 [>]

12.28 [>]

Table 85: [>]

[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]

[>]

12.29 [>]

12.30 [>]

[>]

12.31 [>]

Table 86: [>]

[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]

[>]

12.32 [>]

12.33 [>]

¹⁴⁸ RM6056

¹⁴⁹ [>]

¹⁵⁰ RM comments on LECG draft report, 13 May 2005

12.34 [>]

Collection handshake

12.35 The Collection Handshake initiative contains three operationally led initiatives that aim to make it easier for customers to use Royal Mail products. The financial implications of this initiative are shown below.

Table 87: Financial impact of Collection Handshake – RM

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Implementation	0	(1)	(3)	0	0	0	(4)
Capex	0	(1)	(3)	0	0	0	(4)
Total	(1)	(1)	(6)	0	0	0	(8)

Source: RM 5062-92, 'Collection Handshake'. Positive figures represent savings. Negative figures represent costs.

12.36 There are three elements to this initiative: enabling customers to find post box locations on the internet; providing day tablets, informing customers of collection times and when the next collection will be made, to 25k post boxes; and introducing containers for the handover and presentation of mail from customers.

12.37 Given that (a) this initiative is poorly explained, (b) that Royal Mail's proposed costs relating to this initiative are small, and (c) we believe the benefits outweigh the proposed costs, but have no basis for quantifying these benefits, we have excluded this initiative from our assessment of Royal Mail's efficient benefits and costs. We do believe that there would be benefits arising from this investment, particularly from introducing containers for the handover and presentation of mail from customers discussed further below). Royal Mail will have funds available to make this investment over the period of the coming price control through the non-specific capital allowance we discuss in Section 19 below. Moreover, if Royal Mail were to provide support for these benefits we may include the initiative costs and benefits in our figures in our final report.

¹⁵¹ As described in Condition 3 of Royal Mail's license

¹⁵² [>]

Predictability and information rich environment

12.38 The Predictability initiative seeks to ensure that Royal Mail collections meet or beat the product specification given to customers by Royal Mail, through ongoing measurement and management using a national network reporting system.

12.39 The Information Rich Environment initiative aims to build on this information to generate management information through an Access Barcoding project and the integration of collections IT systems with Sales and Finance systems. The combined anticipated financial impact of these two initiatives is shown in the table below.

Table 88: Financial impact of Predictability and Information Rich Environment – RM

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Implementation	0	(1)	(2)	(1)	(5)	0	(8)
Capex	0	(1)	(2)	(1)	(5)	0	(8)
Total	(1)	(2)	(3)	(2)	(10)	0	(17)

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

12.40 Royal Mail is currently investing £5m in Access Barcoding technology. The Predictability initiative aims to enable operational managers to drive collections performance to specification, investing £4.2m in capital expenditure and implementation costs over the price control period. The programme will make collection performance data available on-line, to allow operational managers to drive performance to specification. Royal Mail states that “enforcing the customer specification will help to ensure that both Royal Mail and customers work within the collection specification.”¹⁵³ Despite this claim, Royal Mail has not quantified a benefit arising from this initiative.

12.41 The Information Rich Environment initiative has a number of strands including integrating existing collection systems, the deployment of an “IT enabled collector” and “container control systems to and from customers”¹⁵⁴. Royal Mail anticipates that the Information Rich Environment project will cost around £12m during the price control period, in terms of both one-off capital expenditure and other one-off

¹⁵³ RM 5062-92

¹⁵⁴ RM 5062-92

- expenses. Royal Mail has not identified any benefits relating to this initiative, or an explanation as to why the major expenditure is a £5m outgoing in 2009/10 and not before.
- 12.42 Royal Mail has not articulated the benefits of either of these two projects, nor has it provided any further information that would allow us to calculate the associated savings relating to these initiatives. Both initiatives are significantly cash negative over the period.
- 12.43 Royal Mail has pointed out that part of its plans to improve its quality of service, as already communicated to Postcomm, involve exploiting the information capabilities of the Access Barcoding system. We assume that in saying this Royal Mail is referring to the document “Royal Mail Quality of Service – Summary of Actions for 2005/06”, which contains an action summarised as “Full exploitation of Access Bar Coding system and use of Collections Routing tool to support remedial action planning”¹⁵⁵.
- 12.44 In principle, our assessment of Royal Mail’s efficient costs must allow Royal Mail sufficient funds to meet its quality of service targets. We must avoid, however, allowing funds that would allow Royal Mail to exceed its quality of service targets, thereby ‘gold plating’ its services and giving it a competitive advantage relative to market entrants. It is not clear at this stage whether this would lead to a gold plating of standards.
- 12.45 The ‘Predictability’ initiative put forward by Royal Mail envisages spend in 2006/07 and 2007/08. Although we have less information on this initiative than we would like, we have treated this initiative as if it were necessary for Royal Mail to meet its quality of service targets. Consequently, we have included this initiative in our initial assessment of Royal Mail’s efficient costs. This initial conclusion may need to be revisited.
- 12.46 Royal Mail does not envisage any spend as part of the ‘Information Rich Environment’ initiative before 2007/08, and envisages the major spend to be in 2009/10. Royal Mail does not appear to be relying on this initiative to meet its quality of service targets during the forthcoming price control. As such, it would be inappropriate for us to incorporate this expenditure into our assessment of

¹⁵⁵ Page 33 and Annex C, Action 19

Royal Mail's efficient costs for the purposes of this price control. We have therefore excluded this initiative from our assessment.

- 12.47 The table below shows the resulting financial impact that we have incorporated into our figures.

Table 89: Financial impact of Predictability and Information Rich Environment – LECG lower and higher cases

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Implementation	0	(1)	(1)	0	0	0	(2)
Capex	0	(1)	(1)	0	0	0	(2)
Total	0	(2)	(2)	(1)	0	0	(4)

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

Training collection staff

- 12.48 Royal Mail is proposing to spend £2m in 2006/07 to train collection staff, as shown in the table below.

Table 90: Financial impact of Training Collection Staff – RM

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Implementation	0	(2)	0	0	0	0	(2)
Total	0	(2)	0	0	0	0	(2)

Source: RM 5062-92. Positive figures represent savings. Negative figures represent costs.

- 12.49 This project involves improvements to the way new drivers of collection vehicles are trained to perform their collection duties, in readiness for the anticipated high degree of innovation and change Royal Mail is proposing for collection activity. Overall, the amounts are small and fall below our materiality threshold. In principle, however, we recognise that change can only be managed successfully if staff are appropriately trained to perform new duties. Accordingly, we have incorporated this spend into our assessment of Royal Mail's costs.
- 12.50 Royal Mail has proposed a related project, Improving Manager Competence that it has not offered further support for. The anticipated project cost is a one-off £200k, which is immaterial to our calculations but has been included in our final figures.

Opportunities for additional efficiencies

12.51 In addition to the initiatives identified by Royal Mail in its Strategic Plan, we have identified two additional opportunities that we believe could add value for Royal Mail. The sub-sections below provide an overview of each initiative considered in further detail.

Weekend operations

12.52 Royal Mail provides delivery and collection services on Saturdays, which requires the transport network to be operational on Saturdays. Royal Mail also provides a limited collection and network service on a Sunday, and runs mail centre sorting operations. As discussed earlier in this section, [>€].

12.53 Our international benchmarking indicates that few international operators provide extensive weekend operations and services. Australia Post provides no services on Saturdays and a minimal collection service on a Sunday, while Canada Post Corporation is actively trying to eliminate weekend working. Finland Post is mainly focused on newspaper delivery on the weekends, while Belgium Post performs only special collections on Saturdays and has no weekend operations on Sundays. TPG closes its collections, mail centre and transport activities for approximately 24 hours to 6pm on Sunday nights. The exceptions to this trend are the US Postal Service and Deutsche Post, which provide similar services to Royal Mail, with delivery and collections on Saturday along with some collections and outward services on Sunday.

12.54 [>€]

12.55 [>€]:

- [>€]
- [>€]
- [>€]
- [>€]

12.56 [>€]

12.57 [>€]:

¹⁵⁶ Section 4 of Postal Services Act 2000

- [>€]
 - [>€]
- 12.58 [>€]
- 12.59 [>€]
- 12.60 [>€]

Table 91: Financial impact of Weekend Operations – LECG higher case

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]

Source: RM 5062-92. Positive figures represent savings. Negative figures represent costs.

Print and deliver

- 12.61 The term “print and deliver” relates to a generic set of initiatives stretching from customer work-sharing to hybrid mail. The common factor across these generic initiatives is the elimination or reduction of the sorting and handling requirements in the postal chain through these different arrangements for access to postal services.
- 12.62 ADL identified significant opportunities in this area, indicating, “*the collection stage may be eliminated entirely as postal operators offer print and mail services (to some extent, encroaching on mailing houses’ business) and insert the physical mail into their network where it minimises their costs.*”¹⁵⁹.
- 12.63 Our international benchmarking indicates that other postal operators have successfully used two forms of print and deliver type arrangements. The first, work-sharing, involves large customers sorting mail down to the delivery sequence and entering the mail into the pipeline close to its final destination. USPS offers such a service, with a significant discount to its customers for providing mail in such a format¹⁶⁰. Australia Post offers a similar service, through

¹⁵⁷ “2006 Royal Mail Price and Service Quality Review – Initial Proposals”, Postcomm, June 2005, page 171

¹⁵⁸ Additional supplementary questions relating to Operations and HR, question 1, sent to RM on 17 January 2005

¹⁵⁹ The ADL Report, page 4

¹⁶⁰ www.usps.com

a firm called EDI Post, which undertakes to print and bar code the items for sequenced delivery. The Australian Automobile Association lodges 2.5 million items monthly using this service. Clearly, it is significantly cheaper for postal organisations to handle mail in this way than to collect bulk mailings unsorted.

- 12.64 The second innovation that postal operators have successfully used is hybrid mail, where customers provide information electronically to the postal operator, who then prints and delivers the mail. ADL indicates, “*the most significant change in collection is the elimination of this stage through concepts such as hybrid mail*”¹⁶¹.
- 12.65 In Europe, Finland Post has been one of the leading postal operators to provide electronic options for its customers. Its hybrid services, which include a range of different EDI, multi-letter, hybrid and e-services, are provided through a wholly owned subsidiary of Finland Post, Atkos Ltd. Electronic messaging has grown about 30% to 40% each year for the last three years and now accounts for a turnover of 127 million euros, which is nearly a quarter of Finland Post’s total mail revenue¹⁶². Many of these services have been developed primarily for Government and public administrative bodies, where there are many potential applications. Further detail on work sharing and hybrid services is set out in the case studies in Appendix 11.
- 12.66 We understand that Royal Mail has attempted to exploit the first opportunity, work sharing, to the extent it offers discounts to customers, most notably for its Mailsort and Walk sort products. Such work sharing may also be encouraged by the access arrangements Royal Mail is entering in to with competitors.
- 12.67 Moreover, we understand that Royal Mail has attempted in the past to exploit the opportunities arising from hybrid mail. It entered this market in 1996, developing sites in Leicester, Chesterfield and Mount Pleasant. Royal Mail has indicated that the market for these services failed to materialise. Royal Mail closed its print and deliver facilities at Mount Pleasant in January 2000, and contributed its loss-making hybrid mail facilities into a joint venture with Opus Trust. In March 2003, Royal Mail sold its stake in this joint venture to Opus Trust¹⁶³.

¹⁶¹ Ibid

¹⁶² www.posti.fi

¹⁶³ RM 6071

- 12.68 Overall, the concepts put forward in this section are consistent with Royal Mail's current strategy of "transforming the customer offer" – particularly the introduction of market-leading products and services designed around the needs of different sets of customers. The Strategic Plan indicates that there is a need to incentivise customers towards buying lower-cost postal products. This is consistent with our benchmarking, which shows that there is scope to eliminate or reduce collection and sorting costs.
- 12.69 At this stage, we have not incorporated savings related to print and deliver initiatives into our assessment of Royal Mail's efficient costs, not least for reasons of consistency, since such initiatives are not reflected in Postcomm/ Frontier's volume projections. We note, however, that the opportunity to augment efficiency in this way appears to exist.

Conclusions

- 12.70 Royal Mail has proposed some significant changes to its collection activities. We believe that several of these initiatives are sensible. However, in places we have been provided with insufficient information regarding the initiatives to evaluate properly whether the associated costs and benefits are robust.
- 12.71 The table below shows our quantification of the specific sorting-related initiatives proposed by Royal Mail under our low case scenario, showing a saving of £37m a year by 2010/11.

Table 92: Cash impact of collections initiatives – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Optimise collection efficiency	7	8	9	9	8	11	44
Optimise collection times	(4)	12	12	12	12	12	58
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Collection handshake	0	0	0	0	0	0	0
Predictability	0	(2)	(2)	(1)	0	0	(4)
Information rich environment	0	0	0	0	0	0	0
Training collection staff	0	(2)	0	0	0	0	(2)
Weekend operations	0	0	0	0	0	0	0
Print and deliver	0	0	0	0	0	0	0
Total	4	23	33	35	35	37	163

Source: LECG analysis. Red – we have excluded Royal Mail's initiative in full. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG, not considered by Royal Mail.

12.72 In aggregate, by benefit and cost type, our lower case assessment of Royal Mail's collections-related activities is shown in the table below.

Table 93: Aggregate impact of collections – LECG lower case

2004/05 £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	22	33	36	36	37	37	179
Implementation	(15)	(9)	(1)	(1)	(1)	0	(12)
Capex	(4)	(1)	(1)	(1)	(1)	0	(4)
Total	4	23	33	35	35	37	163

Note: Positive figures represent savings. Negative figures represent costs.

12.73 We believe that there may be further savings available to Royal Mail from its collections-related initiatives. The additional savings we have been able to quantify give rise to an incremental operating cost benefit of £10m by 2010/11, for a total benefit in that year of £47m, as shown in the table below.

Table 94: Cash impact of collections initiatives – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Optimise collection efficiency	7	8	9	9	8	11	44
Optimise collection times	(4)	12	12	12	12	12	58
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Collection handshake	0	0	0	0	0	0	0
Predictability	0	(2)	(2)	(1)	0	0	(4)
Information rich environment	0	0	0	0	0	0	0
Training collection staff	0	(2)	0	0	0	0	(2)
Weekend operations	0	2	4	6	8	10	30
Print and deliver	0	0	0	0	0	0	0
Total	4	25	37	41	43	47	193

Source: LECG analysis. Red – we have excluded Royal Mail's initiative in full. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG, not considered by Royal Mail.

12.74 The aggregate impact of these additional savings is shown in the table below.

Table 95: Aggregate impact of collections – LECG higher case

2004/05 £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	22	35	40	42	45	47	209
Implementation	(15)	(9)	(1)	(1)	(1)	0	(12)
Capex	(4)	(1)	(1)	(1)	(1)	0	(4)
Total	4	25	37	41	43	47	193

Note: Positive figures represent savings. Negative figures represent costs.

12.75 We believe that the above higher case quantification is conservative. We have not included an allowance for a number of additional potential savings areas, including:

- savings in fuel and other non-staff costs arising from reducing the number of collections per collection point, related to the Optimise Collection Times initiative;

- [>]; and
- the introduction of the services described under the section 'Print and Deliver'.

13 Review of sorting costs

Introduction

- 13.1 This section reviews Royal Mail's sorting activities. We first provide an overview of the sorting stage of the pipeline and summarise historical cost trends. That is followed by a high-level summary of the sorting-related efficiency opportunities identified and implemented during the current price control. Next we provide a review of Royal Mail's submissions in relation to sorting initiatives. Finally, we summarise our conclusions in relation to the sorting stage of the pipeline.
- 13.2 This section has been prepared with and under the direction of Ian Bethel. Mr. Bethel's career at Royal Mail spanned 35 years. During this time he held a number of senior positions including Mail Centre Manager at Chester, Glasgow, Manchester and Preston, Divisional Operations Director, and Territory Head of Performance.

Overview of sorting operations

- 13.3 Sorting activities take place across a nation-wide network of 70 mail centres (including the Heathrow Worldwide Distribution Centre) and 7 RDCs¹⁶⁴. RDCs handle pre-sorted mail from bulk mailers, sending it on to the relevant mail centre or delivery office as appropriate. There are two main elements to mail centre sorting, which are referred to as outward processing and inward processing. Both elements are defined below:
- outward processing begins when mail arrives from Royal Mail's collections activities, or is presented to a mail centre by a third party taking advantage of Royal Mail's downstream access arrangements. Local mail¹⁶⁵ is identified for inclusion in the inward processing operation, while non-local mail is sorted to the level of individual mail centres/ very large delivery offices before being transported across the National Transport Network; and
 - inward processing involves sorting mail to the level of individual delivery offices and/ or delivery office sections. Some mail is additionally sorted to the level of individual walks and/ or selected large business recipients. Mail

¹⁶⁴ RM comments on draft report, 13 May 2005, and 3094a

¹⁶⁵ Local mail is mail with addresses served by the relevant mail centre, so, unlike non-local mail, does not need to be transported to a different mail centre for inward processing

is then despatched to the relevant delivery offices, where any mail that is not already walk sorted is sorted to that level.

13.4 The main tasks involved in mail centre processing are:

- *culling* mail into different streams – letters, flats and packets;
- *facing* mail so that it is all facing the same direction;
- *class segregating* mail, into 1st class and 2nd class;
- *cancelling* the stamp, so that it cannot be reused; and
- *sorting* mail to various levels of specificity – for example, on inbound some mail is sorted to the level of delivery office, while some mail is further sorted to the level of individual postman’s walks and large recipients.

13.5 In addition, staff at mail centres perform revenue protection and special delivery activities and despatch mail onto the transport network.

13.6 Mail centres are supported by remote Manual Data Entry Centres (“MDECs”). Operatives at the MDECs review digital images of mail items that cannot be processed by OCR equipment and then instruct the sorting equipment at the relevant mail centre how to process such items. The system supporting this activity is referred to as the Address Interpretation (“AI”) system.

13.7 Royal Mail also uses several supporting systems in its mail centres, in addition to the AI system that supports remote reading of hard-to-read mail. These supporting systems include a range of readers that support automated machinery, known as ‘GLIMP/ Scanner systems’; Domino, which prints barcodes on mail pieces being automatically processed; NEIDS, a management information system relating to automated equipment; and CRAMP, the ‘Computerised Routing for Automated Systems’ system¹⁶⁶.

13.8 The international mail pipeline also flows through the mail centre network. Currently, mail centres separate mail for international addresses from mail for UK addresses. A limited level of sorting takes place before mail is despatched to a designated outward Office of Exchange (“OE”). The outward OE sorts all of the mail from its catchment area to a wide range of worldwide destinations. In

¹⁶⁶ See document titled ‘Equipment Obsolescence’ in RM 5045. Equipment descriptions provided by our postal experts

2003/04, there were five OEs. The OEs are being closed down over time, and Royal Mail is transferring the work to the new HWDC, set up in Langley as part of the WAND project¹⁶⁷.

- 13.9 Sorting activities also take place within delivery offices. Some, but not all, mail arriving at a typical delivery office will have been walk sorted. Flats and packets will not have been walk sorted. The first task in a delivery office involves walk sorting the mail and then sequencing it ready for delivery. Increasing the proportion of mail that is walk sorted in a mail centre does, other things being equal, increase costs in that mail centre, but typically leads to a more-than-compensating decrease in workload at the relevant delivery office¹⁶⁸.
- 13.10 Royal Mail has an estate of 69 mail centres, plus the Heathrow Worldwide Distribution Centre, built between 1910 and 2002. The oldest are Shrewsbury (1910), London West (1910), and London Central (1930). Around 21 mail centres were constructed prior to 1980, and another 14 before 1990. The 1990s saw the most extensive programme of mail centre construction, with 31 new mail centres in the decade. The most recent new builds are Greenford (2001) and Jubilee (2002). There are eight mail centres built between 1910 and 1974 that operate on more than one floor. As a result of this spread of building dates, the operational design and layout of mail centres is not consistent, with about half of mail centres built before the roll-out of the current range of automated processing equipment in the 1990s.
- 13.11 Royal Mail uses a range of automated sorting equipment in its mail centres to enable the mechanical processing of mail. Equipment is supported by a range of software and management systems. The number of machines used currently by Royal Mail are summarised in the table below.

¹⁶⁷ RM 6061

¹⁶⁸ Royal Mail 3094a, page 12, for example, indicates that inward processing is more than three times more costly to do manually than by machine, while outward processing is over five times more costly when done manually

Table 96: RM's automation hardware

Name	Number	Description
Culler Facer Canceller (CFC)	118	Segregates letters and packets, first and second-class mail, and orientates mail so it can be automatically read and sorted. The canceller cancels the stamp by placing an impression over it
V3 Optical Character Recognition (OCR)	28	Stamps a barcode on readable mail pieces, which LSMs can interpret as they automatically sort mail
Machine de Tri a Tasseurs (MTT)	86	A later version of the OCR
Letter Sorting Machine (LSM)	278	Sorts mail to the destination mail centre on the outbound sort, and to either the delivery office, the delivery office section or the postman's walk on the inbound sort
Integrated Mail Processor (IMP)	101	Combined CFC, OCR and LSM
Integrated Mail Processor ex CFC (IMPex)	25	Combined OCR and LSM

Source: Royal Mail response to PCR 3069 – mail centre variables

Historic costs

- 13.12 The table below provides a summary of recent trends in Royal Mail's sorting costs for the period 2000/01 to 2003/04. Royal Mail's financial systems identify nine major sorting activities. An overview of each activity is provided in Appendix 15 together with a summary of activity costs by cost type.

Table 97: Historical sorting cost trends

In 2003/04 prices	00/01 £m	01/02 £m	02/03 £m	03/04 £m	CAGR
MC outward mechanical	170	203	249	187	3.3%
MC outward manual	361	431	408	386	2.3%
MC inward mechanical	78	73	59	91	5.1%
MC inward manual	221	261	260	214	-1.1%
RDC outward	64	63	59	65	0.7%
RDC inward	29	29	27	30	0.7%
MC shared (IW &OW)	80	1	14	27	-30.2%
Outward foreign	401	386	322	320	-7.2%
Total	1,404	1,446	1,399	1,320	-2.0%

Source: RM 6079: Review of Royal Mail pipeline costs for 2001 to 2004, LECG analysis, and Postcomm volume data

13.13 Royal Mail has restated historical costs to allow a comparison of activity costs on a relatively consistent basis. Overall, total sorting costs have fallen by around 2.0% a year in real terms. These average cost movements mask some significant changes in the sorting function since 2000/01, described in the following paragraphs.

- outward foreign sorting costs have fallen dramatically, as a result of the WAND initiative, the benefits of which began to come on stream in 2002/03;
- mail centre outward mechanical costs peaked in 2002/03 when Royal Mail introduced the AI project;
- there was a further marked decline in mail centre outward mechanical costs in 2004, caused by the deployment of Simplified Sorting (SISO), which transferred work from outward sorting to inward sorting. The impact of this is estimated to be in the region of £30m;
- mail centre inward mechanical costs increased by 57% in 2004, due to the transfer of work from the outward mail centre as part of the SISO project. In addition, there has been an initiative to encourage customers to use the MS120 and MS700 mechanised mail products rather than MS1400, which has the effect of reducing manual sorting in delivery offices while increasing machine sorting in mail centres. This initiative is also reflected in the reduction in inward manual costs; and

- RDC costs were previously consolidated into a single activity. To obtain an historical cost trend, we have assumed that “RDC outward” and “RDC inward” costs have formed a constant proportion of total RDC costs – at 34% and 16% respectively. Clearly, this is a simplifying assumption. Overall, however, RDC outward and inward costs have been relatively flat over this period.

Current price control

13.14 WS Atkins incorporated the following sorting-related initiatives into its assessment of Royal Mail's efficient costs over the current price control:

- the introduction of 46 flat sorting machines (twice the number Royal Mail was proposing at the time), which would allow mechanised sorting of over 90% of flats. WS Atkins estimated the net operational cost savings at £68m a year by 2006/07¹⁶⁹;
- potential “upstream” cost savings from other initiatives such as relaxing the delivery timeframe and introducing AI technology. The estimated cost saving was £19m a year by 2005/06¹⁷⁰;
- a capital expenditure programme, relating to automated packets sorting, with a capital expenditure spend over the current price control of £64m. Royal Mail described this programme as ‘more speculative’ than some of the other investment it was proposing¹⁷¹; and
- a capital expenditure programme relating to walk sequencing, with no defined benefits over the current price control period. Royal Mail described this programme as ‘more speculative’ than some of the other investment it was proposing¹⁷².

13.15 The current price control also included an allowance for capital expenditure relating to flat and packet sorting, and an operating cost benefit from the installation of IMP equipment, the automated flats sorting initiative, and upstream efficiency opportunities¹⁷³.

¹⁶⁹ WS Atkins Report, paragraph 14.19 and following

¹⁷⁰ WS Atkins Report, paragraph 14.29 and following

¹⁷¹ WS Atkins Report, table 15.4

¹⁷² WS Atkins Report, table 15.4

¹⁷³ WS Atkins Report pages 15-6, 15-8 and 15-9

- 13.16 We understand that Royal Mail currently operates eight flats sorting machines – six in its mail centres and two at the HWDC – plus one packet sorting machine at the WAND centre. Royal Mail performs no automated walk sequencing. The related initiatives described above do not appear to have been implemented. As the following section makes clear, Royal Mail is again proposing to implement similar initiatives during the forthcoming price control.
- 13.17 The main element of Royal Mail's Renewal Plan affecting sorting activities was the Mail Centre Review. Implementation was anticipated to begin in 2004/05, with full implementation by March 2005. Royal Mail anticipates that the first full year of savings from the Mail Centre Review will be 2005/06¹⁷⁴. The size of savings to be achieved were staff cost reductions of 10%, although mail centres that were already high performers at the start of the review had their target staff cost saving reduced to 5%.

Review of Royal Mail's submissions

- 13.18 Royal Mail's strategy is to modernise its network through a phased investment programme that automates the pipeline and introduces uniform best practice processes to transform the capability and efficiency of the collections, sortation and delivery operations.
- 13.19 Under this programme, Royal Mail identifies a number of initiatives that will modernise sorting activities, following three core themes: 1) ensure uniform operating procedures and best practices; 2) simplify the network; and 3) move towards full automation and materials handling. A summary of each theme is provided below.

Uniform operating procedures

- 13.20 Royal Mail recognises that its current operating procedures vary by locality and sometimes by season, with a resulting impact on performance. It does not have an environment of continuous improvement and has not introduced lean manufacturing or production control techniques. Frontline employees do not have clearly defined job tasks and there is a lack of consistent or best practice processes to guide mail centre management. In addition, Royal Mail says of the

¹⁷⁴ PCR 5011, Appendix I, page 1

current situation: “*Collections operation not seen and managed as a critical enabler for quality and sorting efficiency*”¹⁷⁵.

- 13.21 The introduction of uniform operating procedures will ensure that the pipeline is under greater management control, enabling consistent delivery of dependable mail services, improved service nationwide against the next day specification and a shortened “tail” for all mail delivered after the next day.

Simplified network

- 13.22 Royal Mail suggests that its mail centre network is too diverse and complicated, with 70 mail centres (including the Heathrow Worldwide Distribution Centre) and 7 RDCs of varying size and layout. The current mail centre network is stretched – and Royal Mail finds it difficult to meet quality time windows. Royal Mail says quality is compromised by volume surges at peak periods. Historically, changes have been made to one part of the network without adequate consideration of the impact on the rest of the pipeline.

- 13.23 [>]. [*We have excised our original text here at Royal Mail’s request. Royal Mail has suggested alternative wording, as follows: “The object of this initiative is improving quality and driving down costs by having the simplest possible network that runs standard operating procedures throughout.”*] The end state network will be designed to achieve consistent quality performance with capacity to meet surges in volume during peak periods. Operations will be enhanced to ensure that the pipeline is flexible enough to accommodate future pressures.

Full automation and materials handling

- 13.24 Royal Mail indicates that it has an under-invested pipeline and that it is significantly behind best practice postal benchmarks, in terms of the deployment of the latest automation techniques. Further, it notes that there is heavy reliance on manpower to undertake bag opening, tipping and conveyance tasks resulting in low productivity and [>].

- 13.25 The purpose of this initiative is to develop a best-in-class automated pipeline. Royal Mail plans to overhaul the materials handling environment to industry best practice standards, with bags eradicated from mail centres and distribution

¹⁷⁵ Supplementary Paper to the Board on Implementation, 30 November 2004, page 9

networks. Royal Mail plans to create a safer working environment with controlled workflow and reduced mail piece damage.

Overall impact

- 13.26 The Strategic Plan envisages a significant investment in the mail centre network and sorting equipment, together with proposals to drive operating efficiencies through moving to a variety of best practices. The table below summarises the sorting-related initiatives contained in the plan, together with their associated financial effects.

Table 98: Cash impact of sorting-related initiatives – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Mail centre network and functionality	(3)	(4)	(93)	(120)	(66)	(55)	(338)
Obsolescence investment	(31)	(86)	(114)	(4)	(32)	(3)	(238)
3D automation	0	(10)	38	41	20	21	111
Materials handling & related initiatives	(5)	(1)	7	10	13	16	46
Area efficiency	50	50	50	50	50	50	250
Customer handshake intelligent mail	(1)	11	25	36	38	39	149
RFID Phases 1 & 2	(19)	(23)	(3)	(3)	(3)	(3)	(33)
Automation utilisation	(11)	7	32	69	81	91	280
Production control	(6)	27	40	39	39	39	186
Other*	1	1	1	(2)	(5)	(8)	(15)
Total	(24)	(28)	(15)	117	136	188	398

Source: RM 4054, 5045 and 5062-92. *Combining RDC and Mail Centre Collections, and New Distribution Network.

- 13.27 The aggregate impact of these changes by cost category is shown in the table below.

Table 99: Royal Mail's proposed sorting-related initiatives

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	88	175	247	305	317	318	1,363
Implementation	(24)	(19)	(22)	(28)	(15)	(26)	(110)
Capex	(88)	(183)	(241)	(160)	(167)	(104)	(856)
Total	(24)	(28)	(15)	117	136	188	398

Source: RM 5045 and 5062-5092; Capital expenditure information from RM 4054

13.28 Royal Mail's stated objective is to modernise its network. The modernisation programme is estimated to require capital expenditure of £856m, associated implementation costs of £110m, in its mail centres and sorting operations between 2006 and 2011¹⁷⁶. The total proposed investment is £965m. Cost reductions are driven by:

- automation and materials handling, which will reduce costs by removing workload from manual processing (letter, flat and packet sorting in mail centres) and in manual indoor delivery (letter and flat walk sorting and letter walk sequencing); and
- investment in automation and rationalising the mail centre network, which will also improve the consistency of quality of service by reducing missorts, allowing mail to be better tracked, and lengthening the time windows for network distribution and delivery.

13.29 The sub-sections below discuss the main elements of the specific initiatives.

Mail Centre Network and Functionality

13.30 Royal Mail proposes to reduce its network of mail centres, supported by a programme of new builds, extensions and closures¹⁷⁷. The financial implications of this initiative are shown in the table below.

¹⁷⁶ This figure excludes a significant proposed investment in walk sequencing equipment

¹⁷⁷ RM 5045 and Strategic Plan

Table 100: Financial impact of Mail Centre Network and Functionality – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	0	0	0	5	8	13
Implementation	0	0	(18)	(25)	(13)	(25)	(81)
Capex	(3)	(4)	(75)	(95)	(58)	(38)	(270)
Total	(3)	(4)	(93)	(120)	(66)	(55)	(338)

Source: RM 5045, Royal Mail LIA/BPRev1/BP11. Positive figures represent savings. Negative figures represent costs

13.31 Royal Mail's forecasts are based on the following assumptions. In general, Royal Mail provides no information to support each assumption:

- implementation one-off project costs are £20m. Royal Mail assumes that each new mail centre will require a project team consisting of eight people for four years and [>€].
- other associated one-off implementation costs are £61m. Such costs include communications, excess travel expense, unit design, property consultancy and engineering costs, and some redundancies. Royal Mail does not provide a break-down of these costs by category;
- each new mail centre will require automation costs of [>€], and IT system costs of [>€];
- other one-off capital costs of [>€] relate to property costs, which we comment on further below.

13.32 Royal Mail argues that it has too many mail centres of varying size and layout¹⁷⁸, and contends that its end state design will see the integration of the mail centre and RDC networks. The speed of integration is dependent on volume loss and the capacity of new mail centres. The table below shows the planned phasing of this initiative.

¹⁷⁸ RM Strategic Plan

Table 101: Royal Mail's proposed changes to the mail centre network

Number of mail centres	05/06	06/07	07/08	08/09	09/10	10/11	End-point
New build	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Extended	[>]	[>]	[>]	[>]	[>]	[>]	[>]
As is	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Total	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Closed	[>]	[>]	[>]	[>]	[>]	[>]	[>]

Source: Royal Mail Strategic Plan, p35

13.33 Directionally we believe that Royal Mail's initiative has merit. International comparisons indicate that many postal services have initiated major mail centre transformation programmes. According to ADL, such projects include Deutsche Post's STAR project, Canada Post's Business Transformation (BT) project, the Swiss Post's REMA project and a recent large-scale upgrade project by USPS¹⁷⁹. Moreover, the Irish postal operator An Post is completing the concentration of its mails processing centres into four automated hubs, located in Athlone, Cork, Dublin and Portlaoise¹⁸⁰.

13.34 However, it appears to us that Royal Mail's proposed pace of change is slower than it and other postal operators have been able to achieve in the past:

- Royal Mail built 32 mail centres between 1990 and 1999, including some of its largest mail centres at Birmingham, Edinburgh, Glasgow, Manchester, Newcastle and Leeds¹⁸¹; and
- in the early 1990s, Deutsche Post began to develop an entirely new network of 82 standardised mail centres from over 1,000 mail centres before reunification in 1991. The 82 new mail centres were introduced over a period of just over 3 years, between 1995 and 1998¹⁸².

13.35 The information provided to us by Royal Mail is inconsistent – in terms of the speed of mail centre closures. Information provided to us in April 2005 – in connection with work performed on Royal Mail's asset base – indicates that Royal

¹⁷⁹ The ADL Report, page 8

¹⁸⁰ NERA, Economics of Postal services report, July 2004

¹⁸¹ RM 6111

¹⁸² See Table 289 in Appendix 11 below

Mail plans to have disposed of [>€] mail centres by the end of 2007/08, against [>€] identified above, and to have disposed of [>€] mail centres by the end of 2010/11, against [>€] identified above¹⁸³.

13.36 One consequence of this slower pace of implementation is that Royal Mail's financial estimates show a considerable cost during the coming price control, but little associated saving. Royal Mail also appears to have underestimated the value of this initiative, for the following reasons:

- it seems that the proposed project costs, at a cumulative £49m between 2006 and 2011, are high. Royal Mail has provided little backing for its figures;
- it is not clear whether the proceeds of property disposals are properly included; and
- there are almost certainly greater operating savings available from mail centre closures than have been identified by Royal Mail. As always, there is a particular danger of double-counting benefits claimed separately by automation projects. However, in our view there is potential for a saving of at least £2m a year from each pair of merging mail centres. Savings would be generated through fewer staff for platform work and portering; fewer supervisors; fewer engineers; fewer book room staff; fewer postal staff performing other tasks such as producing labels for bags and trays, work load assessment etc; fewer blue collar administrative staff; reduced facilities and maintenance charges; consolidated staff restaurants, etc.

13.37 Moreover, it is not clear to us that Royal Mail's financial projections are properly thought through, although in part this difficulty arises because Royal Mail has provided us with insufficient information to evaluate the proposed costs and savings. We have a number of specific concerns:

- [>€]
- [>€]
- [>€]
- [>€]

¹⁸³ RM 9050, Annex C

- [>€]

13.38 For the reasons above, Royal Mail’s business case for this initiative is not well made. Importantly, as proposed, this initiative is not self-financing in terms of its projected net present value. For these reasons, we have not included the Mail Centre Network and Functionality programme in our projection of efficient costs.

13.39 For consistency, we have also excluded a smaller initiative, relating to the impact on the new distribution network, which is enabled by the Mail Centre Network and Functionality initiative.

Obsolescence investment

13.40 Royal Mail proposes an extensive programme of refurbishment and/ or replacement of automation hardware over the period 2004 and 2011¹⁸⁴. The total proposed outlay is £[>€]m, of which £[>€]m is anticipated to fall between 2006 and 2011. The profile of this planned expenditure from 2005 to 2011 is shown in the table below.

Table 102: Financial impact of Obsolescence Investment – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Capex	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

13.41 Royal Mail states that the spend covers automation hardware, automation operating systems and automation software. Royal Mail plans to refurbish (or replace) [>€] LSMs and [>€] CFCs at a cost of £[>€]k each, plus additional expenditure of £[>€]m for “other obsolescent parts” for the CFCs. In addition, all of the OCR machines and all of the MTT machines will be refurbished (or replaced) at a cost of £[>€]k per machine. It appears no such expenditure is planned for the IMP or IMPex equipment, but that £[>€]m is planned for the AI system, £[>€]m for the GLIMP/ Scanner systems, and £[>€]m for other systems including Domino, NEIDS and the CRAMP system.

13.42 In addition to the above costs, Royal Mail indicates there may be operating costs for deployment of the initiative that have not yet been scoped and that “*the replacement profile match[es] the end of the useful life of equipment and software*”.

¹⁸⁴ RM 5045

No support has been provided to demonstrate that this expenditure is required and no support has been provided to justify the replacement or refurbishment cost per machine. Moreover, no support has been offered for the timing of this expenditure, which is very heavily loaded towards the first two years of this price control. In our experience, the lack of such support for an initiative on this scale is unusual.

- 13.43 Royal Mail has therefore failed to demonstrate to us the need for this capital expenditure, and we are unable to say that Royal Mail will in fact make this expenditure over the period of the coming price control. Moreover, under the proposed RAB-based price control, any such expenditure that Royal Mail does make over the coming price control will, if efficiently-incurred, be recompensed in the roll-forward of the regulatory asset base at the time of the next price control. Further, as we explain in Section 19 below, we are including in our figures funds relating to a significant amount of ‘non-specific’ capital expenditure that Royal Mail could use for this purpose. We have therefore excluded the financial implications of this initiative from our assessment of Royal Mail’s efficient costs.

Three dimensional automation

- 13.44 Royal Mail proposes an investment of £[>€]m in automated processing of flats and packets (known as three dimensional or 3D items). The estimated costs and benefits of this project are described in the table below.

Table 103: Financial impact of 3D Automation – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0 [>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Capex	0 [>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Total	0 [>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]

Source: RM 5045. Positive figures represent savings. Negative figures represent costs

- 13.45 Royal Mail currently outward processes around 5% of flats mechanically¹⁸⁵, while it processes all packets by hand. This compares with its current outward letters automation proportion of 89%. Under this proposal, the current number of flat sorting machines (“FSMs”) will increase from 6 to [>€], and Royal Mail will introduce [>€]. Packet Sorting Machines (“PSMs”). Royal Mail proposes the following roll out of this initiative.

¹⁸⁵ Supplementary Paper to the Board on Implementation, November 2004, page 12

Table 104: Roll-out of 3D automation equipment

	05/06	06/07	07/08	08/09	09/10	10/11	End state
FSMs	[>]	[>]	[>]	[>]	[>]	[>]	[>]
PSMs	[>]	[>]	[>]	[>]	[>]	[>]	[>]

Source: Royal Mail Strategic Plan

13.46 Royal Mail states that the packet sorting machines will only be installed in newly-built mail centres, while the FSMs will be rolled out in three phases: the first ending in 2007/08, by which time Royal Mail will have [>] FSMs, and enabling the processing of all 2nd class and local 1st class flats; the second ending in 2010/11, enabling the [>]; the third without a target date but involving a further [>] FSMs, with an unspecified effect on automated sorting percentages¹⁸⁶. Royal Mail assumes that:

- each FSM will cost £[>]m, and will incur an annual running cost of £900k. [>]. Savings decline from 2008/09, as Royal Mail anticipates its flats volumes to decline from that year; and
- each PSM will cost £[>]m, and each machine will have annual running costs of £2m. [>].

13.47 International benchmarking suggests that directionally this is a sensible strategy to pursue. The USPS has recently implemented Automated Flat Sorting Machines (known as AFSM 100) to replace their partially automated Flat Sorting Machines (FSM 100). This has caused a decrease in manual handling at the flat sorting stage from 80% to 25%¹⁸⁷. In addition, from our visit to the Amsterdam Mail Centre in November 2004, we saw around 10 sorting machines handle flats, and some larger, thicker letters. The number of machines is sufficient to provide not only all the flat sorting capacity needed for outward and inward sorting, but also for sorting to postmen's walks.

13.48 We are concerned, however, that Royal Mail may not be able to install the necessary number of FSMs and PSMs without the mail centre extensions and new builds discussed in the section on "mail centre network and functionality" above. The footprint of a typical FSM can be up to 50 metres by 25 metres, taking into account tray storage areas. Many mail centres do not currently have the required

¹⁸⁶ RM 5045

¹⁸⁷ The ADL Report, page 18

space for the installation of these machines. Since we have not included in our incremental change scenario capital expenditure for much of the mail centre network and functionality initiative, it would be inconsistent of us to incorporate **all** of the benefits generated by the automation initiative.

- 13.49 That said, Royal Mail believes it can install [>€] FSMs by 2007/08 without any mail centres extensions or new builds to the mail centre network. We have therefore incorporated both the costs and savings of this into our projections. It appears that the installation of these [>€] FSMs accounts for a significant proportion of the total savings projected by Royal Mail over the period.
- 13.50 In both of our scenarios, we have assumed that Royal Mail will only install [>€] additional FSMs due to space constraints. We have assumed, therefore, that there will be no increases in savings beyond 2007/08.
- 13.51 Royal Mail has provided us with very little information in relation to its packet sorting proposals. We do not feel able, therefore, to incorporate the costs and benefits of this element into our projection of costs.
- 13.52 Royal Mail indicates in the back-up to its estimates relating to 3D automation that [>€] before machine running costs of £900k a year, which generates [>€]. Each FSM costs £[>€]m, with a further £500k cost for linking the FSM to the AI network. Royal Mail also projects falling volumes of 3D items towards the end of the coming price control period. These volume falls do not affect costs in either of our scenarios below, as the volumes that are processed are constrained by a need to turn around inbound 2nd class flats in 6 hours rather than by the total volumes that are posted¹⁸⁸. Our assessment of the resulting costs and benefits of this initiative is shown in the table below.

Table 105: Financial impact of 3D automation – LECG lower case

£m and in 2004/05 prices	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Capex	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Total	0	(22)	8	14	14	14	29

Source: LECG analysis. Positive figures represent savings. Negative figures represent costs

¹⁸⁸ RM 5045

- 13.53 Our higher case scenario is based on the profile of costs and benefits put forward directly by Royal Mail in its schedule of benefits and savings relating to this initiative¹⁸⁹, rather than the backup information provided by Royal Mail which we used in the preceding paragraph to calculate savings in our lower case. These two sets of figures do not appear to be consistent, which is surprising as purportedly the schedule of benefits and savings is calculated using the information contained in the backup. We do not know why there is this discrepancy, or which set of figures is correct¹⁹⁰.
- 13.54 In deriving the figures for our higher case, we have had to make some assumptions about how Royal Mail performed its calculations. Whether or not we have done this precisely, the resulting figures for flat sorting are approximately consistent with the schedule of benefits and savings relating to the FSM element of this initiative, and we do not know how to improve on our estimate. Our higher case assessment of the resulting costs and benefits of this initiative is shown in the table below.

Table 106: Financial impact of 3D automation – LECG higher case

£m and in 2004/05 prices	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Capex	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]
Total	0	(5)	45	52	52	52	195

Source: LECG analysis. Positive figures represent savings. Negative figures represent costs.

¹⁸⁹ RM 5062-92

¹⁹⁰ We received the relevant information late in the information-provision process, at approximately the same time as Royal Mail signalled to Postcomm that it would be unable to provide further information in connection with this efficiency review

Materials handling

- 13.55 The term ‘materials handling’ generally relates to methods of handling and moving mail through the pipeline. Most handling takes place in mail centres, and in the preparation of mail for transporting to mail centres by large customers. Specific methods include the use of trays by customers and mail centre staff, the use of tray management systems, and the use of wheeled containers, including automated guided vehicles and robotics. Royal Mail has proposed three related initiatives: Materials Handling; Bagless Mail Centre Network; and Bagless Presort Network¹⁹¹. Each is summarised below.
- 13.56 The *Materials Handling* initiative relates to moving mail within operational buildings, which is described as a manual and costly task. Many other businesses have moved to automated solutions for such tasks. Royal Mail proposes a five-year phased investment schedule for enhanced and automated materials handling capability to remove much of this cost in six mail centres, as a precursor to roll-out across the mail centre network.
- 13.57 [>]. [*We have excised our original text here at Royal Mail’s request. Royal Mail has suggested alternative wording, as follows: “According to Royal Mail, of the average 450 people per mail centre, 150 are portering staff. Improving materials handling and greater automation should allow us to reduce the amount of bags that need to be physically hauled around the mail centres.”*]
- 13.58 Royal Mail comments in a supplementary paper to its Strategic Plan that it is aiming to “*overhaul materials handling environment to industry standard with bags eradicated from mail centres and distribution network*”. The scale of the anticipated savings suggests that Royal Mail is considering a radical automation of the movement of mail within mail centres.
- 13.59 The *Bagless Mail Centre Network* initiative proposes to move mail between mail centres using trays (for letters and flats) and sleeved Yorks (for packets) rather than the current use of bags. Royal Mail believes that this will enable better mail hygiene¹⁹² and will reduce the number of machine failures. The financial information presented by Royal Mail assumes a limited trial only. Further project

¹⁹¹ Found in RM 5045 and in RM 5062 to 5092

¹⁹² Hygienic mail is mail that has not been bent, weather damaged, or otherwise mistreated by lack of adequate protection

financials would be prepared if Royal Mail decided to go through with a national rollout of this initiative.

- 13.60 The *Bagless Presort Network* initiative is similar to the Bagless Mail Centre Network initiative, in that it promotes the use of trays and containers by presort mail customers in preparing mail for delivery to RDCs. Royal Mail believes that this will not only reduce its own handling costs, and assist in the automation of mail, but should also be in line with customer requirements. [>€].
- 13.61 The costs and savings associated with these projects are shown below. The detail underlying this table indicates that more than 90% of the capital expenditure is related to the Materials Handling initiative, but over 60% of the operating cost benefits in 2010/11 arise from the two bagless network initiatives.

Table 107: Financial impact of Materials Handling – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	5	14	22	25	28	31	121
Implementation	(2)	(1)	0	0	0	0	(2)
Capex	(8)	(15)	(15)	(15)	(15)	(15)	(73)
Total	(5)	(1)	7	10	13	16	46

Source: RM 5045 and 5062 through 5092. Positive figures represent savings. Negative figures represent costs.

- 13.62 We believe that these proposals are in line with those adopted by more advanced postal organisations. As such, we believe this initiative is directionally correct. TPG, for example, processes all mail within its mail centres in trays. TPG's Amsterdam mail centre has a tray management system, installed as part of the mail centre fit-out in 1997. Given the time that had elapsed since implementation, TPG was unable to give an indication of the costs and benefits of implementing the relevant processes.
- 13.63 When we visited the Amsterdam mail centre, we observed that the extent of manual facing and segregation, meter, and PPI activities were minimal compared to Royal Mail, with no more than 20 people involved. The Amsterdam Mail Centre handles about 4m mail outward pieces a day, and the same number on inward – these are roughly the volumes processed by the very largest of Royal Mail's mail centres.

- 13.64 A key enabler for the materials handling techniques employed in Amsterdam is the presentation of all mail in trays, except for street collections. While we have not so far been able to assess the net benefit of traying in collection hubs and reducing workload in mail centres, as TPG does, we believe that this offers clear advantages in the form of a significantly more streamlined approach to the time-critical processes of mail preparation.
- 13.65 Royal Mail's projections are financially positive and the initiative is in line with postal best practice. In our lower case scenario, we have incorporated Royal Mail's assessment of costs and benefits into our assessment of efficient costs. We believe this treatment is conservative, for several reasons.
- 13.66 First, we believe there are unidentified opportunities in mail centres from the introduction of a bagless presort network and bagless mail centre network. These savings arise from the fact that mail arriving in trays for the inward operation is easier to prepare for inward processing than mail arriving in bags. We believe this could also give rise to further savings in the cost areas in mail centres identified in the table below, which total £69m, and all of which include large elements of bag handling. We have no basis for determining how large such savings might be, although a 5% saving would generate savings of at least £3.5m a year.

Table 108: Cost categories affected by introducing a bagless network

Activities	2003/04, £m
Platform work on outward mail	32
Platform work on inward mail	28
Manual bag segregation, network	9
Inward bag opening tables	Not known
Bag cleaning	Not known
Total	>69

Source: RM 3085. Note: Savings would be some fraction of the cost areas identified above.

- 13.67 Second, we are not convinced that Royal Mail has identified the full implications and benefits to RDCs that a bagless presort network and bagless mail centre network could bring. RDCs currently operate indoor manual bag sorting and segregation activities. Moving away from this has very significant implications for current RDC processes. Royal Mail has not identified any savings in the RDCs, and we do not have a basis for generating such an estimate.

13.68 Third, we believe that there may be mail centre savings arising from the Collection Handshake initiative. An element of this initiative relates to the containerisation of mail that is currently presented by customers in bags and meter pouches. Our visit to TPG indicated that trays are a more efficient means of inserting mail into the network than bags. Costs that might be affected by these initiatives total £85m, as shown in the table below¹⁹³. Again, we have no basis for determining how large such savings might be, although a 5% saving would generate savings of £4m a year.

Table 109: Costs potentially affected by customer containerisation

Activities	2003/04, £m
Manual facing, stamping and class segregation	40
Meter preparation	30
PPI preparation	11
Bag control	4
Total	85

Source: RM 3085, 6061 and 6066. Savings would be some fraction of the cost areas identified above

13.69 Fourth, Royal Mail does not present any initiative that looks at the opportunity to integrate RDCs into mail centres, [>] to take effect from 2007/08 onwards. This initiative would presumably also have cost saving implications for Royal Mail.

13.70 Fifth, the pace of rollout is very slow, with no more than six mail centres operating under the new method of working by 2010/11. There may be scope to accelerate the introduction of these methods, and achieve savings earlier than anticipated by Royal Mail – although we understand that space constraints may impede a rapid roll-out of this initiative.

13.71 We do not have a firm basis for calculating a higher saving arising due to the five factors outlined above, so we have not incorporated a further saving in our higher case. We do, however, believe there is scope for significant additional savings arising from this initiative.

¹⁹³ Figures from RM 6061, 6066, and 3085

Area efficiency

13.72 Royal Mail proposes to set its area management the target of reducing costs by 1% in 2004/05. The financial impact of this is shown in the table below, and amounts to a £50m ongoing saving to operating costs.

Table 110: Financial impact of Area Efficiency – RM

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	50	50	50	50	50	50	250

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

13.73 Royal Mail does not propose any explicit central enablers or investment to support this plan, instead expecting area management to identify savings opportunities on a unit-by-unit basis. Royal Mail points out that historically such schemes have achieved savings from 'best practice' approaches. An example is the Mail Centre Review element of the Renewal Plan.

13.74 Our internal benchmarking identified savings of £350m to £400m a year from mail centres and delivery offices¹⁹⁴. The savings proposed as part of this initiative, which Royal Mail intends to achieve through best practice sharing, are therefore the kinds of saving we identified in the internal benchmarking exercise. We note that Royal Mail is proposing other initiatives that are also of the same kind as those identified in the internal benchmarking exercise.

13.75 We have incorporated Royal Mail's proposed savings into both of our scenarios. We discuss, later in this and subsequent sections, the extent to which Royal Mail's Strategic Plan maps on to the mail centre and delivery office savings we identified in our internal benchmarking work.

Customer handshake – intelligent mail

13.76 An "intelligent" mail piece is one that contains a unique identifier – typically a bar code imprinted on the front of the mail. The uniqueness of this information allows individual mail pieces to be tracked, both by the postal operator and by the sender. Royal Mail suggests that the Customer handshake – intelligent mail initiative will automate the revenue protection process, and thereby reduce lost revenue.

¹⁹⁴ See paragraph 20.110

- 13.77 Royal Mail's estimate of the financial impact of this project is shown in the table below. The project appears strongly value-creating, generating £41m a year from 2008/09.

Table 111: Financial impact of Customer Handshake Intelligent Mail – RM

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	1	15	34	41	41	41	171
Implementation	(1)	(1)	(1)	(1)	(1)	(1)	(5)
Capex	0	(4)	(8)	(4)	(2)	(1)	(18)
Total	(1)	11	25	36	38	39	149

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

- 13.78 Royal Mail states that it *“currently accepts and performs revenue protection at consignment level for larger posting customers. This is manually intensive and can be inaccurate, leading to costs in revenue protection and lost revenue for Royal Mail through under-charging of customers”*¹⁹⁵. It goes on to say that the use of intelligent mail technology presents an opportunity to automate the counting of mail pieces, and then bill customers accurately. Individual customer coding would also provide visibility to the pipeline for customers, as information collected could also be made available to customers. Automating the revenue protection process will [>], and may also benefit customers through reduced administration costs.
- 13.79 In its review of postal technology, ADL suggests *“The next major step in the postal industry is thought to be the move towards intelligent mail, where information is carried on the mail item in the form of e.g. barcodes. This information can be relayed to the sender, with updates on when the mail arrives, when the mail was responded to and co-ordinate telemarketing efforts; the postal operator can use the information to trace the mail, determine where the mail came from, where it is going, as well as information on pre-paid arrangements like mailsort; the receiver could also benefit from intelligent mail, by being able to track the mail if it is expected”*.
- 13.80 We believe that this project is in line with international trends, and the project financials are strongly positive. As such, it appears a sensible project to undertake, and we have incorporated Royal Mail's assessment of the financial implications of this project into both our lower and higher case scenarios.

RFID phases 1 & 2

- 13.81 Royal Mail proposes to introduce Radio Frequency Identifier technology to its pipeline in order to trace mail through its pipeline. This will help to identify problems in the pipeline. The project will be implemented in two phases, with the expected combined financial impact shown in the table below.

Table 112: Financial impact of RFID Phases 1 & 2 – RM

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	(1)	(3)	(3)	(3)	(3)	(3)	(13)
Implementation	(10)	(10)	0	0	0	0	(10)
Capex	(8)	(10)	0	0	0	0	(10)
Total	(19)	(23)	(3)	(3)	(3)	(3)	(33)

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

- 13.82 The investment relating to phase 1 of this project is anticipated to be made primarily in 2005/06, with ongoing costs of £[>€]k a year from that year relating to software and monitoring activities. Phase 2 is subject to a successful completion of phase 1, and involves further exploitation of this technology, with one-off costs of £[>€]m in 2005/06 and ongoing benefits of £[>€]m a year from that year. Royal Mail states that the primary purpose of these initiatives is to improve customer service and to reach its target levels of quality of service¹⁹⁶, although apart from an anticipated £[>€]k saving from reduced compensation levels Royal Mail has not identified any financial benefits arising from this initiative.
- 13.83 Royal Mail's plans are sufficiently advanced that they have attracted media attention¹⁹⁷. Royal Mail does not quantify any financial benefits arising from these initiatives. Moreover, we have had no support for the costs that Royal Mail says are required to implement these initiatives.
- 13.84 We are mindful, that Royal Mail should be allowed sufficient funds to meet its quality of service targets. It is clear that Royal Mail regards these initiatives as essential to meeting these targets in the short- and medium-term. We have

¹⁹⁵ RM 5062-5092

¹⁹⁶ "Royal Mail Quality of Service – Summary of Actions for 2005/06", Page 32 and Annex C, action 7

¹⁹⁷ For example refer to High-tech drive to track lost letters, The Times, 7 March 2005. We understand that Postwatch is in broad agreement with the direction of this type of initiative.

therefore incorporated these initiatives into our assessment of Royal Mail's efficient costs. We do, however, consider this to be a conservative approach. In particular, if, between now and the time of Postcomm's final proposals, it becomes clear that this expenditure is not required for Royal Mail to meet its quality of service targets, or leads to gold plating of standards, then we will reconsider our treatment of these initiatives. We will also need to consider any associated impacts on volumes.

Automation utilisation

13.85 Royal Mail has put forward three projects that are intended to increase the proportion of mail that is processed automatically. These are:

- Baseline Automation Quality, which is a plan to invest in modifications to Royal Mail's existing automation assets;
- Sort Plans, which will support mail centre management in establishing optimal sorting plans; and
- Automation Utilisation, which builds off the first two projects and aims to produce a step change improvement in the proportion of mail that is automatically processed within Royal Mail.

13.86 The anticipated financial impact of these three initiatives is shown below.

Table 113: Financial impact of Automation Utilisation – RM

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	20	31	41	71	81	91	314
Implementation	(3)	(3)	(2)	(2)	-	-	(6)
Capex	(28)	(21)	(6)	-	-	-	(28)
Total	(11)	7	32	69	81	91	280

Source: RM 5045 and 5062 through 5092. Positive figures represent savings. Negative figures represent costs.

13.87 The Baseline Automation Quality initiative is estimated to require capital expenditure of £18.5m in 2005/06 and £14.5m in 2006/07, while the majority of the remaining capital expenditure in the 2006-11 period arises from software and hardware costs associated with the Automation Utilisation project. Royal Mail states that any benefits from the Baseline Automation Project, which it expects to come from reduced levels of re-work in operational units, have not yet been evaluated and are not shown in the project financials.

- 13.88 The main costs for the Sort Plans initiative relate to an upgrade to the current CRAMP software, requiring capital expenditure of [>€] . The increase in savings after 2007/08 stems from removing sorting work from delivery offices. Royal Mail suggests that the implementation of a new delivery model is a key enabler to achieve these savings.
- 13.89 Royal Mail expects operating cost savings from the Automation Utilisation Project rising to £40m a year in 2007/08 and thereafter, and a further £50m a year savings by 2010/11 from delivery office workload reductions.
- 13.90 The table below shows the proportion of mail (letters, flats and packets) automatically processed by selected USO postal organisations. Royal Mail currently processes less mail automatically than the average postal organisation. At a rate of 50% automatically processed, Royal Mail is well behind Germany (89%) and the Netherlands (80%).

¹⁹⁸ RM 5062-92. Expenditure on CRAMP is also put forward as part of the Equipment Obsolescence initiative, as part of £[>€]m planned spend on 'Other – Domino, NEIDS, CRAMP'. We did not incorporate the Equipment Obsolescence initiative into our assessment of RM's efficient costs

Table 114: Mail automation rates for selected Universal Service Providers

Country	1998 (%)	2003 (%)	Trend 1998- 2003 (%)	Mech Mail 2003 (%)
Austria		72		81
Belgium	50	55	+5	90
Czech Republic	12	25	+13	
Denmark	60	60	0	60
Estonia		50		94
Finland	63	73	+10	
France		63		
Germany		89		
Hungary	19	19	0	37
Ireland	25	75	+50	85
Luxembourg	97	97	0	97
Netherlands	75	80	+5	80
Poland		45		80
Portugal		56		80
Slovenia	56	64	+8	75
Spain		68		90
UK		50		
Weighted Average	n/a	67*	n/a	n/a

Source: NERA, Economics of Postal Services, July 2004. Note: Percentages relate to letters, flats and packets. Italics in 1998 column indicate data is earliest available; for 2003 italics indicate that data is for latest year available.

- 13.91 Clearly, there are cost savings associated with processing mail automatically rather than manually. As NERA states in its review of the economics of postal services: “Automatic sorting machines can achieve rates in excess of 30,000 items per hour, and improve quality of service. Error rates are generally much lower using automatic sorting machines than manual sortation”. We understand that a manual sorter can generally achieve rates of around 2,000 items an hour¹⁹⁹.
- 13.92 ADL concludes that for incumbent operators, sorting technology has the greatest potential for creating cost savings throughout the delivery chain. Knock-on

¹⁹⁹ NERA 2004, page 14

benefits throughout the chain multiply the impact of relatively small technical performance improvements²⁰⁰.

- 13.93 TPG currently machines 95% of letters and automation rates have improved significantly since the 80% automation rate shown in the table above for 2003. There would appear to be considerable scope for Royal Mail to increase the proportion of mail it sorts automatically.
- 13.94 As summarised in the table below, the Strategic Plan states that Royal Mail currently sorts 89% of its outward letters automatically, and it achieves an automation level of 30% for walk sorting of letters²⁰¹. Royal Mail has not explicitly provided us the current or proposed inward machine sorted percentage, however based on other information from Royal Mail we estimate this at 70%²⁰². Royal Mail is aiming to achieve 95% walk sorted mail by 2015, with 'improved levels' by 2010/11.

Table 115: Royal Mail's current and target rates of automated sorting

Process	Current automated	Target 2015	Description
Outward	89%	95%	Identify local mail, sort remainder to mail centre/ large delivery offices for transportation to inbound mail centre
Inward	70%*	95%	Sort mail to delivery office/ delivery office section
Walk sorting	30%	95%	Sort mail to level of individual walks

Source: RM 5045, 5062-92. Strategic Plan – supplementary paper on implementation. *LECG calculation based on information in RM 6069

- 13.95 Based on the international benchmarking, we believe that such increases in rates of automated sorting are achievable and desirable for Royal Mail. Moreover, achieving such rates of automated sorting would assist Royal Mail in meeting, and exceeding, its current quality of service targets. However, we believe that Royal Mail has underestimated the long-run level of savings that should be achievable.

²⁰⁰ The ADL Report, page 8

²⁰¹ Supplementary Paper to the Board on Implementation, 30 November 2004, page 12

²⁰² Based on information in RM 6069. 70% figure is average of proportions by mail centre labelled as 'Inward % mech'. Other information in this spreadsheet that would allow us to calculate this figure more directly appears to be mislabelled or incorrectly input

- 13.96 In order to cross-check Royal Mail's proposed savings from this initiative, we mapped those proposed savings onto the three key stages of mail centre sorting – outward, inward and walk sequencing. The results of this are shown in the table below. In order to make this allocation we assumed²⁰³ (a) that [>£] and (b) that [>£]. The results of this allocation are shown in the table below.
- 13.97 Our estimates of the savings that we would expect to accrue from this initiative are also shown in the table below. To generate our savings estimates, we apply the reduction in manual sorting workload implied by the target increase in automation rates across each of the inward, outward and walk sorting activities to the 2003/04 cost of each activity. As automation rates increase, manual sorting workloads, and therefore costs, are reduced, while there is some increased cost relating to automated sorting. We have therefore assumed that the increase in costs arising from increased automation workloads is [>£] of the related decrease in manual sorting costs²⁰⁴. Cost savings relating to increased automation of walk sorting derive from reducing workload in delivery offices, which is difficult to achieve on the scale implied by this calculation without shifting to a partially part-time delivery workforce. However, we believe that it would be possible to make some savings without major change to the delivery office environment – for example, through the reduction of night sorting duties, rebalancing of walks, and reduction in extended duty costs. We have therefore assumed that Royal Mail will realise only half of the £[>£]m saving implied by our initial calculations relating to increased automation of walk sorting, i.e. £[>£]m.

Table 116: Savings from increasing mechanised processing in mail centres

Process	Cost of manual sorting activity, 2003/04	Long run annual operating cost saving estimate	
		Royal Mail	LECG
Outward	101	[>£]	44
Inward	91	[>£]	61
Walk sorting	195*	[>£]	72
Total	387	[>£]	178

Source: RM 5045, 5062-92, 6069, and 6079. *Cost incurred in delivery offices – total cost of manual walk sorting is £324m, of which 40% assumed to relate to flats and packets. All figures 2003/04, £m

²⁰³ Figures with reference to RM 5045

²⁰⁴ In line with information provided in RM 3094

- 13.98 As the table shows, we estimate that Royal Mail could save up to £178m a year from the anticipated significant improvements in automation performance.
- 13.99 Moreover, we believe that Royal Mail is being pessimistic about the pace of this proposed change. Royal Mail has identified the remaining key enablers for achieving 95% of outward letters sorted by machine, and 95% inward machine walk sorted, as being investment in IMPex and LSM extensions, plus some outlay for sorting plans. Royal Mail believes it can perform the required adjustments to its automated sorting machinery without extensions or new builds of mail centres. The key enablers for this initiative will be in place by 2007/08. Royal Mail should therefore be able to reach its target mechanisation rates, which would put it on a par with TPG, by 2010/11 rather than by 2015 as suggested in its Strategic Plan.
- 13.100 The estimates in Table 116 above give savings from the automation utilisation initiative alone rising to £178m a year by 2010/11. In order to be conservative, we have not incorporated these additional savings into our lower case assessment of an efficient cost path for Royal Mail. However, our higher case figures do incorporate these additional savings, as shown in the table below.

Table 117: Financial impact of Automation Utilisation – LECG higher case

2004/05 prices - £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	40	60	80	139	159	179	617
Implementation	(3)	(3)	(2)	(2)	0	0	(6)
Capex	(28)	(21)	(6)	0	0	0	(28)
Total	8	36	72	138	159	179	584

Note: Positive figures represent savings. Negative figures represent costs.

Production control

- 13.101 Production Control relates to mail centre activities designed to ensure a constant alignment between workload and resource levels. When performed effectively, this starts with accurate traffic forecasts, which allow effective scheduling, and continues with the use of live information on emerging and actual volumes and processing rates, to allow work areas to prepare and adjust to changes in a cost-effective way. As such, effective production control has the potential to drive efficiencies throughout mail centres, and potentially into delivery offices as well through improved walk sorting rates.

13.102 The Strategic Plan describes Royal Mail's measurement of traffic, hours and manpower as "poor". Royal Mail has set itself an objective to develop an information-rich environment, with managers managing by facts and data, and to engage in continuous improvement, using lean manufacturing techniques with production control methods deeply embedded in all facilities²⁰⁵. Royal Mail has provided some information relating to these plans, across five initiatives: Production Control; Production Control – Customer Management; Production Control – Resourcing; Mail Centre Resource Strategy; and MIS. We describe each in turn, below.

- Production Control seeks to improve mail centre efficiency, reducing operational costs and improving quality of service by introducing an integrated package of tools for managing the processing operation. The first part of the work is scheduling software, to manage workflow through mail centres. A separate system, the Time and Resource Management System, will automate some of the backroom activities, reducing administrative costs in mail centres.
- Production Control Resource Management plans *"to develop, test and implement an automated resourcing package that will ensure the workforce is fully aligned with predicted workloads"*²⁰⁶. The Mail Centre Resourcing initiative also appears to address this issue.
- Production Control: Customer Management aims to *"redesign the interface between customers and Royal Mail by providing higher quality information about traffic volumes in an automated fashion"* and the purpose of this project is to *"develop an integrated proposal for an automated customer management package that aligns and integrates with capacity planning and scheduling."*²⁰⁷
- Management Information Systems addresses Royal Mail's belief that it does not provide adequate information to mail centre management, or have an easy-to-access system. This initiative aims to examine the potential for improving this situation through a centralised management information tool.

²⁰⁵ Strategic Plan, RM 5045 and RM 5062-92

²⁰⁶ RM 5062-5092

²⁰⁷ RM 5062-5092

13.103 The combined costs and anticipated benefits of these production control initiatives are shown in the table below.

Table 118: Financial impact of Production Control – RM

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	12	37	40	39	39	39	196
Implementation	(8)	(5)	0	0	0	0	(5)
Capex	(10)	(5)	0	0	0	0	(5)
Total	(6)	27	40	39	39	39	186

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

13.104 The capital expenditure included within the price control period relates to the Production Control initiative, and includes scheduling software and the Time and Resource Management System. Royal Mail anticipates needing an average of three people per mail centre to generate change, on a one-off basis.

13.105 Savings increase from 2007/08, and have been calculated by Royal Mail assuming that there are:

- 24 large mail centres that will be able to save £1m each;
- 24 medium mail centres that will be able to save £600k each; and
- 21 small mail centres that will be able to save £300k each.

13.106 Royal Mail has not estimated a financial impact within the price control period for the other four initiatives relating to production control: Production Control – Customer Management; Production Control – Resourcing; Mail Centre Resource Strategy; and MIS initiatives. Overall, the combined set of initiatives is NPV positive, generating £39m a year from 2007/08 for a total investment of £28m.

13.107 As with many of the other initiatives proposed by Royal Mail, this set of initiatives looks sensible given developments in other European postal operators. Our international benchmarking found two postal organisations making effective use of production control technology:

- Swiss Post has introduced a Production Planning and Control System (PPS). This system has several features that are important to creating an effective production control environment, including the ability to capture and

analyse data such as manpower and traffic data, productivity achieved, and the ability to track variations to plan. The system involves some tracking of staff location within the mail centres, which initially met with significant employee resistance. Swiss Post has overcome these problems and is in the process of rolling this system out across its mail centre network.

- Belgium Post examines efficiency in work centres using Industrial Engineering experts and applications to design mail flows, mail centre layout and work methods. Belgium Post says this approach has produced an average productivity increase of 5% of mail centre staff costs.

13.108 Royal Mail's plans are insufficiently detailed for us to obtain a full and clear understanding of its proposals. However, there is sufficient information available to suggest that successful deployment would lead to significant productivity gains. If Royal Mail were able to follow Belgium Post in achieving a 5% reduction in Royal Mail's mail centre staff costs of £793m in 2003/04²⁰⁸, it would save £40m a year – almost exactly the £39m indicated in Table 118 above.

13.109 We have incorporated Royal Mail's assessment of the costs and benefits into both our lower and higher case scenarios.

Conclusions

13.110 Royal Mail has proposed some extensive and costly changes to its sorting activities. We believe that the direction of the plan is sensible. Unfortunately, in places we have been provided with insufficient information regarding the initiatives to properly evaluate whether the associated costs and benefits are robust.

13.111 The table below shows our quantification of the specific sorting-related initiatives proposed by Royal Mail, under our lower case scenario.

²⁰⁸ Refer to Appendix 15

Table 119: Cash impact of sorting initiatives – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Mail centre network and functionality	0	0	0	0	0	0	0
Obsolescence investment	0	0	0	0	0	0	0
3D automation	0	(22)	8	14	14	14	29
Materials handling & related initiatives	(5)	(1)	7	10	13	16	46
Area efficiency	50	50	50	50	50	50	250
Customer handshake intelligent mail	(1)	11	25	36	38	39	149
RFID Phases 1 & 2	(19)	(23)	(3)	(3)	(3)	(3)	(33)
Automation utilisation	(11)	7	32	69	81	91	280
Production control	(6)	27	40	39	39	39	186
Other*	1	1	1	1	1	1	3
Total	10	50	161	218	234	247	910

Source: LECG analysis. Positive figures represent savings. Negative figures represent costs. Red – excluded. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG. *Combining RDC and Mail Centre Collections, and New Distribution Network

13.112 The aggregate impact of those sorting initiatives that we have incorporated into our projections is shown in the table below.

Table 120: Impact of proposed sorting initiatives – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	88	158	200	239	251	264	1,112
Implementation	(24)	(19)	(4)	(3)	(1)	(1)	(28)
Capex	(54)	(88)	(36)	(18)	(16)	(16)	(174)
Total	10	50	161	218	234	247	910

Source: LECG analysis. Positive figures represent savings. Negative figures represent costs.

13.113 [>]. We have quantified additional operating cost savings in relation to the 3D automation and automation utilisation programmes, as shown in the table below.

Table 121: Cash impact of sorting initiatives – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Mail centre network and functionality	0	0	0	0	0	0	0
Obsolescence investment	0	0	0	0	0	0	0
3D automation	0	(5)	45	52	52	52	195
Materials handling & related initiatives	(5)	(1)	7	10	13	16	46
Area efficiency	50	50	50	50	50	50	250
Customer handshake intelligent mail	(1)	11	25	36	38	39	149
RFID Phases 1 & 2	(19)	(23)	(3)	(3)	(3)	(3)	(33)
Automation utilisation	8	36	72	138	159	179	584
Production control	(6)	27	40	39	39	39	186
Other*	1	1	1	1	1	1	3
Total	29	96	238	323	349	372	1,379

Source: LECG analysis. Positive figures represent savings. Negative figures represent costs. Red – excluded. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG. *Combining RDC and Mail Centre Collections, and New Distribution Network

13.114 The aggregate annual impact of this more aggressive case is shown in the table below.

Table 122: Impact of proposed sorting initiatives – LECG's higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	108	204	277	344	367	389	1,582
Implementation	(24)	(19)	(4)	(3)	(1)	(1)	(28)
Capex	(54)	(88)	(36)	(18)	(16)	(16)	(174)
Total	29	96	238	323	349	372	1,379

Source: LECG analysis. Positive figures represent savings. Negative figures represent costs.

13.115 Over and above the savings quantified in our higher case above, we believe there are further savings relating to the sorting activity available to Royal Mail, arising from incorporating additional cost areas into the assessment of the savings and

from the Materials Handling initiative and achieving savings in RDCs through moving to a bagless network for bulk mail.

14 Review of transport costs

Introduction

- 14.1 This section provides a bottom-up review of Royal Mail's transportation activities. We first provide an overview of the transportation stage of the pipeline and summarise historical cost trends. We then summarise at a high level the transport-related efficiency opportunities identified and implemented during the current price control. We then provide a bottom-up review of Royal Mail's submission for the forthcoming price control. We also identify a number of additional opportunities not considered by Royal Mail in its submissions. Finally, we summarise our conclusions in relation to the transportation stage of the pipeline.
- 14.2 This section has been prepared with extensive input from Derek Osborn and the other postal experts referred to in this report. Mr Osborn was formerly a senior manager within Royal Mail. From 1989 to 1991, Mr Osborn was a Transport Network Manager within Royal Mail, with responsibility for a major transport project known as Skynet. From 1991 to 1995, Mr Osborn held distribution and consultancy roles within Royal Mail.

Description of activities

- 14.3 The transport activity covers the transportation of mail between regional distribution centres, mail centres, and to delivery offices. Mail is transported by road, by air and/ or rail to a mail centre for inward sorting. The Logistic Services Business Unit manages the network distribution phase of the product pipeline for all Royal Mail operational sites. The key activity for network distribution is the physical transfer of "containerised" mail between operational sites. Further details are provided below.

Historic costs

- 14.4 Transport costs in 2003/4 totalled £453m, which is equivalent to approximately 7% of total pipeline costs of £6,095m. Recent transportation cost trends for the period 2000/01 to 2003/04 are provided in the table below, stated in 2003/04 prices. An overview of each activity is provided in Appendix 15 together with a summary of activity costs by cost type.

Table 123: Historical transport cost trends in 2003/04 prices and in £m

Activity	00/01	01/02	02/03	03/04	CAGR
MC network	245	277	276	258	1.7%
RDC network	81	80	76	62	-8.5%
Local distribution	107	110	103	133	7.4%
Total	434	467	456	453	1.5%

Source: Royal Mail6079: Review of Royal Mail pipeline costs for 2001 to 2004

- 14.5 Overall, total transport costs have increased by 1.5% a year in real terms. This increase needs to be considered in the context of the Transport Review. Royal Mail states that the Transport Review involved a comprehensive re-engineering of the distribution network to provide a new integrated mail distribution network. Royal Mail's aim was to move from the operation of evolved transport networks to a proactively planned system using principally road, augmented by air transport where necessary. The changes centred on the provision of distribution hubs and the establishment of a centralised National Distribution Centre (NDC). Royal Mail expected the planned proposals to result in a reduction in the number of distribution hubs, restricted use of the rail network and more efficient use of air transport.
- 14.6 Claimed achievements as of March 2004 have been the reduction of daily truck movements from 8,900 to 2,900, the reduction of daily train movements from 68 to 8, the reduction in the number of daily flights from 39 to 27, the closure of 7 out of 16 RDCs, the opening of two new hubs at the NDC and in East London, and the elimination of Travelling Post Offices²⁰⁹. The programme was completed in April 2004. Recurring steady-state savings of £45m have been embedded into Royal Mail's budgets²¹⁰. A post implementation review is currently underway to validate the achievement of expectations.
- 14.7 Royal Mail explains the key trends in the table above as follows²¹¹:
- Mail Centre Network costs have increased by around 1.7% a year in real terms but costs decreased between 2003 and 2004. During this period, Logistic Services took over the management control of the Mail Centre

²⁰⁹ Royal Mail Holdings Board, Transport Review RMH(04), provided to Postcomm as TR-8 in July 2004, page 2

²¹⁰ Rplan comms.doc, 24 December 2004

²¹¹ Review of RM pipeline costs from 2001 to 2004, PCR3 6079

Network vehicles, which were previously under the control of Area Management. As part of the Transport Review, Logistic Services has rationalised the resources needed for network distribution;

- RDC Network Costs have fallen by around 8.5% a year in real terms due to the transfer of this activity to Logistic Services management, and the rationalisation of network distribution under the Transport Review project; and
- Local Distribution involves the transportation of mail from inward mail centres to delivery offices. Each delivery office will receive one or more consignments during the night, dependant on local traffic patterns and delivery office opening hours. Local distribution costs have increased by around 7.4% a year in real terms due to the Transport Review which has lead to a number of revisions within the local distribution area – requiring more vehicle resources.

14.8 Royal Mail has provided no further information to allow us to understand cost trends in more detail.

Current price control

14.9 At the start of the 2003 price control review, Royal Mail indicated that it was expecting significant transportation cost savings through the implementation of the Transport Review. The Transport Review Implementation plan indicated that the total cost of deploying the strategy was £219m, with projected annual benefits of £89m a year²¹². Royal Mail's latest forecast is that the project will deliver annual benefits of £52m a year²¹³. The scope of Royal Mail's strategy included: the closure and disposal of 10 RDCs; the provision of a new central hub; the provision of two new hubs in the South East; a move away from rail to road operations; the removal of Travelling Post Offices; and the removal of local network operations in service delivery.

14.10 WS Atkins did not identify any further transport related opportunities in its review of efficient costs at the start of the current price control.

²¹² Transport Review Implementation, Consignia plc Board, CB(02)18

²¹³ Rplan comms.doc, 24 December 2004

Review of Royal Mail's submissions

14.11 Royal Mail's strategy is to modernise its network through a phased investment programme that automates the pipeline and introduces uniform best practice processes to transform the capability and efficiency of the collections, sortation and delivery operations. In the information provided to us, Royal Mail does not assess how the national transportation network will be impacted by its key initiatives, such as its proposal to simplify the network and the introduction of a new outdoor delivery model.

14.12 Royal Mail has presented two relatively small initiatives relating to transport. The first relates to driver communications and the second relates to a scheduling tool for the large truck fleet. The financial impact of both initiatives is presented in the table below.

Table 124: Cash impact of transport-related initiatives – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
In cab communications	(3)	(4)	(2)	(2)	(2)	(2)	(12)
Paragon*	0	0	0	0	0	0	0
Total	(3)	(4)	(2)	(2)	(2)	(2)	(12)

Source: RM 4054, 5045 and 5062-92. *Royal Mail's estimated cost relating to this initiative is £500k and incurred in 2004/05. We discuss benefits that may arise from this initiative below.

In cab communications

14.13 Royal Mail proposes to provide equipment supporting safe two-way communication between drivers and management. The anticipated financial impact of this initiative is shown in the table below.

Table 125: Financial impact of In Cab Communications – RM

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	3	3	3	3	3	15
Capex	(3)	(7)	(5)	(5)	(5)	(5)	(27)
Total	(3)	(4)	(2)	(2)	(2)	(2)	(12)

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

14.14 Royal Mail states that there is currently no method of contacting drivers in vehicles. Royal Mail expects this project to provide minor operational benefits, including an

improvement to the drivers' environment. Royal Mail provides no further details of this proposed initiative.

- 14.15 The estimated financial impact of this initiative appears internally inconsistent. For example, there are operating cost benefits arising from the first phase of capital expenditure in 2005/06 and 2006/07, but then no further benefits arising from capital expenditure thereafter. We might expect operating benefits to increase as capital expenditure is incurred year after year.
- 14.16 The business case for this investment had not been made – in terms of the financial payback and or in terms of describing the principal benefits of the investment. The plan does not create a positive net present value. Royal Mail indicates that the main benefit of this initiative is to improve the driver's environment. Based on the information that has been provided it is difficult to see the underlying logic of Royal Mail's proposals. Moreover, Royal Mail does not appear to have considered other potential ways of achieving its goals with less cost or greater benefits, such as the use of mobile phones or in cab automated route planners. As such, we have excluded this project from our assessment of Royal Mail's efficient costs.

Paragon

- 14.17 Royal Mail proposes to purchase Paragon software that will allow it to schedule its large truck fleet. This is expected to cost £500k in 2004/05, with no costs over the price control period. Royal Mail has not quantified any benefits arising from this initiative.
- 14.18 Royal Mail's large truck fleet comprises vehicles over 7.5 tonnes. These vehicles transport bulk mail from customers to RDCs, transport mail between RDCs, and transport mail from RDCs to mail centres. Approximately 30 RML Area management teams run smaller vehicles, covering mail centre collections, routes from mail centres to delivery offices, and some routes from mail centres to other mail centres.
- 14.19 Our research indicates that there are likely to be significant savings accruing from the implementation of the Paragon software. Postal organisations in other countries are beginning to use routing software to support their transport planning – Finland and Belgium being examples.

- 14.20 Paragon claims that other firms have realised significant savings from the use of its software, including²¹⁴:
- Parcelforce Worldwide has increased driver productivity by 20%;
 - United Dairy Farmers achieved a 10% improvement in vehicle utilisation;
 - Corus achieved a 10% reduction in the average cost per tonne delivered;
 - John Lewis achieved an 8% improvement in vehicle utilisation; and
 - Domino's Pizza achieved a 12% fleet reduction.
- 14.21 Royal Mail has told us that it "*has no fit for purpose central and over-arching tool for the large truck fleet*"²¹⁵. Given the benchmarking information above, we believe that savings of around 10% should be achievable through the implementation of the Paragon software.
- 14.22 Paragon also has a partnership with a firm called Isotrak, which specialises in web-based vehicle tracking and fleet management. The Isotrak system uses real-time information to give instructions to drivers and to track vehicles en route – in contrast to Paragon, which identifies vehicle routes and schedules on a daily but not intra-day basis. Isotrak claims savings of 10% of overall transport costs from the implementation of its system²¹⁶. In principle, the savings from the Isotrak system are in addition to the saving arising from the Paragon software.
- 14.23 The two systems combined could give savings of up to 20% of transport costs. Under our lower case scenario, however, we have assumed that Royal Mail only implements the Paragon system and achieves operational savings of 10%, in line with the benchmarks above. Under our higher case scenario, we have assumed savings of 15%, which incorporates an additional 5% benefit from the implementation of Isotrak software together with Paragon.
- 14.24 Royal Mail's RDC network costs in 2003/04 were £65m²¹⁷ in 2003/04 prices, equivalent to £67m in 2004/05 prices. Applying a 10% saving to the £67m relevant

²¹⁴ www.paragonrouting.com/benefits.htm and <http://www.paragonrouting.com/News/news39.htm>. We do not have further details of the timing of components of these savings

²¹⁵ RM 5062-92

²¹⁶ www.isotrak.com/financial.html

²¹⁷ Source: RM 2023a BPM2_v2.7. We have only included savings relating to the RDC network. Mail Network transportation costs are relatively small and Local Distribution transportation related savings are covered by other initiatives such as CRT

costs gives a cost saving of £6.7m a year. These savings primarily relate to a reduction in the fleet size and better utilisation of drivers. Under the higher case scenario, which generates a 15% saving, annual savings would be £10.0m a year.

- 14.25 Paragon's customers state that savings have been realised relatively quickly²¹⁸. Consequently, we have assumed that full savings arising from the Paragon software can be realised by 2006/07, with half the savings achieved in 2005/06. For our higher case, we have assumed a £500k cost for the Isotrak system (in line with the cost for the Paragon system), which is incurred in 2006/07, with half of the benefits accruing in 2007/08 and full benefits from 2008/09 onward.
- 14.26 We have therefore incorporated the figures below into our lower case assessment of Royal Mail's efficient costs for the purposes of this price control.

Table 126: Financial impact of Paragon – LECG lower case

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	3	7	7	7	7	7	33

Note: Positive figures represent savings. Negative figures represent costs.

- 14.27 We have incorporated the figures below into our higher case assessment of Royal Mail's efficient costs.

Table 127: Financial impact of Paragon – LECG higher case

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	3	7	8	10	10	10	45
Implementation	0	(1)	0	0	0	0	(1)
Total	3	6	8	10	10	10	45

Note: Positive figures represent savings. Negative figures represent costs. Figures do not add due to rounding errors.

Opportunities for additional efficiencies

- 14.28 Royal Mail's overall Strategic Plan envisages extensive change to its operations and operational network, leading to a smaller and more efficient mail centre and RDC network. We would expect such changes, if implemented, to give rise to a

²¹⁸ See for example www.paragonrouting.com/news/10newsletter2.htm

cost saving opportunity relating to the transport function. Royal Mail has not put forward such an opportunity as one of its initiatives.

14.29 We conclude however, that Royal Mail has not made the case for certain key elements of its plan, and we have not included these initiatives in our assessment of efficient costs. Consequently, it would be incorrect for us to include related transportation savings in our assessment of future costs. We have, however, looked in more detail at two further areas of Royal Mail's transport operations – its purchasing activities, and its trunking capacity utilisation.

Purchasing

14.30 Royal Mail has provided supporting information to show that its current procurement strategy is efficient and benchmarked to best practice. Examples include, among others:

- all vehicle purchasing requirements within Royal Mail Group are undertaken using controlled tender procedures and advertised in the Official Journal of the European Union (OJEU), to maximise competition and to comply with legal requirements under WTO legislation;
- Royal Mail has been able to ascertain the purchase costs of standard production line vehicles in both the Car Derived Van and Panel Van categories from Leaseplan UK. The information shows that Royal Mail achieves more for less, in its contracts for vehicles, when compared with other major purchasers;
- a Triangle benchmarking report for Logistics dated March 2003 compares data for two line haul vehicle types (28t and 38t vehicles) and demonstrates low vehicle running costs compared to others in the industry. The study concludes that Royal Mail's leasing arrangements offer very good value for money; and
- as part of the Transport Review, Royal Mail evaluated its air network. The Review proposed that the air network be replaced with containerised jet aircraft, better able to cope with adverse weather conditions, and capable of carrying larger volumes of mail. The benefits of the new air network were the introduction of modern, larger all weather capable aircraft replacing the older aircraft affording greater capacity with fewer services. Containerisation of the air network aids handling costs with the probable move away from

mailbags. In August 2002, Royal Mail published an advertisement in the OJEU, for the provision of Inland Air services.

- 14.31 Based on the process of competitive tendering and benchmarking, it would appear that Royal Mail is nearing an efficient level of costs for the transportation services that it purchases – although at this stage we cannot conclude on whether the transportation network is optimally configured.

Capacity utilisation

- 14.32 In addition to the Paragon savings identified above, we believe there may be an opportunity for Royal Mail to save transport costs by outsourcing some or all of its transport operations. There is international precedent for such a strategy. TPG, for example, owns 300 vehicles for its long-distance transport, and charters 200 vehicles for additional capacity as required. Canada Post and Finland Post also outsource their long-distance transport needs. Finland Post has saved 15% on its vehicle transport costs by outsourcing²¹⁹. The key driver of such savings appears to be the ability to vary capacity, in aggregate and on specific routes, by day of week and week of year, without maintaining idle capacity in off-peak periods.
- 14.33 The table below shows the primary advantages to Royal Mail of outsourcing some or all of its transportation services, and with an assessment of whether Royal Mail is currently obtaining the maximum advantage from its current arrangements. Royal Mail may be able to improve its capacity utilisation to some extent by exploiting the Paragon and Isotrak tools. However, our benchmarking indicates that fully achieving such savings from better capacity utilisation requires outsourcing some or all of its transport activities.

²¹⁹ Conversation with Finland Post Director of Transport, 23 February 2005

Table 128: Transport savings under different scenarios

Saving area	Royal Mail today	Royal Mail with Paragon/ Isotrak	Royal Mail if fully outsourced
Lowest cost vehicles and fuel	Yes, through competitive tendering	Yes, through competitive tendering	Yes
Drivers' wages at benchmark levels	Yes, through benchmarking	Yes, through benchmarking	Yes
Optimal scheduling strategy	No	Yes, through Paragon	Yes
Optimal day-to-day operations	No	Yes, through Isotrak	Yes
Capacity flexed to match volumes	No	Possibly	Yes

Source: Meeting with Vehicle Services, 4 November 2004.

- 14.34 Royal Mail has confirmed to us that it has no information on capacity utilisation in its transportation network. Royal Mail states that: *“There is no high level information available on vehicle fill by product. For each trunk road service a planned number of cages/ yorks by product is used. Local measures will determine whether or not the planned traffic was made available for the planned dispatch time. Receiving offices will take up with dispatching offices any variation to plan. Vehicles have to leave on time irrespective of load fill in order to meet the time constraints at the mail centres, with any failure to meet these times impacting on quality of service performance.”*²²⁰ We conclude from this, and Royal Mail's responses/ failure to respond to other questions, that Royal Mail has not engaged in any systematic effort to manage capacity in its transport operations in an optimal way (or, indeed, to schedule its fleet).
- 14.35 Royal Mail explained that shortly before the planned awarding of a contract in 2002, the Board decided not to outsource the transport function²²¹. Royal Mail later explained that the reasons for this were: *“inability to predict accurately vehicle numbers, a larger than required workshop network and workforce, customer immaturity in supplier management and fleet understanding, a loss making Contract Hire business (£22m), vehicle availability requirements not understood,*

²²⁰ RM 6109

²²¹ Meeting with RM on 4 November 2004. RM noted that this occurred after 18 months of preparatory work

*access on joint sites*²²². We are unable to determine whether these were sound reasons for not awarding the specific contract, or whether these are reasons or not for outsourcing the transport function in general.

14.36 It is unclear to us whether these barriers are still insurmountable. If such barriers could be overcome, as they are in other countries, there is a potential opportunity for saving at least a further 2.5% of transport costs²²³ through the underlying savings from capacity utilisation achievable from outsourcing transport. This calculation is speculative, however, and as such we do not include it in our lower case scenario. We remain certain however, that there are some savings relating either to some degree of outsourcing or more effective capacity management.

14.37 As such, we have included savings from introducing some degree of outsourcing or improvement in capacity management capabilities across Royal Mail's mail centre and RDC transport network in our calculation of the higher case scenario. We believe that any such initiatives, if they took place, could be in place by the start of the 2006/07. A 2.5% reduction in transport costs would give rise to an ongoing saving from that year of £8m²²⁴, as shown in the table below.

Table 129: Financial impact of capacity utilisation improvement – LECG higher case

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	8	8	8	8	8	41

Note: Positive figures represent savings. Negative figures represent costs.

Conclusions

14.38 We believe that there are additional savings to be generated from the Paragon initiative. The case for In Cab Communications, however, has not been made, and as such, we do not consider this allowable. Our financial estimates under the lower case scenario are shown in the table below.

²²² RM 6109

²²³ Calculated as the half of the 5% difference between the 15% saving achieved by Finland Post and the 10% saving identified for Paragon above. The saving could be higher, if Finland Post savings were made from an already efficient level of transportation costs

²²⁴ Calculated as 2.5% of mail centre transport costs of £256m plus RDC network costs of £65m in 2003/04 – from RM 6037

Table 130: Cash impact of transport initiatives – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
In cab communications	0	0	0	0	0	0	0
Paragon	3	7	7	7	7	7	33
Capacity utilisation	0	0	0	0	0	0	0
Total	3	7	7	7	7	7	33

Source: RM 4054, 5045 and 5062-92. LECG analysis. Red – we have excluded Royal Mail's initiative in full. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG, not considered by Royal Mail.

14.39 The table below shows these costs year by year and by cost type.

Table 131: Aggregate impact of transport initiatives – LECG lower case

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	3	7	7	7	7	7	33
Implementation	0	0	0	0	0	0	0
Total	3	7	7	7	7	7	33

Note: Positive figures represent savings. Negative figures represent costs.

14.40 We believe that there may be additional savings achievable from improving capacity utilisation through outsourcing Royal Mail's transport function, equal to £8m a year from 2006/07, and from implementing Isotrak software alongside the Paragon system, equal to an additional £3m a year. Our higher case therefore incorporates such savings, as shown in the table below. We have not included the full potential saving arising from the implementation of Isotrak software, and we therefore believe that even this higher case is conservative.

Table 132: Cash impact of transport initiatives – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
In cab communications	0	0	0	0	0	0	0
Paragon	3	6	8	10	10	10	45
Capacity utilisation	0	8	8	8	8	8	41
Total	3	14	17	18	18	18	86

Source: RM 4054, 5045 and 5062-92. LECG analysis. Red – we have excluded Royal Mail's initiative in full. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG, not considered by Royal Mail.

- 14.41 We show the annual impact of our higher savings case in the table below, broken down to the different financial impacts.

Table 133: Aggregate impact of transport initiatives – LECG higher case

2004/05 prices- £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	3	15	17	18	18	18	87
Implementation	0	(1)	0	0	0	0	(1)
Total	3	14	17	18	18	18	86

Note: Positive figures represent savings. Negative figures represent costs.

15 Review of delivery costs

Introduction

- 15.1 This section covers the costs associated with Royal Mail delivery offices. The main activities within delivery offices are the sorting, preparation for delivery, and delivery of mail. Some 118,000 of RML's 184,000 FTEs, or 64% of the total, are employed in delivery offices.
- 15.2 This section first provides an overview of delivery activities and provides a summary of historical cost trends. We then summarise the delivery-related efficiency opportunities identified at the start of the current price control. We then provide a full review of the initiatives contained within Royal Mail's Strategic Plan. In performing this review, we identify two additional opportunities not considered by Royal Mail in its submissions. Finally, we summarise our conclusions in relation to the delivery stage of the pipeline.
- 15.3 This section has been prepared with and under the direction of Peter Portnoi. Mr Portnoi held roles as National Delivery Office Programme Manager and Head of Access & Delivery Deployment during his 35-year career at Royal Mail²²⁵.

Overview of delivery operations

- 15.4 Royal Mail has a national network of approximately 1,400 delivery offices. The key activities at delivery offices are: sort mail to delivery route; prepare mail for delivery; deliver mail; and collect mail.
- 15.5 Mail arrives in "yorks" and bags overnight and early each morning, in three separate streams – letters, flats, and packets. The mail is unloaded, weighed to determine the implied workload, and taken to the relevant area of the delivery office. On average, around 30% of the letters arriving at delivery offices have been walk-sorted²²⁶. The mail centre that most closely serves the delivery office will have performed this initial level of walk-sorting.
- 15.6 The extent to which mail has already been walk-sorted will vary depending on the inbound volumes at the relevant mail centre, the performance of that mail centre the preceding night, and the mail centre's work plan and processing "window".

²²⁵ Refer to paragraph 12.3 for a short biography of Mr Portnoi

²²⁶ Supplementary Paper on Implementation, page 12

There is wide variation around this average, both between delivery offices and for a particular delivery office across different nights.

- 15.7 There are then two major components to delivery activities. The first component is finishing the preparation of mail for delivery, which is typically referred to as “indoor work”. This involves completing the walk sorting of mail, which is referred to as the “inward primary sorting” activity. On completion of the inward primary sort, staff “prep” the mail for delivery. This involves putting the mail into the sequence it will be delivered (referred to as walk sequencing) and preparing for the delivery of packets, special deliveries, and unaddressed “door-to-door” materials.
- 15.8 The second component is the actual delivery of the mail. Walk-sorting and sequencing for residential customers typically finishes by 8.30am, at which time delivery staff leave on their rounds. Delivery staff serving business customers prep their mail and leave on their rounds by around 7.15 am.
- 15.9 Delivery staff travel to their first delivery point by foot or bicycle, in a Royal Mail vehicle or on public transport. Mail is delivered along pre-assigned routes, and in some cases, delivery staff also make collections. Work is complete when staff return to the delivery office and deal with any undelivered mail. Under “job and go” arrangements delivery staff finish their shifts when their work is finished – usually around noon, although this time varies by delivery office – rather than at a predetermined time.

Historical cost trends

- 15.10 Delivery costs in 2003/4 totalled £2,444m – which is equivalent to approximately 37% of total RML costs of £6,095m. There are three major activities: indoor sorting and prepping of mail; walk bundling (preparation of unaddressed door-to-door items)²²⁷; and outdoor delivering of mail. An overview of each activity is provided in Appendix 15 together with a summary of activity costs by cost type.
- 15.11 The table below summarises costs in 2003/04 prices across each delivery activity.

²²⁷ RM indicates that walk bundling is not strictly a delivery activity. The facilities are generally co-located with RDCs and managed by the LS business unit.

Table 134: Historical delivery cost trends

2003/04 prices £m	00/01	01/02	02/03	03/04	CAGR
Delivery outdoor	1,402	1,402	1,350	1,339	-1.5%
Delivery indoor	1,044	1,018	1,127	1,097	1.7%
Walk bundling	11	8	8	8	-9.4%
Total	2,457	2,428	2,485	2,444	-0.2%

Source: Royal Mail historical pipeline cost analysis (RM 5079). Notes: * refers to volume adjusted compound average growth rate.

- 15.12 Overall, delivery costs have fallen by around 0.2% a year in real terms. It would appear that over the past four years, aggregate cost improvements in the delivery component of the pipeline have been small.
- 15.13 Outdoor costs have fallen at 1.5% a year, due to the implementation of the SDD project, which when complete will have removed most second deliveries²²⁸.
- 15.14 Delivery indoor costs have increased by around 1.7% a year in real terms. The cost benefit of hours saved from the implementation of SDD has been offset by an enhanced pay package for those delivery offices that have successfully deployed SDD, with basic weekly wages rising to £300 over this period.

Current price control

- 15.15 A key element of Royal Mail's Renewal Plan was SDD²²⁹. The aim of the programme was to reduce Royal Mail's delivery specification from two deliveries to one delivery a day and to move the latest time for delivery from 9.30am to lunchtime (no specific time was identified), enabling a reduction in total hours worked and some "payback" to staff in the form of higher weekly basic pay²³⁰.
- 15.16 Royal Mail has not provided us with the original business case for the SDD programme. We understand that the case was based on the following observations²³¹:

²²⁸ The latest project financials show a negative impact on operating costs of £23m a year

²²⁹ SDD was previously referred to as the Tailored Delivery Services project

²³⁰ Refer to the section on HR for a more specific discussion of "payback" to staff

²³¹ Royal Mail Group plc Board, "Tailored Delivery Services (TDS)", January 2003, Royal Mail (03)08a, provided as document TDS-2

- only 4% of mail was delivered in the second delivery, which accounted for 14% of delivery round costs;
 - the vast majority of social customers do not require a second delivery; and
 - that accommodating employee demands for a shift to a five day week would be operationally very difficult within the two-delivery framework.
- 15.17 We understand that the initial SDD business case envisaged an operating cost saving of £370m a year by 2004/05 before any increase in pay, and savings of £186m a year after pay increases. The anticipated implementation cost was £348m²³². The key driver of cost savings was a significant reduction in headcount of the order of 20,000 heads, underpinned by a reduction in the number of delivery “drops” and an extension in delivery spans to four hours.
- 15.18 WS Atkins²³³ concluded that the SDD initiative was implementable in roughly the form proposed by Royal Mail, but that additional savings were available, in the following areas:
- increasing the number of points of call on each delivery route, consistent with a four-and-a-quarter hour delivery span;
 - starting delivery shifts at 7am, rather than between 5am and 6am, thereby removing the need for shift allowances;
 - lower project implementation costs; and
 - lower employee payback, as advised by Consignia.
- 15.19 WS Atkins argued that these savings would be partly offset by a longer implementation period, of five years rather than the three years proposed by Royal Mail. WS Atkins estimated that the programme would generate an ongoing net benefit of £268m a year in 2000/01 prices, in comparison with the £189m identified by Royal Mail²³⁴.
- 15.20 Royal Mail’s latest information indicates that SDD, once fully implemented, will have a negative impact on operating costs of £23m a year²³⁵. The key elements of

²³² Consignia plc Board, Tailored Delivery Services Authority for spend up to September 2002, August 2002, CB(02)78, provided as document TDS-1

²³³ Refer to Page 14-2 and following in the WS Atkins Report

²³⁴ WS Atkins, table 14-2

²³⁵ Document TDS-6, provided as part of Postcomm’s service quality review

the difference between Royal Mail's initial plan and this latest estimate are that maximum delivery spans were set at three-and-a-half hours and the proportion of payback to the workforce was increased so that, as of February 2004, the value of this payback was estimated at £150m²³⁶. Overall, the implementation of SDD has not therefore delivered the financial benefits originally anticipated.

- 15.21 We note that a number of international operators do have longer delivery spans than Royal Mail and that this may give rise to savings opportunities in the future.

Review of Royal Mail's submissions

- 15.22 Royal Mail has approximately 1,400 delivery offices achieving different levels of cost and delivery efficiency. Royal Mail says these delivery offices face a number of problems, including:

- a high level of manual sortation at delivery offices;
- incomplete and inaccurate delivery databases;
- commercial and employee goals which are poorly aligned; and
- [>]

- 15.23 Royal Mail's strategy is to modernise its network through a phased investment programme that automates the pipeline and introduces uniform best practice processes to transform the capability and efficiency of delivery operations. Royal Mail plans to remove the manual indoor sortation task, which is made possible through investment in automation and product re-specification. Royal Mail says it intends to design an optimum structure of workforce for the new outdoor delivery task.

- 15.24 In addition, Royal Mail intends delivery offices to have fully-integrated delivery databases which will be owned and maintained locally. Royal Mail plans to introduce a new [>]. [>].

- 15.25 Royal Mail proposes a number of delivery initiatives. Four of these initiatives – Walk Sequencing, Delivery Network and Equipment, Delivery Span and Professional Delivery Workforce – require significant investment. [>]. [We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "The primary objective of these initiatives is to

²³⁶ RM 5011, Appendix G

reduce the burden of sortation on delivery employees and focus them on providing an excellent delivery service to receiving customers.']

- 15.26 The remaining three initiatives – Best Practice Deployment, Delivery Process Measurement, and Delivery Systems – aim to improve processes across indoor and outdoor delivery activities, but do not require significant capital or one-off expenditure.
- 15.27 The table below summarises the cash impact of Royal Mail's initiatives in this area, combining the effects of operating cost savings and one-off costs (capital expenditure, any redundancy and other implementation costs).

Table 135: Cash impact of delivery-related initiatives – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Delivery network and equipment	(23)	(23)	(40)	(34)	(9)	(3)	(109)
Walk sequencing	(3)	(11)	(3)	10	(6)	24	14
Delivery span	(3)	(3)	(10)	(15)	(15)	0	(43)
Professional delivery workforce	(11)	(11)	(11)	0	0	0	(22)
Best practice deployment	10	40	61	62	62	62	287
Delivery process measurement	0	0	1	5	13	25	44
Delivery systems	(4)	(9)	(9)	3	3	2	(10)
Total	(35)	(18)	(12)	31	48	110	160

Source: RM 5045 and 5062-92. Positive figures represent savings. Negative figures represent costs.

- 15.28 In addition to the Strategic Plan and the BPM initiative support, we understand that Royal Mail is considering a further three elements of the delivery operation, including: Information Systems Redesign; Walk Route Tracking and Design; and Delivery Office Work Planning²³⁷. The sub-sections below discuss the main elements of Royal Mail's proposed initiatives in further detail.

²³⁷ Meeting with Royal Mail on 16 November 2004

Delivery network and equipment

- 15.29 Royal Mail proposes a major one-off spend to address what it describes as “*the under-investment in recent years in the Royal Mail delivery estate*”²³⁸. Royal Mail further states that, “*the estate must be reviewed and reduced in order to align with changes to mail centres and increased automation*”. Royal Mail’s estimate of the financial impact of this initiative is shown in the table below.

Table 136: Financial impact of Delivery Network and Equipment – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	0	0	6	11	17	34
Capex	(23)	(23)	(40)	(40)	(20)	(20)	(143)
Total	(23)	(23)	(40)	(34)	(9)	(3)	(109)

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

- 15.30 There is a disconnect between Royal Mail’s description of this initiative and its quantification of the impact. In addition to the comments above regarding ‘reducing’ the delivery office estate, Royal Mail states that: “*As Royal Mail increases the level of automation in mail centres and implements Walk Sequencing, there may be opportunities to rationalise the delivery office estate.*” Royal Mail also says it “*must ensure that locations and facilities are fit for purpose and tools for the job are adequately provided, both for operational and administrative activities.*”
- 15.31 Royal Mail only quantifies the second, refurbishment-related, element of this initiative, assuming that “delivery office refurbishment” will average £133k per delivery office. Royal Mail anticipates a small operating cost saving that comes in from 2008/09 and represents savings in maintenance and related expenditure. Royal Mail indicates that in practice, a more detailed network survey is required to enable accurate project-by-project costing, and states that further expenditure may be necessary.
- 15.32 We have reviewed the refurbishment-related element of this initiative here, and discuss potential rationalisation of delivery offices in paragraph 15.86 below. We note that the disposal value of delivery offices over the last five years has averaged

²³⁸ RM 5045

£190k²³⁹, and that refurbishment costs are projected at £133k per delivery office, or 70% of the historic disposal value. We believe that it is unlikely that Royal Mail would spend such a large proportion of the value of a property on refurbishing it, when relocation might be a cheaper option that would lead to a more optimally specified delivery office.

15.33 Moreover, as Royal Mail states in relation to this initiative, an implication of the Strategic Plan is that an extensive programme of relocation and rationalisation of delivery offices will be required over the next five to ten years (see paragraph 15.86 below). We do not believe that it would be value creating for Royal Mail to undergo an extensive refurbishment of its delivery office network before undertaking such an initiative.

15.34 The business case for this investment had not been made – in terms of the financial payback or in terms of describing the principal benefits of the investment. Consequently, we have excluded this initiative from our assessment of Royal Mail's efficient costs. Again, however, we note that there is scope within the amounts that we suggest should be allowed for capital expenditure generally for Royal Mail to pursue this initiative if it believes that it is valuable to do so.

Walk sequencing

15.35 Royal Mail proposes to introduce automated sequencing of mail to remove a very large component of indoor work in delivery offices. Royal Mail expects to achieve this through the use of existing equipment in mail centres and the purchase of dedicated walk sequencing equipment. A key enabler for this project is increasing the proportion of mail that is walk sorted in mail centres, rather than in delivery offices²⁴⁰. Royal Mail's estimate of the financial impact of this initiative is shown in the table below.

²³⁹ LECG analysis of data contained in RM 6102

²⁴⁰ RM 5045

Table 137: RM's assessment of the financial impact of Walk Sequencing

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Implementation	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Capex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Total	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

- 15.36 The key assumptions behind Royal Mail's projections are as follows. Royal Mail plans to install [>£] walk sequencing machines by 2010/11. Its final vision is to install around [>£] sequencing machines. [>£]. *[We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "Walk sequencing machines will initially be targeted at units where they will have the greatest impact so that 50% of volume is covered by 2010/11."]*
- 15.37 This plan appears to be directionally correct. Deutsche Post, TPG, CTT Correios (Portugal), Finland Post, and USPS all have implemented or are implementing similar programmes.
- 15.38 The long-run level of savings that Royal Mail expects to generate from this initiative is a little lower than we might expect. By 2010/11, Royal Mail expects a benefit of £50m from walk sequencing 50% of its mail. Assuming that each machine generates the same benefit, this implies end-state benefits of £100m a year. The table below shows savings that other postal operators have been able to achieve through walk sequencing, together with the comparable benefits for Royal Mail. This indicates that Royal Mail should be able to achieve savings of between about £100m and £220m a year from walk sequencing. We would not, however, propose to make an adjustment for this difference, as Royal Mail is close to the bottom of this range and there may be reasons that explain this difference.

Table 138: International benchmarks relating to walk sequencing

Operator	Change	Benefit achieved	Annual saving for RM
TPG	Full roll-out of walk sequencing	€80m a year	£180m
USPS	Walk sequencing of 82% of mail	Eliminated 4% of city carrier (delivery) routes	£100m
CTT (Portugal)	Walk sequencing of 3% of mail	Eliminated 100 FTEs	£220m

Source: LECG international benchmarking. See 0. Royal Mail equivalents have been adjusted for differences in total volumes handled by postal organisations.

- 15.39 We note that the proposed pace of implementation is slow. TPG was able to move from a decision to implement walk sequencing in 2002 to a planned completion of the initiative in 2005. Royal Mail states that its automation utilisation initiative is an enabler for walk sequencing, but the automation utilisation initiative is expected to be fully rolled-out by the end of 2007/08. There may be a constraint arising from the pace of roll-out of the three dimensional processing initiative, although Royal Mail does not make such a link. We are therefore not aware of any operational constraint to a more rapid rollout of walk sequencing, and believe it may be possible for Royal Mail to roll this initiative out more quickly.
- 15.40 [>€]. A key enabler to achieving savings from the implementation of walk sequencing is [>€] .
- 15.41 [>€]
- 15.42 Factoring these gainshare payments into the assessment of walk sequencing implies that, on Royal Mail's figures, the initiative will be value destroying over the period of the Strategic Plan. At best, at end-state, walk sequencing would be roughly break-even on an ongoing basis [>€], although it would not generate sufficient savings to compensate for the one-off costs and net operating costs incurred during the lengthy implementation phase.
- 15.43 Moreover, as discussed in paragraph 15.31 above, it is also the case that significant delivery office rationalisation has typically been necessary to allow the installation of walk sequencing equipment in delivery offices. Royal Mail has not

²⁴¹ RM Strategic Plan

²⁴² LECG international benchmarking – see A.14.21

²⁴³ [>€]

considered a reduction in the number of delivery offices in its financial plans. We believe that the rationalisation of the delivery network could realise significant additional savings, which Royal Mail has not incorporated into its financial projections.

- 15.44 We therefore do not believe that Royal Mail has made the case for its proposed investment in walk sequencing. The figures we do have available imply that the initiative will be value destroying, and although we believe that there is potentially a value-creating case to be made for walk sequencing, we do not have sufficient information to make that case. We have therefore excluded this initiative from our assessment of Royal Mail's efficient costs. Under a regulatory value approach to the setting of the price control, that need not constrain Royal Mail's ability to carry out the investment.

Delivery span

- 15.45 Royal Mail proposes to introduce 15,000 motorised trolleys for its delivery staff between 2005/06 and 2008/09. Royal Mail states that this provides a solution to the weight on delivery walks problem, which in turn is being driven by longer walk spans and the changing profile of mail towards heavier and larger items. The financial impact of this initiative is shown in the table below.

Table 139: Financial impact of Delivery Span – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Capex	(3)	(3)	(10)	(15)	(15)	0	(43)

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

- 15.46 Royal Mail states that each such motorised trolley costs £3,000, and that motorised trolleys are required for 30% of the 50,000 town delivery routes across the country. Royal Mail states that this investment is required to meet Health and Safety Executive requirements and that it has therefore not quantified any savings arising from reduced sick absence and retirements because of this initiative. Royal Mail provides no support for either the cost of each trolley, or the number of routes that actually require such investment.
- 15.47 We do not have information on the extent to which delivery rounds have changed as a result of SDD, or how weight per delivery point has changed over that period.

We are therefore unable to assess whether weight has become a more significant issue for delivery staff since the last price control.

- 15.48 Volumes of both flats and packets were roughly constant from 2003/04 to 2004/05, and Royal Mail's own volume forecasts (which assume that its size-based pricing proposals are accepted) predict significant declines in flats and packet volumes from 2005/06 to 2010/11, as shown in the table below.

Table 140: Royal Mail's forecast volume of 3D items

Units, m	05/06	06/07	07/08	08/09	09/10	10/11	CAGR 06-11
Flats	4,690	4,043	4,063	3,987	3,939	3,938	(3.4%)
Packets	1,108	1,006	1,020	1,001	981	969	(2.6%)

Source: Business Planning Model

- 15.49 We are surprised that Royal Mail does not quantify benefits associated with this initiative. We would expect at the least such an initiative to reduce sick leave, and perhaps to increase productivity relating to outdoor work. Royal Mail does not make such connections in its initiative support, or in the documentation relating to its HR initiatives.
- 15.50 We recognise the need for Royal Mail to meet its obligations to the Health and Safety Executive. However, we have insufficient detail to determine the nature of the need for motorised trolleys, or how that need may alter in line with other changes as part of this price control. The project as it is shown by Royal Mail is financially negative. We have therefore excluded this initiative from our assessment of Royal Mail's costs. This exclusion is the result of inadequate support provided by Royal Mail and does not reflect any inherent belief on our part that the addition of motorised trolleys would not be desirable.

Professional delivery workforce

- 15.51 Royal Mail proposes to invest in handheld IT devices to support a new, professionalised, delivery workforce specialising in business recipients of mail. Royal Mail states: "*the devices will facilitate communications with business customers and improve Royal Mail's ability to provide an optimal service.*"²⁴⁴ The financial impact of this initiative is shown in the table below.

²⁴⁴ RM 5045

Table 141: Financial impact of Professional Delivery Workforce – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Implementation	(11)	(11)	(11)	0	0	0	(22)

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

- 15.52 Royal Mail indicates that there are 7,000 walks serving business recipients and 3,000 special delivery walks that will require hand-held devices. This represents 10,000 units paid for at £1,100 each year for three years, for a total cost of £33m. Royal Mail states that the objective of this investment is to improve customer service, and that no financial benefits have been projected. Royal Mail states that this spend is necessary to support volume projections in the face of increasing competition.
- 15.53 In presenting its case, Royal Mail:
- does not explain how such devices will improve customer service. To support such an initiative we would expect Royal Mail to present a range of supporting information, including customer surveys, clearly showing that this type of expenditure is required by its customers;
 - explains that the investment is subject to trial. We are concerned that at this stage there is not a robust business case for this plan with clearly identified benefits (in terms of both costs and revenues). We are also concerned that if the trial failed, Royal Mail would benefit by the requested allowance for one-off expenditures of around £22 million; and
 - states that these devices will support existing and future products. Apart from downstream access products, the BPM and Strategic Plan do not include future products. It would be inappropriate to include the costs required to support such products without also including the future revenues associated with the products.
- 15.54 We note that Parcelforce already uses such hand-held devices, including a track-and-trace feature. We are not aware of other postal organisations using such technology, and we can only speculate on the specific use of this equipment.
- 15.55 We do not believe that Royal Mail has made a sufficiently robust case for the inclusion of this expenditure. In particular, we are surprised that Royal Mail does not show benefits arising from the supposedly superior customer service deriving

from this initiative. We would expect that working more closely with customers would yield a number of benefits. Consequently, we have excluded this initiative from our assessment of Royal Mail's future costs. As with other initiatives, under a regulatory value price control Royal Mail could make this investment and benefit through the roll-forward of the regulatory asset base at the time of the next price control, if it were able to demonstrate that this investment had been financially positive. The funds to make this investment should be available to Royal Mail through the non-specific capital allowance described in Section 19 below, if it should choose to make this investment.

Best practice deployment

- 15.56 This project is aimed at raising productivity in poorer-performing delivery offices by specifying standard tools, implementing existing processes and procedures in a uniform and consistent way, and coaching Royal Mail people and managers in the 'right' way to perform tasks. It also aims to provide operational managers with specialist support and advice to ensure that specifications are adhered to. Royal Mail states that the initiative will be supported by appropriate people incentives, and productivity-linked pay increases.
- 15.57 We show Royal Mail's estimates of the financial implications of this initiative in the table below.

Table 142: Financial impact of Delivery Best Practice – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	12	42	62	62	62	62	290
Implementation	(2)	(2)	(1)	0	0	0	(3)
Total	10	40	61	62	62	62	287

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

- 15.58 Royal Mail states that these savings "are modelled using all units on post Single Daily Delivery estimates of efficiency". Royal Mail will target the top 250 delivery offices with the highest potential for efficiency savings. Royal Mail anticipates savings primarily in the area of reduced indoor costs in preparing mail for delivery rounds. These savings arise from moving the poorest-performing delivery offices towards existing best practices – rather than from identifying and implementing

better practices across the delivery office network, which is covered by the 'Delivery Process Measurement' initiative discussed below.

- 15.59 Royal Mail assumes that end-state savings will be approximately [>€] hours per week, with an associated saving per hour of £[>€]. Royal Mail provides no support for these assumptions. However, with very low implementation costs, this initiative is highly value creating.
- 15.60 It is unclear why Royal Mail has decided to roll this initiative out to only 250 delivery offices. There appears to be potential to achieve additional savings from implementing this initiative in the next most poorly performing delivery offices. On the assumption that the next 250 delivery offices may be able to achieve savings of half those achieved by the top 250, Royal Mail would be able to generate savings of an additional £31m, or total savings in the long-run of £93m.
- 15.61 Our internal benchmarking analysis indicates that labour savings of the order of £250m per year are achievable simply by applying existing best practices within the delivery office network. Our analysis also indicates that compared to a top decile benchmark, the worst 250 performing delivery offices could achieve labour savings of up to £125m per year, while the worst 500 performing delivery offices could achieve labour savings of up to £200m a year. This is conservative estimate for the reasons given in Section 20 below.
- 15.62 In our lower savings scenario, we have incorporated Royal Mail's assessment of the financial impact of these initiatives into our assessment of efficient costs unadjusted. However, we believe that significant additional benefits could be achieved through this initiative, to bring the total long-run benefit from this initiative closer to £200m a year in 2003/04 prices, or £206m a year in 2004/05 prices. Therefore, in our higher savings scenario, we have incorporated these more aggressive savings, as shown in the table below. We discuss the overall connection between our internal benchmarking exercise and Royal Mail initiatives relating to delivery offices below.

Table 143: Financial impact of Delivery Best Practice – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	12	42	62	110	158	206	578
Implementation	(2)	(2)	(1)	0	0	0	(3)
Total	10	40	61	110	158	206	575

Note: Positive figures represent savings. Negative figures represent costs.

Delivery process measurement

- 15.63 Royal Mail indicates that significant savings can be achieved by seeking “*to embed a continuous improvement philosophy throughout delivery, which will engage Royal Mail delivery postmen and women with the ongoing success of the business*”²⁴⁵. Royal Mail continues that it expects to achieve this through “*better measurement, continuous improvement and the redesign of the delivery processes*”.
- 15.64 Our understanding is that this initiative differs from the Delivery Best Practice initiative, which focuses on spreading existing best practice. The Delivery Process Measurement appears to build on identifying new methods of working that do not currently exist within Royal Mail. The table below summarises the expected financial impact of this initiative.

Table 144: Financial impact of Delivery Process Measurement – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	0	2	6	14	26	48
Implementation	(1)	(1)	(1)	(1)	(1)	(1)	(5)
Total	0	0	1	5	13	25	44

Source: RM 5045. Figures in 2005/06 and 2006/07 do not add due to rounding. Positive figures represent savings. Negative figures represent costs.

- 15.65 Royal Mail states that the source of these anticipated savings is a 20% reduction in indoor delivery costs in targeted delivery offices, with the savings phasing in over four years. Royal Mail assumes these costs are not targeted by other projects, and that the initiative will be launched in 150 of its 1,400 delivery offices by 2007/08 and 450 delivery offices by 2010/11. Implementation costs relate to the fully loaded costs of the implementation team, which rises to 10 FTEs from 2007/08.

²⁴⁵ RM 5045

- 15.66 The estimated savings are based on an average indoor delivery cost per unit, which have not yet been scoped to individual delivery offices or areas. Royal Mail assumes that it will be able to reduce indoor delivery office costs in 450 selected delivery offices by 20% beyond the best practice levels discussed above in relation to the Best Practice Deployment initiative. Royal Mail provides no further support for its assumptions.
- 15.67 We have assumed that this initiative covers savings that Royal Mail might make as part of the implementation of the Transend system. This system supports the analysis and setting of workloads for indoor mail sorting, sequencing and prepping work, and for outdoor work²⁴⁶. During the course of our review, Royal Mail indicated that it is piloting the Transend system in a single delivery office²⁴⁷, however this is not commented on within the Strategic Plan or its initiative support. We find this strange – but since Transend appears so closely related to aspects of this initiative, we assume that the Transend system forms a part of this proposed initiative.
- 15.68 Royal Mail makes a key assumption that it cannot implement this initiative in more than 150 delivery offices in a given year. By 2010/11 Royal Mail assumes it will have rolled out this initiative to 450 delivery offices²⁴⁸. We have no firm basis on which to comment; however, our experience, and that of our postal experts, indicates there may be an opportunity for Royal Mail to roll this initiative out more rapidly.
- 15.69 Royal Mail assumes that each delivery office has the same level of indoor costs, £569k a year. Our figures indicate that indoor staff costs for an average Delivery office in 2003/04 are higher, at £614k a year²⁴⁹. Moreover, we know that delivery offices differ significantly in cost – according to our internal benchmarking, the 450 worst performing represent 44% of total (indoor and outdoor) staff costs²⁵⁰. Adjusting Royal Mail's figures for these two factors, and restating in 2004/05 prices, would give a saving by 2010/11 of £78m rather than the £26m put forward by Royal Mail – an additional saving of £52m a year from that time.

- 15.70 We believe that Royal Mail may have underestimated the financial savings that can be achieved from this initiative. We have not incorporated an adjustment to our figures in our lower case. In our higher case, however, we have included an additional £52m a year savings from this initiative, as shown in the table below. We believe that this treatment is conservative, as we have not adjusted for the faster phasing of this initiative that we believe may be possible.

Table 145: Financial impact of Delivery Process Measurement – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	0	5	18	43	78	145
Implementation	(1)	(1)	(1)	(1)	(1)	(1)	(5)
Total	(1)	0	4	17	42	77	141

Note: Positive figures represent savings. Negative figures represent costs.

Delivery systems

- 15.71 Delivery offices are not fully networked and elements of the management of delivery offices is still supported, monitored and controlled by paper-based systems of simple spreadsheets and word processing documents²⁵¹. Royal Mail proposes a full systems audit to identify the gap in current provision and review what information is required to support existing processes. In addition, it will identify the information that a delivery office manager needs to successfully run his or her office. The estimated financial impact of this initiative is shown in the table below.

²⁴⁶ RM 6114 for further details on Transend, and paragraph 15.76 for our discussion of efficiencies in outdoor work

²⁴⁷ Meeting with RM on 16 November 2004

²⁴⁸ [>]

²⁴⁹ Calculated as £859m from Appendix 14 divided by 1,400 delivery offices

²⁵⁰ Staff costs of £910, compared with total delivery office staff costs of £2,061m.

²⁵¹ RM 5045

Table 146: Financial impact of Delivery Systems – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	(1)	1	3	3	2	8
Implementation	(4)	(8)	(10)	0	0	0	(18)
Total	(4)	(9)	(9)	3	3	2	(10)

Source: RM 5045. Positive figures represent savings. Negative figures represent costs.

- 15.72 Royal Mail estimates that savings will be based on removal of administrative costs of maintaining existing paper based systems, based on an anticipated saving of 20% of a duty per delivery office. Implementation costs in the price control period relate to IT costs.
- 15.73 We note that this project has not yet been scoped – as the first stage of the project will be a full systems audit. Consequently, Royal Mail has no basis to support the anticipated implementation costs. This gives rise to the problem that, if this project is incorporated into the figures for this efficiency review, and Royal Mail spends less than the amounts envisaged in this initiative, then Royal Mail will benefit to the extent it has not spent the allowed one-off costs.
- 15.74 Moreover, the anticipated savings are insufficient to justify the required level of one-off costs involved. For the purposes of our projections, therefore, we have reduced the level of one-off costs so that the project is positive in net present value terms²⁵². The resulting financial implications are shown in the table below, and we have incorporated these financials into our assessment of Royal Mail's efficient costs.

Table 147: Financial impact of Delivery Systems – LECG

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	(1)	1	3	3	2	8
Implementation	(2)	(4)	(5)	0	0	0	(9)
Total	(2)	(5)	(4)	3	3	2	(1)

Note: Positive figures represent savings. Negative figures represent costs.

²⁵² Savings calculated to 2014/15 assuming an 8% real discount rate

Opportunities for additional efficiencies

15.75 We have identified two delivery-related areas where we believe Royal Mail might achieve additional savings. These areas are walk route optimisation, and delivery office consolidation. This sub-section discusses each of these in turn.

Walk route optimisation

15.76 Our international benchmarking indicates that there are significant savings available to postal operators from optimisation of walk routes using dedicated computer software – see, for example, Table 299 in Appendix 10. In general, savings stem from a reduction in travelling time for delivery postal staff. Savings achieved by selected international postal operators include²⁵³:

- Finland Post is targeting savings of 2-5%;
- Belgium Post 17% of headcount; and
- Deutsche Post initially identified 1.25% of combined indoor and outdoor costs, and has saved 10% of travel times to date.

15.77 Giro Inc is a leading supplier of walk route optimisation software. Giro asserts that postal customers using its Georoute software have made savings of between 1% and 10% of outdoor delivery costs with a typical savings level of 5% of outdoor delivery costs²⁵⁴.

15.78 Moreover, a study performed for Royal Mail in 1997 estimated that savings in the number of deliverers arising from route optimisation could be as high as 3% to 5%. Other benefits envisaged included cheaper, quicker route revisions. This study saw significant costs, however, relating to gathering and maintaining the delivery point geographic information required to operate such a system²⁵⁵. This estimate was made before the Single Daily Delivery initiative was contemplated and relates to when Royal Mail was making two deliveries a day using unmotorised carts.

15.79 Royal Mail uses a suite of software tools known as Pegasus, which contains the Georoute software as a component and could in principle be used and enhanced

²⁵³ Information from LECG international benchmarking survey October 2004 and comments by Johnny Thijs, CEO of Belgium Post, to World Mail and Express Conference, Brussels, May 2005

²⁵⁴ Marc Dupont, Managing Director, Giro Inc., conversation with Derek Osborn 23 February 2005

²⁵⁵ International Postal Corporation International Project on Delivery Benchmarking, Efficiency and Optimisation Questionnaire Summary, Country Analysis, August 1997, page 7.

to support walk route optimisation. Royal Mail has run trials of this software, but did not use this tool systematically to design walks as part of the SDD initiative (i.e. the most recent widespread review of walk routes)²⁵⁶. This implies that there may be some inefficiency in the current walk design. As such, cost savings of the scale identified in the international benchmarking could be available to Royal Mail²⁵⁷.

- 15.80 Despite not mentioning walk route optimisation in its Strategic Plan, Royal Mail does appear to be considering the initiative. Royal Mail has indicated that it was considering running the Pegasus tool in a single delivery office. Royal Mail has indicated that it is trialling the Pegasus tool in [>€] delivery offices, to compare the benefits of the tool against traditional “desktop” revisions²⁵⁸. Royal Mail has not provided information regarding the outcomes of these trials.
- 15.81 We estimate that the full implementation of the Pegasus system would lower delivery outdoor costs by at least 2.5% (net of implementation costs). This is in line with international benchmarks and at the conservative end of the range suggested by Giro Inc above. Savings relate to outdoor work and do not double count the initiatives identified by Royal Mail above, because none of them lead to material outdoor delivery work savings. As shown in Appendix 15, outdoor delivery work related costs in 2003/04 amounted to £1,325m, or £1,365m in 2004/05 prices. A 2.5% saving translates into ongoing savings of £34m a year.
- 15.82 Royal Mail states that gathering the additional information required to implement the system would cost £20m to £30m²⁵⁹. We have assumed one-off costs at the upper end of this range, at £30m.
- 15.83 Royal Mail states that it sees three barriers to making extensive use of the Pegasus system²⁶⁰:

- [>€]

²⁵⁶ RM 6114

²⁵⁷ We recognise that some of the savings identified in our internal benchmarking exercise may relate to differences between delivery offices relating to efficiency of walk route design

²⁵⁸ Meeting with RM on 16 November 2004, as summarised in PCR3 6114. In July 2005, Royal Mail told us that these trials had not actually begun.

²⁵⁹ RM 6114

²⁶⁰ RM 6114

- it takes from four to nine months for delivery staff members to learn a new route, during which time there is a fall in productivity and staff morale; and
- [>]

15.84 These arguments are not compelling. Like many of Royal Mail's initiatives, we believe that a managed, involved and phased implementation process would overcome these barriers. A phased implementation over the period to 2010/11 would allow management the time to develop the new routes, involving staff through a data-driven process. Moreover, a phased implementation spreads out the difficulties of learning new routes, reducing the risk of falling productivity and staff morale.

15.85 The financials in the table below reflect our assumptions for our higher case assessment of Royal Mail's efficient costs. We have not incorporated this initiative into our lower case scenario.

Table 148: Impact of Walk Route Optimisation – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	0	7	14	20	27	34	102
Implementation	0	(6)	(6)	(6)	(6)	(6)	(30)
Total	0	1	8	14	21	28	72

Note: Positive figures represent savings. Negative figures represent costs.

Delivery office consolidation

15.86 The Strategic Plan is closely modelled on the changes that TPG has implemented in its business over the past eight years, with one major exception. Royal Mail does not propose any rationalisation of its delivery office estate. We believe that there is an opportunity for Royal Mail to reduce its delivery office network as it implements walk sequencing.

15.87 As noted in paragraph 15.43 above, and as acknowledged by Royal Mail²⁶¹, we believe that many of Royal Mail's delivery offices would prove too small to operate walk sequencing machinery. It may not be possible in each case to walk sequence mail at the relevant mail centre. As a result, some relocation and consolidation of

²⁶¹ RM 5045

the delivery office estate would be a necessary enabler of the widespread roll out of walk sequencing.

15.88 TPG was unable to tell us the level of financial savings it had generated through this initiative. We have therefore performed some high level calculations in relation to the rationalisation of the delivery office estate. We have assumed:

- that the freehold disposal value for each delivery office would be equal to the median of the delivery offices that have been disposed over the last five years;
- that the annual leasehold cost for each delivery office would be equal to the average for the whole estate; and
- that Royal Mail would dispose of freehold and leasehold properties in the same proportion that they currently exist within the delivery office estate.

15.89 We do not know how much of the delivery office estate would be affected by any consolidation. However, to understand the scale of figures involved, we have calculated that, on the basis above, vacating half of Royal Mail's delivery offices would generate a one-off gross cash inflow from sale of freeholds of some £66m and a gross annual saving from assigning leaseholds of £14m. Moreover, this would remove facilities costs of around £38m a year and maintenance costs of around £30m a year. Of course, there would be significant costs associated with developing and maintaining new, merged, delivery office sites and in making one-off "travel payment" costs to affected delivery office staff. While this would offset the savings above, we believe the net savings would still be significant.

15.90 However, without further information, we are unable to quantify savings in a robust manner. We have therefore not taken the potential savings associated with this initiative into account in our assessment of Royal Mail's costs.

Conclusions

15.91 Royal Mail has proposed some very extensive and costly changes to its delivery activities. We believe that the direction of Royal Mail's proposed changes is sensible, but we have insufficient information regarding some initiatives to evaluate whether the associated costs and benefits have been properly stated.

15.92 The table below shows our quantification of the specific delivery-related initiatives proposed by Royal Mail under our low case scenario.

Table 149: Cash impact of delivery initiatives – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Delivery network and equipment	0	0	0	0	0	0	0
Walk sequencing	0	0	0	0	0	0	0
Delivery span	0	0	0	0	0	0	0
Professional delivery workforce	0	0	0	0	0	0	0
Best practice deployment	10	40	61	62	62	62	287
Delivery process measurement	0	0	1	5	13	25	44
Delivery systems	(2)	(5)	(4)	3	3	2	(1)
Walk route optimisation	0	0	0	0	0	0	0
Delivery office consolidation	0	0	0	0	0	0	0
Total	7	34	57	70	78	89	329

Note: Positive figures represent savings. Negative figures represent costs. Red – excluded. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG.

15.93 Our low case quantification is broken into its major cost components below.

Table 150: Aggregate impact of delivery initiatives – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	12	41	64	71	79	90	347
Implementation	(5)	(7)	(7)	(1)	(1)	(1)	(17)
Total	7	34	57	70	78	89	329

Note: Positive figures represent savings. Negative figures represent costs.

15.94 The figures above are primarily Royal Mail's own figures for the relevant initiatives, with the exception of the savings we identified in relation to Walk Route Optimisation and our adjustment to the savings arising from the Delivery Systems initiative. However, we have also identified potential additional operating cost savings of at least a further £231m a year by 2010/11. We have incorporated those savings, which we have been able to quantify into our higher case.

Table 151: Cash impact of delivery initiatives – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Delivery network and equipment	0	0	0	0	0	0	0
Walk sequencing	0	0	0	0	0	0	0
Delivery span	0	0	0	0	0	0	0
Professional delivery workforce	0	0	0	0	0	0	0
Best practice deployment	10	40	61	110	158	206	575
Delivery process measurement	(1)	0	4	17	42	77	141
Delivery systems	(2)	(5)	(4)	3	3	2	(1)
Walk route optimisation	0	1	8	14	21	28	72
Delivery office consolidation	0	0	0	0	0	0	0
Total	7	35	68	145	225	314	787

Note: Positive figures represent savings. Negative figures represent costs. Red – excluded. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG.

15.95 We show the aggregated impact of our higher case in the table below.

Table 152: Aggregate impact of delivery initiatives – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Opex	12	48	82	152	232	321	834
Implementation	(5)	(13)	(13)	(7)	(7)	(7)	(47)
Total	7	35	68	145	225	314	787

Note: Positive figures represent savings. Negative figures represent costs.

15.96 We believe our assessment of the higher case is conservative. For example, we have not incorporated an unquantified amount relating to the more rapid rollout of the Delivery Process Measurement initiative, or an unquantified amount of one-off cash inflow and ongoing operating cost savings relating to rationalisation of the delivery office estate.

16 Review of human resources costs

Introduction

- 16.1 Staff costs account for approximately 64% of total RML costs²⁶². Many of the strategic initiatives discussed in Part C of this report have implications for Royal Mail's work-force through, for example, increased training associated with new machinery, changes to the full-time/ part-time mix of staff, or voluntary redundancies. These specific consequences are discussed under each of the relevant initiatives.
- 16.2 In this section, we focus on the issues that will impact the level of staff costs over the forthcoming price control. The staff issues covered include the level of remuneration paid to Royal Mail employees, the level of absence rates, the rate of staff turnover, and the costs of additional training.
- 16.3 The first of these issues – the level of remuneration paid to Royal Mail employees – is presented in pragmatic terms within this section, although the underlying issue of sustaining and improving labour relations through a period of potentially significant change is a complex and challenging one. In presenting it in the way that we do, our intention is not to suggest otherwise.
- 16.4 It is also not our intention to be prescriptive as to the structure of the agreements on pay that Royal Mail might reach in negotiations with the CWU. The balance of basic pay and specific bonuses, and the nature of those bonuses and the circumstances in which they might be paid, are for Royal Mail and the CWU to determine, in response to the circumstances that prevail at the time. We have therefore treated the various potential components of future pay collectively (in terms of their overall impact) rather than considering them individually.
- 16.5 As regards the overall level of remuneration incorporated into our conclusions and forward projections, it is worth noting that it is necessarily very difficult to conclude with precision. The underlying issue, as noted above, is complex, and there are no direct comparisons available to provide guidance. [>] in our figures these pay increases are associated with greater productivity improvements than Royal Mail have suggested they might achieve.

- 16.6 We also note that the recent²⁶⁴ pay agreement, which was announced after the work described within this section was completed. The pay bill increase of the deal is 3.4%. [>]].
- 16.7 Our conclusions are set out below. We first provide a brief background to the Royal Mail human resources environment and the review of staff costs in the previous efficiency review. We then discuss our review of the staff cost initiatives discussed in Royal Mail's Strategic Plan. We then discuss additional staff cost initiatives and conclude by outlining our estimates of staff costs for the price control period.
- 16.8 This section has been written with guidance on human resources strategy from Brian Thomson. Mr Thomson was a former Royal Mail Personnel Director and Director of Royal Mail's London division. This section has also benefited from considerable input from Matthew Lanham. Mr Lanham was a former Royal Mail Area Manager.

Background

- 16.9 Royal Mail has a history of poor industrial relations. Lord Sawyer's independent inquiry into Royal Mail's industrial relations²⁶⁵ highlighted an organisation that suffered from bullying, inadequate managers and a difficult relationship with its unions. However, we understand, from the information provided, that Royal Mail has made significant improvements recently in its human resources/ industrial relations environment. Royal Mail list as recent achievements in this area:

- increasing front-line staff pay to £300 per week as part of the implementation of SDD;
- introducing the Share in Success scheme;
- reducing the level of industrial action (as measured by days lost to industrial action);
- reducing the number of restrictive practices; and

²⁶² BPM

²⁶³ [>]

²⁶⁴ 14 April 2005

²⁶⁵ Independent Review of Industrial Relations between Royal Mail and the Communication Workers Union ("The Sawyer Report"), July 2001

- reducing the levels of bullying and harassment²⁶⁶.

16.10 However, Royal Mail also recognise that there are still a number of human resources and industrial relations issues that need to be improved, including:

- poor staff morale;
- resistance to change;
- inflexible working; and
- poor management skills²⁶⁷.

16.11 Royal Mail has indicated that it plans to address all of these issues through, for example, greater training.

Current price control initiatives

16.12 At the time of the previous efficiency study, Royal Mail was forecasting the biggest reduction in FTEs in its history for the period 2000/01 to 2006/07. At the time, Royal Mail Group had 218,000 FTEs and the Service Delivery unit²⁶⁸ had 170,600 FTEs²⁶⁹. Over the period, Royal Mail was forecasting a Group reduction of over [>€] FTEs, with a forecast reduction of over [>€] FTEs for the Service Delivery unit. The table below shows the forecast FTE reduction at the time of the previous price control review.

Table 153: Projected FTEs 2001/02 to 2006/07

	01/02	02/03	03/04	04/05	05/06	06/07
Service Delivery	170,600	[>€]	[>€]	[>€]	[>€]	[>€]
Consignia	218,000	[>€]	[>€]	[>€]	[>€]	[>€]

Source: WS Atkins, Table 6.2

16.13 Royal Mail did not provide a comprehensive reconciliation of the plans from the previous price control and actual performance. However, we note that the current number of FTEs in RML is 165,000. [>€].

²⁶⁶ RM 5044

²⁶⁷ RM 5044

²⁶⁸ Service Delivery was one of the business units combined into the UK Letters business unit as part of Royal Mail's 2003/04 consolidation, the other business units being Business and Consumer Markets, Media Markets, Stamps and Collectibles, Customer Management and Sales and Customer Support (RM 3030).

²⁶⁹ WS Atkins, Table 6.2

16.14 The FTE reductions, and other HR initiatives such as the forecast reduction in the sick absence rate, were accompanied by what appear to be significant pay increases. We have been unable to determine from the previous efficiency study the exact pay initiatives proposed by Royal Mail at the time of the previous price control period. However, the pay related costs forecast by WS Atkins are shown in the table below. A brief description of each initiative follows.

Table 154: Projected incremental pay related costs (£m in 2000/01 prices)

	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
Real pay increase	0	34	49	64	91	118	[>]	[>]
Lump sums	4	13	4	0	0	0	[>]	[>]
Pay restructuring	36	42	39	35	31	29	[>]	[>]
Shorter working week	14	38	40	36	32	30	[>]	[>]
Productivity pay	0	0	5	11	12	25	[>]	[>]
Total	57	127	137	146	166	202	[>]	[>]

Source: WS Atkins, Table 15.2

16.15 The pay related initiatives contained in the previous efficiency study included:

- real pay increase: no details provided;
- lump sums: one-off payments negotiated as part of the agreement with the CWU;
- pay restructuring: increases in base pay associated with the move to a single operational pay grade;
- shorter working week: the cost associated with funding the reduction in the number of hours worked each week from 41.5 to 40; and
- productivity bonus: a bonus that passes 40% of savings from efficiency improvements on to staff.

Initiatives put forward by Royal Mail

16.16 Royal Mail's Strategic Plan contemplates a programme of widespread change. [>].

- 16.17 The Strategic Plan and supporting papers²⁷⁰ discuss changes to pay, staff levels and other HR elements that Royal Mail believes will be necessary to facilitate the business transformation envisaged. Royal Mail also mentions a desire to instil a new way of working involving a strengthened relationship between management and employees. Royal Mail believes that it will only succeed with the transformation that it envisages if its people are appropriately engaged and rewarded.
- 16.18 In order to support this transformation, and to minimise the risk of industrial action, Royal Mail believes that it needs to invest in its people. This investment includes increasing base pay from £300 per week today to over £[>€] per week by 2010/11, offering bonuses on a “pay for change, not before change” basis and increasing training provisions. Royal Mail states that the forecast investment in people is £[>€]m per annum by 2010/11²⁷¹. Royal Mail states that engaging its workforce will enable it to implement its operational plan to modernise its operations, and also to achieve savings through reduced absence rates.
- 16.19 Royal Mail’s proposed plans in this area have very significant implications for staff costs. We estimate that Royal Mail’s plans lead to an overall net increase in operating expenditure by 2010/11 of £[>€]m, and one-off costs over the period 2006/07 to 2010/11 of £[>€]m²⁷². These costs exclude [>€] payments, described as being made to staff out of profits and anticipated to total £[>€]m in 2010/11²⁷³.
- 16.20 Each initiative is summarised in the table below:

²⁷⁰ RM 5044

²⁷¹ Information pack for Postcomm on Royal Mail HR Strategy, p.9. [>€] All figures are in outturn prices

²⁷² RM 5044. [>€]

²⁷³ All in 2004/05 prices

Table 155: Royal Mail's proposed staff cost initiatives, £m 2004/05 prices

Initiative	Brief description	Opex impact, 2010/11	One-off costs, 2006-11
Pay and bonuses	[>€]	[>€]	[>€]
Reduction in sick absence	[>€]	[>€]	[>€]
Reduction in staff turnover	[>€]	[>€]	[>€]
Increase in staff training	[>€]	[>€]	[>€]
Refresh of management staff	[>€]	[>€]	[>€]
Operational redundancies	[>€]	[>€]	[>€]
Total		[>€]	[>€]

Source: RM 5062-5092. Positive figures represent savings. Negative figures represent costs.

16.21 We discuss the main elements of Royal Mail's initiatives in detail below.

Remuneration (Pay, Bonuses, Pension[>€])

16.22 Royal Mail's current remuneration package for its operational grades includes a basic wage of £300 per week, allowances of, on average, £24 per week, average overtime and schedule attendance payments of £36 and £22 per week, a pension contribution (the equivalent of £25 per week²⁷⁴) and, in 2004/05, a Share in Success payment.

16.23 [>€]

16.24 While we consider each of the remuneration initiatives separately, our conclusions treat all of these elements as part of an overall package. The net operating cost

²⁷⁴ Cash pension payments for 2003/04 were £271m (refer to Base Year section). Given 165,000 people, this implies pension costs of £25 per employee per week

²⁷⁵ RM 5044. Under its business-as-usual case, as presented in the Strategic Plan, Royal Mail intends [>€]. This is equivalent to an increase of [>€] each year in the total pay package

impact of these pay related initiatives alone is a £[>£]m increase in operating costs by 2010/11. The table below shows the year-by-year cost implications of Royal Mail's pay related initiatives.

Table 156: Financial impact of Royal Mail pay assumptions, relative to RPI

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: RM 5062-5092, BPM, LECG analysis. Positive figures represent savings. Negative figures represent costs. We have calculated the change in Base Pay using Royal Mail's Business Planning Model to assess the change in costs associated with real wage cost inflation. The calculation takes account of Royal Mail's forecast reduction in the number of FTEs over the period.

16.25 Royal Mail's proposed pay and bonuses would increase weekly pay (before allowances and overtime) from £300 to £[>£], and imply an increase of approximately [>£] each year before [>£] payments (and [>£] each year after the [>£] payments contemplated within the Strategic Plan). The table below summarises the impact of Royal Mail's initiatives on weekly wages.

Table 157: Royal Mail pay and bonus forecasts 2004/05 to 2010/11

	04/05	05/06	06/07	07/08	08/09	09/10	10/11
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: RM 5044: Strategic Plan. Note: We have converted the [>£] Share in Success payment into a weekly equivalent.

16.26 We discuss each of the pay-related areas further below, after first reviewing the current level of pay within Royal Mail.

Current level of Royal Mail pay

16.27 [>] Royal Mail has provided information on wage benchmarking to support its pay assumptions²⁷⁷. The main source of supporting information is [>] that was provided in support of the Strategic Plan²⁷⁸.

16.28 Royal Mail claims that the benchmark material shows that its employees, [>]. Royal Mail provides the following wage benchmarking information:

- a comparison of total compensation levels in comparable sectors from the Office of National Statistics' New Earning Survey;
- a comparison of base pay in jobs with comparable content (based on the Hay rating system²⁷⁹);
- a comparison of base pay in a number of "comparable" public sector roles, based again on information from the New Earnings Survey; and
- a comparison of manual worker base pay from the Annual Survey of Hours and Earnings (ASHE).

16.29 We have reviewed the information provided by Royal Mail and undertaken our own research into pay rates. We believe that there is substantial evidence to suggest that, on average across the country, Royal Mail currently pays above market average rates. For example, we find:

- the comparisons to private sector jobs presented by Royal Mail show that pay for the operational grade is above average pay in comparable sectors. The total compensation comparison shows total weekly pay for the Royal Mail operational grade (at £391²⁸⁰) is between 5% and 38% above sector averages. For instance, Royal Mail's operational grade pay is 5% above pay in the process, plant and machine operatives sector, 8% above pay in the

²⁷⁶ RM 5044

²⁷⁷ Royal Mail claims that it has used Mercer, Monks Group, Hay Management Consultants and Towers Perrin as external providers of pay information in the recent past (RM 3025), however studies from these organisations were not provided by Royal Mail. RM 5044 contains information from the Office of National Statistics and a slide of comparisons that appear to have been compiled by Hay Management Consultants

²⁷⁸ RM 5044

²⁷⁹ RM 5044. All the roles considered had a Hay rating of 107 based on the knowledge and skills required and the job demands. Royal Mail provides a comparison to other roles rated at 107 in a number of industries including transport and utilities

²⁸⁰ RM 5044. The components of Royal Mail's total weekly pay as presented in the benchmarking material are: base pay £298, allowances £24, overtime £50 and other £19

postal workers, mail sorters, messengers and couriers sector, and 35% above pay in the sales and customer service sector. The base pay comparison shows that base pay for the operational grade is between 6% and 25% above median base pay in comparable roles across all sectors, and above top quartile base pay in some sectors;

- the public sector roles held up as comparators range in hourly pay from £5.68 to £14.41, although 13 of the 16 roles have hourly pay above the £7.50 paid to a Royal Mail operational grade employee. [>€]. However, we note that many of the roles put forward as comparators by Royal Mail appear to require significantly more skills or qualifications than the operational role. For example, Royal Mail considers that Police Sergeants, Train Drivers and Ambulance Staff are appropriate comparators to operational employees. We do not believe that this is the case. Hay Management Consulting has provided us with further information on two of the roles presented as comparators – both had higher Hay ratings than the Royal Mail Operational grade (107)²⁸². The NHS Support Staff role typically has a Hay rating of 125, but pay is around 24% less than Royal Mail's operational grade. The Police Constable role, although paid more than a Royal Mail operational grade employee, has a Hay rating of between 240 and 252²⁸³. In conclusion, we feel that many of the public sector comparators presented by Royal Mail are inappropriate. Further, as competition is introduced to the UK postal market, we believe that Royal Mail will increasingly need to benchmark its staff costs to private sector, rather than public sector, rates;
- [>€]; and
- additional benchmarking information we have reviewed suggests that on average Royal Mail pay rates for postmen are above market rates²⁸⁴ as presented in the following table. We have selected the roles presented in the table as they are consistent with the roles presented in Royal Mail's own benchmarking material (discussed above). We have been unable to obtain

²⁸¹ [>€]

²⁸² Memo from Julie Alderdice, Associate Director, Hay Group, March 2005

²⁸³ Further, the Police Constable role, for which we were presented additional details, is a lower rank than the Police Sergeant role presented as a comparator by Royal Mail

²⁸⁴ www.paywizard.org: a UK pay benchmarking website maintained jointly by the Trade Union Congress and the Incomes Data Services.

Hay ratings for these roles but consider that they would be similar to the Royal Mail operational role.

Table 158: Weekly pay in comparable private sector roles in the Transport, Distribution and Communications industry sector

Roles	Weekly pay, £
Royal Mail Operational Grade including allowances and overtime	372
Bus and coach drivers	287
Fork-lift driver	292
Other goods handling and storage occupations	288
Postal workers, mail sorters, messengers, couriers	338
Transport and distribution clerks	376
Van drivers	274

Source: RM 5044, www.paywizard.org. We have compared Royal Mail's operational grade to comparable roles in the Transport, Distribution and Communication sector. For the comparators, weekly pay excludes pension contributions, bonuses and holiday pay. For Royal Mail, we have excluded "other" pay (of £19) from the £391 per week presented in RM 5044.

16.30 We recognise that no comparison is perfect. Royal Mail may claim that the nature of its operational grade role, which in many cases involves hours some would consider unsocial, requires a higher level of remuneration. However, many of the other roles presented as comparators also involve unsocial hours or other factors that should make remuneration in these sectors comparable. In summary, we consider that these roles are broadly comparable to the Royal Mail operational grade. Overall, we do not believe that Royal Mail has made the case that it currently pays less than comparable sectors. In fact, we find that Royal Mail pays more than most comparators.

Proposed changes to base pay

16.31 [>]

- [>]
- [>]
- [>]
- [>]

16.32 The information provided by Royal Mail in support of the proposed changes to base pay includes: details of its historical wage increases; pay increases at TPG and Deutsche Post; and forecast changes in the statutory minimum wage. We discuss each element below.

- Royal Mail operational employees have had above inflation pay deals in each of the previous 4 years: RPI + 0.3% in October 2000, RPI + 0.4% in October 2001, RPI + 0.7% in October 2002 and RPI + 0.1% in October 2003. This implies an average pay increase of RPI + 0.4% over the period 2000 to 2003²⁸⁸;
- Royal Mail provided information that shows that, over the period 1997 to 2004, both Deutsche Post and TPG made base pay increases above inflation and one-off bonuses in a number of years²⁸⁹. Deutsche Post increased pay by RPI + 2.1% in 1998, RPI + 2.2% in 2002, RPI + 2.1% in 2003 and RPI + 1.2% and paid a €130 bonus in 2004. It is not clear from the information presented whether these represent one-off pay increases in each year, or annual pay increases for each relevant period. TPG increased pay by RPI + 0.8% and paid a 3% bonus in 1997 and increased pay by RPI + 1% in 1998; and
- [>€] ²⁹¹

16.33 We make the following observations about the information provided by Royal Mail on the justification for pay increases:

- [>€]
- [>€]

²⁸⁵ RM 5044

²⁸⁶ RM 5044

²⁸⁷ RM 5044

²⁸⁸ RM 5044

²⁸⁹ RM 5044

²⁹⁰ "Rise in the minimum wage will benefit many low-paid workers following Low Pay Commission's recommendations", Low Pay Commission Press Release 25 February 2005

²⁹¹ "Setting the Rates", Low Pay Commission, March 2005

²⁹² We were not provided with information on changes to the total pay package over the period 2000/01 to 2003/04

²⁹³ "The National Minimum Wage: The Fourth Report of the Low Pay Commission", Low Pay Commission, March 2003

- [>]²⁹⁴
- while [>] the pay benchmarking information we have reviewed suggests that on average Royal Mail is already currently paying above market rates. As discussed under the heading “Reduction in staff attrition” later in this section, Royal Mail does not have a problem retaining staff once they have been employed for more than one year. Royal Mail does have a problem retaining new joiners (those employed for less than one year), however we understand from Royal Mail that the main issues for new joiner attrition relate to not understanding the job requirements, poor induction training and bullying, rather than pay per se. Royal Mail is seeking to address each of these issues separately. Further, the information we have reviewed suggests that pay is much less likely to be a reason for voluntary resignation at Royal Mail than in other UK organisations. Only 6% of total leavers resign from Royal Mail for reasons of pay²⁹⁵. The UK average is around 15%²⁹⁶. Pay would appear to be a much lower cause of turnover for Royal Mail than other UK employers; and
- [>]

16.34 Royal Mail has presented information about the extent of its regional pay variations. Royal Mail pay appears to be below benchmark in some parts of the country and above benchmark in other parts. We recognise this is an issue for Royal Mail but do not consider that this is a justification for increasing the overall level of pay given that, on average, its current level of pay is above benchmark.

16.35 In conclusion, given that the benchmarking material reviewed above suggests that Royal Mail employees are currently paid above market rates, [>] and that fewer people resign for pay reasons at Royal Mail than elsewhere, we do not think Royal Mail has made a strong case for the level of changes to base pay proposed in the Strategic Plan.

²⁹⁴ [>]

²⁹⁵ RM 5044. [>].

²⁹⁶ “Recruitment, Retention and Turnover 2004”, Chartered Institute of Personnel and Development, 2003

Proposed bonuses

- 16.36 The second element of Royal Mail's proposed remuneration package relates to the introduction of performance related bonuses. [>€].
- 16.37 In principle, we consider that the linking of performance and pay should bring positive results in terms of productivity and quality of service provided bonuses are set appropriately and are made conditional upon the achievement of productivity and quality targets. [>€].

Allowances and door-to-door payments

- 16.38 [>€]
- 16.39 [>€]

Share in Success

- 16.40 [>€]. Royal Mail provides no support for [>€] Share in Success payments other than a stated general desire to align rewards with organisational goals. [>€] Share in Success payments are typically described as being made "out of profits", and summarised separately from other components of the overall pay package which are treated as being part of operational costs.
- 16.41 In a regulatory context, the distinction is more cosmetic than real unless the "success" that is being shared reflects *outperformance* against the regulatory targets contained within the price control framework. [>€].
- 16.42 [>€] the treatment of Share in Success payments for regulatory purposes, is that: either these are payments that would only be made in the event that Royal Mail exceeded the level of profitability envisaged within the regulatory price control framework (in which case they can be ignored for price setting purposes); or they are payments that would be made even if that level of profitability were not exceeded. In the latter case, they form part of the aggregate payroll costs on which we conclude below; and because of the nature of those conclusions, can be ignored.
- 16.43 We have not, therefore, given specific consideration to [>€] Share in Success payments [>€]. Royal Mail could still, however, choose to make such payments

²⁹⁷ RM 5044

²⁹⁸ RM 5062-5092

in the event of outperformance against regulatory targets without any overall adverse impact on their financial position.

Conclusions

- 16.44 When viewed as a complete remuneration package, Royal Mail’s proposed pay and bonuses represent an increase of approximately [>£] each year before [>£] payments. Including [>£] payments, the package represents an increase of [>£] each year. The combination of above [>£] seems generous given the current starting pay levels (as discussed above).
- 16.45 We have estimated that Royal Mail’s proposed remuneration package will cost £[>£]m over the period 2006/07 to 2010/11²⁹⁹. Given the total operational cost savings of £2,109m³⁰⁰ over the period 2006/07 to 2010/11, the proposed remuneration package represents a ‘payback’ to employees of [>£].

Table 159: Royal Mail’s remuneration package ‘payback’ 2004/05 to 2010/11

2004/05 prices	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
[>£]							
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis of BPM. Operational cost savings represent savings in the areas of delivery, transport, collections and sorting. Net people cost savings represent savings from reduced sick absence and attrition, net of additional costs of training and management refresh. This table presents LECG’s analysis of Royal Mail’s forecast savings and is comparable, but not identical, to similar analysis presented in the Strategic Plan.

- 16.46 In our lower case scenario, we have included revised costs to reflect an alternative remuneration package consistent with our observations in the preceding

²⁹⁹ LECG analysis using BPM – see Table 156 above

³⁰⁰ BPM, RM 4054, LECG analysis. Excludes step-change adjustments (such as Flow-through), depreciation and compensation and non people related savings (such as savings in corporate overhead costs)

subsections. The justifications for our changes to Royal Mail's proposed remuneration package costs are:

- Royal Mail's current level of base pay is above private sector benchmarks;
- [>€]
- as discussed elsewhere in Part C, we are not including a number of the initiatives that would require the more significant changes to employees – such as [>€]. Our lower and higher cases are therefore based on lower levels of change than is envisaged within Royal Mail's Strategic Plan. As such we do think that there is the same requirement to change the remuneration package;
- under its business-as-usual plan, Royal Mail is forecasting base pay increases of [>€] and the [>€]. This package results in a total weekly pay, before [>€], of £[>€] in 2010/11 and represents, in total, an increase of [>€] each year;
- Royal Mail has stated that it is planning to reduce headcount over the life of the Strategic Plan through natural wastage rather than through the use of compulsory redundancies;
- [>€]. We have found it difficult to obtain benchmarking information on the level of payback³⁰¹. We asked Royal Mail to provide top-down evidence to support its pay assumptions – nothing was provided. As a sense-check, we have reviewed the wage increases and operational savings made by Deutsche Post over the period 1997 to 2004 (based on information provided in RM 5044, NERA's report on costs in the postal industry (June 2004), and annual reports). Our analysis suggests that Deutsche Post's payback over this period was between 25% and 40%.
- For our lower case scenario, we consider the remuneration package contained in Royal Mail's business-as-usual plan would be more appropriate than the package proposed in the Strategic Plan, given the level of change required. [>€]. We consider that this level of increase is consistent with the level of change assumed in our lower case scenario and the observation that Royal Mail pay is currently above benchmark.

³⁰¹ We have contacted organisations involved in human resource benchmarking and other UK regulators but have been unable to obtain robust estimates of payback levels

16.47 Given the total level of operational savings forecast under our lower case scenario of £1,874m³⁰², the proposed remuneration package represent payback of [>£]. The table below contains a comparison of weekly pay before overtime, allowances and [>£] under Royal Mail's Strategic Plan assumptions and under our lower case assumption.

Table 160: Comparison of pay per week forecasts [>£] 2004/05 to 2010/11 – LECG lower case

	04/05	05/06	06/07	07/08	08/09	09/10	10/11
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: RM 5044: Strategic Plan, LECG analysis. The comparison includes base pay and bonuses only.

16.48 The table below shows the total year-by-year cost implications of our pay assumptions.

Table 161: Financial impact of pay assumptions – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Negative figures represent costs. [>£].

16.49 Under our higher case scenario, we assumed a greater level of payback than under our lower case scenario given the greater level of change involved. Our higher case pay figures are consistent with a [>£] payback. Since under our higher case scenario operational savings are £3,133m³⁰³, the [>£] payback results in significantly higher increases in pay, consistent with increases of [>£] each year. [>£].

16.50 The table below shows the total year-by-year cost implications of our pay assumptions under our higher case scenario.

³⁰² BPM, RM 4054, LECG analysis

³⁰³ BPM, RM 4054, LECG analysis

Table 162: Financial impact of pay assumptions – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Negative figures represent costs. [>£].

Reduction in absence levels

- 16.51 The level of sick and other unapproved absences within Royal Mail has historically been higher than most other UK comparators³⁰⁴. The current level of absence within Royal Mail is 6.4%³⁰⁵. This is the equivalent to losing around 14.5 days per employee each year³⁰⁶. The level of absence has increased significantly since 1998/99, when the level of absence in Royal Mail was in line with benchmarks³⁰⁷. Royal Mail claims that the nature of the operational grade work (shift work, outdoor work) and the recent level of organisational change have contributed to the recent increases in the absence rate³⁰⁸. Royal Mail proposes to achieve significant cost savings over the period 2005/06 to 2010/11 through the reduction of absence levels. The proposed savings are set out in the table below.

Table 163: Financial impact of reduced absence – RM

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	17	35	50	64	77	89	315

Source: RM 5062-5092: People Costs – Team Working / Reduced Sick Absence. Positive figures represent savings.

- 16.52 Royal Mail has based its savings on plans to reduce the level of absence to 4.4% by 2010/11³⁰⁹ – a reduction of about one third. The proposed profile of absence for Royal Mail over the period 2005/06 to 2010/11 is as follows:

³⁰⁴ RM 5062-5092: People Costs – Team Working / Reduced Sick Absence

³⁰⁵ RM 3076

³⁰⁶ Based on a working year of 225 days (consistent with Royal Mail's calculation of days lost to sickness per employee per annum in RM 3076)

³⁰⁷ Atkins, Table 5-16

³⁰⁸ RM 3076

³⁰⁹ RM 5044, RM 3099

Table 164: Forecast reduction in unplanned absence

	05/06	06/07	07/08	08/09	09/10	10/11
Sick absence	6.1%	5.7%	5.4%	5.1%	4.7%	4.4%

Source: RM 3099

- 16.53 Royal Mail has provided support for its target in the form of sick absence information on BT (3.2%), Manufacturing sector (4.2%), Public sector (4.6%) and Large employers (4.6%)³¹⁰. Royal Mail does not provide a reference for the industry benchmarks. Royal Mail has also provided details of current and planned programmes that it considers will enable the reduction of absence as forecast³¹¹. These include new reporting arrangements, league tables, a prize draw incentive scheme, and assessing job design and working environment standards.
- 16.54 We have reviewed benchmark information on sick absence rates³¹². In general, Royal Mail's target of 4.4% is above the sick absence benchmarks shown below.

Table 165: Sick absence benchmarks

Source	% Sick absence
EP-Saratoga study for Royal Mail (2000)	3.3%
Chartered Institute of Personnel and Development (CIPD)	
National average (2003)	4.0%
"Manufacturing & production" average (2003)	4.0%
Confederation of British Industry (CBI)	
National average (2003)	3.2%
"Manual worker" average (2003)	3.9%

Source: RM 3008, CIPD³¹³ and CBI³¹⁴

³¹⁰ RM 5044

³¹¹ RM 6017

³¹² Absence benchmarks commonly focus on sick absence only. Sick absence is only one component of total unplanned absence. However, material provided by Royal Mail suggests that its sick absence rate is the same or very similar to its unplanned absence rate. For example, RM 3076 states that the average number of days lost to sickness per employee in 2003/04 was 14.3, while RM 3099 states that the average number of days lost to unplanned absence per employee in 2003/04 was also 14.3. Without further information, we consider the comparison of Royal Mail's absence targets to sick absence benchmarks to be appropriate.

³¹³ Employee Absence 2004, Chartered Institute of Personnel and Development, July 2004

³¹⁴ Annual Absence Survey, Confederation of British Industry, May 2004

- 16.55 We have also reviewed the level of cost savings forecast by Royal Mail as a result of reducing absence. While Royal Mail does not make its calculations explicit, we have been able to sense-check the level of cost savings using information on the total cost of absence³¹⁵. Given the absence target assumed, Royal Mail's forecast cost savings seem broadly in line with the forecast reduction in the level of absence.

- 16.56 That said, we still consider Royal Mail's absence target of 4.4% by 2010/11 to be conservative. While the target represents a significant improvement on Royal Mail's current absence performance, it is still above current benchmarks. The benchmarking evidence supports a much lower target. Even a target of 4% by 2010/11 would only represent achievement of the 2003/04 national average rate (as identified by CIPD). We also consider Royal Mail's straight-line phasing of the reduction in the absence rate to be conservative.

- 16.57 For our lower case scenario, we have accepted Royal Mail's forecast absence reduction. The level of savings identified (set out in the table below) are slightly different than the savings forecast by Royal Mail due to different assumptions. For the reasons set out above, we consider these savings to be conservative.

Table 166: Financial impact of reduced absence – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Positive figures represent savings. Numbers adjust for LECG lower case conclusions on overall pay and FTE reductions over the period.

- 16.58 Royal Mail's target reduction by 2010/11 is above current benchmark levels. For our upper case scenario we have recalculated the potential savings from reducing absence to reflect this, as set out in the table below. The forecast is based on an absence rate target of 4%, which is consistent with the higher of the benchmarks identified above. This is still 25% greater than the lower benchmark presented by CBI (of 3.2%).

³¹⁵ RM 6017, RM 9043

Table 167: Forecast reduction in absence – LECG higher case

	05/06	06/07	07/08	08/09	09/10	10/11
LECG higher case	5.9%	5.5%	5.1%	4.7%	4.3%	4.0%
Royal Mail	6.1%	5.7%	5.4%	5.1%	4.7%	4.4%

Source: RM 3099

- 16.59 The financial implications of the reduction in absence in our higher case scenario are set out in the table below. The projection is based on the cost per absence day implied in Royal Mail's estimates and assuming a constant 7.5% reduction in the absence rate each year. The estimates are consistent with the lower number of FTEs assumed under our higher case scenario.

Table 168: Financial impact of reduced absence – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]

Source: LECG analysis. Positive figures represent savings. Numbers adjust for LECG conclusions on overall pay and FTE reductions over the period.

Reduction in staff attrition

- 16.60 High levels of staff attrition are costly in terms of recruitment, training and workforce instability. There is also a significant benefit from retaining more skilled workers arising from associated quality benefits³¹⁶. Royal Mail's level of staff attrition was 13.7%³¹⁷ in 2003/04. More than half of this attrition was due to voluntary resignation.
- 16.61 Royal Mail proposes to achieve cost savings by reducing staff attrition suggesting that the rate would fall to 9.5% if voluntary resignations fell by half by 2010/11³¹⁸. Royal Mail's estimate of the benefits of reducing attrition are outlined below and are driven by the avoidance of recruitment and induction costs.

³¹⁶ RM 5062-5092

³¹⁷ RM 5044. Royal Mail defines staff attrition as exits where it does not pay directly for the departure. This is broader than the standard definition of staff turnover, which include redundancies. For 2003/04 Royal Mail's turnover was 16.5% which included 2.8% redundancies

³¹⁸ RM 5044

Table 169: Financial impact of Reduced Attrition – Royal Mail

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	0	5	10	10	10	10	45

Source: RM 5062-5092: People Costs – Reduced Attrition. Positive figures represent savings.

- 16.62 Royal Mail has set separate attrition targets for new starters (10%) and longer serving employees (6%)³¹⁹. There is currently a significant difference between the levels of attrition for new starters (those employed for less than 12 months) and longer serving employees. For new starters the current level of attrition is 29%, while for full-time staff employed for more than one year it is 8%. The table below shows the proposed profile of turnover over the period.

Table 170: Forecast reduction in staff attrition – Royal Mail

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR 05-11
Turnover	13.5%	12.6%	11.7%	10.9%	10.2%	9.5%	-8.4%

Source: RM 5044 and LECG analysis

- 16.63 No benchmark information has been provided to support the attrition targets. Royal Mail does provide a list of reasons why attrition is high, such as increasing mobility of workforce and the move away from a job for life culture. It also provides a list of process improvements that will enable the proposed reduction in attrition. These include a comprehensive benefits package, zero tolerance on bullying and workplace coaches for new starters³²⁰.
- 16.64 We have benchmarked turnover in the UK labour market to verify Royal Mail's target. The CIPD states that the average turnover rate for all workers in the UK in 2003 was 16.1%, having reduced in recent years from 26.6% (2000) and 18.2% (2001)³²¹. An alternative survey by CBI puts the total average UK figure at 17.9% in 2000³²², with lower rates in public services (12.5%) and local government

³¹⁹ RM 5044. We note that the separate targets of 10% for new starters and 6.5% for longer serving employees do not seem consistent with the combined target of 9.5% as it implies the majority of staff are new starters

³²⁰ RM 5044

³²¹ Labour Turnover, Chartered Institute of Personnel and Development, 2003

³²² Labour Turnover Survey, Confederation of British Industry, 2000

(11.2%)³²³. Compared to these benchmarks, Royal Mail's target of 9.5% staff attrition appears very low.

16.65 That said, we still consider the savings identified by Royal Mail to be conservative. The savings relate only to savings in recruitment and induction training costs. Other costs should be considered. For instance, Royal Mail provides material that suggests that a fully trained worker is considerably more productive than a newly recruited worker or a casual worker, and that reducing attrition would have a significant benefit in terms of improved productivity³²⁴. Royal Mail does not quantify this added benefit. Since Royal Mail is planning to reduce turnover of longer serving employees from 8% to 6%, we expect that this benefit could be significant.

16.66 An additional consideration is the impact the reduction will have on Royal Mail's ability to achieve headcount reduction without resorting to redundancies. We have reviewed Royal Mail's forecast headcount reduction programme. We are satisfied that, on average, it will still be possible to reduce headcount as per the Strategic Plan through natural wastage.

16.67 In summary, Royal Mail is planning to reduce staff attrition over the next six years. For our lower case scenario we have estimated the savings from reduced attrition (set out in the table below) as follows:

- we have adjusted the attrition targets given the benchmarking material identified. The targets assumed in our lower case scenario are 15% for new starters and 8% (i.e. no reduction) for longer serving employees. This is consistent with Royal Mail addressing its major attrition problem, turnover of new starters. This is also consistent with the fact that pay is lower under our lower case scenario;
- we have assumed that the recruitment and training costs associated with turnover (i.e. the cost that are saved by reducing attrition) are £2,500 per employee. Royal Mail did not provide this figure. Royal Mail's attrition savings figures appear to be based on a figure in the range £2,500 to £4,500. We have used the figure at the bottom of that range to be

³²³ Submission in support of Local Government Pay Claim for 2004-2005, GMB, TGWU, Unison, Jan 2004

³²⁴ RM 5044

conservative. We note that the £2,500 figure is consistent with benchmarking material on the costs of labour turnover;³²⁵ and

- we have calculated the savings consistent with the assumed headcount in our lower case.

Table 171: Financial impact of Reducing Attrition – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Positive figures represent savings. Numbers adjust for LECG conclusions on overall pay and FTE reductions over the period.

16.68 For our higher case scenario, we have used Royal Mail’s attrition targets, namely 10% for new starters and 6% for longer serving employees. We have also incorporated additional savings to reflect the productivity benefit of reducing turnover of longer serving employees. Our calculations are based on the following:

- Royal Mail claim that they need two or three casuals and entry people to do the same job as a competent fully trained employee³²⁶;
- we estimate that the forecast reduction in attrition of longer serving employees will result in approximately 7,600 fewer competent employees having to be replaced over the period 2006/07 to 2010/11; and
- we calculate that this has a total productivity benefit of approximately £118m, based on needing two entry people to do the job of a competent employee for one year³²⁷ (based on base pay only).

16.69 The financial implications of our higher case scenario are set out below.

Table 172: Financial impact of Reducing Attrition – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Positive figures represent savings. Numbers adjust for LECG conclusions on overall pay and FTE reductions over the period.

³²⁵ Labour Turnover, Chartered Institute of Personnel and Development, 2003. Estimated cost per leaver is £4,800 with a range of £1,500 to £7,000

³²⁶ RM 5044

³²⁷ This is consistent with the relative productivity material provided on slide 25 titled “Reducing Attrition Can Have Tremendous Value” (RM 5044)

Increase in staff training

- 16.70 Royal Mail claims that its current level of staff training is significantly below industry benchmarks and that it is planning to significantly increase the level over the period 2005/06 to 2010/11. The forecast costs associated with increasing training are set out in the table below.

Table 173: Financial impact of Training – Royal Mail

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	(26)	(39)	(51)	(57)	(55)	(52)	(253)

Source: RM 5062-5092: People Costs – Training. Negative figures represent costs.

- 16.71 Royal Mail put forward the following benchmarks on the number of days training per employee per annum: GM (6), BAE (6), Rover (5) and Motorola (5)³²⁸. Royal Mail indicates that each of these benchmarks relates to organisations in steady-state rather than moving through the [>€] changes proposed in its Strategic Plan. As a consequence, Royal Mail assumes training of six days per employee per annum³²⁹, with up to ten days training per employee during change³³⁰.
- 16.72 Royal Mail claims that the impact of this will be to increase the current annual training spend per employee from £120 to £420. The particular types of training spend mentioned by Royal Mail include leadership and team effectiveness training and training in relation to the Royal Mail Way.
- 16.73 Royal Mail currently provides training in the form of induction training for new recruits and ongoing training in various forms including the work time listen and learn programme. On average, each operational employee gets less than one days training per annum³³¹. Operational employees also participate in the work

³²⁸ RM 5044

³²⁹ RM 5062-5092

³³⁰ RM 5044

³³¹ RM 5044, RM 6017

time listen and learn programme, which at 30 minutes per week³³², is equivalent to three days per operational employee per annum³³³.

16.74 Other than mentioning leadership, team effectiveness, diversity and bullying & harassment training and training in relation to the Royal Mail Way, Royal Mail does not provide any details of the types of training that would require an additional ongoing investment of six days per employee per year. We would have expected Royal Mail to provide us with a clear training programme – outlining what training is required by grade at what point in time. The additional six days training per annum, over and above the training already provided, represents an investment of over £250m over the period 2006/07 to 2010/11.

16.75 We have reviewed the benchmarks put forward by Royal Mail as well as other additional benchmarks. Our findings are as follows:

- it is not clear that the organisations put forward as benchmarks by Royal Mail (BAE, Motorola, Rover and General Motors) are particularly good comparators to Royal Mail (particularly to the delivery function). Given the nature of the industries these firms operate in, we would expect these companies to invest more heavily in ongoing training than Royal Mail;
- we have conducted separate UK benchmarking of training spend per employee. We have found that both the engineering (2.2 days / £190 per person per year) and electronics (2.4 days / £250 per person per year)³³⁴ sectors have on average significantly lower training than proposed by Royal Mail. Even the aerospace industry has a slightly lower average training spend per employee (£380 per year) than Royal Mail is planning; and
- we have found that Royal Mail's plans are above other postal industry comparators. TPG provides between three and four training days per year³³⁵. This figure includes all induction and other training. Deutsche Post

³³² RM 3084

³³³ Royal Mail considers the work time listen and learn programme to be employee communication rather than training. We have concluded, in consultation with our Postal and HR experts, that these sessions would be appropriate for much of the additional training proposed

³³⁴ The People Skills Scoreboard for the Engineering Industry 2003-2004

³³⁵ TPG Annual Report

provides an average of three days training per year including the two days induction training provided to new employees³³⁶.

16.76 We conclude that Royal Mail has not provided enough support to substantiate the £250m additional investment in training. In our lower case scenario, we have reduced the level of additional training costs in line with this conclusion. We have included 50% of Royal Mail's additional training expenditure (or the equivalent of three days additional training per employee) to allow for any additional training that cannot be provided within the work time listen and learn sessions. This would increase the level of training provided to Royal Mail operational employees to seven days per annum including work time listen and learn (four days per annum excluding work time listen and learn). We have phased in the additional training over the period 2005/06 to 2010/11 to reflect the difficulty that Royal Mail may experience implementing an immediate increase in the level of training (particularly for delivery office employees). We make the following observations in support of our conclusions of the level of additional training costs:

- we understand that the costs of additional training associated with [>€] have been included separately in the implementation costs associated with each programme³³⁷; and
- we consider that the work time listen and learn sessions provide an appropriate forum to provide training on team effectiveness, the Royal Mail Way and any additional issues such as customer service improvement or new products. While it appears that Royal Mail does not consider the time spent on work time listen and learn sessions as training,³³⁸ we understand that these sessions are currently used to deliver the types of training proposed by Royal Mail (e.g. diversity, bullying & harassment) and have concluded, in consultation with Brian Thomson and Matthew Lanham, that these sessions would be appropriate for much of the additional training proposed.

16.77 The financial implications of our conclusions are set out below.

³³⁶ Information gained during LECG international benchmarking exercise February 2005

³³⁷ RM 5045. For example, training costs are included as one-off opex expenditure in a number of initiatives put forward by Royal Mail including [>€]

³³⁸ Meeting with Royal Mail 22 March 2005

Table 174: Financial impact of Training – LECG lower case

2004/05 prices, £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Negative figures represent costs. Numbers adjust for LECG conclusions on FTE reductions over the period.

16.78 For our higher case scenario, we have included 33% of Royal Mail’s forecast additional training costs (or the equivalent of an additional two days training per employee). This is consistent with increasing the level of training provided to Royal Mail operational employees to six days per annum including work time listen and learn (three days per annum excluding work time listen and learn).

Table 175: Financial impact of Training – LECG higher case

2004/05 prices, £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Negative figures represent costs. Numbers adjust for LECG conclusions on overall pay and FTE reductions over the period.

Management Refresh

16.79 [>£]. [We have excised the preceding sentence at Royal Mail’s request. Royal Mail has asked us to insert the following text in its place: “With the introduction of a fully competitive market from January 2006, greater focus on customer requirements, new products and services, the increasing impact of third part access into the Royal Mail network, it is necessary over the course of the price control period to ensure that our managers are fully equipped to face this swiftly changing environment. The Management Refresh programme is a key element in this transformation.”] Royal Mail states that the objectives of this programme are: “to put in place the appropriate level of managerial capability to deliver the new strategy and run a modern business”³³⁹. Initially, the programme will focus on assessing and improving the skills and capabilities of the existing management population. In some cases, where managers are unwilling or unable to meet the expected standards of performance, there will be associated costs of replacement. The financial implications of this programme are set out in the table below. [>£].

³³⁹ RM 5062-5092

Table 176: Financial impact of Management Refresh – Royal Mail

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Total	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: RM 5062-5092: People Costs – Management Refresh, RM 5004: Strategic Plan, LECG analysis. Negative figures represent costs.

- 16.80 Royal Mail does not provide any support for the need to refresh its managerial workforce in order to raise its managerial capability. Neither does it provide any support for the costs of the management refresh programme.
- 16.81 We have reviewed Royal Mail's and external information to form a view on the costs of the management refresh programme. [>£] .
- 16.82 We have reviewed benchmark information on the average costs to recruit a manager in the UK. We understand that the average recruitment costs are £5,000 per individual manager³⁴³. This is the average for recruitment for all management levels up to senior management and for all industries. We have re-estimated the total recruitment cost over the period 2006/07 to 2010/11 based on per manager recruitment costs of £5,000. [>£]. Further, we understand that many of the costs associated with recruitment are not specific to individual hire decisions – such costs include the costs of designing job descriptions and advertising for vacancies. Other costs such as costs of assessing candidates and costs associated with induction and new hire training would also be expected to be lower than average for the [>£] recruitment process [>£].
- 16.83 [>£] we would still expect a number of managers to leave Royal Mail over the life of the plan as a part of everyday business operations (through for instance dismissal, retirement and death, as well as voluntary resignation). [>£].
- 16.84 For our lower case scenario, we have:

³⁴⁰ RM 6081
³⁴¹ RM 5062-5092
³⁴² RM 5044
³⁴³ Recruitment, retention and turnover 2004, CIPD, 2004

- [>£] the costs of the management refresh programme using the benchmark figure for recruitment costs per manager (£5,000) and [>£] to reflect managerial turnover;
- we have not been provided with turnover figures for managerial positions so, for our lower case scenario, we have assumed 3% (or 225 managers per year). We note that average turnover for managers and professionals in the UK is 12.5% (10.5% in the public sector)³⁴⁴. [>£]; and
- [>£]

16.85 The financial implications of this programme consistent with our lower case assumptions are set out in the table below.

Table 177: Financial impact of Management Refresh – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Total	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Negative figures represent costs. Numbers adjust for LECG conclusions on overall pay and FTE reductions over the period.

16.86 For our higher case scenario, we assumed a lower figure for recruitment costs per manager of £4,000 consistent with the view that there would be economies of scale in the recruitment process. We have also assumed a managerial turnover rate of 4% (or 340 managers per year), which reduces the number of [>£].

16.87 The financial implications of this programme are set out in the table below.

³⁴⁴ Recruitment, retention and turnover 2004, CIPD, 2004

³⁴⁵ RM 3024

Table 178: Financial impact of Management Refresh – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Total	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]

Source: LECG analysis. Negative figures represent costs. Numbers adjust for LECG conclusions on overall pay and FTE reductions over the period.

Headcount reduction and redundancy

- 16.88 Royal Mail plans to reduce frontline FTEs by some 30,000 over the period 2005/06 to 2010/11. Royal Mail states in its Strategic Plan that it plans to achieve any headcount reduction largely through natural attrition avoiding redundancies and the potential for industrial action³⁴⁶. However, we note that Royal Mail is forecasting operational redundancy costs of £[>£]m over the period 2006/07 to 2010/11³⁴⁷. [>£]. Royal Mail provides no support for the forecast operational redundancy costs. We note that at the average cost per operational redundancy of £[>£]³⁴⁸, the redundancy costs included in the Strategic Plan imply approximately [>£] redundancies over the period 2005/06 to 2010/11.
- 16.89 Royal Mail has provided little or no support for the additional redundancy costs included in the Strategic Plan. It states that its policy is to avoid operational redundancies where possible, relying instead on natural wastage to deliver the desired headcount reduction. We consider that a stated policy of avoiding operational redundancies as part of the headcount reduction programme should discourage employees who might ordinarily leave from remaining at Royal Mail in the hope of a redundancy payout.
- 16.90 We have reviewed Royal Mail's forecast levels of staff attrition and believe that it is possible for Royal Mail to reduce headcount by 34,000 over the period 2005/06 to 2010/11 without resorting to redundancies. At the staff attrition rates forecast by Royal Mail, the number of FTEs that leave Royal Mail over the period 2006/07 to 2010/11 is over 50,000. On average, we feel that Royal Mail would be able to

³⁴⁶ RM 5044

³⁴⁷ RM 5044. Figures are in nominal prices

³⁴⁸ RM 3024

reduce headcount as per the Strategic Plan through natural wastage and without having to use operational redundancies.

- 16.91 We have calculated the headcount reductions implied by our detailed review of Royal Mail's Strategic Plan. For our lower case scenario the implied headcount reduction is approximately 23,000 while for our higher case scenario it is approximately 39,000. We consider, on a conservative basis³⁴⁹, that no redundancies are necessary in our lower case, while approximately 4,800 redundancies are necessary under our higher case. The costs of these redundancies in our higher case scenario are shown in the table below.

Table 179: Financial impact of redundancies – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Implementation	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]	[>€]

Source: LECG analysis. Negative figures represent costs. Numbers adjust for LECG conclusions on overall pay and FTE reductions over the period.

Further cost saving opportunities

- 16.92 There are a number of additional opportunities for staff cost savings that we have identified through our review of the Strategic Plan and supporting information that are not covered in Royal Mail's BPM. These are outlined below.

Local pay flexibility / Regional pay

- 16.93 [>€] . We have reviewed data on regional pay variation from the National Earnings Survey to understand the extent of regional pay variation in the UK. Each of the manufacturing (44%), transport, storage & communications (32%) and public administration & defence (46%) sectors show significant variation between pay in the North East of England and pay in London³⁵¹. We consider these sectors broadly comparable to Royal Mail. We have also reviewed information from Hays

³⁴⁹ Given the average level of staff turnover, we estimate that the headcount reduction assumed in both our lower case and higher case would not require any compulsory redundancies. However, we recognise that there is a significant regional variation in staff attrition, ranging from 14% in the Hampshire and Dorset region to 6.3% in the Chester and North Wales region (RM 9042), which may mean redundancies are required in some areas. We consider that, even accounting for this regional variation, redundancies would only be required under our higher case scenario

³⁵⁰ RM 5044

³⁵¹ ONS National Earnings Survey, Table E9a. Ratios calculated by LECG and based on full-time adult male weekly pay rates

Survey of Contact Centres, which shows that there is a premium of between 29% and 55% for London customer service and telemarketing employees³⁵².

16.94 By comparison, there appears to be a 28% differential between pay in London mail centres and pay in mail centres in the North East of England³⁵³. For delivery offices, the differential is 20%³⁵⁴. These figures have been calculated using ordinary hours and pay, and therefore represent differences in the basic pay and not difference in the use of overtime. We understand that these differences would reflect allowances paid in areas where recruitment and retention is difficult.

16.95 It is not clear that local pay flexibility would have a significant cost implication. Our review of pay levels concluded that Royal Mail's pay is currently above average. There is currently some regional variation in Royal Mail pay rates but not the same extent as in other industries, which may suggest that further variation is desirable. However, within the pay packages assumed under our lower and higher case scenarios there is scope for re-balancing of regional pay rates so we do not consider that introducing further regional variation in pay would necessarily lead to an increase in staff costs.

Annualised hours

16.96 [>€]

16.97 We understand that Royal Mail has trialled an annualised hours system at the WAND facility. Royal Mail did not provide any details of the savings achieved from the introduction of annualised hours at WAND.

16.98 Many employers have used annual hours to reduce a culture dependent on overtime. The major outcome of introducing annual hours is an improvement in productivity since the incentive for low productivity (e.g. overtime) is removed³⁵⁵. It is suggested that annual hours introduce a culture of pace and teamwork, which can reduce costs by 10 to 15%³⁵⁶. We understand that employees of Samsung

³⁵² Survey of Contact Centres, Hay Management Consulting, 2004

³⁵³ RM 6069. There is a 43% differential between the highest paying mail centre (London East, £9.15) and the lowest paying mail centre (Aberdeen, £6.42)

³⁵⁴ RM 6025. There is a 33% differential between the highest paying delivery office (WC (Central London), £8.47) and the lowest paying delivery office (South Woodham Ferrers, £6.34)

³⁵⁵ Annualised Hours Contracts - The Way Forward in Labour Market Flexibility? David Bell and Robert Hart, National Institute Economic Review, 2003, 185, pp. 64-77

³⁵⁶ www.smarthumanlogistics.com

and Tesco, and 3% of employees in the distribution industry work with an annualised hours contract³⁵⁷.

- 16.99 There is also precedent for the use of annual hours in the postal industry. We understand that delivery staff at TPG operate under a system whereby hours are rolled-up over a four week period enabling fluctuations in workload to be accommodated without the use of overtime³⁵⁸.
- 16.100 While we expect that there are likely to be significant cost savings associated with the introduction of annual hours, we have not included any additional savings in our cost estimates. We consider that the major cost saving is likely to be a saving in the amount of overtime paid due to improved productivity. We recognise that obtaining union agreement for the introduction of annual hours is likely to be difficult, although it could be introduced in stages (for instance, starting with weekly hours and then moving to monthly hours, etc).

Pensions

- 16.101 Postcomm has commissioned Hymans Robertson³⁵⁹ to provide an independent assessment of Royal Mail's future cash pension deficit requirements over the price control. We understand that the forecast has been based on forecast wage inflation of [>€]³⁶⁰. If actual pensionable pay increases by less than the forecast used to prepare the forecast pension contributions, the level of pension contributions would be overstated.

Conclusions

- 16.102 The table below summarises our conclusions under our lower case scenario on some of the staff cost related initiatives contained in Royal Mail's Strategic Plan.

³⁵⁷ Annualised Hours Contracts - The Way Forward in Labour Market Flexibility? David Bell and Robert Hart, National Institute Economic Review, 2003, 185, pp. 64-77

³⁵⁸ Information from LECG international benchmarking survey October 2004

³⁵⁹ Report to the Postal Services Commission: Assessment of the funding of the Royal Mail Pension Plan for the purposes of the 2006 price review, Hymans Robertson, February 2005.

³⁶⁰ Report to the Postal Services Commission: Assessment of the funding of the Royal Mail Pension Plan for the purposes of the 2006 price review, Hymans Robertson, February 2005, pp.8-10.

Table 180: Cash impact of staff cost initiatives – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Remuneration	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Reduced absence	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Attrition	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Training	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Management refresh	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Operational redundancies	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Total	(97)	(131)	(141)	(146)	(97)	(97)	(611)

Note: Positive figures represent savings. Negative figures represent costs. Red – excluded. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG.

- 16.103 The table below shows the year-by-year cost implications of our conclusions on Royal Mail's staff cost related initiatives under our lower case scenario.

Table 181: Financial impact of staff cost initiatives – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Implementation	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Capex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Total	(97)	(131)	(141)	(146)	(97)	(97)	(611)

Source: RM 5062-5092, LECG analysis

- 16.104 The table below summarises our conclusions under our higher case scenario.

Table 182: Cash impact of staff cost initiatives – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Remuneration	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Reduced absence	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Attrition	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Training	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Management refresh	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Operational redundancies	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Total	(103)	(182)	(251)	(310)	(207)	(256)	(1,206)

Note: Positive figures represent savings. Negative figures represent costs. Red – excluded. Blue – LECG identifies different savings than Royal Mail. Green – additional area of savings identified by LECG.

- 16.105 The table below shows the year-by-year cost implications of our conclusions on Royal Mail's staff cost related initiatives under our higher case scenario.

Table 183: Financial impact of staff cost initiatives – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Implementation	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Capex	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]	[>£]
Total	(103)	(182)	(251)	(310)	(207)	(256)	(1,206)

Source: RM 5062-5092, LECG analysis

17 Review of property costs

Introduction

17.1 In this section, we review Royal Mail's property and facilities management costs. We first provide an overview of the role of Property Holdings and the treatment of property and facilities management costs. We then provide details of Royal Mail's property portfolio and the current level of property and facilities management costs. For completeness, we provide a short summary of the cost saving opportunities identified by WS Atkins, in relation to property and facilities management costs, during its review of operating costs at the start of the current price control.

17.2 We then review the future property and facilities management cost initiatives put forward by Royal Mail and assess the extent to which the cost savings identified are achievable and consistent with other initiatives. In general, the Strategic Plan, and its supporting information, is relatively silent on property and facility management cost savings.

17.3 However, information provided by Property Holdings suggests that there is considerable scope for savings in property and facilities management costs over the price control period, largely through reducing the size of the property portfolio. We have focussed our review on this information to arrive at a set of achievable cost savings. We conclude by summarising our views on the efficient level of future property and facilities management costs.

17.4 This section has been written under the strategic guidance of, and with input from, Gren Collings (BSc (Estates Management), FRICS). Mr Collings was a former Managing Director of Royal Mail Property Holdings, having worked for Royal Mail for over 20 years, firstly as Chief Estate Surveyor, then as Group Property Director.

Overview of Property Holdings

17.5 Property Holdings is Royal Mail's dedicated property and facilities management division. The treatment of property and facilities management within Royal Mail can be summarised as follows:

- Property Holdings holds all property used by Royal Mail business units, and acts as the landlord for all accommodation used by the business units;

- Property Holdings is responsible for associated property and facilities services, such as rates, utilities, cleaning and day-to-day maintenance. A number of facilities services are provided under outsourcing contracts, including office services (i.e. Romec) and catering (i.e. Quadrant);
- Property Holdings charges other Royal Mail business units for the use of accommodation through the internal charging (recharging) mechanism. The charges comprise an externally referenced market rent charge on freehold and leasehold properties or the actual rent on rented premises, a facilities charge (e.g. rates, energy, cleaning, waste, etc.), and a maintenance charge;
- Property Holdings charges other business units for new properties constructed or acquired. Property Holdings charges for the cost of the land and “shell” through the market rent charge, while it charges for the cost (asset value) of fit out through a project charge. We understand that Property Holdings’ decision about whether to purchase or lease new properties is taken on a case-by-case basis; and
- Property Holdings does not charge Royal Mail business units directly for certain costs, including depreciation, costs of vacant and externally let properties, and property management fees. These costs flow through a residual profit / loss charge. As discussed in Section 7, this residual profit / loss is allocated back to the operational business units³⁶¹ in proportion to accommodation and project charges (i.e. the total of their internal recharges from Property Holdings which is a form or equi-proportional cost allocation).

17.6 The significance of the profit element discussed above is that it “reduces” the level of charges paid by the operational business units³⁶². We understand that normally the revenue charged by Property Holdings in any year will exceed the costs incurred. This is because Property Holdings charges a market rent for all properties but does not actually incur any cash costs on the properties it owns. The net effect of the charges and profit allocation is that business units only pay the costs incurred by Property Holdings in providing the property portfolio. Whilst the net charge will also include a charge for depreciation, we adjust for this within the Base Year (refer to Section 7).

³⁶¹ RM Letters, International, Logistics, Parcelforce and Post Office®

³⁶² A loss would increase the level of costs charged to the business units

- 17.7 We have reviewed a significant amount of material covering Property Holdings including the preparation of Portfolio Plans, the charging methodology and the process used to identify surplus property. Based on the information that has been provided it would appear that Property Holdings adopts good practice processes. Caradon Consulting, an external property consultant who reviewed Property Holdings' processes in March 2004, agrees with this view³⁶³. It concluded that Property Holdings were in line with best property management practice.

Historical costs

- 17.8 We discuss recent changes in Royal Mail's property portfolio and the level of property and facilities management costs below. The following table shows the level of gross and net book value for freehold, long-leasehold and short-leasehold properties for each year between 2001 and 2004.

Table 184: RMG property assets 2001 to 2004

Year ending - £m	25 March 2001	31 March 2002	30 March 2003	28 March 2004
Freehold properties				
Gross book value	1,490	1,589	1,557	1,488
Accumulated depreciation	(604)	(648)	(687)	(685)
Net book value	886	941	870	803
Long-leasehold properties				
Gross book value	223	225	232	244
Accumulated depreciation	(75)	(114)	(128)	(139)
Net book value	148	111	104	105
Short-leasehold properties				
Gross book value	379	366	422	457
Accumulated depreciation	(127)	(174)	(195)	(203)
Net book value	252	192	227	254
Total				
Gross book value	2,092	2,180	2,211	2,189
Accumulated depreciation	(806)	(936)	(1,010)	(1,027)
Net book value	1,286	1,244	1,201	1,162

Source: RM 4002

³⁶³ RM 3008d. Report commissioned by RM

- 17.9 As at 31 March 2004, the total net book value of Royal Mail's property assets was £1.2bn. Although Royal Mail does not revalue its properties for accounting purposes³⁶⁴, we understand that Property Holdings undertakes regular revaluations for the purposes of establishing market rents and identifying disposal opportunities.
- 17.10 Royal Mail has indicated that its current market value of property is £2.4bn³⁶⁵. This figure includes the whole RML portfolio valuation as at 31 December 2004 and a capitalised value for short leaseholds. The composition of the valuation has been provided in detail in RM 9055³⁶⁶.
- 17.11 Property Holdings states that although freehold property assets worth over £500m have been disposed of since 1996, the total area occupied, and therefore the base cost of property, has not changed significantly over this period³⁶⁷. The number of property disposals and the level of proceeds and the level of accounting profit (i.e. the difference between sale proceeds and the depreciated carrying value in the accounts) associated with those disposals, for the past five years are shown below.

Table 185: Property Holdings, property disposals 2001 to 2004

	99/00	00/01	01/02	02/03	03/04
Number of disposals	73	77	62	57	143
Proceeds from disposals (£m)	76	28	29	34	88
NBV of disposals (£m)	53	16	8	18	26
Profits from disposals (£m)	23	12	21	16	62

Source: RM 6102

- 17.12 For 2003/04, Property Holdings' "income" from the other Royal Mail business units was £533m (compared with £548m for 2002/03). This income comprised accommodation charges, maintenance charges and charges for building projects. The direct charge to RML was £354m, comprising £338m for accommodation and

³⁶⁴ RM 6093. We understand that since RM moved to historic cost accounting in 2001/02 it no longer revalues assets for accounting purposes

³⁶⁵ RM 9055

³⁶⁶ RM 9055. Royal Mail has submitted that the current market value of RML's property portfolio is £1.7bn, excluding the capitalised value of property fit out costs. Most properties are valued on an existing use basis. Further details on the value of property assets is provided in a separate report on Royal Mail's regulated asset base

³⁶⁷ RM 6001a

maintenance and £16m for projects³⁶⁸. We have not been provided with Property Holdings cost information for previous years so cannot comment on the trend in costs over time.

Current price control initiatives

17.13 Royal Mail identified the following implications for property and facilities management costs at the start of the current price control period:

- an increase of £65 million in the property and facilities management costs charged to the Inland Letters Business (i.e. the regulated business) due to the moving of Quadrant costs to Property Holdings, the use of an alternative allocation methodology for shared buildings, and the application of market rents;
- forecast property and facilities real cost reductions of 3% per annum; and
- further reductions in Property Holdings' overhead costs³⁶⁹.

17.14 The table below sets out the level of property and facilities management charges forecast by WS Atkins in the 2002 efficiency review. We note that the actual charges to RML for 2003/04 (£354m) were lower than forecast at the time of the previous efficiency review.

Table 186: WS Atkins forecast of property and facilities management costs

£m nominal prices	01/02	02/03	03/04	04/05	05/06	06/07
Property Holdings	327	364	365	371	382	392
ROMECC		22	16	14	10	10
Total	327	386	381	385	392	402

Source: WS Atkins Report, Table 5-18

Initiatives put forward by Royal Mail

17.15 The Strategic Plan contains two initiatives that we would expect to have a significant impact on the property portfolio. These are the Mail Centre Network initiative and the Walk Sequencing initiative.

³⁶⁸ RM 3036. The total property charge for RML was £351.3m. The difference relates to the allocation of a share of Property Holdings profits (of £3m) to RML (as discussed in Section 7 and Section 18).

³⁶⁹ WS Atkins Report, Section 5

17.16 We would have expected Royal Mail to provide information on the potential proceeds from disposing of some of the high value mail centres and delivery offices as part of these initiatives as well as the on-going property cost savings. However, the Strategic Plan and the supporting documents provide no direct or clear information on the property portfolio impacts of these initiatives.

17.17 Although these initiatives were discussed in detail elsewhere in this report, we set out below a summary of the main property implications of these initiatives in our scenarios.

Mail Centre Network

17.18 [redacted]. [We have excised our original text here at Royal Mail's request. Royal Mail has suggested alternative wording, as follows: "Royal Mail proposes to review its mail centre network to ensure the business has the right number of sites in the right places."]

17.19 Royal Mail has provided some information about the potential property impacts of this initiative³⁷⁰. RM 5045 contains estimates of the one-off property related capital expenditure costs of the programme. Over 2006/07 to 2010/11 these costs are £241 million. However, it is not clear from the information provided whether these are the net property costs (new build costs less disposal proceeds) or only the new build costs. Royal Mail does state that it is developing estimates of the property impacts of the mail centre rationalisation initiative, however these were not available in time to be considered in this efficiency study.

17.20 In RM 6001, Property Holdings provided additional details of potential property cost savings in the mail centre network³⁷¹. Property Holdings states that there is potential to release significant value through disposing of the highest cost or highest value mail centres. In relation to the mail centre network, Property Holdings mentioned two options:

- the disposal of the highest cost mail centres. Through a benchmarking exercise, Property Holdings identified that there was a significant variation in the level of property costs between mail centres. Property Holdings concluded that proceeds of £[redacted]m (and significant ongoing savings) could

³⁷⁰ RM 5045

³⁷¹ RM 6001a

be obtained if the most costly sites were disposed of (and presumably replaced by more cost effective sites); and

- the disposal of the highest value mail centres. Property Holdings also discussed the release of highly valuable properties (e.g. [>€]) and estimated that the release of [>€] sites might yield £[>€]m to £[>€]m, while the release of the next 20 highest value sites might yield an extra £[>€] m.

17.21 The property disposal proceeds identified by Property Holdings in RM 6001 are set out in the table below:

Table 187: Property Holdings, potential property disposal proceeds

£m, 2004/05 prices	Potential disposal proceeds
Reducing floor-space occupancy	
Letters (highest cost units)	[>€]
Release latent asset value	
[>€]	[>€]
Next 20 high value sites	[>€]

Source: PCR3 6001

17.22 We understand that the figures contained in the table above are disposal proceeds before any new build costs. However, Property Holdings mentions that much of the property disposal programme proposed in its Property Strategy would be self-financing³⁷². It would appear that the Property Plan and the Strategic Plan are inconsistent in this area with the Strategic Plan suggesting mail centre rationalisation would incur a property-related cost, while Property Holdings suggests it could be self-financing. We believe that disposals/ restructuring of the network is likely to have operational benefits as well as one-off disposal benefits.

17.23 Subsequently, in RM 9050 Royal Mail corrected for this inconsistency. That is, they have identified disposals not previously included in the Strategic Plan. The treatment of disposals is outlined further below.

³⁷² RM 6001

Walk sequencing and delivery office amalgamations

- 17.24 One of the initiatives put forward by Royal Mail is the introduction of automated sequencing equipment to enable walk sequencing. The introduction of walk sequencing enabled both TPG and Deutsche Post to significantly reduce the size of their delivery networks. Royal Mail does not mention potential property cost savings through rationalisation of the delivery network in the information supporting the Walk Sequencing initiative. In fact, the supporting documentation states that there may be an additional £45m in property and address interpretation costs over the plan³⁷³. Elsewhere, Royal Mail mentions that there may be opportunities to rationalise the delivery office estate “*as a result of greater automation in the mail centres and the introduction of walk sequencing*”³⁷⁴. Royal Mail does not quantify the potential benefits – which we find unusual.
- 17.25 We have not estimated the benefits of delivery office consolidation - due to the paucity of information that has been provided. We believe, however, that walk sequencing would generate value for RML – in part due to the disposal of property.
- 17.26 We also recognise that even in the absence of walk sequencing, Royal Mail is likely to undertake some rationalisation of the delivery office network on an incremental basis. This may involve, for instance, disposing of high value or high cost delivery offices where the opportunity exists. Again, we have not considered such savings. In general we believe that any disposals/ restructuring of network is likely to have operational benefits as well as one-off disposal benefits.

Further cost saving opportunities

- 17.27 We received a substantial amount of information on Royal Mail’s property and facilities management costs in response to the original BPQ, supplementary information requests on property (dated 24 August 2004 and 11 October 2004), and as part of our separate review of Royal Mail’s regulatory asset base (RAB). The analysis presented in this section relies largely on information the provided by Royal Mail. We have identified the following additional opportunities for cost saving: property cost savings through disposal of surplus, operational and administrative properties; and savings in facilities and property management costs.

³⁷³ RM 5045

³⁷⁴ RM 5045

Disposal of surplus, operational and administrative properties

- 17.28 Each year Property Holdings disposes of a number of properties from its portfolio. The disposal of property has a number of cost implications. Firstly, the disposal of freehold and long leasehold property will yield cash sales proceeds, often at amounts greater than the carrying amounts in the financial accounts³⁷⁵. Secondly, the disposal of leased property will result in savings of annual rental costs. Thirdly, disposal also results in savings of facilities costs (e.g. rates, utilities). Finally, the disposal of operational sites often results in additional operational savings (although occasionally additional costs) associated with the reconfiguration of the network following the disposal.
- 17.29 In this subsection, we focus on the rental and facilities cost savings (“property cost savings”) that result from property disposals. Our discussion of the proceeds related to property disposals follows in the next subsection.
- 17.30 To estimate the potential property cost savings associated with the disposal of properties during the forthcoming price control period we have used information provided by Royal Mail. Amongst the information received in response to our supplementary information requests on property were documents that set out Property Holdings’ view of the potential for property disposals over the forthcoming price control period. These documents included details of the property cost savings that would be associated with the potential property disposals.
- 17.31 We also received information on RML’s property portfolio as part of our separate review of Royal Mail’s submission on its RAB. Amongst the information provided were estimates of property disposals for each year of the period 2004/05 to 2009/10. These were provided in the context of the roll forward of the RAB over the price control period.
- 17.32 We have identified three categories of property disposals that will lead to property cost savings for RML:

³⁷⁵ The disposal value is often greater than the value in the financial accounts since RM no longer revalues assets for accounting purposes (RM 6093)

- Surplus properties³⁷⁶: Royal Mail has provided details of the stock of surplus properties, those properties that other RMG business units have returned to Property Holdings, as at September 2004³⁷⁷ along with the associated property costs³⁷⁸. RML would benefit from the disposal of surplus properties through an increased Property Holdings profit allocation (or decreased Property Holdings loss allocation) as discussed in Section 7. RML's share of Property Holdings costs, which determines the profit/ loss allocation, was 66% for 2003/04³⁷⁹. Accordingly, in our cost projections we have included only 66% of the property savings identified by Royal Mail to reflect the fact that not all of the property savings following disposal of surplus properties would flow through to RML. For partially vacant properties we have also reduced our savings by an estimate of the one-off costs associated with installing additional security into properties occupied by the Post Office®;
- Operational properties: Royal Mail has provided details of the properties that are currently in use by RML that it plans to dispose of over the forthcoming price control³⁸⁰. We have compiled a list of operational property disposals using Royal Mail's information. Our analysis excludes mail centre disposals, which is consistent with our findings in Section 13 (i.e. we have excluded the Mail Centre Network reconfiguration initiative in our profile of future efficient operating costs). We have identified the associated property cost savings from Royal Mail information in RM 6059 and RM 9023. However, we expect that our estimate understates the property cost savings because it excludes savings in rent for some leased operational properties;
- Administrative properties: Over the last five years, RMG's number of standalone administrative rentable units has reduced from over 180 to around 20³⁸¹. We understand that it is Royal Mail's aim to reduce the

³⁷⁶ From the perspective of RML, surplus properties can be either properties that RML previously occupied that are now completely vacant ("completely vacant properties") or properties that RML has vacated but where part of the premises are still occupied by another Royal Mail business unit ("partially vacant properties"). We understand that Property Holdings plans to reduce its partially vacant property portfolio [>€]

³⁷⁷ RM 6011 and RM 6013

³⁷⁸ Rental costs are set out in RM 6011 and RM 6013, facilities costs on vacant properties are set out in RM 6010.

³⁷⁹ RM 6050

³⁸⁰ The planned operational property disposals are set out in three separate submissions: RM 9023, RM 9049 and RM 9050

³⁸¹ RM 6011

standalone administrative property portfolio to properties in [>]. We have used information provided by Property Holdings to estimate the property cost savings available from disposal of administrative properties during the forthcoming price control period. Property Holdings has provided details of plans to reduce the size of the administrative property portfolio by a further 10 properties over the period 2005/06 to 2012/13³⁸². For the purposes of this report, we have included the savings associated with the disposals forecast for the period 2005/06 to 2010/11. The forecast financial impact of these disposals is a £5.3m cumulative reduction in property costs by 2010/11³⁸³. As with surplus properties we have reduced our estimate to reflect the fact that not all of the property savings following disposal of administrative properties would flow through to RML.

- 17.33 The table below shows our estimates of the property cost savings associated with the disposal of surplus, operational and administrative properties. Our estimates are based on Royal Mail information provided in the various documents mentioned in the previous paragraph. For each type of property disposal, we have slightly adjusted Royal Mail's information – these adjustments are discussed in the bullet points above.

Table 188: LECG estimate of cumulative property cost savings 2004/05 to 2010/11

£m, 2004/05 prices	04/05	05/06	06/07	07/08	08/09	09/10	10/11
Surplus properties	0	3	11	12	12	12	12
Operational properties	0	3	5	7	7	7	7
Administrative properties	0	0	1	1	2	4	4
Total	1	6	17	20	22	23	23

Source: LECG analysis. Numbers may not add exactly due to rounding

- 17.34 We consider the estimates of property cost savings identified above to be conservative for the following reasons:
- we estimate savings from the disposal of surplus property based on the stock of surplus properties as identified by Property Holdings as at September 2004. It is likely that RML would benefit from the disposal of

³⁸² RM 6102

³⁸³ RM 6102

other property that becomes surplus over the price control period that has not been identified by Royal Mail at this stage (and thus excluded from its operational property disposal submissions); and

- our estimates of the property savings associated with the disposal of operational properties are based on incomplete information of the associated rent and facilities costs and are thus likely to understate the on-going operational cost saving that results from the disposals.

17.35 The operational cost savings included in our cost projections are shown in the table below.

Table 189: Financial implications of disposal of property – LECG

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	6	17	20	22	23	23	105

Source: LECG analysis. Positive figures represent savings or proceeds. Negative figures represent costs

Proceeds from the disposal of operational properties

17.36 Over the past five years, the average level of proceeds from Royal Mail's property disposals was approximately £50m each year (refer to Table 185 above), with associated profit from disposals of £27m per year (or around 50% of the proceeds). In this subsection we discuss our conclusions on the likely proceeds from the disposal of freehold and long leasehold properties over the price control period. The property disposal proceeds discussed in this subsection are netted off our estimate of capital expenditure (as discussed in Section 19) and are also used in the roll forward of the RAB (as outline in a separate report).

17.37 We have estimated the proceeds from disposals based on Royal Mail's forecasts, consistent with the approach used to estimate the property cost savings (as discussed above). The primary submissions relied upon, RM 9049 and RM 9050, were provided in response to questions raised as part of Postcomm's RAB review.

17.38 Royal Mail has provided details of the operational and administrative properties that it plans to dispose of over the forthcoming price control³⁸⁴. It has also provided estimates of the likely timing of disposals and likely disposal proceeds each year. We have compiled a list of operational property disposals using Royal Mail's

³⁸⁴ RM 9049 and RM 9050

information. As explained above, we have excluded any disposals relating to the any proposals to restructure the mail centre network (refer to Section 13). The disposal information in the table below is for operational properties only. We understand that the administrative properties that Royal Mail is forecasting to dispose of are leased.

Table 190: Proceeds and net book value for property disposal – LECG

2004/05 prices £m	04/05	05/06	06/07	07/08	08/09	09/10	10/11
Proceeds	4	9	6	2	0	0	0
Net book value	2	5	3	1	0	0	0

Source: RM 9049, RM 9050 and LECG analysis. Positive figures represent savings or proceeds. Negative figures represent costs

- 17.39 For the purposes of our efficiency review we have netted off the anticipated proceeds from disposal from our estimate of capex. The financial implication of the disposal of property is shown in the table below.

Table 191: Financial implications of disposal of property – LECG

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Capex	9	6	2	0	0	0	7

Source: LECG analysis. Positive figures represent savings or proceeds. Negative figures represent costs

Savings in facilities and property management costs

- 17.40 We understand that as part of a recent organisational review, the headcount and costs of Property Holdings have been reduced substantially³⁸⁵. We have sought to confirm that the level of facilities and property management costs charged by Property Holdings are appropriate.
- 17.41 Royal Mail provided a property benchmarking study conducted by Caradon Consulting in March 2004. The Caradon study included a benchmarking exercise of the costs charged by other property management divisions. Caradon provided three comparators who offered a range of property management services and had property management costs in the range of 2.5% to 5.75% of total rent. The level of property management services provided by Property Holdings is most like the

³⁸⁵ RM 6010

comparator in the middle of the above range who had property management costs of just over 4% of total rent. The comparable measure for Property Holdings was 4.5% for 2003/04³⁸⁶, and forecast to be 4.1% for 2004/05³⁸⁷. We conclude that the property management costs of Property Holdings are broadly comparable with other property management companies.

17.42 In summary, we conclude that there are unlikely to be significant additional cost savings in the areas of facilities and property management costs. We have based this conclusion on the following observations:

- the rent charge for all properties is externally assessed;
- the utilities, rates and other external costs are passed directly through to Royal Mail business units;
- functions that have been outsourced, such as cleaning and catering, have been done so through an OJEU tendering process;
- property management costs are at benchmark level; and
- Property Holdings applies a consistent methodology to the allocation of facilities costs to all Royal Mail business units.

Conclusions

17.43 Our conclusions in relation to the disposal of surplus, operational and administrative properties are set out in the table below. These conclusions apply to both our lower and higher case scenarios. As indicated above, we believe our conclusions to be conservative.

³⁸⁶ RM 6102. The costs of Property Holdings for 2003/04 were £26m and the total rent roll was £573m (which is the total of charges to RM business units, charges to external tenants and charges relating to vacant properties)

³⁸⁷ RM 6102 – “Property Holdings – Comparison of Rent Roll” embedded spreadsheet

Table 192: Disposal of surplus, operational and administrative properties – LECG

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	6	17	20	22	23	23	105
Disposal proceeds	9	6	2	0	0	0	7
Total	15	23	22	22	23	23	112

Source: LECG analysis. Positive figures represent savings or proceeds. Negative figures represent costs

18 Review of overhead costs

Introduction

18.1 Corporate and support function costs, which are commonly referred to as overheads, account for approximately 17% of RML's annual operating costs³⁸⁸. We have compared the level of overhead costs incurred by RML against well-established external benchmarks to determine the efficient level of overhead costs. Regulators in the UK have generally accepted the use of functional benchmarks to determine efficient costs³⁸⁹.

18.2 In this section, we first provide a high-level overview of the support functions of the whole RMG business. We then provide an overview of the historical level of overhead costs incurred by RMG and RML. We then summarise the overhead cost initiatives put forward by Royal Mail and compare these to the results of our overhead benchmarking exercise. Finally, we present our conclusions on the efficient level of overhead costs.

18.3 Overall, we conclude that when compared to external benchmarks the level of some overhead costs incurred by RML are high, given the size and nature of its business. There is scope for reductions beyond those proposed by Royal Mail.

18.4 This section focuses on the *level* of total overhead costs. The specific issue of how overhead costs should be allocated to RML was discussed in Section 7.

Overview of activities

18.5 RMG has five principal overhead divisions, which provide support to the whole business: Finance; P&OD; CAS; TSI; and Property³⁹⁰. Each business unit operates as an independent profit centre. RMG's five operating business units³⁹¹ and, in some cases, the other overhead business units, are charged for the use of the support functions through the internal charging mechanism.

18.6 The table below provides an overview of the principal overhead activities performed within Finance, P&OD, CAS and TSI.

Table 193: Activities performed within RMG overhead business units

Unit	Overhead activities performed
Finance	Financial budgeting & analysis, asset management, financial reporting, accounts payable & receivable, strategy & regulation
P&OD	Payroll, recruitment, turnover (e.g. leavers management), training & development, absence management, health & safety
CAS	In-house legal advice, external legal advice, media relations, industry relations, employee communications, security, Company Secretariat
TSI	In-house IT support services, outsourced IT support services, infrastructure development

Source: RM 3030, RM 6085

18.7 Some operational business units have internal activities that can be classified as support or overhead related. For example, RML performs its own marketing activities directly and the Logistics business provides vehicle services to the rest of the group.

18.8 Our overhead benchmarking exercise focuses on the particular overhead activities provided by the Finance, P&OD and CAS business units. It concentrates on the costs of the finance, human resources, legal, marketing, communications, strategy, and regulation activities. The overhead benchmarking exercise does not cover:

- the costs charged by Property Holding for providing and managing RMG's property portfolio, which is discussed separately in Section 17;
- IT related costs, due to the lack of comparable and robust benchmarks and the fact that the majority of IT costs are provided through competitive tender; or
- the costs charged by Vehicle Services for providing and managing RMG's vehicle fleet, which are discussed separately in Section 14.

³⁸⁸ RM 6003, RM 6085

³⁸⁹ Recent examples include KPMG's review of NATS for the CAA and OXERA's review of Network Rail for the ORR

³⁹⁰ RM 3030

³⁹¹ RM Letters, International, Logistics, Parcelforce and Post Office®

Base year costs

- 18.9 The table below provides a breakdown of the level of overhead costs for RMG and RML for 2003/04. We requested the level of overhead costs in previous years. Royal Mail informed us that this data was not available³⁹².

Table 194: Overhead costs for RMG and RML for 2003/04, £m

Overhead function ³⁹³	RMG	RML
Property and facilities management	530.2	351.3
Marketing ³⁹⁴	358.0	358.0
IT	283.5	163.1
Human resources	128.0	94.7
Finance	99.1	68.1
Legal	24.4	13.7
Strategy	11.8	3.9
Communications	9.9	6.7
Company Secretariat	9.4	6.3
Security	4.4	1.5
Regulation	2.2	2.2
Total overheads	1,460.9	1,069.5
Total operating costs	8,582.0	6,095.0
Overheads as a % of operating costs	17.0%	17.5%

Source: RM 6003, RM 6031, RM 6079 and RM 6085

- 18.10 We understand that most overheads have been allocated to the Pipeline Overheads, Other Overheads, Marketing and Other cost types. These cost types include other non-overhead costs (for example compensation). The table below shows the trend in these cost types in 2003/04 prices. This provides an indirect indication of overhead trends.

³⁹² RM 6122

³⁹³ The figures in this table relate to the costs of a particular overhead function rather than the costs of a particular overhead business unit. For instance, the Finance overhead function includes payroll costs provided by the P&OD business unit and excludes Strategy and Regulation costs provided by the Finance business unit. As a result the figures in this table and the figures in Table 37 are not directly comparable.

³⁹⁴ We were not provided with details of marketing costs for other RMG business units. For the purposes of this table we have conservatively assumed that the marketing costs for RMG are the same as the marketing costs for RML as identified in the BPC

Table 195: Historical overhead cost trends

£m, 2003/04 prices	00/01	01/02	02/03	03/04	CAGR
Pipeline overheads	128	337	565	505	58.1%
Other overheads	603	353	163	214	-29.2%
Other	245	237	232	252	0.9%
Marketing	287	419	381	358	7.7%
Total	1,262	1,345	1,343	1,329	1.7%

Source: RM 6079, LECG analysis

18.11 The total level of overhead costs recorded in the Pipeline Overheads, Other Overheads, Marketing and Other cost types have increased over the period 2000/01 to 2003/04. The trend is difficult to interpret, however, due to significant movements in individual cost types, the effect of other non-overhead costs, changes to the cost allocation system and changes in the structure of overheads (as discussed below). In particular, we note that there has been considerable reallocation of costs between cost types³⁹⁵.

18.12 Interbusiness POL costs represent the costs related to the counter service contract between RML and POL. While not technically an overhead we mention these costs briefly in this section, as they have not been discussed elsewhere in this report. We note that Interbusiness POL costs have reduced significantly over the period 2000/01 to 2003/04. We believe this has been driven by major efficiency reviews undertaken by the Post Office®, and ongoing pressure by Royal Mail in negotiating competitive rates for the services offered by the Post Office® over this period. The table below shows the trend in Interbusiness POL costs in 2003/04 prices.

Table 196: Historical Interbusiness POL cost trends

£m, 2003/04 prices	00/01	01/02	02/03	03/04	CAGR
Interbusiness POL	266	267	241	213	-7.2%

Source: RM 6079, LECG analysis

³⁹⁵ RM 6027

Current price control

- 18.13 To support the 2003 price control review, Royal Mail put forward a number of overhead cost saving initiatives. At the time of the review, Royal Mail operated under a different corporate structure, involving much less centralisation of corporate and support functions than under the current structure³⁹⁶.
- 18.14 Royal Mail identified two specific initiatives. The first was the Operations Administration Review, which was intended to deliver savings through a reassessment of RMG's administration and support functions. The second initiative was Charges by Internal Suppliers, which captured savings resulting from a reduction in the level of overhead costs charged to RML by other business units. Some of the cost savings identified related to initiatives that were not in fact implemented (e.g. outsourcing of Transaction Services).
- 18.15 The table below shows Royal Mail's projected savings in total overhead costs for the period 2003/04 to 2006/07.

Table 197: RM's projected overhead cost savings

2000/01 prices £m	03/04	04/05	05/06	06/07
Operations administrative review	59	59	59	59
Internal recharges (property and ROMEK)	5	1	(6)	(16)
Internal recharges (other overheads) ³⁹⁷	32	89	85	80
Total	96	149	138	123

Source: WS Atkins Report Tables 5.18 and 5.27, and LECG analysis

- 18.16 For most overhead areas, WS Atkins concluded that Royal Mail's projected overhead costs were consistent with those of an efficient operator based on the information available to it at that time³⁹⁸. In two areas, however, WS Atkins included additional cost savings of £5m to £6m per annum, which related to further

³⁹⁶ RM 3030

³⁹⁷ The internal recharges included within other overheads are: Business Sales & Solutions, Group Centre, Business Systems, Transaction Services, Employee Health Services, Legal Services, Communications Services, Purchasing, Training & Development Group, Research & Consulting Services, and Engineering Services

³⁹⁸ Atkins' Report. Section 6.

reductions in Transaction Services costs (i.e. moving to a monthly payroll) and further reductions in Group Centre costs³⁹⁹.

- 18.17 From the information provided to us from Royal Mail, it has not been possible to ascertain whether the cost savings relating to overheads as put forward at the start of the current price control have been achieved.

Review of Royal Mail's submissions

- 18.18 The Strategic Plan outlines four initiatives relating to overhead costs, which are summarised below, together with their financial impact.

Table 198: RM's proposed overhead initiatives. Figures in 2003/04 prices⁴⁰⁰

Initiative	Brief description	Net opex savings in 2010/11	Total one-off costs 2006 to 2011
Central Costs	Additional savings in central overhead units	£34m	-
Incremental Marketing	Brand advertising and the changing of products	(£43m)	-
Marketing TSI	IT system changes to support pricing and product changes	-	(£84m)
TSI BAU	No information provided to explain initiative	(£11m)	-
Total		(£19m)	(£84m)

Source: RM 5062-5092. Positive figures represent savings. Negative figures represent costs.

Central Costs

- 18.19 Royal Mail is forecasting reductions in the level of general overhead costs. Royal Mail claims that it has an established track record for reducing central overhead cost and that further reductions in overheads through the Strategic Plan are possible through: "*general bearing down on costs, and providing an additional*

³⁹⁹ These cost savings were included in WS Atkins' efficiency adjustments (see paragraphs 6.41 and 6.63)

⁴⁰⁰ In contrast to other sections in this Part of the report we have adjusted Royal Mail's figures into 2003/04 prices to aid comparability with our benchmarking exercise, which has been conducted in 2003/04 prices.

stretch target for the first two years of the plan. These savings are additional to any overhead reductions driven by other initiatives or expected volume loss⁴⁰¹.

- 18.20 The table below shows the financial implications of the overhead cost reduction initiative put forward by Royal Mail in the Strategic Plan.

Table 199: Financial implications of RM's Central Costs initiative

2003/04 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	13	24	27	29	32	34	146

Source: RM 5062-5092: Central Costs (adjusted to 2003/04 prices). Positive figures represent savings

- 18.21 Royal Mail states that the overhead savings targets, as presented in the table above, are based on a target for overhead business units to absorb inflation plus a further 2.5% reduction in the cost base each year. Royal Mail does not provide details of which overhead business units will be expected to deliver the greatest cost savings although it does mention that the savings targets will vary between units⁴⁰².
- 18.22 While Royal Mail states that it has based its savings forecast on a 2.5% real cost saving each year, it does not provide any details with which to verify this figure. We have sense-checked the level of potential savings against the 2.5% real cost savings target using the overhead costs identified in Table 194 above. Applying an annual 2.5% real saving to the level of 2003/04 overhead costs (excluding property and marketing costs) over the period 2005/06 to 2010/11 implies a cost saving of £50.8m by 2010/11, compared with the £34.5m suggested by Royal Mail. This suggests that even on Royal Mail's assumption of 2.5% real cost savings per year, total cost savings should be higher. If property and market costs were included, then this would imply cost savings of approximately £150m per year by 2010/11.
- 18.23 To form our own view of the potential for cost savings in overhead areas, we have conducted an overhead cost benchmarking exercise for RML. This exercise involved extensive reviews of costs in the following overhead areas: finance, human resources, legal and marketing. The details of this exercise are presented in Appendix 16.

⁴⁰¹ RM 5062-5092

⁴⁰² RM 5062-5092

- 18.24 We have compared the level of overhead costs incurred by RML in 2003/04 to external benchmarks. The benchmarks we have selected are from established global benchmarking organisations. In many cases, the studies we have relied upon have also been used in other UK regulatory reviews.
- 18.25 For each overhead area, we present a range of possible adjustments. Two scenarios provide the bounds of our range: a *low savings scenario*, in which we compare RML to a median benchmark performance and a *high savings scenario*, in which we compare RML to a more challenging (e.g. top quartile) benchmark. We have expressed the efficiency of RML's overhead expenditure in terms of an efficiency ratio. An efficiency ratio of less than one indicates that RML has higher overhead costs for its size when compared with the benchmark.
- 18.26 We have estimated the level of costs that RML would have incurred in 2003/04 if it were operating at the benchmark level of efficiency by applying the efficiency ratio to the level of costs incurred by RML in 2003/04. We have estimated the potential operating saving in each overhead function by taking the difference between the actual costs for 2003/04 and the benchmark level of costs implied by our benchmarking exercise. Further details of this calculation are provided in Appendix 16.
- 18.27 We present the results of our benchmarking of the finance, human resources and legal costs in the table below. The figures relate to RML. Since Royal Mail has separately identified marketing cost initiatives, we present the results of our marketing benchmarking in the next sub-section.

Table 200: Results of LECG overhead benchmarking exercise

	Low savings case		High savings case	
	Efficiency ratio	Potential savings	Efficiency ratio	Potential Savings
Finance	0.73	£19m	0.46	£37m
Human Resources	0.49	£48m	0.16	£79m
Legal	0.90	£1m	0.52	£7m
Total		£68m		£123m

Source: LECG benchmarking exercise

- 18.28 Our analysis suggests that the finance, human resources and legal costs incurred by RML are above benchmark. Our benchmarking suggests that potential

operating cost savings in these areas could be two to three times greater than the forecast reductions in overhead costs put forward by Royal Mail.

18.29 Under our lower case scenario, we have set overhead cost savings by 2010/11 according to the low saving benchmarks identified in the table above. We have assumed that by 2010/11 the overhead costs of RML will be £68m lower than the 2003/04 levels. This represents a 19% total reduction in overhead costs or a 3.4% real reduction per annum⁴⁰³. This compares to Royal Mail's assumption of 2.5% per annum. As indicated above, we believe that the 2.5% rate suggested by Royal Mail is consistent with savings in 2010/11 of around £51m, not the £34m contained in the BPM.

18.30 Although the level of savings estimated is greater than the savings put forward by Royal Mail, we believe our estimate is conservative for the following reasons.

- we have used the low savings benchmark to set the target for RML in 2010/11. This implies that even if Royal Mail successfully achieved the targets by 2010/11, its performance would only be at the level of median benchmark performance as at 2003/04;
- we have assumed that savings are phased in linearly over the period 2005/06 to 2010/11. This is a conservative approach compared to other UK efficiency reviews. For example, in the 2000 review of NGC savings in finance and human resources costs were phased in over two years, while in the 2001 review of Transco savings in overhead costs were applied retrospectively to the Base Year. The financial implication of this assumption over the period 2006/07 to 2010/11 is that our forecast savings are approximately £56m lower than if we assumed the phasing in Royal Mail's forecasts and approximately £107m lower than if we assumed an immediate reduction;
- we have assumed no improvement in the benchmark levels. A review of benchmarking studies suggests that benchmarks generally improve over time, so that by 2010/11 we expect median performance to be better than the current level;
- we have estimated the efficient level of overhead costs assuming Royal Mail's current size. We have not taken account of the impact of other

⁴⁰³ Based on RML overhead costs (excluding property and marketing) of £360m for 2003/04

initiatives, which might, for example reduce the size of the business (e.g. reduce the number FTEs). Other things being equal, a reduction in FTEs would increase the ratio being compared, indicating that Royal Mail is more inefficient overtime; and

- we have set the level of overhead cost savings according to three overhead areas only. Royal Mail could potentially achieve cost savings in other overhead cost areas that were not included in our benchmarking exercise (e.g. communications, company secretariat and IT costs).

18.31 The table below sets out the financial implications of our lower case conclusions.

Table 201: Financial implications of Central Costs – LECG lower case

2003/04 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	11	23	34	45	56	68	226

Source: LECG analysis. Positive figures represent savings. Negative figures represent costs.

18.32 Under our higher case scenario, we have set overhead cost savings by 2010/11 according to the high saving benchmarks identified in the table above. We have assumed that by 2010/11 the overhead costs of RML will be £123m lower than the 2003/04 levels. This represents a 34% total reduction in overhead costs. The table below sets out the financial implications of our conclusions.

Table 202: Financial implications of Central Costs – LECG higher case

2003/04 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	20	41	61	82	102	123	408

Source: LECG analysis. Positive figures represent savings. Negative figures represent costs.

Incremental marketing and Marketing TSI

18.33 Royal Mail includes two marketing related initiatives in its Strategic Plan and BPM: Marketing TSI and Incremental Marketing. The total cost of these initiatives over the period 2006/07 to 2010/11 is £293m in 2003/04 prices.

18.34 The supporting documentation provided by Royal Mail combined the two marketing initiatives under the heading Commercial Product and Pricing Roadmap. According to RM 5062-5092, the Commercial Product and Pricing Roadmap initiative involves redesigning the product range and introducing branded products

tailored at business customers. The Strategic Plan indicates that the objective is to design market leading products and services designed around the needs of different sets of customers (but tailored, in particular, around the requirements of the top 100 customers).

- 18.35 Of the £293m increase in marketing spend, £209m relates to additional brand advertising and the changing of products and £84m relates to IT system enhancements to support pricing and product changes. The table below summarises the financial impact of Royal Mail's marketing initiatives.

Table 203: Financial implications of RM's Marketing initiatives

2003/04 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	(29)	(36)	(42)	(44)	(43)	(43)	(209)
Implementation	(18)	(22)	(25)	(15)	(12)	(11)	(84)
Total	(46)	(59)	(67)	(59)	(55)	(54)	(293)

Source: RM 5062-5092: Commercial Product and Pricing Roadmap. Negative figures represent costs

- 18.36 We have been unable to sensibly check the level of additional marketing costs forecast by Royal Mail due to a lack of detailed information.
- 18.37 Our review of price controls in other market sectors, indicates that, in preparation for competition, firms have typically forecast an increase in the level of marketing spend, sometimes significantly. Other sector regulators have not been minded to allow material increases. Allowing regulated firms additional revenues to fund marketing expenditure, presumably recovered from captive customers, could act as a barrier to entry to new market entrants. This might act against Postcomm's objective of securing effective market competition.
- 18.38 It is also wrong to assume that competition necessarily leads to greater marketing spend. We note that TPG, in contrast, plans to reduce marketing spend over the period to 2008 through, for example, restructuring its call centres⁴⁰⁴.
- 18.39 We have reviewed Royal Mail's historical marketing cost trends to assess whether there has been a significant upward trend in recent years. The table below shows

⁴⁰⁴ RM 3094a

the historical cost movements in marketing expenditure between 2000/01 and 2003/04.

Table 204: Historical marketing costs in 2003/04 prices

	2000/01	2001/02	2002/03	2003/04	CAGR
Marketing costs £m	287	419	381	358	7.7%
Total operating costs £m	6,169	6,236	6,167	6,095	-0.4%
Marketing / Total costs	4.7%	6.7%	6.2%	5.9%	
Revenue derived volumes	19,918	20,746	20,447	20,856	1.5%
Unit marketing costs	0.014	0.020	0.019	0.017	6.0%

Source: RM 6079

- 18.40 Total marketing costs have increased by approximately 7.7% in real terms and by 6% per annum in unit cost terms. To determine whether Royal Mail's current level of marketing expenditure is appropriate, we have considered the overall level of marketing costs as a function of total revenue, and have benchmarked this against other companies of comparable size. The details of this benchmarking exercise are contained in Appendix 16. The results are presented in the table below.

Table 205: Results of LECG marketing exercise

	Low savings case		High savings case	
	Relative efficiency	Savings implied	Relative efficiency	Savings implied
Marketing costs	0.70	£67.6m	0.31	£158.3m

Source: LECG benchmarking exercise

- 18.41 The current level of spending on marketing by RML is above both our low savings and high savings benchmarks. As discussed in Appendix 16, under our low savings scenario we have compared Royal Mail to median performance, while under our high savings scenario we have compared Royal Mail to top quartile performance. Both our low savings and high savings benchmarks are drawn from an international marketing cost benchmarking study.
- 18.42 Our benchmarking exercise suggests that the marketing costs of RML are between £68m and £158m above an efficient level given the size of the business. We consider this range to be a conservative estimate of Royal Mail's performance against marketing cost benchmarks since, as discussed in Appendix 16, we have used the lower of the two possible Royal Mail measures and we have compared

that measure to the highest of the three marketing benchmarking studies we reviewed.

18.43 Royal Mail's two marketing related initiatives total over £290m over the period 2006/07 to 2010/11. We have not included this additional allowance in our estimates of the efficient costs for the following reasons:

- Royal Mail has not provided enough evidence to support the significant increases in marketing costs contained in its Strategic Plan;
- other competitive postal firms such as TPG are reducing the level of marketing spend;
- under our low savings scenario, Royal Mail's marketing spend appears to be overstated by £68m;
- Royal Mail already believes that it has considerable brand strength⁴⁰⁵;
- marketing spend has increased significantly from 2000/01 levels; and
- there is some regulatory precedent that additional marketing costs should not be allowed as the market becomes more competitive.

18.44 Overall, we believe that Royal Mail's current levels of marketing could be reduced. However, for our lower case scenario, we have taken a more prudent approach. We have disallowed the proposed additional marketing costs but we have not reduced the current level of marketing spend.

18.45 For our higher case scenario, we have reduced the current level of marketing spend in line with the savings identified in our benchmarking exercise. We have assumed that by 2010/11, marketing costs will be £68m lower than 2003/04 levels, consistent with the savings identified from moving to median level of marketing costs. The table below sets out the financial implications of our conclusions.

Table 206: Financial implications of Marketing initiatives – LECG higher case

2003/04 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	11	23	34	45	56	68	225

Source: LECG analysis. Positive figures represent savings.

⁴⁰⁵ RM 4051. The brand is valued by RM at £1.2bn

TSI BAU

- 18.46 The final overhead related initiative put forward by Royal Mail relates to the costs of TSI, RMG's IT division. The table below shows the financial implications of the TSI BAU costs as contained in the BPM.

Table 207: Financial implications of RM's TSI BAU costs

2003/04 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	1	(1)	(4)	(6)	(9)	(11)	(31)

Source: BPM. Positive figures represent savings. Negative figures represent costs.

- 18.47 For 2003/04, IT costs for RMG were £283.5m⁴⁰⁶. For RML, IT costs were £163.1m in 2003/04⁴⁰⁷. We have been unable to sensibly check the level of additional TSI costs forecast by Royal Mail due to a complete lack of information provided in support of these costs. Unlike other initiatives, Royal Mail did not provide any information to support or justify this additional expenditure in either RM 5045 or RM 5062-5092.
- 18.48 In the absence of any supporting information, we have not included the TSI BAU costs, as forecast by Royal Mail, in our cost estimates.

Conclusions

- 18.49 Our conclusions in relation to overhead costs are set out in the tables below. For our lower case scenario, we have restated Royal Mail's estimates of savings in central costs based on the results of an extensive benchmarking exercise and excluded the additional marketing and TSI costs. As indicated above, we believe our conclusions to be conservative. For comparability with other sections, our conclusions are stated in 2004/05 prices.

Table 208: Financial implications for overhead costs – LECG lower case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	12	23	35	47	58	70	233

Source: LECG analysis. Positive figures represent savings.

⁴⁰⁶ RM 3065 and RM 6050

⁴⁰⁷ RM 3065 and RM 6050

18.50 For our higher case scenario we believe higher savings can be justified. For our higher case scenario we have: restated Royal Mail's estimates of savings in central costs based on the higher savings results of our benchmarking exercise; reduced marketing costs in line with marketing cost benchmarking information; and excluded the additional TSI costs.

Table 209: Financial implications for overhead costs – LECG higher case

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	2006-11
Opex	33	65	98	131	163	196	653

Source: LECG analysis. Positive figures represent savings.

19 Review of capital expenditure

Introduction

- 19.1 In this section we derive an efficient level of capital expenditure for the purpose of this price control. We draw heavily on the review of pipeline activities and the property section earlier in this report. We also review Royal Mail's capital expenditure and asset management processes.

Level of capital expenditure over the current price control

- 19.2 RML is not a capital-intensive business. This is reflected both in the accounting value of its assets and in its historic levels of capital expenditure. The table below shows RML's capital expenditure over the current price control for the regulated business, which is forecast to average £148m a year between 2003/04 and 2005/06 in 2004/05 prices. This amounts to approximately 2% of RML's turnover⁴⁰⁸.

Table 210: RML's regulated business capital expenditure over the current price control

2004/05 prices - £m	2003/ 04	2004/ 05	2005/ 06	Total	Average
Royal Mail 2002 forecast for current price control	208	234	194	636	212
Allowed in current price control	146	173	168	487	162
Actual/ forecast capex	115	129	199	443	148

Source: RM4054 and 9049, Postcomm and WS Atkins

- 19.3 Royal Mail's forecast actual capital expenditure of £443m over the current price control is considerably less (30% less) than the £636m that Royal Mail projected in its submissions to Postcomm when the current price control was being determined.
- 19.4 Moreover, this sum is less than the £487m allowed by Postcomm at the time of the last price control. This under spend is particularly surprising given that it is occurring at a time when Royal Mail is engaging in some highly capital-intensive projects, including the WAND and AI initiatives.

⁴⁰⁸ This figure does not fully reflect the value of the assets of which RML makes use. Property Holdings or Vehicle Services own many assets. These are then recharged to RML

- 19.5 Given that the current price control is calculated on a cash basis, the gap between capital expenditure allowed to Royal Mail by Postcomm and the actual amount that will be spent represents a one-off transfer of value from customers to Royal Mail. Under the RAB approach, which Postcomm is considering for the next price control, by contrast, any such under-spend not due to Royal Mail finding more efficient ways to execute its capital investment would be adjusted at the time of the subsequent price control, through the mechanism of the roll-forward of the RAB.

Review of Royal Mail's submissions

- 19.6 We discussed RML's specific capital expenditure plans in our review of its activities and costs above. The table below shows the aggregate effect of Royal Mail's capital expenditure proposals for RML which relate to specific initiatives through to 2010/11, which envisage a cumulative expenditure over the period of the coming price control of £1,158m, equivalent to £232m a year⁴⁰⁹. The level of capital expenditure included within our lower and higher case incremental change scenarios is much lower, at only £178m from 2006 to 2011, equal to £36m a year.

Table 211: Royal Mail and LECG's proposed initiative-specific capital expenditure, RML, 2005 to 2011

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11	Avg 06-11
Royal Mail	122	228	311	227	238	154	1,158	232
LECG lower & higher case	58	90	37	19	17	16	178	36

Source: RM 4054; LECG analysis. Note: Excludes cash inflows from property disposals.

- 19.7 In addition to the initiative-specific capital expenditure identified in the table above, Royal Mail plans to spend capital expenditure of a further £293m over the price control period. Royal Mail has indicated that the capital expenditure in the Strategic Plan was incorrectly stated because it omitted on-going capital expenditure⁴¹⁰. This addition is equivalent to around £59m a year. No further information has been provided in support of this submission – and we remain concerned over the validity of this requirement.

⁴⁰⁹ The detail underlying these aggregate data is shown in Appendix 17

⁴¹⁰ RM 9050 and 9055

Table 212: Royal Mail additional capex in relation to property estate, RML, 2005 to 2011

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11	Avg 06-11
Additional capex in relation to property estate	92	66	66	54	54	54	293	59

Source: RM 9050 and 9055. Note: Excludes cash inflows from property disposals.

- 19.8 We have incorporated this proposed spend, without adjustment, into our bottom-up assessment of Royal Mail's capital expenditure requirements, as shown in the table below. After making this adjustment, Royal Mail's plans imply capital expenditure of £1,450m (£290m a year), while our figures imply capital expenditure of £471m (£94m a year).

Table 213: Royal Mail and LECG's estimates of capital expenditure, including 'additional capex not in plan', RML, 2005 to 2011

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11	Avg 06-11
Royal Mail	215	294	377	280	292	208	1,450	290
LECG lower & higher case	149	155	103	72	71	69	471	94

Source: RM 4054 and 9050; LECG analysis. Note: Excludes cash inflows from property disposals.

- 19.9 The gap between Royal Mail's proposed capital expenditure and the amounts that emerge from our detailed review of Royal Mail's initiatives in Part C is therefore very large. These latter figures may in principle under-estimate the amount of capital expenditure that RML will actually need over the coming price control period. As described in previous sections, we have been unable to identify such expenditure on a case-by-case basis due to the limited support offered by Royal Mail for its initiatives.
- 19.10 To support our bottom up review of capital expenditure requirements, we have also considered requirements on a top down basis. We have done this by examining three benchmarks:
- Royal Mail's projected capital expenditure under the 'business-as-usual' scenario contained within its Strategic Plan. This suggests an average capital expenditure allowance for RML of around £95m a year in 2004/05 prices before taking account capital expenditure not included in the plan⁴¹¹.

⁴¹¹ The Strategic Plan and LECG analysis

Including “additional capital expenditure” (i.e. £59m a year⁴¹²), suggests an allowance of around £153m a year;

- Royal Mail’s actual and forecast capital expenditure over the period of the current price control averages £148m a year in 2004/05 prices. Postcomm allowed £162m a year. The current price control does relate to a period of significant capital expenditure, including spending on the WAND facility, the Address Interpretation technology, and other elements of the Renewal Plan; and
- Royal Mail’s actual capital expenditure over the period 2000/01 to 2002/03, which for RML averaged £183m in 2004/05 prices.

19.11 We believe that it is appropriate to set an allowance for capital expenditure at the high end of the various benchmarks described above. This approach has the merit of being based on historic information and short-term forecasts, rather than an estimate either by Royal Mail management which may, as at the current price control, turn out to be too high, or by us, which would be subject to inevitable information asymmetries and complexities of calculation. Moreover, the period 2003 to 2006 includes some major capital projects, including the WAND and AI projects, so we are content that there is some allowance for such projects in addition to more routine capital expenditure.

19.12 The period of highest capital expenditure from the benchmarks above is the period from 2000/01 to 2002/03, when RML expenditure averaged £183m a year in 2004/05 prices and £178m a year in 2003/04 prices. We have therefore incorporated an annual allowance slightly higher than this figure, at £185m a year in 2003/04 prices, into our assessment of an efficient level of capital expenditure for Royal Mail for each year from 2006/07 to 2010/11. This is equivalent to £191m a year in 2004/05 prices.

19.13 This figure does not represent an amount we think Royal Mail will necessarily spend, or an amount it should spend. Instead, it represents a base amount that we think Royal Mail is likely to spend on capital expenditure over the period of the coming price control. Any variance from this figure would, if it were efficiently incurred and under a regulatory value form of control, be picked up in the roll-forward of the RAB at the time of the next price control.

⁴¹² RM 9055

- 19.14 The implication of this approach for our quantification of Royal Mail's efficient costs is that we add to the capital expenditure we identified in our detailed review, an amount of 'non-specific' capital expenditure in each year, equal to the difference between the amounts identified in our detailed review of Royal Mail's Strategic Plan, including the additional property-related capital expenditure, on the one hand, and the £185m a year (2003/04 prices) allowance, on the other. For the year 2005/06, we have incorporated Royal Mail's estimates of the capital that it plans to spend for that year, rather than the results of our adjusted bottom up exercise that we use for the subsequent years. Since the capital expenditure levels emerging from our lower and higher cases are the same, the calculation is the same in both cases – as shown in the table below.

Table 214: RML's capital expenditure – LECG lower and higher cases

2004/05 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11	Avg 06-11
Bottom-up review capex*	122	90	37	19	17	16	178	36
Additional capex in relation to property estate	92	66	66	53	54	53	292	58
Non-specific capex	-	35	88	118	119	121	482	96
Capex allowance	215	191	191	191	191	191	953	191

Source: RM 9050; LECG analysis. Note: Excludes cash inflows from property disposals. 2005/06 is based on Royal Mail's forecast, as we are not setting an allowance for the current price control. * The detail underlying these aggregate data is shown in Appendix 17.

- 19.15 As a consequence of our conclusions, Royal Mail will have an allowance to fund certain initiatives that we have disallowed on the grounds that the related business case had not been made. For example, this allowance could cover Royal Mail's proposed capital expenditure on the Information Rich Environment (£6m), Delivery Span (£43m), and In Cab Communications (£27m) initiatives. This would include all of the capital expenditure we have incorporated into our bottom-up review (£178m) and the additional capital expenditure (£292m), and still leave a further £406m available for upgrades to the delivery and mail centre networks, further automation equipment, and other capital projects. We believe that this could lead to further efficiencies – not included in our bottom-up review.

Management of capital expenditure and assets

- 19.16 In this section, we review WS Atkins' findings on the capital management process and then comment on the key developments to the process.

2003 price control

- 19.17 WS Atkins made a number of criticisms of Royal Mail's management of the capital expenditure process and its asset stewardship. Partly for this reason, WS Atkins recommended that Royal Mail's proposed capital expenditure should be adjusted downwards for the period covered by the 2003 price control.
- 19.18 WS Atkins noted that, in the four years ending 2000/01, Royal Mail's actual spend on capital investment was 20% higher than budget. This contrasted, WS Atkins said, with other organisations that typically under spend by as much as 40%⁴¹³.
- 19.19 WS Atkins made the following further criticisms of Royal Mail's management of the capex process (references to the WS Atkins Report in brackets):
- Royal Mail did not have a capex vision, strategy or annual plan (10.2);
 - there were no systems in place for monitoring or controlling the effort, spend or plan of capex (10.9);
 - there was no systematic tracking of internal resources used to develop projects (10.16);
 - Royal Mail had not adopted the 'Managing Successful Programmes' initiative, put forward by the Office of Government Commerce (10.10);
 - Royal Mail's Investment Board and Post Investment Review Board were not incentivised to play an active role in creating the capex vision, directing the strategy, or delivering the capex plan (10.14);
 - Royal Mail was unable to provide explanations for variance between budget and actual capex, for groups of projects, despite often significant variances (9.4 to 9.6);
 - there was no manual covering numerous aspects of identifying and successfully implementing a capital expenditure programme, unlike other organisations of which WS Atkins had experience (10.8); and
 - Royal Mail did not systematically capitalise its project on-costs, unlike the utilities for which WS Atkins had previously performed price controls. One implication of this is that projects were shown as more expensive if external staff developed the project than if internal staff developed the project (8.22).

⁴¹³ WS Atkins Report, section 9.4

19.20 WS Atkins made the following criticisms of Royal Mail's management of its asset base in its report for the 2003 price control (references to this report in brackets):

- Royal Mail did not use whole life costing for the whole asset base (7.8);
- there was no clear sense of asset 'ownership' (8.30);
- Property Holdings (then as now responsible for the greater part of Royal Mail's assets) lacked a written strategy (8.32);
- Royal Mail had a large number of asset information systems, many of which did not communicate with each other, making it hard to take a holistic view of the asset base. Royal Mail was at this time in the process of implementing SAP, although WS Atkins had concerns about the extent of information that such systems would capture (8.24 and following); and
- Royal Mail did not include in its asset base assets with an individual capital value of less than £2,500. This had the effect of excluding from Royal Mail's asset base items with a value estimated at £327m, including many sorting frames, drop bag fittings, post boxes, bicycles and computers (8.16 and table 8-4).

Developments since 2003 price control

19.21 Since the 2003 price control, Royal Mail Group has centralised the planning and management of capital expenditure within the Group Centre Finance function, under a Director of Investment who has extensive experience of playing a similar role outside Royal Mail. The Group says it has implemented a revised framework for appraisal of capital projects, including investment policy and post implementation review guidelines⁴¹⁴.

19.22 Major investment-related decisions are now taken by the Investment Committee, which comprises the Group Chief Executive, Finance Director, and Investment Director, among others. This committee meets monthly. The Investment Committee authorises all investments between £1m and £10m, and reviews investments of more than £10m prior to Royal Mail Holdings Board approval – these thresholds were lowered in March/ April 2002⁴¹⁵.

⁴¹⁴ Described in RM 5080. Investment policy and Post Implementation Review Guidelines provided in RM 4003 to 4008

⁴¹⁵ Meeting with RM, 22 November 2004

- 19.23 Since October 2004 the Group Investment function has reviewed any proposals in RML for spend greater than £50k, which has led to a greater involvement of senior management, including the Group Chief Executive, in investment activity in RML. The Investment Committee also reviews periodic progress reports on major investments as they are being implemented, and reviews investments at project completion and after implementation via Post Implementation Reviews (“PIRs”)⁴¹⁶.
- 19.24 The Group Investment function has introduced a range of tools and processes to support investment activities within Royal Mail. These include the introduction of:
- a Group-wide investment policy⁴¹⁷;
 - planning guidelines to support decisions on which projects to proceed with;
 - an investment appraisal model, completion of which is mandatory for any proposed investment; and
 - a Business Planning System, which feeds into Royal Mail’s SAP system.
- 19.25 Moreover, since June 2003 Royal Mail has held monthly and quarterly reviews of investment project operating and capital expenditure against budget.
- 19.26 We believe that the above and other changes to Royal Mail’s capital expenditure processes are appropriate, and if well-implemented are likely to form the basis for significant improvements in Royal Mail’s identification and implementation of major initiatives. However, at this stage we have not been provided with any evidence that would allow us determine if the changes have been “well-implemented”.
- 19.27 We note that the initiative support documents we have been provided⁴¹⁸ in relation to the BPM fall far short of the quality of investment planning suggested by the process above, and example planning documents that Royal Mail has provided us. We take this as evidence that Royal Mail’s initiatives are in the early stages of planning, rather than as evidence that the processes described above are not working. An implication of this, however, is that it is likely that the financial impact of these initiatives is likely to be significantly different from that quantified by Royal Mail in these initiative support documents. An example of this phenomenon is provided by the SDD initiative, which as noted in Section 6 (Table 23) was initially

⁴¹⁶ Meeting with RM, 22 November 2004

⁴¹⁷ RM 6104

⁴¹⁸ RM 5045 and 5062-92

estimated to save £118m a year, and is currently thought to have *increased* Royal Mail's costs by £23m a year.

- 19.28 These changes to the investment process have been introduced on a rolling basis since 2002, and as such it is too early to see their impact on the outcomes of particular initiatives. For example, the problematic SDD initiative was already under way when the current investment team moved into place. By contrast, the Mail Centre Review project, which as noted in Section 6 appears broadly on track to meet its financial objectives, was started after the current processes were introduced.
- 19.29 We do not propose to make any adjustment to the capital expenditure allowance for Royal Mail in relation to the efficiency or effectiveness of its investment planning or implementation activities. We note that our capital allowance for the coming price control is based on Royal Mail's capital expenditure levels during the current price control, and therefore any inefficiency in capital expenditure during this price control will be reflected in a higher capital allowance than would otherwise be the case. We do not propose to adjust for that possibility. Further, we note that if Postcomm adopts a RAB basis for the coming price control, any inefficiency in capital expenditure planning or implementation can be taken into account at the time of the roll-forward of the RAB at the subsequent price control.

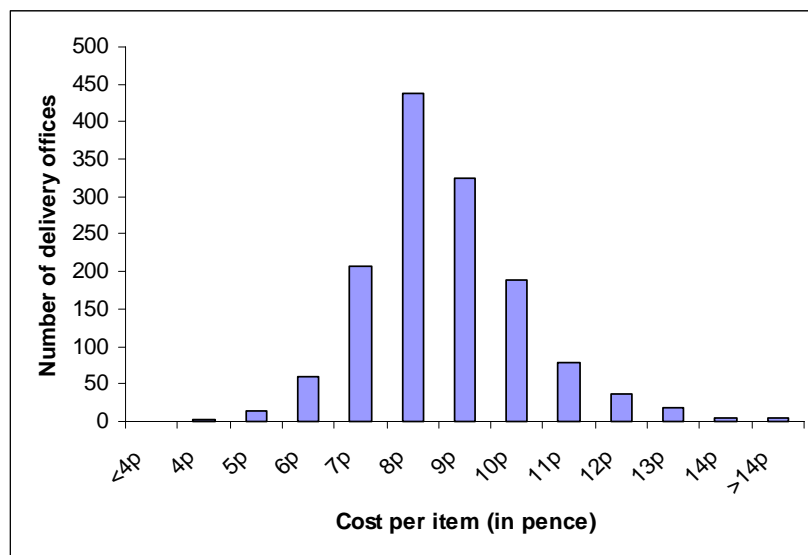
Part D: Internal Benchmarking

20 Internal benchmarking

Introduction

- 20.1 Every industry and each organisation exhibits variation in both practices and performance. Benchmarking aims to identify the best performers in order to spread their best practices to the rest of the industry or organisation. Internal benchmarking compares the cost performance (or efficiency) of similar units within the same company against each other.
- 20.2 In this section, we consider the relative cost performance of Royal Mail's mail centres and delivery offices. Internal benchmarking is commonly based on simple performance ratios such as mail volume, overall cost performance, labour productivity, overtime cost or absenteeism. WS Atkins evaluated Royal Mail's internal performance using this methodology – and concluded that there was wide variation in performance between operational areas.
- 20.3 Wide variations in performance still exist between operational areas, a fact that Royal Mail recognises in its Strategic Plan. Royal Mail states: *"We will... identify best practices within the organisation and rapidly roll these out across all parts of our network through uniform operating practices to help drive greater productivity"*⁴¹⁹.
- 20.4 The variation in internal performance can be illustrated using simple performance ratios. For example, the figure below shows how labour costs per unit vary across delivery offices. The variation is significant.

⁴¹⁹ RM's Strategic Plan

Figure 10: Operational performance of delivery offices in 2003/04

Source: RM 6025 and LECG analysis

- 20.5 The average labour cost per item is 8.6p; but over 460 delivery offices have average cost of 9p or more. If, by way of example, all these 460 delivery offices could reduce their labour costs to a 9p per item “benchmark”, the resulting savings would be of the order of £110m annually. Similarly, over 280 delivery offices have an average cost per item of 7p or below. If we set 7p as the unit cost benchmark, and all the delivery offices with higher costs attained the benchmark, the resulting savings would be of the order of £400m annually.
- 20.6 The main weakness of single performance ratios, however, is that they cannot reliably explain the interaction of more than one cost driver. That is, simple ratio analysis cannot explain performance variations between operational areas due to inefficiency on the one hand, and other factors such as traffic mix, technology/equipment differences, building structure, the external labour market, or the local geography on the other.
- 20.7 For example, let us assume that two delivery offices have identical outputs (i.e. the same level and quality of delivered mail) but different costs – perhaps due to one office employing more postmen. A simple look at unit cost ratios would spot the difference in costs, but from the ratio, we would be unable to explain why the delivery offices have different costs. The risk is that the difference might be falsely attributed to inefficiency. It might be that one office covers a smaller, more densely populated area and needs fewer postmen to deliver the mail. Geography is a non-

controllable factor⁴²⁰, but it has an impact on costs, and has to be accounted for before it is possible to conclude that either office is more efficient. Similarly, the local wage level relative to the wage paid by Royal Mail is not controllable by local management, but can affect the efficiency of a delivery office through the quality of labour employed. This level must be accounted for before a conclusion on efficiency is made.

- 20.8 Quantitative techniques allow us to take account of these non-controllable factors. In the case of delivery offices, such techniques define the efficiency of a delivery office relative to an assessment of best performing delivery offices at a particular point in time. This is referred to as the efficiency frontier. If a delivery office is operating on the frontier it is assumed to be *efficient*. Conversely if a delivery office is operating away from the frontier it is *inefficient*, and the level of inefficiency can be measured quantitatively relative to the frontier.
- 20.9 Quantitative techniques are commonly divided into *parametric* and *non-parametric techniques*, which are explained in more detail in Appendix 20. In line with regulatory best practice, we have used both. Our approach is consistent with the yardstick competition methodology that is used in other UK regulated industries for the purpose of price regulation. Most previous studies have considered UK company comparisons, for example in water and electricity distribution reviews. Ofgem and Ofwat have used benchmarking methods to identify industry best performance, which are then incorporated into financial models along with other assumptions in order to arrive at a price cap over the price control period. A summary of UK regulatory best practice is provided in Appendix 18.
- 20.10 Through our analysis, we identify Royal Mail's best performing delivery offices and mail centres. However, we do not identify the particular practices that enable high performance to be achieved. We note that utility and network industry regulators have generally avoided making explicit recommendations about specific management practices, since these are regarded as the proper business of the

⁴²⁰ In the context of an efficiency review, we define as non-controllable factors all those factors that affect costs but cannot be modified by management. For example, in the case of a delivery office, the location of the office and the type and quantity of mail to be delivered are not controllable because they are independent of management actions. Controllable factors can instead be modified by the delivery office manager. Quantitative techniques allow us to "deflate" costs of the effect of all factors that are not controllable; if there is still a difference in cost between delivery offices then this difference is due to factors that can be controlled by management, and implies that some of these factors are being used inefficiently by the management of the more expensive (more inefficient) office

owners and managers. We expect Royal Mail to be able to identify internal best practice – and such initiatives are indeed contained within Royal Mail's Strategic Plan.

- 20.11 In this section, we summarise the results of our internal benchmarking. We first provide a high level overview of the benchmarking techniques we have used. We then provide a summary of our approach, before summarising our findings for both delivery offices and then for mail centres. In Appendix 19, we provide a summary of the theoretical underpinnings of cost and efficiency analysis and provide a graphical illustration of efficiency analysis. We also explain the technical concepts by way of postal examples.
- 20.12 This Section has been written under the direct supervision of Professor John Cubbin and Professor Meloria Meschi
- 20.13 Professor Cubbin is a renowned and published expert in Non-Parametric Analysis. He is an affiliate of LECG, and a Professor of Economics at City University, London and Head of the Department of Economics. Prior to his appointment at City University, he worked for NERA and held a series of University posts. He has taught on a wide variety of courses for economics and MBA students. He was a founding editor of the *Business Strategy Review*, and is on the editorial board of *Applied Economics*. Together with J Ganley he has co-authored *Public Sector Efficiency Measurement: Applications of Data Envelopment Analysis*, North-Holland (Elsevier) 1992. Professor Cubbin has written a series of articles on comparative performance analysis, such as "The use of real cost as an efficiency measure: An application to merging firms", *Journal of Industrial Economics*, September 1979, 73-95 (with G. Hall); and, "Regression versus Data Envelopment Analysis for Efficiency Measurement: An application to the England and Wales Water Industry" *Utilities Policy*, vol 7, 1998, 75-85 (With G. Tzanidakis.) Professor Cubbin has applied quantitative techniques of cost and performance analysis to over 15 organisations.
- 20.14 Professor Meschi teaches Applied Microeconomics and Industrial Organization at John Cabot University in Rome, and is a Professor at the Masters in Antitrust and Regulation at Tor Vergata University, Rome where she teaches "The Estimation of Cost Functions and Efficiency." She has a double PhD in Applied Econometrics (University of Warwick) and Economic Policy (University of Genova, Italy). Her international publications in the fields of statistics and applied econometrics include

work on the estimation of random coefficients frontier models, and she is a co-author of the *Office of Fair Trading Research Paper N. 17*, on “Quantitative Techniques in Competition Analysis.” She has designed and supervised the empirical analysis in more than 30 antitrust, regulatory and damages cases in a variety of industries including telecommunications, media, retail, advertising, pharmaceuticals, consumer goods, software solutions, and the tobacco industry.

Benchmarking techniques

- 20.15 We review the quantitative techniques that we have used to assess the economic efficiency of Royal Mail's delivery offices and mail centres below. These include both parametric and non-parametric techniques – both of which are explained in more detail in Appendix 20.
- 20.16 Ideally, one would want to analyse the relative efficiency of individual production units vis-à-vis each other and across a time dimension, to assess whether each unit is getting closer to the frontier or further away from it. This would require multiple years of data for each delivery office or mail centre, which are not available. We have therefore carried out a static analysis, based on one year of data, and the techniques described in this section refer to this type of analysis only.

Parametric techniques

- 20.17 Parametric techniques are essentially econometric techniques used to estimate the efficiency frontier. Regression analysis is a family of parametric techniques used to estimate economic relationships and to test economic theories. Regression analysis is used to assess the mathematical relationship between inputs (e.g. mail centre operational characteristics, mail volumes, local wage rates, etc) and outputs (e.g. labour costs).
- 20.18 The coefficients of a regression equation (or cost function) measure the numerical impact of each driver on costs. From this a cost frontier can be developed and operating units can be ranked according to their efficiency scores. Applying regression analysis requires a particular functional form for the cost function to be imposed (i.e. to specify the nature of the mathematical relationship between the level of costs and the various cost drivers). The cost function must be compatible with economic theory and industry factors and must be consistent with the data.
- 20.19 There are two particular econometric methods used to estimate these parameters – *the deterministic frontier* method (“DFA”) and *the stochastic frontier method*

("SFA"). We have undertaken both types of regression analysis. The efficiency rankings produced by the two regression techniques may differ – due to the application of different technical benchmarks. If the rankings were to differ markedly and inexplicably, there might be concern about the reliability of the results produced by the analysis. The cost frontier represents the minimum cost necessary to produce a given amount of output, which is called the *necessary* cost. For an individual sample unit, cost efficiency is measured as the ratio between the necessary and the actual costs of production, given the output produced by that unit. In DFA, the necessary costs are benchmarked against those of the most efficient unit in the sample. In SFA, the necessary costs are the result of an averaging process.

Data envelopment analysis

- 20.20 Non-parametric approaches establish an efficient frontier relating outputs to inputs without recourse to econometric estimation. DEA, which uses linear programming to determine the efficient frontier, is the most widely used approach in this category
- 20.21 DEA is a non-parametric technique. This means that it produces an efficiency ranking without the need to impose a particular functional form on the cost function. Each observation is benchmarked against the most efficient unit(s) in the sample. The most efficient unit (or units) is a real observable mail centre or delivery office, rather than an average. DEA uses linear programming to generate all the possible input-output combinations, and then compares each sample unit to the best corresponding combination⁴²¹. Under DEA, a unit is classified as efficient if no other unit, or linear combination of units, can produce more output(s) using less of any input. This means that the efficiency frontier is constructed from the "envelope" of these linear combinations of inputs – hence the name of the technique.
- 20.22 As a non-parametric technique, DEA allows the estimation of efficiency scores, but does not quantify the impact of the various drivers of cost. DEA calculates the efficiency of each unit versus the frontier in terms of a score, θ , on a scale from 0 to 1 with the frontier (efficient) units receiving a score of 1. The difference $(1 - \theta)$ measures by how much the unit needs to reduce its inputs to reach the efficiency frontier. For example, a unit with $\theta = 0.8$ is 80% efficient with respect to its

⁴²¹ Refer to http://www.isye.gatech.edu/ideas/dea_intro.html for a simple example of DEA

potential, so that it should be able to cut its costs by 20% and still produce the same amount of output. Appendix 20 provides a technical explanation of DEA.

Modelling issues and limitations

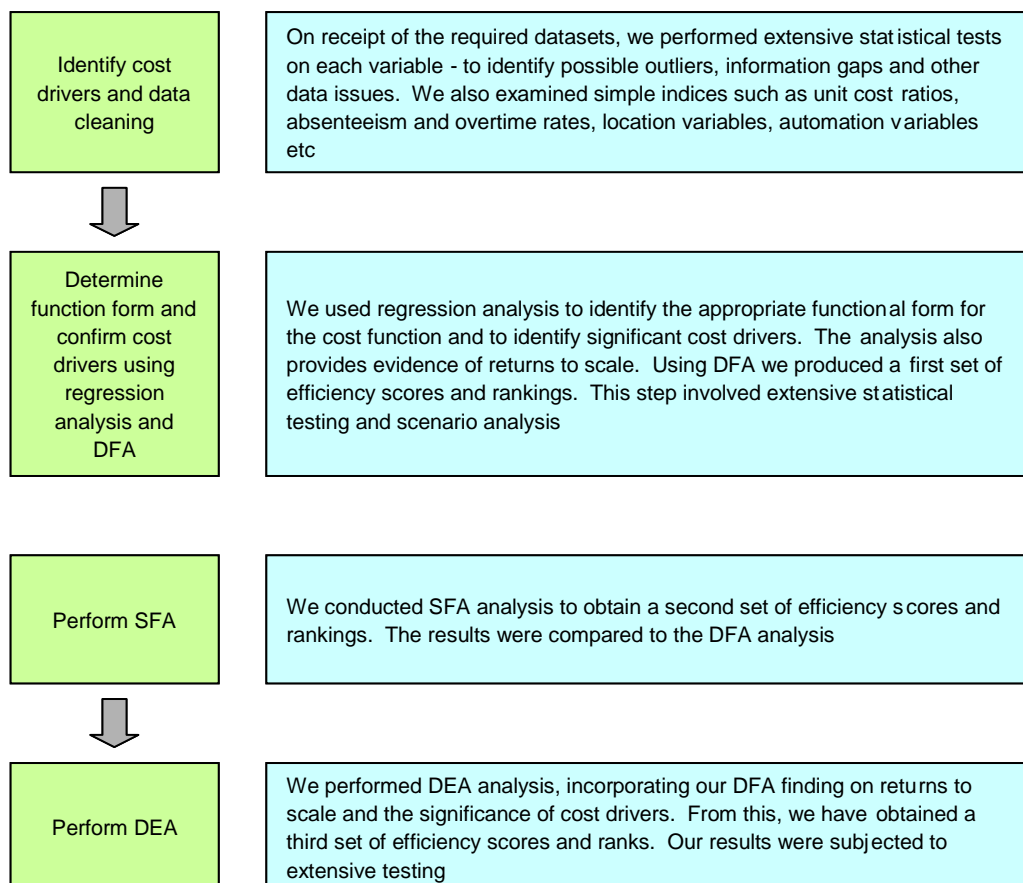
- 20.23 Potential modelling issues have been cited for each of the techniques identified above. Our approach to dealing with each issue has been informed by the lessons learned from applying the techniques in the context of regulation in the UK, the relevant academic literature and by the results of our empirical analysis.
- 20.24 Although these techniques have shortcomings when used in isolation, the use of the techniques together allows us to use the results obtained with one technique to run consistency tests for the results obtained from another. The estimation results that we have obtained with regression analysis, for example, are very similar under DFA and SFA. The efficiency rankings that the three techniques have produced are remarkably consistent, and robust to the sensitivity tests that we have applied to them. Appendix 20 provides an overview of the issues that commonly occur and provides a summary of how we have resolved each issue.

Approach

- 20.25 To assess the economic efficiency of mail centres and delivery offices it is necessary to construct a dataset containing information on each operating unit. For each unit (or observation) we require information on the level of costs, output levels and quality. In addition, we require information on the factors that affect or drive costs, split between those factors that Royal Mail can control locally and those that it cannot. Our approach to determine the relative efficiency of delivery offices and mail centres has been informed by an extensive investigation of the academic and regulatory literature⁴²² pertaining to cost assessment in general and postal cost analysis in particular, and is summarised below:

⁴²² A comprehensive summary of the literature is provided in Economics Of Postal Services: Final Report. A Report to the European Commission, DG-MARKT, NERA, July 2004

Figure 11: Approach to determining efficiency



Identification of potential cost drivers

20.26 In this section, we consider the cost drivers that should be included within our analysis. In the following section, we assess the overall quality of Royal Mail's data, and summarise the implications for our analysis. We asked Royal Mail to provide their views on cost drivers, the materiality of each cost driver and on data availability⁴²³. Our analysis considers these views.

Delivery office cost drivers

20.27 We have identified delivery offices cost drivers primarily by reference to economic theory. Royal Mail was, however, actively involved in the identification and validation process and provided us with a list of relevant cost drivers. Appendix 21

⁴²³ RM response for delivery offices is contained in the file PCR3 6002 delivery office variables PB final.xls; the response for MCs is contained in the file ER P1 MC variables response 15.09.04.xls

provides a summary of Royal Mail's submission on the significance of key delivery office cost drivers.

20.28 For clarity we have grouped cost drivers into the following five categories: measures of scale and output; drivers of workload per unit of output in delivery office functions; labour costs; competitiveness of the local labour market; and other exogenous cost drivers⁴²⁴. Each grouping can be defined as follows:

- measures of scale and output include the volume and type of mail, and the number and type of delivery points. Delivery point type refers to whether they are residential or business, or if they are classified as “firm”;
- drivers of work load per unit of output include the length of road or surface area per delivery point, potentially quality of service, the type of delivery zone, the equipment and type of mail sorting, etc;
- the cost of labour is the wage rate paid by Royal Mail, while the wage rate prevailing in the area for manual workers allows for the competitiveness of Royal Mail's wage rate within the local labour market. The comparison gives us a proxy for the quality of labour that Royal Mail attracts; and,
- there are a number of further cost drivers that might affect costs, such as the size and layout of the delivery office, and the percentage of delivery points that are “warranted firm” delivery. Royal Mail has indicated that data on these cost drivers is not available.

20.29 We list below the cost drivers for which we have a complete data set. Royal Mail has indicated that it believes that some of the data is of relatively poor quality (identified in italics below). For other variables, Royal Mail has been unable to assess data quality (identified in bold italics).

- measures of scale and output include: number of delivery points; percentage of delivery points that are business; and weighted *and disaggregated volumes*;
- drivers of workload per unit of output in delivery office functions include: *number of delivery routes; percentage of firms delivery routes*; delivery office surface area; percentage of urban area; road length; type of delivery zone; *percentage of mail that is walk sorted at mail centre*; number of

⁴²⁴ By exogenous cost driver, we mean factors that are not under the control of management

redirections⁴²⁵; *number of vehicles*; average distance between mail centre and delivery office; average distance between delivery office and SPDO; ***total number of inward sorting frames; total number of preparation frames, percentage number of RM2000 preparation frames; and number of opening hours per day;***

- labour costs and competitiveness of the local labour market includes Royal Mail's wage and the local wage rate ratio (data refers to 2002/2003); and
- other exogenous cost drivers include percentage of all due mail delivered on time; industrial action days per full-time employee; ***office hours on NDA***; sick absence rate; employee turnover and number of offices mapped onto organisation unit.

Mail centre cost drivers

20.30 We have identified mail centre cost drivers primarily by reference to economic theory and underlying business processes. Royal Mail was actively involved in the identification and validation process. Appendix 22 provides a summary of Royal Mail's submission on the significance of key mail centre cost drivers.

20.31 Royal Mail has submitted total labour costs data by mail centre for inward and outward sorting activities only. Our analysis excludes mail centre collection activities. In line with the delivery office analysis, we have grouped cost drivers into categories. We list below the cost drivers by category for which we have a complete data set. Royal Mail has indicated that some of the data is of relatively poor quality (identified in italics below).

- measures of scale include: number of delivery points; percentage of delivery points that are business; and weighted *and disaggregated volumes*;
- drivers of workload per unit of output in mail centre sorting function include: inward and outward mail distribution⁴²⁶; percentage of mail that is walk sorted at inward mail centre; type and number of sorting machines, and automation category; the maximum journey length between the mail centre and other mail centres; the distance between the mail centre and local

⁴²⁵ One-off measure referring to October 2004. Redirections are not expected to change from year to year

⁴²⁶ That is, the percentage of inward mail that comes from RDCs, from the mail centre area, from neighbouring mail centres and from distant mail centres. It also includes the percentage of outward mail that goes to the mail centre area, to neighbouring mail centres and to distant mail centres

delivery offices; the percentage of urban area; the road length; the mail centre surface area;

- labour costs and competitiveness of the local labour market includes Royal Mail's wage and the local wage rate ratio⁴²⁷; and
- other exogenous cost drivers include the number of delivery offices and offices of exchange that are inside the mail centre; the date of construction; the number of floors; the floor space; the percentage of days on which outward final despatch time is met; the percentage of days on which wave 4c despatch time is met; the annual posted and delivered end-to-end quality of service measure for each non bulk product for the mail centre of posting and the mail centre of delivery respectively; industrial action days per full-time employee; sick absence rate; employee turnover.

Assessment of data quality

20.32 We assess the overall quality of Royal Mail's data below.

Delivery office data quality

20.33 Royal Mail supplied us with labour costs for 1,377 delivery offices in Great Britain and Northern Ireland. Labour costs represent approximately 85% of the total costs of delivery offices. Royal Mail indicated that they could not allocate the remaining costs (e.g. vehicles, property, overheads etc) to delivery offices with any degree of accuracy, due to cost allocation constraints.⁴²⁸ Consequently, our analysis is limited to labour costs. The impact of this is that our analyses will under-estimate the scope for savings to be made from greater efficiency.

20.34 Total delivery office costs amount to £2,237m (i.e. around 38% of Base Year costs). Delivery office labour costs amount to around £2,056m (i.e. 90% of total delivery office costs⁴²⁹).

20.35 Royal Mail expressed the following reservations about the quality of the delivery office data provided to us. First the data are not audited. That is, there is no systematic process for ensuring that it is accurate or complete. Second, delivery office managers may have an incentive to increase volume measures with the

⁴²⁷ Data refers to 2002/2003

⁴²⁸ See RM 2004 July Submission, file PCR3 3051 8.4 8.5 & 8.6 Comparative Performance Measurement by MC DO and RDC PB Final.com

⁴²⁹ Labour costs are those provided by RM for the purpose of LECG's internal benchmarking analysis

intention of making their personal performance appear stronger. Last, the data is subject to clerical error. We understand that the delivery office managers primary concern is “getting the mail out”, and that accurate reporting may be a secondary concern. In general, we are surprised that there is no auditing process for the reporting of such key data. Clearly, good quality internal performance data is an important enabler for management decision-making.

20.36 We further assessed data quality through a process of data review. This is the process of analysing the data with the intention of identifying outlying or irregular data points. We did this by, for example, calculating summary statistics for each variable; by producing pair-wise scatter plots between pairs of variables; and by computing data correlation matrices. We did not eliminate any delivery offices from the analysis at this stage and evaluated all the variables, including variables known to be of poor data quality. We asked Royal Mail to comment on all outlying or irregular data points.

20.37 Our main findings with respect to data quality can be summarised as follows:

- Royal Mail questioned the quality of their disaggregated volume data⁴³⁰ - which it believes are biased by measurement errors. Royal Mail advised us to use weighted volume estimates, which are obtained using an engineering weighting system based on workload figures. We have followed Royal Mail's recommendation with respect to this cost driver.
- Royal Mail provided total cost data disaggregated by activity and by hours⁴³¹. Royal Mail raised significant concerns over the quality of this data. As a result, we have restricted our model to assess efficiency in terms of total labour costs, as opposed to the relative efficiency at an activity level.
- Delivery offices in Northern Ireland had missing geographical variables. As a result, all Northern Ireland delivery offices have been excluded from our analysis. This exclusion will tend to result in an underestimate of the scope for future cost savings.

⁴³⁰ RM provided volume data disaggregated by walk sorted letters, flats and packets; manual letters, flats and packets; special delivery; and business reply

⁴³¹ RM provided information on the following activities: indoor; outdoor; meal relief and training; access and consolidation; local distribution; and delivery support. RM provided the following split of hours: ordinary hours; overtime hours; casuals; scheduled hours; allowances; and agency hours

- Royal Mail identified 240 delivery offices that had experienced year-on-year changes in volume in excess of $\pm 15\%$ - indicating a volume measurement issue. To test the sensitivity of our results to poor data volumes, we have considered two scenarios. The first scenario estimates costs and efficiencies including all delivery offices (henceforth referred to as the “whole sample” scenario). The second scenario removes the poor volume delivery offices (henceforth we call this the “restricted sample” scenario). We chose to use the restricted sample in our analysis, making the final efficiency saving estimate lower than if we had included all the delivery offices.
- We assessed the sensitivity and robustness of our cost estimates and efficiency scores to different treatments of the five large aggregated delivery offices⁴³². We found that our cost model was not sensitive to different treatments (i.e. disaggregating the large delivery offices). In our final cost model, we have used the original aggregated delivery office observations.
- The number of vehicles available to delivery offices is, potentially, an important cost driver – but appears to be a poor variable in terms of quality. We have run a sensitivity analysis with this variable, which we describe in the DFA section below.
- Royal Mail has expressed concerns about the quality of the following variables: total inward sorting frames, and number of office opening hours per weekday. We have not used these variables in our analysis.
- Royal Mail was unable to provide time series data. Our analysis, therefore, is necessarily based only on 2003/04 data.

20.38 We provide a more detailed summary of data quality in Appendix 23.

Mail centre data quality

20.39 Royal Mail provided total operational labour costs for 70 mail centres in Great Britain and Northern Ireland⁴³³. These costs relate to processing functions only, and exclude costs associated with collection activities or delivery functions

⁴³² These offices were EC1-EC4, Coventry, Northampton, Derby and Stockport

⁴³³ We understand that London North closed at the start of 2003/2004. We believe that this is consistent with the Strategic Plan (page 39), which states that the total current number of mail centres is 71. We assume this includes London North. However, information provided by Royal Mail in May 2005 indicates that there are 69 mail centres, plus the Heathrow Worldwide Distribution Centre, and this is the figure we have used elsewhere in this report relating to the number of mail centres.

operating from the same building⁴³⁴. Royal Mail also provided mail centre building and maintenance costs, but indicated that they could not allocate these costs by activity with any degree of accuracy. Consequently, our analysis is limited to sorting labour costs. The impact of this is that our analyses will under-estimate the scope for savings to be made from greater efficiency.

20.40 Total mail centre costs amount to £1,341m (i.e. around 23% of Base Year costs). Mail centre labour costs amount to around £715m (i.e. 53% of total mail centre costs⁴³⁵). Royal Mail expressed a number of reservations about the quality of some of the mail centre data provided to us. For example, the data that is sourced directly from mail centre managers are not audited and the data may be subject to clerical error.

20.41 We further assessed data quality through a process of data review, following the same procedure as for the delivery office data. We asked Royal Mail to comment on all outlying or irregular data points. Our main findings with respect to data quality can be summarised as follows:

- Royal Mail questioned the quality of its inward volume data⁴³⁶ - which are produced by mail centres directly and may be biased by measurement errors. Royal Mail advised us to use aggregate weighted volume estimates, which are obtained using an engineering weighting system based on workload figures.⁴³⁷ We have followed Royal Mail's recommendation with respect to this cost driver.
- Royal Mail also provided alternative volume figures, referred to as MCS volumes, which are estimated using survey techniques. Royal Mail advised us that outward MCS volume data are accurate measures. Inward MCS volume is calculated by sampling outward mail at each mail centre to

⁴³⁴ RM indicated, however, that some misallocation of costs might be possible. Refer RM 2004 October Submission, file PCR3 6070 MC data for internal benchmarking.PB.191004.doc, para. 2.7: *"The building (and maintenance) costs are the direct charges from Property Holdings and cover the entire building from which the MC operates. Therefore a portion of the building cost should be allocated to other functions (collection, delivery etc) that operate from the same building"*

⁴³⁵ Labour costs are those provided by RM for the purpose of LECG's internal benchmarking analysis

⁴³⁶ RM provided inward and outward volume data by MC and OE, disaggregated by manual and mechanised letters, manual flats, packets and special delivery.

⁴³⁷ Note that the weighting system does not take the split between first and second class mail into account

determine the mail centre area of delivery. It is a different measure from the volume of mail that is processed at the inward mail centre. Given that we require a robust measure of sorted volume, we were unable to use this variable in the analysis.

- Royal Mail provided total cost data disaggregated by activity and by hours⁴³⁸. Royal Mail raised significant concerns over the quality of this data. As a result, we have restricted our model to assess efficiency in terms of total sorting labour costs, as opposed to the relative efficiency at an activity level.
- The Belfast mail centre had missing geographical variables. As a result, this mail centre has been excluded from our analysis. This is a prudent assumption that will tend to result in an underestimate of the scope for future cost savings.
- The London Central mail centre (i.e. Mount Pleasant) is by far the largest centre in the country. It has a cost per unit of 40 pence, which is 13 pence higher than the unit cost in London South, which has the second highest unit cost. We assessed the sensitivity and robustness of our cost and efficiency estimates to the treatment of this mail centre. We found that the average efficiency scores calculated including and excluding London Central were statistically the same. In our final cost model, we have included London Central in the sample.
- Royal Mail was unable to provide time series data. Our analysis, therefore, is necessarily based on 2003/04 data.

20.42 We provide a more detailed summary of data quality in Appendix 23.

Delivery office results

20.43 In this section, we assess the relative efficiency of delivery offices using the quantitative techniques whose application we discussed above. We first discuss the specification of the delivery cost equation and its functional form. We then present the results of our DFA, SFA and DEA analysis. We then present our conclusions – which provide an assessment of the scope for future efficiencies, assuming that Royal Mail only achieves its own internal best practice. This section

⁴³⁸ RM provided information on the following activities: indoor; outdoor; meal relief and training; access and consolidation; local distribution; and delivery support. RM provided the following split of hours: ordinary hours; overtime hours; casuals; scheduled hours; allowances; and agency hours

only provides a high level summary of our findings. Further support for the conclusions presented in this section are set out in Appendix 24.

Specification and functional form

20.44 The purpose of our econometric analysis is to estimate the parameters of a functional relationship (in the form a mathematical equation) relating delivery office costs to cost drivers. We have attempted to take into account as many cost drivers as possible, including those identified as relevant by Royal Mail. Variables tested for inclusion in the final cost equation include:

- number of delivery points;
- percentage of delivery points that are businesses;
- weighted volume of mail per delivery point;
- length of road per delivery point, in metres;
- delivery zones: major city centre, urban, suburban, rural and deep rural⁴³⁹;
- mail redirection, measured as the number of pieces of mail that have been redirected;
- proportion of mail that has been walk sorted at the mail centre;
- average distance between delivery office and mail centre, in km;
- number of sorting frames which are RM2000;
- number of vehicles available at the delivery office;
- variations in input prices, which is covered by the variable average wage rate paid by delivery office;
- competitiveness of local labour market/ labour force average quality index, which is represented by the variable average local wage rate for manual workers⁴⁴⁰; and
- a quality of service measure which captures the percentage of all due mail delivered on time.

⁴³⁹ Delivery zones are modelled using dummy variables. A value of one indicates that the delivery office is in a particular zone. Otherwise, the value is zero

⁴⁴⁰ This variable has been obtained by multiplying the ratio of local to RM wages by the wage rate paid by the RM

- 20.45 We chose variables for inclusion in the final equations according to the following criteria. First, we assessed whether the sign of the estimated variable was intuitively reasonable. Second, we tested the statistical significance of each variable. Only variables that were found to be providing additional explanatory power were retained. Only variables outside of management control were included in the cost equation.
- 20.46 The term “functional form” refers to the mathematical relationship assumed between the cost drivers and the cost itself. The simplest form is a linear equation⁴⁴¹. Another common functional form is the Cobb-Douglas form, which is linear in the logarithms of the main variables⁴⁴². We tested a number of alternative functional forms and found that the Cobb-Douglas form provided the best empirical fit to the data.

Deterministic Frontier Analysis

- 20.47 We have estimated DFA cost equations for both the whole and restricted samples (i.e. including and excluding poor quality volume data). We found that the inclusion of poor volume data changed the coefficients of our estimated model. Although the differences were not large, they were statistically significant. We found, however, that our restricted DFA model was more statistically robust, and the estimated coefficients conformed more closely to economic theory. As a result, our delivery office efficiency analysis is based on the restricted sample.
- 20.48 In determining our final model, a number of scenarios were considered (i.e. including different variables). Further details of these scenarios are provided Appendix 24. Our final DFA model, which excludes the 240 delivery offices with poor quality volume data, is presented in the table below:

⁴⁴¹ This form has been used, for example in the analysis of electricity distribution businesses and in the analysis of NHS hospitals

⁴⁴² This form has been used in Ofwat's models of the England and Wales water industry

Table 215: Estimated DFA cost equation⁴⁴³

Variable	Coefficient	T-ratio	P Value
Constant	-2.78	-6.71	0.00
Average wage rate	1.09	10.69	0.00
Wage competitiveness index	0.12	1.58	0.12
Volume per delivery point	0.67	18.15	0.00
Number of delivery points	1.02	51.52	0.00
Length of road per delivery point	0.08	5.66	0.00
Major city centre dummy variable	-0.10	-1.28	0.20
Urban dummy variable	-0.13	-1.99	0.05
Suburban dummy variable	-0.10	-1.57	0.12
Rural dummy variable	-0.11	-1.88	0.06
Percentage of business delivery points	0.11	7.34	0.00
Mail redirection	0.03	1.59	0.11
Number of RM2000 frames	-0.002	-1.41	0.16
Number of observations		1108	
R ²		0.965	
Adj. R ²		0.964	

Source: LECG analysis.

- 20.49 Our analysis satisfies a number of prior views about the nature of the delivery office cost function. With respect to the scale and volume indicators, we note that the coefficient on delivery points shows a cost elasticity close to one⁴⁴⁴. This implies that there is close to constant returns to scale on the operation of delivery offices. Other things being equal, an office with twice the delivery points should have twice the labour cost expenditure. We also find that the coefficient on volume per delivery point confirms that economies of density exist. That is, a 10%

⁴⁴³ The t-ratio is the statistic that is commonly used to test whether a coefficient is statistically significant. The t-ratio is the ratio between the coefficient and its standard error. A P-value of 0.1 implies that the coefficients are significant (i.e. they are statistically different from zero) at the 10% level. The lower the P-value, the more significant the coefficient

⁴⁴⁴ Statistically, the hypothesis that the scale coefficient is equal to one could not be rejected

increase in volume increases labour costs by 6.7% only. The cost elasticity of 0.67 is almost identical to the estimated value of 0.66 reported to us by Royal Mail⁴⁴⁵.

- 20.50 The dummy variables are indicators of workload per unit of output. The coefficients provide an assessment of the impact on labour costs relative to deep rural areas. For example, the figure of minus 0.13 for the “Urban” dummy variable indicates that, other things being equal, costs in an urban area would be 13% below costs in a deep rural area.
- 20.51 The quality of service variable that Royal Mail provided is not included in our final specification. The quality of service measure had a small negative coefficient when entered into the regression. The negative coefficient that we observed in estimating the aggregate cost function is largely the result of the variations in managerial effectiveness across the delivery office network. Managerial effectiveness will determine, in part, not only the cost efficiency, but also the quality of service of a delivery office. Thus, less efficient delivery offices will be associated with poorer management, and that leads to a lower quality of service⁴⁴⁶. The observed negative relationship across the network reflects the fact that efficiency and quality of services are jointly determined, even though an individual delivery office manager may be faced with a controllable trade off between cost and quality. A more detailed discussion of this issue can be found in Appendix 25.
- 20.52 A widely used indicator of a model's explanatory power is the coefficient of determination or R^2 . This measures the proportion of the variability of the dependent variable that can be explained by the variables included in the model⁴⁴⁷. The R^2 of the regression equation is 0.965, meaning that 96.5% of the variability of the dependent variable (that is, total cost) is explained by the model.
- 20.53 We found when we included only the scale variable in the regression (i.e. the number of delivery points) the R^2 of the regression was 0.84. This suggests that most of the explanatory power of the regression is due to the scale variable, and that there is only 16% of cost variation to be explained by cost drivers other than scale. The addition of these cost drivers reduces the unexplained variation by

⁴⁴⁵ The 0.66 implied cost elasticity in Royal Mail's BPM refers to delivery staff, as opposed to entire pipeline. This figure applies only to the staff cost element of delivery activities, whilst the BPM estimate for the whole of Royal Mail is 0.57.

⁴⁴⁶ Technically, the quality of service is an *endogenous* variable

⁴⁴⁷ We understand that the measure can be affected by several factors, including whether the dependent variable has been deflated by a scale

12.5% (i.e. 96.5% less 84%), or from 16% to 3.5%. This 12.5% reduction represents 78% of the 16% that was left to be explained after total costs is regressed on the scale variable alone. In other words, if we divide total costs by the scale variable, obtaining the *unit cost*, and regress it on the costs drivers of our model, we explain nearly 80% of the variation in *unit costs*.

20.54 The explanatory power of our model is high in comparison with other regulatory efficiency models. For example, many of Ofwat's models have an explanatory power in the range 25% to 45% of the variation in unit cost. The water distribution unit cost equation has an R^2 of 0.26, the water resources and treatment model has an R^2 of 0.27, and the sewerage network model has an R^2 of 0.46⁴⁴⁸.

20.55 In determining efficiency scores, we have used the top decile as the efficiency benchmark (i.e. the worst delivery office in the top 10%). Doing this and setting the inefficiencies of the top 10% all to 0, the average inefficiency for all offices falls to 15% of aggregate costs. Appendix 26 provides a summary of the best and worst delivery offices. The table below provides a summary of our initial efficiency estimates before further adjustments.

Table 216: DFA delivery office potential savings

Decile	Average Efficiency	Average delivery office saving £'000	Total delivery office savings £'000
1	100%	-	-
2	97%	44	4,896
3	93%	93	10,353
4	90%	151	16,747
5	87%	185	20,529
6	84%	230	25,561
7	82%	320	35,537
8	79%	372	41,279
9	75%	491	54,493
10	66%	923	100,593
Total	85%	280	309,988

Source: LECG analysis

⁴⁴⁸ Ofwat, 'Water and sewerage service unit costs and relative efficiency 2002-2003 report', Appendix 1, page 45-46 - Tables 14a, 14b and 15a

- 20.56 There are a number of variables, which might be taken as labour force quality indicators in the dataset supplied by Royal Mail, and which can be used to test whether cost inefficiency is related to labour quality and service quality. One might expect that for example offices with high levels of sick leave, overtime rates, agency time rates, and turnover or with higher strike activity might be less efficient. In such an event, the correlation between these variables and the inefficiency scores should be positive, and high. We have computed these correlations, and they in fact are all small. Consequently, there appears to be very little evidence that these potential indicators of labour quality are related to efficiency. Further interpretation of the DFA model is provided in Appendix 24.
- 20.57 There is little or no evidence that cost efficiency and quality of service are significantly correlated over most of the sample range, but there is a notable decline in the quality of service for the least efficient offices. This is consistent with the idea that the effectiveness of management (which is only indirectly observed) affects both cost efficiency and quality of service. Managers who are struggling with quality of service will also be struggling with efficiency.

Stochastic frontier analysis

- 20.58 In order to assess the robustness of the DFA estimates and efficiency scores, we have estimated a stochastic frontier model, assuming different functional forms for the inefficiency term. We found that the most suitable functional form for the residual terms was the half normal distribution.
- 20.59 The results for the restricted sample are reported in the table below, with insignificant coefficients reported in bold.

Table 217: Estimation of SFA cost equation

Variable	Coefficient	T-ratio
Constant	-2.63	-10.45
Average wage rate	1.03	10.67
Wage competitiveness index	0.10	1.36
Volume per delivery point	0.66	34.32
Number of delivery points	1.01	135.76
Length of road per delivery point	0.08	5.89
Major city centre dummy variable	-0.10	-1.95
Urban dummy variable	-0.13	-2.58
Suburban dummy variable	-0.10	-2.19
Rural dummy variable	-0.11	-2.87
Percentage of business delivery points	0.10	7.43
Mail redirection	0.04	12.41
Number of RM2000 frames	-0.001	-1.29
N	1108	
Log-L	677.3	
Proportion of stochastic error term that is inefficiency	0.83	

Source: LECG Analysis

- 20.60 There are two points of relevance regarding these results. First, the coefficients between the DFA and SFA models are very similar⁴⁴⁹. Second, the proportion of the stochastic error term that is attributable to inefficiency, which (by construction) is 100% under DFA, is 83% under the half-normal SFA model⁴⁵⁰. Further interpretation of the SFA cost model is provided in Appendix 24.

⁴⁴⁹ The t-ratios are different between DFA and SFA. One part of the reason is because SFA estimates are obtained with Maximum Likelihood and DFA are obtained with OLS. Another part of the reason is because the DFA results are corrected for heteroscedasticity but the SFA results are not. For these reasons, the t-ratios obtained with OLS should be considered as the most appropriate in drawing inference on the coefficient of the cost equation

⁴⁵⁰ Both DFA and SFA are regression-based methods. Costs are regressed on the cost drivers. The part of actual costs that are not explained by the drivers is entirely attributed to inefficiency. SFA instead splits the part of actual costs that is not explained by the drivers, into two components, one attributable to inefficiency and the other to random occurrences (such as those explained in paragraph 20.71). As a result, inefficiency as estimated by SFA is always lower than that estimated by DFA. In the case of the delivery offices, SFA estimates that , of the part of actual costs that is not explained by the cost drivers, 83% is due to inefficiency and 17% is due to random occurrences

20.61 Our unadjusted efficiency results are reported in the table below.

Table 218: SFA delivery office potential savings

Decile	Average Efficiency	Average delivery office saving £'000s	Total delivery office savings £'000s
1	95%	68	7,521
2	94%	83	9,201
3	93%	101	11,193
4	92%	116	12,925
5	90%	132	14,597
6	89%	156	17,342
7	88%	205	22,761
8	86%	251	27,910
9	83%	349	38,701
10	74%	722	78,658
Total	88%	217	240,809

Source: LECG analysis

Data Envelopment Analysis

20.62 The technique used to perform DEA is one of cost minimisation with either constant or variable returns to scale. Since DEA is a non-parametric technique with no agreed model selection process, the choice of variables to include is based upon our econometric analysis, as reported above. Our DEA analysis was carried out using a program written by Professor John Cubbin. This was originally developed in 1987 and has been applied extensively since then⁴⁵¹.

20.63 To ensure the consistency of the efficiency savings and in keeping with the approach undertaken in the previous section of the study, we have focussed on the restricted sample excluding the observations claimed as of poor data quality by Royal Mail.

20.64 The final model specification takes account of the dummy variables relating to delivery zones as used in the regression analysis. Royal Mail has strongly indicated that delivery office location, that is whether the office is situated in a

⁴⁵¹ Professor Cubbin's model has been applied in the Halifax Building Society, the Metropolitan Police, Local Education Authorities, Local Authority refuse collection services, prisons, electricity distribution and Training and Enterprise Councils

major city centre or in an urban, suburban, rural or deep rural area, is a key driver of cost in its operations. As such, we have extended our analysis to account for this geographical variability in delivery office location. The regression analysis above indicated that urban, suburban, and rural areas had similar cost levels but major city centres and deep rural areas had higher costs. Consequently, we need to avoid estimating efficiency savings by comparing a delivery office in a deep rural location with an efficient office located in a suburb or vice versa.

- 20.65 We have split the restricted sample into five sub-samples, reflecting the different delivery zones. The findings are summarised in the table below. The results show that the total projected savings remain relatively consistent across samples and across delivery zones. Based on the assumption of constant returns to scale, the total projected efficiency savings by delivery zones are provided in the table below.

Table 219: Summary of efficiency savings by delivery zone under CRS

Delivery Zone	Number of efficient offices	Efficiency Savings £'000s	Savings as % of total labour cost
City Centre	25	£7,430	6.2%
Urban	47	£69,438	15.6%
Suburban	44	£239,585	24.7%
Rural	43	£36,659	14.0%
Deep Rural	9	£133	2.3%
Total	168	£353,244	19.6%

Source: LECG Analysis based on 1108 observations.

Comparing DEA with DFA and SFA

- 20.66 It is somewhat difficult to make direct comparisons between the findings due to the differing nature of the methodology adopted. Carrying out both approaches is a form of sensitivity analysis, which can reveal potential weaknesses in conclusions drawn from the techniques.
- 20.67 The linear programming approach that forms the basis of DEA identifies a set of efficient delivery offices from which the efficiency of other delivery offices is assessed. Regression analysis approaches efficiency calculations from a different

perspective. Essentially, instead of a set of efficient delivery offices, it specifies an efficient cost function against which delivery offices are assessed.

20.68 The efficiency scores and the rankings produced by DFA and SFA are remarkably consistent. The correlation coefficient between the inefficiency scores (i.e. the percentage of cost that is inefficiency) produced by DFA and SFA is 0.91. The correlation coefficient between the delivery office rankings (i.e. the position of each delivery office in terms of inefficiency, with the best delivery office ranked 1 and the worst ranked 1108) produced by DFA and SFA is 0.99. These are very high levels of correlation.

20.69 The efficiency scores and the rankings produced by DEA and DFA/SFA are consistent, but the correlation is not as high. This is expected, due to the different type of benchmarking which these techniques perform. The correlation coefficient between the *efficiency scores* produced by DFA and DEA is 0.67. The correlation coefficient between the *efficiency rankings* produced by DFA and DEA is also 0.67.

Delivery office efficiency savings

20.70 It is important to recognise that no model is fully accurate. All models are subject to some degree of error and uncertainty, although it is a central feature of SFA that these errors can be specifically modelled⁴⁵².

20.71 Both DEA and DFA, however, take as the default assumption that all cost deviations left unexplained by the variables used represent efficiency variations. It is well known that this is an implausible assumption and needs some adjustment in order to set realistic cost targets. The potential sources of error and our assessment of their importance is as follows:

- **Omitted variables:** The equation contains 12 variables – far more than any other comparative efficiency model known to LECG. It is unlikely therefore, that omitted factors count for more than 2-3% of the residual.
- **Poor proxy:** Some measures of volume are inaccurate, which could be a source of error. We also have some doubts about road length as a proxy for

⁴⁵² See footnote 450

the distance between delivery points⁴⁵³. Our experience indicates that this random error could account for approximately 10% of the residual.

- **Sampling error:** With over 1,000 observations the sampling error is likely to be very small.
- **Measurement error:** There may be some small errors of cost allocation between activities.
- **Mathematical form:** Experiments with the trans-log functional form suggests the model is appropriately specified.

20.72 Taking these together, the estimate of 20% attributable to random factors as estimated by SFA seems appropriate for the DFA estimate, also. In practice, this particular issue has been tackled in one of two ways. The first, applied by Ofwat, is to discount the potential efficiency saving calculated from the benchmark (by 10% in the case of the water activities and 20% in the case of sewerage⁴⁵⁴). Ofwat use the "best" company as the benchmark except where this constitutes less than 3% of the industry output⁴⁵⁵. The second, applied by Ofgem, is simply to use a particular percentile as the benchmark, with no discount. In the current Electricity Distribution price control review, Ofgem adopts the 25th percentile (i.e. the upper quartile) as the efficiency benchmark in its final proposals⁴⁵⁶.

20.73 We have used a combination of the above for the DFA estimates. We would not take the "best" company as the benchmark, instead choosing the worst of the 10th decile (i.e. the 110th most efficient delivery office). By not benchmarking against the top delivery office, we have adopted a prudent approach. For the DEA, we have (so far) used the 166 offices classed as efficient as the benchmark, but in comparing the results it is important to bear this in mind.

20.74 The comparisons between the outcomes of the three methods are set out in the table below. The first row shows the type of benchmark used. The second row is the same for all methods and is the total staff cost which forms the denominator for

⁴⁵³ We generated an average measure of the distance between any two delivery points in the delivery office territory by dividing the length of road within the delivery office by the number of the delivery points. This method is necessarily a simplification, but without much more extensive information we are unable to improve on this method.

⁴⁵⁴ Ofwat, Water and Sewerage Service Unit Costs and Relative Efficiency 2002-2003 Report, page 20

⁴⁵⁵ Ofwat, Future Water and sewerage charges 2005-10 – Final determinations, page 260

⁴⁵⁶ Ofgem, Electricity Distribution Price Control Review, Final Proposals, November 2004, page 69

our calculations. Row 3 is taken from the tables explained above using our preferred specification in each case.

20.75 For DEA and DFA, we then apply a 20% adjustment for the random component in the residual. This is not necessary for SFA since it is already taken into account in the estimation method. The 20% adjustment has the effect of making the final efficiency savings figure more conservative. The net figure is shown in row 5. Rows 6, 7, and 8 show the calculation of the savings to be applied to the omitted delivery offices, which were added together with row 5 to give our estimate of the potential savings from the delivery offices, shown in row 9.

Table 220: Estimated potential savings based on restricted sample

	DFA £m	DEA £m	SFA £m
1. Type of benchmark	Worst of first decile	Efficient offices	N/A
2. Costs of included offices	1,843.9	1,843.9	1,843.9
3. Savings at benchmark	310.0	353.2	240.8
4. Less 20% adjustment	62.0	70.6	Already incorporated
5. Net potential saving	248.0	282.6	240.8
6. % factor implied (Row 5 / Row 2)	13.4	15.3	13.1
7. Costs of omitted offices	169.7	169.7	169.7
8. Potential cost saving using same factor	22.7	26.0	22.2
9. Aggregate potential cost saving	270.7	308.6	263.0

Source: LECG analysis. Note: The 'potential cost savings using same factors' is derived by multiplying 'cost of omitted offices' by % factor implied'.

20.76 The DFA and SFA estimates are within 5% of each other. The DEA score is somewhat higher, but it should be remembered that this estimate is based on some delivery offices that are likely to be outliers, and so will set unattainable benchmarks for delivery offices having the very low cost outliers as targets. Accordingly, we believe that the DEA value should be treated as an upper limit rather than a point estimate.

Delivery office results

20.77 The exercise that we have carried out to estimate the scale of potential efficiency savings within delivery offices has been based on Royal Mail data, using cost

drivers that Royal Mail have agreed to be relevant and which collectively explain over 90% of cost variation. There is a high correlation not just between the overall results of the different models that we have applied, but also between the rankings of delivery offices by efficiency scores that each produces. Over 95% of the delivery offices in the top ten percent of the SFA rankings are also in the top ten percent of the DFA rankings. The models have been tested for sensitivity to key assumptions and have proved robust.

20.78 We have responded to Royal Mail's concerns over data quality by omitting delivery offices for which they believed the data was not robust; and we have dealt only with total labour costs in response to Royal Mail's concerns about data quality for disaggregated cost figures. Finally, we have scaled back by 20% the savings implied by the raw DEA and DFA analysis to allow for random components in the residual error terms.

20.79 The analysis indicates that savings in the range £250m to £300m per year are achievable simply by applying existing best practices within the delivery office network. For the reasons given above, we believe this figure to be conservative. We have in fact excluded those delivery offices that Royal Mail indicated as having poor data quality from the analysis; we have adopted a conservative benchmark (the top 10% of delivery offices for DFA and DEA), and we have applied a 20% adjustment factor to DFA and DEA.

Mail centre results

20.80 We have assessed the relative efficiency of mail centres applying the same methodology that we used for delivery offices. In this section, we first discuss the specification of the mail centre equation and its functional form. We then present the results of our DFA, SFA and DEA analysis. Finally, we present our conclusions – which provide an assessment of the scope for future efficiencies, assuming that Royal Mail only achieves its own internal best practice. This section only provides a high level summary of our findings. Further support for our conclusions are presented in Appendix 27.

Specification and functional form

20.81 In specifying the cost function for the sorting activity of mail centres, we have attempted to take into account as many cost drivers as possible, including those identified as relevant by Royal Mail. Variables tested for inclusion in the final cost equation include:

- weighted volume;
- percentage of inward and outward mail that is distant, neighbouring and intra-mail centre;
- percentage of inward mail that comes from RDC;
- percentage of mail that is walk sorted at the mail centre;
- automation category (i.e. total equipment);
- percentage of mail that is mechanised (i.e. inward, outward and total);
- mail centre area surface;
- percentage of mail centre area surface that is urban;
- size of mail centre (floor space in square meters);
- number of floors, or whether the mail centre has multiple floors;
- maximum distance between mail centres and other mail centres, in km and minutes;
- maximum distance between mail centre and delivery offices, in km;
- whether there are delivery offices and/or offices of exchange in the mail centre building;
- variations in input prices, which is covered by the variable average wage rate paid by delivery office;
- competitiveness of local labour market/ labour force average quality index which is represented by the variable average local wage rate for manual workers;
- the quality of service measures which capture the percentage of days in which final despatch, or wave 4c despatch, are completed on time; and
- the quality of service measure for stamped and metered mail delivered on time.

20.82 We chose variables for inclusion in the final equations according to the following criteria. First, we assessed whether the sign of the estimated variable was intuitively reasonable. Second, we tested the statistical significance of each variable. Only variables that were found to be providing additional explanatory

power, were retained. In line with best practice, only variables outside of management control were included in the cost equation.

- 20.83 We tested a number of alternative functional forms and found that the Cobb-Douglas form provided the best empirical fit to the data.

Deterministic Frontier Analysis

- 20.84 We have estimated DFA cost equations excluding Belfast MC, for which data on geographic variables are not available. In determining our final model, we considered a number of scenarios (i.e. including different variables, and excluding the London Central mail centre). Further details of these scenarios are provided in Appendix 27.
- 20.85 The estimating sample is composed of 69 mail centres, much smaller than the sample of delivery offices. Due to the size of the sample, it is important not to include unnecessary parameters, to free up degrees of freedom⁴⁵⁷. Our final model is provided in the table below.

⁴⁵⁷ Given the small number of observations, we need to consider the “degrees of freedom” in the estimated equation. This technical issue constrains the number of explanatory variables that can be included in the regression. The term “degrees of freedom” relates to the number of observations used in the regression minus the number of restrictions put on those observations. For example, in a regression with N observations and two independent variables, there are (N-2) and not N independent observations. The more degrees of freedom in a regression, the more precise the resulting estimates

Table 221: Mail centre DFA cost equation

Variable	Coefficient	T-ratio	P Value
Constant	-8.71	-5.39	0.00
Dummy for small MCs	5.02	2.58	0.01
Volume	1.25	13.98	0.00
Volume * Dummy for small MCs	-0.29	-2.63	0.01
Percent of intra-MC inward mail	0.81	1.61	0.11
Percent of mail that is walk sorted at MC	0.89	3.05	0.00
Percent of MC area that is urban	0.39	3.86	0.00
Number of observations		69	
R ²		0.959	
Adj. R ²		0.955	

Source: LECG analysis.

- 20.86 We found that the elasticity of scale is different between small and large mail centres. We tested a number of different scenarios, and found that the scale elasticity becomes bigger than one at around the median value for the volume variable. Consequently, small mail centres are defined as those 35 with weighted volume below the median value. Large mail centres have an output elasticity of 1.25, which indicates that they suffer from diseconomies of scale. That is a 10% increase in volume would increase staff costs by 12.5%. Small mail centres have an output elasticity of 0.96⁴⁵⁸. That is, a 10% increase in volume would only increase staff costs by 9.6%.
- 20.87 There are a number of possible explanations for the appearance of diseconomies of scale in large mail centres, including: an inability to manage large mail centres efficiently, implying that managing larger operations is more complex than managing smaller operations. This might be explained by a range of factors, including: management control; poor industrial relations; and operational workflow issues. It might be the case that as Royal Mail has increased automation it has not been able to remove staff.

⁴⁵⁸ In order to derive the scale elasticity for small mail centres, one has to add the two volume coefficients, that is the coefficient on Volume and that on (Volume * Dummy for small MC). The sum of these two coefficients, that is 1.25–0.29 is 0.96. The implied t-ratio is 13.8, significant at 1%

- 20.88 We note that whilst larger mail centres might suffer from diseconomies of scale, they might be required to ensure savings from economies of scale or density in other functions of the mail business, for example in delivery. In such a case, the savings achieved in these other functions might offset the extra costs arising from diseconomies of scale in the sorting function at large mail centres.
- 20.89 The percentage of mail that is walk sorted at the mail centre is one of the three automation⁴⁵⁹ variables provided by the Royal Mail, and it is an indicator of workload for unit of output. The higher the percentage, the higher the level of overall mechanisation in the sorting activity. Our analysis also indicates higher labour costs as well. The coefficient indicates that a one-percentage point increase in the percentage of mail that is walk sorted at mail centre increases total staff costs by 0.89%. We provide comments on the other variables used within the mail centre regression in Appendix 27.
- 20.90 The value of the (adjusted) coefficient of determination of our model is 0.959. This means that the cost drivers included in our model explain 95.9% of the variability of the rescaled cost variable. This increases to 96.2% if the wage variable is included in the regression, with total staff costs as dependent variable. We found that when we included the scale variable only (i.e. the two volume variables) the R^2 of the total cost regression was 0.923. This suggests that most of the explanatory power is due to the scale variable. The addition of the other variables reduces the unexplained variation from 7.7% to 3.8%. That is, nearly 50% of the variation in *unit* costs has been explained by the cost driver variables⁴⁶⁰.
- 20.91 The explanatory power of our model is in line with the highest values found in other regulatory efficiency models. It is smaller than that for the delivery offices, but this is expected given the less heterogeneous nature of the work undertaken at mail centres with respect to delivery office work. For mail centre activities there is variation in the nature of the mail received (reflected in the weighted volume figures) and the extent of pre-sorting in incoming mail and sorting of outgoing mail⁴⁶¹. By contrast, delivery routes can vary according to, *inter alia*: road distances between delivery points; nature of delivery points (blocks of flats, suburban

⁴⁵⁹ Refer to Appendix 27 for a further discussion of the automation variables considered for inclusion in the mail centre model

⁴⁶⁰ See paragraph 20.53 for an explanation of how this figure is derived

⁴⁶¹ Other factors, such as the size and layout of the office are under management control

housing, town housing, offices, etc); volume per delivery point; and composition of mail (reflected in weighted volume figures).

20.92 In determining efficiency scores, we have used the top decile as the efficiency benchmark (i.e. the worst mail centre in the top 10%). Doing this and setting the inefficiencies of the top 10% all to 0, the average inefficiency for all offices falls to 16% of aggregate costs. Appendix 28 provides the rankings for the 69 mail centres. The table below provides a summary of our efficiency estimates for mail centres. The table represents a short-run view, based on the assumption that nothing can be done about the scale inefficiency of the larger mail centres. The efficiency scores are therefore calculated from the residuals of the regression shown in Table 221 above⁴⁶².

Table 222: DFA short-run mail centres potential savings – allowing for diseconomies of scale in large mail centre

Decile	Average efficiency	Average saving £'000	Total savings £'000
1	100%	-	-
2	97%	154	1,079
3	92%	781	5,469
4	89%	1,329	9,300
5	87%	1,524	10,665
6	83%	1,723	12,059
7	79%	1,545	10,817
8	76%	2,471	17,300
9	72%	5,287	37,007
10	66%	3,514	21,085
Total	84%	1,808	124,780

Source: LECG analysis

20.93 In the medium to long-term, we believe that Royal Mail should be able to eliminate the diseconomies of scale that characterise the large mail centres. Under this scenario, both large and small mail centres would have the same elasticity of scale, (i.e. 0.962) and total efficiency savings increase to £181m. We present the results of the scenario in Appendix 27. We have allowed for the persistence of

⁴⁶² That is, we assume different scale elasticities for small mail centres (elasticity = 0.96) and large mail centres (elasticity = 1.25)

diseconomies of scale in arriving at our final estimate, making our approach prudent.

- 20.94 The figures reported in Table 222 show that mail centres in the ninth decile have disproportionately high average and total savings. This is due to the presence of the London Central mail centre in this particular decile. We estimate that London Central is 71% efficient, which implies potential cost savings of £20.7m. In turn, this represents some 17% of the total potential savings for the 69 mail centres.
- 20.95 To assess whether the inclusion of London Central mail centre has a significant impact on the efficiency estimates for the other mail centres, we estimated the cost equation for mail centres excluding London Central from the sample, and obtained a second set of efficiency estimates. We tested whether the distribution of the efficiency scores obtained from the samples with and without London Central. The results show that the mean, variance and median of the two efficiency distributions are statistically the same.
- 20.96 There are a number of variables, which might be taken as labour force quality indicators in the dataset supplied by Royal Mail, which can be used to test whether cost inefficiency is related to labour quality and service quality. One might expect that mail centres with high levels of sick leave, overtime rates, agency time rates, and turnover or with high strike activity might be less efficient. In such an event, the correlation between these variables and the inefficiency scores should be positive, and high. We have computed these correlations, and they are all small. Consequently, there appears to be very little evidence that these potential indicators of labour quality are related to efficiency. Further interpretation of the DFA cost model is provided in Appendix 27.

Stochastic frontier analysis

- 20.97 In order to assess the robustness of the DFA estimates and efficiency scores, we have estimated a stochastic frontier model, assuming different functional forms for the inefficiency term. We found that the most suitable functional form for the residual terms was the half normal distribution. The results for the restricted sample are reported in table below, with insignificant coefficients reported in bold.

Table 223: Estimation of SFA cost equation

Variable	Coefficient	T-ratio
Constant	-9.30	- 5.17
Dummy for small MCs	5.25	2.56
Volume	1.27	12.60
Volume * Dummy for small MCs	-0.29	-2.60
Percent of intra-MC inward mail	0.85	1.29
Percent of mail that is walk sorted at MC	0.91	3.98
Percent of MC area that is urban	0.37	3.83
N	69	
Log-L	43.11	
Proportion of error that is inefficiency	0.89	

Source: LECG Analysis

- 20.98 There are two points of relevance regarding these results. First, the coefficients between the DFA and SFA models are very similar. Second, the proportion of the total error that is attributable to inefficiency, which (by construction) is 100% under DFA, is 89% under the half-normal SFA model. Further interpretation of the SFA cost model is provided in Appendix 27. Our unadjusted efficiency results are reported in the table below.

Table 224: SFA mail centres potential savings, £000s

Decile	Average Efficiency	Average mail centre saving	Total mail centre savings
1	96%	395	2,762
2	94%	301	2,109
3	92%	689	4,820
4	91%	1,060	7,417
5	90%	1,158	8,106
6	87%	1,330	9,308
7	84%	1,203	8,420
8	81%	1,948	13,633
9	76%	4,492	31,443
10	68%	3,255	19,531
Total	85%	1,559	107,549

Source: LECG analysis

Data Envelopment Analysis

- 20.99 The technique used to perform DEA is one of cost minimisation with either constant or variable returns to scale. Since DEA is a non-parametric technique with no agreed model selection process, the choice of variables to include is based upon our econometric analysis, as reported above.
- 20.100 Our findings show that the number of mail centres classified as efficient under the assumption of constant returns to scale is 15, representing 22% of the sample. Under the assumption of variable returns to scale, there are 28 efficient mail centres, or 41% of the sample. The results of this analysis are summarised in Appendix 27.
- 20.101 The final model specification takes account of all the variables used in the cost function with DFA and SFA and includes the London Central mail centre⁴⁶³. The total projected efficiency savings based on the assumptions of constant and variable returns to scale are provided in the table below.

⁴⁶³ The exclusion of London Central does not change either the efficiency savings or the rankings obtained by DEA

Table 225: Summary of efficiency savings by mail centre, £000s

Type of returns to scale	Number of efficient offices	Efficiency Savings	Efficiency Savings as % of total MC labour cost
Constant	15	£122,570	17.4%
Variable	28	£58,925	8.4%

Source: LECG Analysis based on 69 observations.

Comparing DEA with DFA and SFA

- 20.102 The efficiency scores and the rankings produced by DFA and SFA are remarkably consistent. The correlation coefficient between the inefficiency scores (i.e. the percentage of cost that is inefficiency) produced by DFA and SFA is 0.96. The mail centre rankings (i.e. the position of each mail centre in terms of inefficiency, with the best mail centre ranked 1 and the worst ranked 69) produced by DFA and SFA are identical. The efficiency scores produced by DEA and DFA are rather different. The correlation between the inefficiency scores is 0.68. The correlation between the rankings is 0.63.

Mail centre potential savings calculations

- 20.103 As we have discussed in the delivery office section, both DEA and DFA, take as the default assumption that all cost deviations left unexplained by the variables used to represent efficiency variations. It is well known that this is an implausible assumption and needs some adjustment in order to set realistic cost targets. The potential sources of error and our assessment of their importance is as follows:

- **Omitted variables:** The equation contains five variables plus the volume size dummies. This is considerably more than the number used in the Ofwat and Ofgem equations⁴⁶⁴. In addition, we believe that mail centre activities are more homogeneous than, for example, electricity distribution networks or water treatment plants. Although mail centres may vary in layout and style of operation, these are within management control over the medium term. We believe that we have taken into account most of the factors which are outside management control.

⁴⁶⁴ Refer to: Water and sewerage service unit costs and relative efficiency 2002 - 2003 report, Ofwat, page 45 and Electricity distribution price control review final proposals, Ofgem, November 2004, page 69

- **Poor proxy:** In the case of delivery offices we were concerned that the volume measures were measured inaccurately. This is much less of a concern in mail centres, since one of their functions is revenue protection. The volume data should be much better, and this will substantially reduce the inaccuracies associated with this cause.
- **Sampling error:** The sampling error may be slightly raised compared with delivery offices, since the sample size is small. Nevertheless, 69 observations are sufficient to allow for quite small sampling errors.
- **Measurement error:** There may be some small errors of cost allocation between activities.
- **Mathematical form:** Tests with the linear and trans-log functional form suggests the model is appropriately specified.

20.104 Taking these together, we judge that a rather higher proportion of the residual is a reflection of efficiency than is the case with delivery offices. Consequently, we have applied a 15% discount to the residual from the mail centre regressions, bearing in mind that the benchmark is already below the "best performing" centre. For the DFA estimates, we would not take the "best" company as the benchmark, instead choosing the worst of the 10th decile. For the DEA, we have used the 15 mail centres classed as efficient as the benchmark.

20.105 The comparisons between the outcomes of the three methods are set out in the table below. The first row shows the type of benchmark used. The second row is the same for all methods and is the total employee cost which forms the denominator for our calculations. Row 3 is taken from the tables explained above using our preferred specification in each case. For DEA and DFA, we then apply a 15% adjustment for the random component in the residual. This is not necessary with SFA since it is already taken into account in the estimation method. The net figure is shown in row 5.

20.106 Potential cost savings from each of the methods are very similar. The difference between the minimum and maximum values is £3.4m. DEA and DFA estimates are within 2% of each other, and potential cost savings estimated by DFA and SFA are within 1% of each other.

Table 226: Estimated potential savings based on restricted sample

	DFA £'m	DEA £'m	SFA £'m
1. Type of benchmark	First decile	15 "efficient" mail centres	N/A
2. Costs of included offices	703.1	703.1	703.1
3. Savings at benchmark	124.8	122.6	107.6
4. Less 15% adjustment	18.7	18.4	Already incorporated
5. Aggregate potential cost saving	106.1	104.2	107.6

Source: LECG analysis.

Mail centre results

- 20.107 The exercise that we have carried out to estimate the scale of potential efficiency savings within mail centres has been based on Royal Mail data, using cost drivers that Royal Mail have agreed to be relevant and which collectively explain well over 90% of cost variation. There is a high correlation not just between the overall results of the different models, but also between the rankings of mail centres by efficiency scores that each produces. The models have been tested for sensitivity to key assumptions and have proved robust.
- 20.108 We have dealt only with total labour costs and weighted volume in response to Royal Mail's concerns about data quality for disaggregated cost and volume figures. We have scaled back our estimates by 15% of the savings implied by the raw DEA and DFA analysis to allow for random components in the residual error terms.
- 20.109 The analysis indicates that savings of the order of £100m per year are achievable simply by applying existing best practices within the mail centre network. In the longer term, we expect that the diseconomies of scale of mail centres could be redressed. This would increase the scope for further efficiencies by up to £50m.

Conclusions

- 20.110 Internal benchmarking compares the cost performance (or efficiency) of similar units within the same company against each other. The results indicate the

potential for Royal Mail to lower costs by achieving its own best performance consistently across mail centres and delivery offices. Our findings indicate that:

- savings in the range £250m to £300m per year are achievable simply by applying existing best practices within the delivery office network; and
- savings of at least £100m per year are achievable simply by applying existing best practices within the mail centre network.

20.111 The exercise that we have carried out to estimate the scale of potential efficiency savings has been based on Royal Mail data, using cost drivers that Royal Mail have agreed to be relevant and which collectively explain over 90% of cost variation. There is a high correlation not just between the overall results of the three different techniques that we have applied, but also between the rankings of efficiency scores that each produces. The models have been tested for sensitivity to key assumptions and have proved robust.

20.112 We believe our figures to be conservative. We have for example: excluded those delivery offices and mail centres that Royal Mail indicated as having poor data quality from the analysis; adopted a conservative benchmark (the top decile of delivery offices and mail centres for DFA and DEA); and applied a 20% downward adjustment factor to the DFA and DEA results for delivery offices and a 15% downward adjustment factor to the DFA and DEA results for mail centres.

20.113 There is some precedent to use a more challenging benchmark. Ofwat use the "best" company as the benchmark except where this constitutes less than 3% of the industry output. Ofwat then discounts the potential efficiency saving calculated from the benchmark by 10% in the case of the water activities and 20% in the case of sewerage. The table below summarises our estimate of delivery office savings, based on DFA and using a range of different benchmarks and discounts.

Table 227: Delivery office savings from the application of best practice

DFA	Against best office	Against average of top 10%	Against worst of top 10%
No Discount Factor	£814m	£429m	£338m
10% Discount Factor	£732m	£386m	£305m
20% Discount Factor	£651m	£343m	£271m

Source: LECG analysis. The top decile is defined as the point in the distribution where 10% of observations lie above, and 90% below that point. It is therefore approximately the worst of the top 10%.

- 20.114 Adopting the best office as the benchmark suggests savings of between about £650m and about £815m. A less challenging benchmark, of the average of the top 10%, would suggest savings of between about £340m and £430m. We have adopted the worst of the top 10% (i.e. the decile) as benchmark in this version of the report. Even under this benchmark, savings in the range £270m to £300m can be supported. The upper end of this range is consistent with the level of savings derived under the DEA technique after applying a 20% discount.
- 20.115 The table below summarises our estimate of mail centre savings, based on DFA and using a range of different benchmarks and discounts.

Table 228: Mail centre savings from the application of best practice

DFA	Against best office	Against average of top 10%	Against worst of top 10%
No Discount Factor	£178m	£140m	£125m
10% Discount Factor	£160m	£126m	£112m
15% Discount Factor	£152m	£119m	£106m

Source: LECG analysis

- 20.116 We have adopted the top decile as benchmark, making allowance for the diseconomies of scale evident in the larger mail centres. As noted above, however, in the longer term, we expect that the diseconomies of scale of mail centres could be redressed. This would increase the scope for further efficiencies by up to £50m.

- 20.117 Royal Mail indicated to us that only labour costs could be allocated to mail centres and delivery centres with any degree of accuracy. Consequently, our analysis is limited to labour costs. The impact of this is that any scope for efficiency will be underestimated (i.e. it will exclude the scope to reduce vehicle, property and overheads cost).
- 20.118 Delivery office labour costs were £2,056m⁴⁶⁵ in 2003/04. A cost saving of between £250m and £300m is equivalent to a 12.2% and 14.6% reduction in total delivery labour costs. Mail centre labour costs were £1,341m⁴⁶⁶ in 2003/04. A cost saving of £150m (i.e. including diseconomies of scale) is equivalent to an 11.2% reduction in mail centre labour costs.
- 20.119 Our findings can be converted into an efficiency cost trend, the level of which depends on the time period over which the assumed efficiencies are achieved. The table below presents implied cost trends for different time periods:

Table 229: Internal benchmarking RUOE trends

Time period	Annual rate of improvement
3 years	3.6% to 4.6%
4 years	2.7% to 3.5%
5 years	2.2% to 2.8%

Source: LECG analysis. The cost trend relates only to mail centre and delivery office labour costs and reflects savings in constant volume and constant mix terms.

- 20.120 Clearly, achieving current best practice over a shorter period would increase the annual rate of growth in efficiency. The converse is also true. On balance, we believe that Royal Mail should be able to achieve the savings over a four to five-year period. Both of these periods roughly coincide with the proposed length of the forthcoming price control period, depending on the date on which such savings are assumed to begin to be made. We believe that Royal Mail would not be able to achieve these savings over a three-year period.
- 20.121 Finally, it is important to recognise the following:

⁴⁶⁵ Labour costs are those provided by RM for the purpose of LECG's internal benchmarking analysis

⁴⁶⁶ Labour costs are those provided by RM for the purpose of LECG's internal benchmarking analysis

- our internal benchmarking assesses the potential for Royal Mail to lower costs by applying its *own current best practices* consistently across mail centres and delivery offices. It does not capture savings associated with moving Royal Mail's efficiency frontier by, for example, adopting international best practice, increasing the level of automation, switching to a part-time delivery model, etc;
- the benchmarking assumes that Royal Mail's current level of automation remains constant (i.e. cost savings come from increased labour productivity, not through capital substitution). Our analysis could be extended to assess total cost savings associated with changes in key variables; and
- high levels of sick leave, overtime rates, attrition are not correlated with efficiency. Consequently, the internal benchmarking savings we have identified will not double count any potential savings associated with lowering overtime, sickness absence or attrition rates.

20.122 Internal benchmarking provides us with a top-down measure for annual productivity improvements. As suggested above, it appears that savings of between 2.7% to 3.5% per year should be available over a four-year period, and savings of between 2.2% and 2.8% per year should be available over a five-year period. These rates are stated in constant volume and constant mix terms.

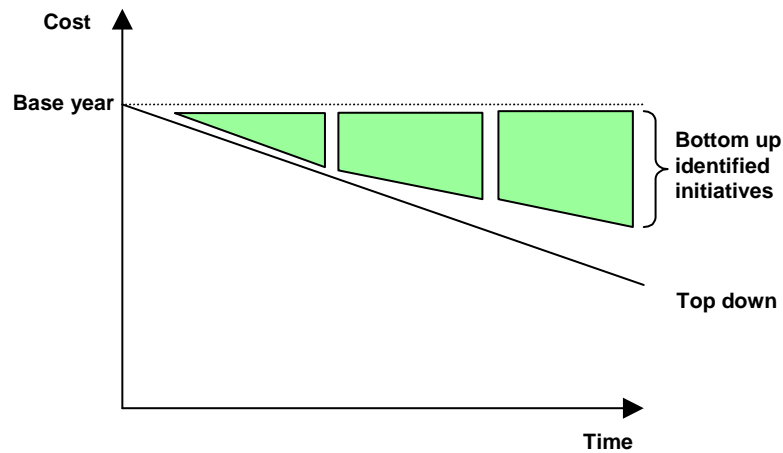
Part E: Top-down approaches

21 Estimating efficiency on a top-down basis

Introduction

- 21.1 This part of the report contains a range of top-down analyses, the results of which are summarised in this section. In the regulatory context top-down analysis typically takes the form of comparisons with aggregate cost data of other companies, either nationally or internationally. Internal benchmarking, also another form of top-down comparative analysis is discussed elsewhere in this report in Section 20.
- 21.2 Top-down analysis is necessary in cost efficiency studies because not all of the mechanisms available to the company for raising efficiency, or reducing costs, over a forward period can normally be foreseen at the start of that period. Looking at the sum of initiatives that can be identified at the outset of the price control period (which is the nature of the bottom-up analysis that we have carried out) may therefore understate the actual scope for forward efficiency gains.
- 21.3 Royal Mail's own experience in the current price control period bears this out, as discussed in Section 6 above. Although the original targets for the specific initiatives encapsulated in the Renewal Plan have not been met, the company has beaten the overall cost targets inherent in the price control. The implication is that additional initiatives, not specifically identified at the time the price control was set, have driven the additional gains.
- 21.4 Consequently, bottom-up estimates of the scope for efficiency gains are more likely to provide a lower limit to the actual scope. Looking at the problem on a top-down basis provides an alternative estimate of the scope for actual forward efficiency gains with which bottom-up estimates can be compared. In principle, neither of the two approaches has, or needs to have, primacy, although by its nature the bottom-up analysis is generally more comprehensive. Our overall conclusions from the two forms of analysis are brought together in Section 26.
- 21.5 The relationship between the two forms of analysis is shown graphically below:

Figure 12: Graphical representation of top-down and bottom-up approach



- 21.6 Although the top-down approach is represented above as producing a single trend estimate, we have in fact considered a range of different approaches each of which produces slightly different figures. We have used these to define the upper and lower limits of a range based on all of the available information and a judgement on what weighting should be attached to each methodology.

Analyses

- 21.7 We have used a number of different approaches, each of which is described in full in the sections which follow:
- Section 22 provides a summary of Royal Mail's historical cost trends, which we use to derive an underlying trend in the rate of productivity improvement. We compare Royal Mail's productivity over different periods and review the level of productivity growth that has been achieved over the current price control. The analysis suggests that economic regulation has had a positive impact on Royal Mail's performance – or at least that productivity growth has been faster during the period over which price controls have been in place.
 - Section 23 provides a summary of the level of efficiency that has been achieved in other regulatory sectors, and compares this to the efficiency targets that have been set by the relevant industry regulators. Comparisons with other regulated companies are commonly used to provide high-level indications of achievable trends in productivity growth.

- An alternative form of top-down efficiency analysis commonly used in the regulatory context is to use benchmark segmented productivity trends in comparable (generally unregulated) industry sectors – using TFP ratios. Section 24 compares productivity trends across comparable sectors using TFP ratios, and derives a composite estimate of the productivity gains achievable by Royal Mail. Royal Mail has carried out a similar exercise themselves, which we review and critique.
- Section 25 looks at efficiency trends across other international postal operators. The results are difficult to interpret, given the different stages that other operators are at in the liberalisation of their markets, and therefore used only to develop indicative trends as to what has been achieved elsewhere.

Findings

- 21.8 Top-down techniques distinguish between productivity, which captures the relationship between a given volume of inputs and a given volume of outputs, and operating efficiency, which identifies the relationship between the value of a given set of inputs and the volume of outputs. The key measure of productivity in such studies is TFP, which captures the relationship between volumes of all inputs (hours worked, capital inputs, etc) and volumes of all outputs.
- 21.9 Two ratios are typically used to capture operating efficiency: RUOE, which reflects total operating accounting costs (before depreciation) divided by the most relevant unit of output, expressed in real terms (i.e. discounted at the rate of the Retail Price Index); and RUOC, which is similar to RUOE but includes either depreciation or capital expenditure. In the calculation of RUOC ratios, if depreciation is used, it is assumed that this is a proxy for capital inputs. Care needs to be taken in comparing RUOC ratios to ensure they are calculated on a comparable basis⁴⁶⁷.
- 21.10 Europe Economics has developed a methodology to relate TFP trends to RUOC and RUOE trends, which we explain further in Section 24, but which can be summarised as shown below:

⁴⁶⁷ RUOC is sometimes used as a measure of total factor productivity. However, RUOC growth will differ from TFP growth by the level of whole-economy TFP growth, differences in input price growth between the relevant company and the economy as a whole, and differences in capital substitution rates in the firm or industry being considered from those in the economy as a whole.

- Firm RUOC growth = Firm TFP growth *less* economy-wide TFP growth *less* an input price adjustment; and
- Firm RUOE growth = Firm RUOC growth *plus* an adjustment for the degree of substitution from capital to labour.

21.11 Unit cost measures such as RUOE and RUOC may also be misleading in industries or for firms subject to economies of scale⁴⁶⁸. Economies of scale arise when the additional cost of producing an additional unit of output is less than the average cost of production for existing outputs. Hence, output growth can lead to unit cost reductions, which tend to overstate true efficiency improvements. The importance of these volume effects depends on both the elasticity of scale and the extent to which volumes have changed over the period concerned. The volume effect is commonly adjusted for using the following equation:

$$\text{Volume adjusted unit cost trend} = \text{Unadjusted unit cost trend} + [(1 - 1/\epsilon) \times \text{Annual change in output}]$$

21.12 In the equation above ϵ is the estimated cost elasticity⁴⁶⁹. The equation only approximates the underlying level of productivity – but works well for small changes in volume. For larger volume changes, the formula may understate the true rate of productivity improvement.

21.13 To allow comparability between our different findings, we have where possible used both RUOE and RUOC trends throughout the top-down analyses in order to drive comparability of results, and where relevant have adjusted for scale efficiencies by stating efficiency growth rates in constant volume terms. Our findings are presented below.

Historical cost trends

21.14 In Section 6, we reviewed Royal Mail's performance under the current price control. Implicit in the current price control is a target reduction in Royal Mail's RUOE ratio of around 5.1% per year, in constant volume terms over the period

⁴⁶⁸ Technically, there is a distinction between economies of scale and economies of density. Returns to density show what happens to unit costs when traffic increases on a fixed network, while returns to scale show what happens when network size and traffic both increase in the same proportion

⁴⁶⁹ For example, if the elasticity is 0.6, it means that if output increases by 10%, costs will increase by only 6%

2002/03 to 2005/06. Our analysis indicates that Royal Mail's costs in 2005/06 will be lower than anticipated at the time of setting the current price control.

- 21.15 The calculation of efficiency gains, however, appears to be biased by an over-estimation of costs in the year prior to the current price control (i.e. in 2002/03). Opening year costs were in fact lower than was assumed, and therefore, actual efficiency gains are also correspondingly reduced. Allowing for this, we estimate actual efficiency gains, on a volume adjusted RUOE basis, of approximately 2.9% per year, across the period 2002/03 to 2005/06 (refer to Section 6).
- 21.16 Prior to March 2001, when Postcomm was given responsibility for the independent economic regulation of the postal services market, Royal Mail had lower levels of RUOE (adjusted for volume effects) as shown by the first two lines of the table below.

Table 230: LECG Royal Mail historical RUOE trends

Cost measure	Source	CAGR	Constant Volume CAGR
RUOE 1996 to 1999/2000	WS Atkins	-2.6%	0.5%
RUOE 2000/01 to 2003/04	LECG	-2.5%	-1.5%
RUOE 2002/03 to 2005/06	LECG	-2.7%*	-2.9%
RUOE 2003/04 to 2005/06	Royal Mail	-4.7%*	-2.8%

Source: LECG analysis and Royal Mail data. Note * Forecasts based different volume forecasts. LECG forecast based on Postcomm's original volumes, which are assumed to decline. Royal Mail's forecasts are based on increasing volumes. We would expect the CAGRs in constant volume terms to be equivalent – which they are.

- 21.17 Since the introduction of economic regulation, Royal Mail's rate of volume-adjusted operating efficiency growth has increased, and Royal Mail's own projections anticipate a further increase in the period to 2005/06.
- 21.18 Royal Mail has faced limited competition since 2002/03 but will face greater levels of competition across its entire product range from January 2006. We anticipate an increasing focus on efficiency on the part of management as the scope of competitive pressure increases. As such, we believe that Royal Mail should *at least* be able to achieve savings, expressed in RUOE terms, of 2.9% (i.e. equivalent to what has been achieved over the current price control).

Trends in other regulated sectors

21.19 Comparisons with other regulated companies are commonly used to provide high-level indications of the scale of future efficiency savings. A summary of our findings is provided in the table below.

Table 231: Summary of cross sector regulatory efficiency savings

Benchmark	Range (CAGR)	Average (CAGR)	Average, constant volume* (CAGR)	Measure
Privatisation, competition and regulatory effect	1.25% - 3.5%	2.4%	2.4 %	RUOE – Europe Economics
Outturn regulated company savings*	1.6% - 8.8%	5.1%	4.8%	RUOE – Ofgem
Outturn regulated company savings*	3.4% - 6.0%	4.3%	4.0%	RUOE – CAA
Outturn regulated company savings*	0.7% - 9.4%	4.3%	4.0%	RUOC – Ofgem
Regulatory cost targets*	1.3% - 7.0%	2.8%	2.5%	Real controllable costs
Regulatory price targets*	2.9% - 6.0%	3.4%	3.1%	Average X / Po

Source: CEPA, Europe Economics, Frontier Economics and LECG analysis. Figures rounded to one decimal place. The range for regulatory price targets excludes WaSCs due to the distorting effect of high capital expenditure requirements. *Average is not the simple average of the high and low ends of the range presented in the table, but reflects the average of the full set of values within this range

21.20 Efficiency targets set by regulators tend on average to be lower than the cost reductions actually realised. We estimate that, across industries and across regulatory reviews, the efficiency targets incorporated into price controls have averaged some 2.5% per year in real constant volume terms. We estimate that actual cost reductions achieved, however, across the same periods and industries, have averaged between 4.0% and 4.8%, depending on precisely how they are measured.

21.21 It appears, therefore, that regulators have generally underestimated the scope for efficiency gains. This need not imply any weakness in the regulatory process – one of the original premises of RPI-X regulation is that it encourages companies to outperform against their efficiency targets.

- 21.22 In making comparisons between regulated companies it is necessary to consider the extent to which readily available efficiency gains have already been captured. The regulatory literature shows that significant catch-up efficiency gains have been achieved by regulated companies in the first five to ten years post privatisation and/ or the introduction of regulatory and competitive price pressures.
- 21.23 This effect is (perhaps misleadingly) termed the “Privatisation Effect”, and has been estimated at between 1.25% and 3.5% a year in RUOE terms. Although it is referred to as an effect of privatisation, it can also be understood as an effect of reduced efficiency incentives for firms in public ownership and facing weak competitive pressures. It is the removal of the resulting embedded inefficiency that has allowed the gains to be achieved post privatisation and liberalisation. Overall, therefore, we see no reason to suppose that similar catch-up efficiency gains should not be available to Royal Mail, regardless of its ownership structure.
- 21.24 The results historically achieved in other regulated sectors, in conjunction with the more one-off gains generally achieved in the first 5 to 10 years of price controls, suggest that annual unit cost savings (in RUOE terms) of between 3% and 4% have typically been achievable in firms that are moving to an efficient frontier after an extended period of public ownership and absence of price pressure.

Total factor productivity analysis

- 21.25 Another form of top-down efficiency analysis commonly used in the regulatory context is to estimate operating efficiency trends by deriving TFP trends in different sectors of the economy and then making appropriate adjustments to those TFP trends. We perform such an analysis in Section 24.
- 21.26 Our TFP analysis indicates that in the short- to medium-term, Royal Mail might be able to achieve RUOE savings of between 1.1% and 4.1% a year. On balance we expect that over the forthcoming price control, Royal Mail could achieve RUOE savings at or slightly above the average of this range.

International comparisons

- 21.27 Due to the significant issues that influence data comparability, it is not possible to perform meaningful comparisons of the absolute level of unit costs across international postal operators. Consequently, our analysis has focused on unit cost trends instead.

- 21.28 Overall, the average rate of productivity improvement across postal operators appears low – but we believe that the figure is biased by a number of operators starting from a relatively high level of efficiency, such as Denmark Post and Deutsche Post, and by a number of operators experiencing reductions in efficiency, as is the case (in the figures set out in a recent NERA study) for France, Portugal and Greece.
- 21.29 Productivity trends are also influenced by the stage of liberalisation of the postal market in the country under consideration. Comparing Royal Mail to countries at similar stages in the development of a competitive market suggests greater scope for savings. Other research suggests that, in anticipation of competition, Sweden Post achieved savings of approximately 9% annually over a four-year period and Deutsche Post has achieved cost savings of around 2.5% in constant volume terms.

Conclusions

- 21.30 On balance, we believe that the evidence suggests that productivity gains, on an RUOE basis and in constant volume terms, between 2.5% and 3.5% should be achievable over the forthcoming price control period. Evidence to support this range is provided below:
- we anticipate that RML's costs will be lower in 2005/06 than was envisaged by Postcomm at the time of the setting of the current price control. We estimate that the rate of efficiency, in RUOE terms, over the price control will be around 2.9% a year in constant volume terms;
 - the BPM indicates that Royal Mail is currently expecting RUOE reductions, in constant volume terms, of 2.8% per year from 2003/04 to 2005/06;
 - other regulated companies have achieved average annual RUOE reductions of between 4.0% and 4.8% across their respective periods since privatisation, in constant volume terms;
 - the so-called "Privatisation Effect" has recently been estimated at between 1.25% and 3.5% a year in RUOE terms by Europe Economics. Royal Mail is still – in comparison to other regulated companies – at an early stage in the liberalisation process. We anticipate that significant catch-up gains should still be available. After allowing for this, comparative TFP and

RUOE analysis suggests annual RUOE gains of up to 4% a year in constant volume terms should be achievable; and

- other analysis suggests that Deutsche Post achieved cost savings of around 2.5% in constant volume terms over the period 1998 - 2003.

21.31 Our top down conclusions are summarised in the table below. Numbers are expressed in constant volume and real terms.

Table 232: Summary of cross sector regulatory efficiency savings

Benchmark	RUOE trends
Royal Mail trends	2.9 %
Outturn regulated company savings	3.0% to 4.0%
Privatisation effect	1.25% to 3.5%
Total factor productivity	Slightly above 2.6%
International cost trend evidence	2.5%

Source: LECG

21.32 Across all of the regulated industries, significant opportunities for productivity gains have emerged in the periods immediately following the onset of price regulation, and when the prospect of competition has started to become real. These “catch-up” gains reflect the early identification and elimination of embedded inefficiency built up during the periods when the companies were under public ownership.

21.33 Royal Mail is different from other regulated companies in that it faces potential competition while under public ownership. That does not mean, however, that the scope for increasing efficiency is any less. We would anticipate that the opportunities for “catch-up” gains in efficiency are as real for Royal Mail as they have been for other regulated companies. As such, we believe that Royal Mail’s performance over the current price control, which coincides with a period of competitive pressures and price regulation, provides a lower bound for the level of efficiencies that can be expected over the forthcoming price control.

21.34 Cost control targets imposed by regulators are rarely welcomed by the companies they regulate, and are often described publicly by the regulated companies as

unachievable. Notwithstanding this, these targets are generally exceeded, as our analysis has shown. The average productivity gains achieved by other regulated companies are therefore instructive. We believe that this range should form the upper bound for the level of efficiencies that can be expected over the forthcoming price control.

- 21.35 On balance, the results of the comparative top-down analysis suggest an RUOE trend of between 3.0% and 4.0% a year in constant volume terms. These savings are in line with those achieved by firms in other regulated sectors moving to an efficient frontier after an extended period of public ownership and absence of price pressure. We have acknowledged in Section 16 above the particular complexities faced by Royal Mail in sustaining and improving labour relations through a period of potentially significant change. We regard our conclusions here as being responsive to those complexities.

22 Royal Mail historical cost trends

Introduction

- 22.1 In this section, we consider recent trends in Royal Mail's operating costs. Specifically we summarise our approach to performing historical cost analysis and the recent trends in Royal Mail's operating expenditures. We then summarise Royal Mail's projected and actual operating efficiency under the current price control. More detailed analysis of Royal Mail's performance under the current price control is provided in Section 6.

Approach

- 22.2 Historical trend analysis of Royal Mail's regulated business is complicated by changes to Royal Mail's cost allocation methodology; changes in the format and structure of the Regulatory Accounts; and changes to volume measurement. The way in which we have dealt with each is summarised below.

Cost allocation

- 22.3 Royal Mail made a number of changes to its costing allocation methodology during 2004, in response to organisational changes and the implementation of a new information technology system. Changes include, among others: an expansion of the activity dictionary to include, for example, Logistic Solutions' activities; the introduction of new cost types to meet business information requirements; and changes to the cost allocation methodology for certain activities (e.g. the driver for non-attributable costs has changed from equi-proportional mark-ups to volume).
- 22.4 Royal Mail acknowledges that these changes have altered the allocation of costs to products and activities – and as such complicate the analysis of unit cost trends at the activity level. At LECG's request, Royal Mail has restated prior year costs, at a high level, for material changes in the cost allocation methodology. This has allowed prior year activity costs to be compared to activity costs in 2003/04, on a relatively consistent basis. However, given the difficulties involved in accurately restating historical numbers, the resulting trends can only be regarded as indicative.
- 22.5 Historical trends in activity costs are provided in Appendix 3. Royal Mail has indicated that the analysis covers total operating costs before exceptional items

for the UK Letters business. For 2002/03 and 2003/04 the total reconciles directly to Total Mails in the 2003/04 Regulatory Accounts. Reconciling figures for 2001/02 and 2002/03 has not been possible for reasons outlined in the next section. A commentary on cost trends at the activity level is provided in Part C of this report. In this section, we concentrate on cost trends at a higher level of aggregation.

Regulatory accounts

- 22.6 The 2003/04 Regulatory Accounts are the fourth set of statements prepared for submission to Postcomm. Royal Mail is required, under Condition 14 of the licence granted by Postcomm on 23 March 2001, to provide regulatory financial statements. We understand that Postcomm has agreed the broad basis of preparation and the format of the accounts⁴⁷⁰.
- 22.7 During 2003/04, Royal Mail changed the format and required disclosures of the Regulatory Accounts. Postcomm agreed these changes. In the 2003/04 regulatory financial statements, revenues and costs are given for four different product scopes:
- **Total USO** covers all products and services which form part of the USO as stated under Condition 2 of Royal Mail's licence;
 - **Total Price Control Products** covers postal products and services which are regulated under Condition 19 of Royal Mail's licence;
 - **Other Letter Products** covers postal products and services outside of the USO and the price control, such as door-to-door; and
 - **Total Mails** covers total USO, price control products and other letter products.
- 22.8 Certain products and services are included in both Condition 2 and Condition 19 – and therefore, the Total Mails total is not derived through the simple addition of Total USO and Total Price Control. Appendix 1 provides an overview of the relationship between USO, price-controlled and other products and services, and explains which products and services fall into each category.

⁴⁷⁰ Postcomm has agreed the breakdown of costs and revenues in the accounts as suitable for Regulatory Accounts presentation purposes. We understand, however, that more information would be required for complex decisions on issues such as cost allocation

- 22.9 The table below summarises the reported costs contained within the 2003/004 Regulatory Accounts. Total Mails for 2003/04 is the aggregation of Total Price Control, Other letter products and USO non-price control products.

Table 233: Regulated opex, before exceptional items

£m, nominal	Total USO	Total Price Control	Other Letter Products	Total USO Non Price Control	Total Mails
2003/04	5,480	5,502	414	179	6,095
2002/03	5,510	5,433	363	245	6,041

Source: Royal Mail's Regulatory Financial Statements 2003/04, 2002/03 has been restated in 2003/04 accounts. Notes: Total USO includes £245m (2002/03) and £179m (2003/04) of USO Non Price Control products and services. Total Price Control includes £168m (2002/03) and £201m (2003/04) of non-USO Price Control products and services.

- 22.10 Royal Mail's 2003/04 Regulatory Accounts are stated excluding non-postal services, such as those provided by the Post Office® and Parcelforce. To derive a comparable dataset, all non-letter services must be excluded from historical Regulatory Accounts. Unfortunately, the 2000/01 and 2001/02 statements include parcel related costs within Non Licensed Non USO products and services. At this stage, Royal Mail has been unable to provide us with the historical level of parcel costs. Consequently, we have been unable to use the Regulatory Accounts as the basis for historical trend analysis.
- 22.11 In note G to the 2003/04 accounts, Royal Mail states: *"Royal Mail continues to develop its information systems and data sources. The accuracy of information has continued to improve during the year and further improvements will be made in future years. Prior year information has not been restated to reflect these improvements. As a consequence of these improvements in costing methodologies and data accuracy, results may not be directly comparable."*
- 22.12 Due to this limitation, we have used figures produced by Postcomm as the basis of our historical cost trend analysis. The operating costs presented below cover Royal Mails' regulated activity costs as prescribed in Condition 2 and 19 of Royal Mail's license (i.e. excluding Non-USO Non-Price Control products). This definition is consistent with how Postcomm currently defines Royal Mail's regulated business.

22.13 The table below shows Royal Mails' historical total operating cost trends in real terms. Operating costs are shown in 2003/04 prices.

Table 234: Regulated opex excluding depreciation

£m, 2003/04 prices	2000/01	2001/02	2002/03	2003/04	CAGR
Operating costs including exception items	5,840	6,372	6,226	5,661	-1.0%
Operating costs excluding exceptional items	5,840	6,047	5,769	5,596	-1.4%

Source: Postcomm analysis and 2003/04 RM Regulatory Accounts. Notes: Exceptional items have been apportioned from the Regulatory Accounts to approximate to the price controlled area. Exceptional items include items such as redundancy provisions, restructuring costs, property provisions and impairment write-downs. Postcomm has historically approximated regulated activities as USO & Presstream products.

22.14 Total operating costs in 2001/02 appear to increase, due to both an upward trend in volumes and allowances for Royal Mail's Renewal Plan.

Volume levels

22.15 Mail is counted on the outward sortation, following arrival at the mail centre. These volumes are referred to as "operational volumes" and are stated in Royal Mail's Regulatory Accounts.

22.16 Postcomm's September consultation paper noted that Royal Mail's method for counting the volume of mail that it handles tends to overstate the actual amount, when compared with the number of mail items actually paid for. A volume measure called "revenue equated volumes" eliminates this overstatement⁴⁷¹. Where possible, revenue equated volumes are used throughout this document. The table below summarises the volumes used in this section:

⁴⁷¹ RM derived calculation based on estimated average revenues for each product. Operational volumes can be overstated as they are based on operation site figures, which are not audited. We understand that volume based incentives may also place an upward bias on operational volume measures

Table 235: Revenue derived volumes for RML's regulated business

	2000/01	2001/02	2002/03	2003/04	CAGR
Revenue derived mail volume (millions)	19,918	20,746	20,447	20,856	1.5%

Source: Postcomm analysis. Note 2001/02 was a 53-week year. Mail volumes are therefore higher

- 22.17 Volumes include all USO products and Presstream. Postcomm has used this historically as an approximation to the regulated area.

Historical operating cost trends

- 22.18 Top-down techniques commonly use ratios as an indicator of productivity. The RUOE ratio is one such indicator. This ratio is expressed before depreciation. An alternative measure is RUOC, which includes either depreciation or capital expenditure. If depreciation is used, it is assumed that this is a proxy for capital inputs. RUOC trends are related to TFP trends, although adjustments are typically needed to infer one from the other.
- 22.19 The table below shows the inflation index we have used to convert nominal prices to real terms. Unit costs are stated in 2003/04 prices.

Table 236: Inflation Index

	2000/01	2001/02	2002/03	2003/04
Inflation index	171.3	173.9	177.5	182.5

Source: National Statistics Online. Monthly index numbers of retail prices 1948-2004. 1987=100. Index based average yearly RPI including mortgage interest. Consistent with Royal Mail's submission RM 6056, Movement related to cost allocation, 15 October 2004.

- 22.20 We have used the level of operating costs stated in Table 234 above divided by volumes as stated in Table 235 to derive RUOE for Royal Mail's regulated business. The table below shows Royal Mails' RUOC trend between 2000/01 and 2003/04.

Table 237: RUOE for RML's regulated business in 2003/04 prices

	2000/01 £	2001/02 £	2002/03 £	2003/04 £	CAGR
RUOE including exceptional items	0.293	0.307	0.304	0.271	-2.5%
RUOE excluding exceptional items	0.293	0.291	0.282	0.268	-2.9%

Source: LECG analysis. Figures exclude depreciation

22.21 Royal Mail's RUOE before exceptional items has fallen by an average of 2.5% per annum in real terms. Excluding exceptional items, Royal Mail's real unit operating RUOE costs have fallen by approximately 2.9% in real terms.

22.22 We have assumed throughout that Royal Mail has a cost elasticity equal to 60%⁴⁷². We believe that this is consistent with Royal Mail's own conclusions on volume variability⁴⁷³.

22.23 Adjusting for volume, using a cost elasticity of 60%, we estimate that RUOE has fallen by 1.9% per annum, excluding exceptional items, and by 1.5% per annum, including exceptional items. Given the range of supporting estimates, it is possible that Royal Mail understates the true level of cost elasticity. If the true cost elasticity were higher than estimated by Royal Mail, then we would make a smaller adjustment to calculate Royal Mail's efficiency gains in constant volume terms.

WS Atkins unit cost trends

22.24 The WS Atkins Report included historical unit cost trend analysis for the period 1996/97 to 1999/00. The figures are stated after depreciation. However, WS Atkins was not explicit in defining the scope of Royal Mail business covered by the analysis. There is evidence to suggest that it relates to the "Inland letters

⁴⁷² When converting to constant volume terms in other industry sectors (i.e. which we do in later sections) we have used a different cost elasticity factor of 90%. The estimation of scale economies in most sectors is not straightforward, and to date it appears limited research has been conducted in this area by UK regulators. Work done, for example, for the ORR, comparing reductions in operating expenditure across sectors, has relied on an assumption that the scale elasticity is 90%. This assumption is consistent with the assumption used by Royal Mail in its assessment of TFP (Royal Mail document 3106). CEPA has followed a similar approach to other sectors in its review of distribution network operators

⁴⁷³ Comparative analysis and trend analysis efficiency paper, RM, page 14, reference 3106

business⁴⁷⁴. The table below summarises the unit costs put forward by WS Atkins.

Table 238: Real unit cost trends 1996/97 to 1999/00

	1996/97	1997/98	1998/99	1999/00	CAGR
RUOE	0.26	0.25	0.25	0.24	-2.6%

Source: "An Efficiency Study of Consignia's Inland Letters Business", WS Atkins Report. LECG analysis

22.25 Unit costs declined steadily between 1996/97 and 1999/00, by approximately 2.6% per annum. Over that period, volume growth was of the order of 4.7% per annum (for all inland letters plus international letters)⁴⁷⁵. This is equivalent to an increase in RUOE of approximately 0.5% between 1996/97 and 1999/00 in constant volume terms.

22.26 We have been unable to reconcile the total costs or volumes used by WS Atkins to any information available to us. We have no reason to believe that the cost data presented by WS Atkins are misstated. It is possible that the scope of business covered by WS Atkins' analysis differs from LECG's definition of regulated activities. Small differences in scope are unlikely to yield significantly different estimates of productivity over the period, so we assume that the unit cost trend analysis shown in Table 238 above is representative of the performance of Royal Mail's regulated activities between 1996/97 and 1999/00.

Summary of RUOE cost trends

22.27 The table below summarises RUOE trends for Royal Mail between 1989 and 2004:

⁴⁷⁴ Atkins also states that the figures for 2000/01 were for the new Service Delivery, Business and Consumer Markets and Media Markets business units

⁴⁷⁵ Royal Mail's Annual Report and Accounts 2000/01

Table 239: Summary of RM's historical RUOE including exceptional items

Period	Analysis	RUOE	Volume adjusted RUOE
1996/97 to 1999/00	WSA	-2.6%	0.5%
2000/01 to 2003/04	LECG	-2.5%	-1.5%
Time weighted average, 1996-2004		-2.6%	-0.5%

Source: LECG analysis

- 22.28 Royal Mail's RUOE has declined steadily since 1996. In constant volume terms, operating costs have declined by 0.5% in real terms over the period. In constant volume terms, RUOE has declined at a higher rate of 1.5% a year since 2000/01.
- 22.29 Royal Mail has also provided us with summary trend analysis. Royal Mail states⁴⁷⁶ that over the period 1989/99 to 2003/04 there has been a steady reduction in the cost per letter of about 1.2% per annum, due to operating cost increases of 2% per annum on addressed letter volume growth of 3.2% per annum⁴⁷⁷. Given real wage inflation over the period of about 0.8%, Royal Mail concludes that the average level of annual productivity was about 1% over the 10-year period to 1999/00, but only 0.3% in the subsequent period to 2003/04.
- 22.30 The above conclusion suggests that recent productivity gains have been lower than the historical trend. This is at odds with our operating efficiency figures in Table 239 above. We believe the explanation for this discrepancy lies in a comment by Royal Mail that the year 1999/2000, for which we have no data on a comparable basis, saw a poor productivity performance⁴⁷⁸. Our use of 2000/01 as our start date for the trend in the table above excludes this year of poor performance, and we therefore derive a stronger trend in operating efficiency.
- 22.31 This conclusion is supported in another Royal Mail submission, where it argues that the Renewal Plan has enabled Royal Mail to improve productivity. Between

⁴⁷⁶ Comparative analysis and trend analysis efficiency paper, RM 3106

⁴⁷⁷ RM has not provided support for its calculations

⁴⁷⁸ Comparative analysis and trend analysis efficiency paper, RM 3106

2001 and 2003, Royal Mail reduced the real cost per addressed item by 2.4% per annum (or about 1.75% in constant volume terms)⁴⁷⁹.

22.32 It is also worth noting that Royal Mail's BPM also forecasts unit operating cost reductions over the period 2003/04 to 2005/06. The table below shows this trend.

Table 240: BPM forecast operating costs for 2003/04 to 2005/06

	2003/04	2004/05	2005/06	CAGR
Nominal opex	6,144.8	6,078.9	6,264.6	1.0%
Inflation index	100.0	103.2	106.0	2.9%
Real opex	6,144.8	5,890.4	5,910.0	-1.9%
Volumes	24,147.1	24,837.7	25,557.8	2.9%
Unit opex	0.254	0.237	0.231	-4.7%

Source: RM 2023a BPM2_v2.7. Opex costs stated before depreciation and after one-off costs

22.33 The BPM forecasts a decline in RUOE at a rate of 4.7% per year (or 2.8% a year in constant volume terms).

Historical RUOC trends

22.34 This section provides an overview of RUOC trends within Royal Mail's Letters business for the period 2000/01 to 2003/04. For the purposes of this sub-section, RUOC refers to operating expenditure plus capital expenditure rather than any other measure of capital inputs. The table below shows capital expenditure by asset category for the period in 2003/04 prices.

⁴⁷⁹ Mckinsey International Benchmarking, page 7, RM 3094a (percentage changes assumed to be cumulative over two years, not per year)

Table 241: Historical RML capital expenditure spend for 2000/01 to 2003/04

	2000/01 million	2001/02 million	2002/03 million	2003/04 million	Average
Land & Buildings	81	100	59	63	76
Plant & machinery	100	37	73*	46	64
Motor Vehicles	21	30	6	4	15
Other	11	16	-	7	11
Total	213	183	138	120	163

Source: RM 4038, Royal Mail Capital Investment and RM 6097, Costing – Follow up to Base Year working session. Note: *Includes Other

22.35 Overall total capital spend has fallen by around 17.3% over the period in real terms. On average, Royal Mail spent £163m per annum over the period. We have asked Royal Mail to explain movements in capital expenditure levels. Royal Mail has yet to explain the significant decline in capital expenditure over the period.

22.36 In the table below, we combine both operating cost and capital expenditure trends and consider productivity in terms of real unit operating costs (i.e. RUOC).

Table 242: RM's historical RUOC trend

	2000/01	2001/02	2002/03	2003/04	CAGR
Operating expenditure	5,840	6,047	5,769	5,599	-1.4%
Capital expenditure	213	183	138	120	-17.3%
Total	6,053	6,230	5,907	5,719	-1.9%
Volume	19,918	20,746	20,447	20,856	1.5%
RUOC	0.304	0.300	0.289	0.274	-3.4%

Source: RM 4038, Royal Mail Capital Investment and RM 6097, Costing – Follow up to Base Year working session and Document 208, Postcomm. RUOC uses capex as a proxy for capital inputs to production.

22.37 Since 2000/01, Royal Mail has reduced unit operating and capital expenditure at a rate of 3.4% per year (or 2.4% in constant volume terms).

Conclusion

- 22.38 In Section 6, we reviewed Royal Mail's performance under the current price control. Implicit in the current price control is a target reduction in Royal Mail's RUOE ratio of around 5.1% per year, in constant volume terms over the period 2002/03 to 2005/06. Our analysis indicates that Royal Mail's costs in 2005/06 will be lower than anticipated at the time of setting the current price control.
- 22.39 The calculation of efficiency gains, however, appears to be biased by an over-estimation of costs in the year prior to the current price control (i.e. in 2002/03). Opening year costs were in fact lower than was assumed, and therefore, actual efficiency gains are also correspondingly reduced. Allowing for this, we estimate actual efficiency gains, on a volume adjusted RUOE basis, of approximately 2.9% per year, across the period 2002/03 to 2005/06 (refer to Section 6).
- 22.40 Prior to March 2001, when Postcomm was given responsibility for the independent economic regulation of the postal services market, Royal Mail had lower levels of RUOE (adjusted for volume effects) as shown by the first two lines of the table below.

Table 243: LECG Royal Mail historical RUOE trends

Cost measure	Source	CAGR	Constant Volume CAGR
RUOE 1996 to 1999/2000	WS Atkins	-2.6%	0.5%
RUOE 2000/01 to 2003/04	LECG	-2.5%	-1.5%
RUOE 2002/03 to 2005/06	LECG	-2.7%*	-2.9%
RUOE 2003/04 to 2005/06	Royal Mail	-4.7%*	-2.8%

Source: LECG analysis and Royal Mail data. Note * Forecasts based different volume forecasts. LECG forecast based on Postcomm's original volumes, which are assumed to decline. Royal Mail's forecasts are based on increasing volumes. We would expect the CAGRs in constant volume terms to be equivalent – which they are.

- 22.41 Since the introduction of economic regulation, Royal Mail's rate of volume-adjusted operating efficiency growth has increased, and Royal Mail's own projections anticipate a further increase in the period to 2005/06.
- 22.42 Royal Mail has faced limited competition since 2002/03 but will face greater levels of competition across its entire product range from January 2006. We anticipate

an increasing focus on efficiency on the part of management as the scope of competitive pressure increases. As such, we believe that Royal Mail should *at least* be able to achieve savings, expressed in RUOE terms, of 2.9% (i.e. equivalent to what has been achieved over the current price control).

23 Historic efficiency trends in other regulated sectors

Introduction

- 23.1 Comparisons with other regulated companies are commonly used to provide high-level indications of the scale of potential future efficiency savings. In this section, we summarise the efficiency savings that have been achieved in other UK regulated sectors. These outturn efficiency savings are then compared to the relevant efficiency targets set by UK sector regulators.

Historical efficiency in other regulated sectors

- 23.2 The results of aggregate savings achieved by regulated utilities have been published in a number of price control reports. This section provides a summary of this work. Where appropriate, we have updated the underlying analysis. The table below summarises the compound annual rate of changes in RUOE and RUOC for a number of regulated UK industry sectors and companies since privatisation.

Table 244: Compound RUOE & RUOC growth, not volume-adjusted

Regulated Company	Start point for trend	RUOE	RUOC
BT (Ofstel / Ofcom)	1984	-3.7%	-4.0%
BAA (CAA)	1987	-1.6%	-1.3%
Electricity Distribution (Ofgem)	1990	-5.6%	-4.6%
Electricity Transmission (Ofgem)	1991	-6.7%	-4.0%
Gas Transportation & Distribution	1990	-8.8%	-9.4%
Railtrack 1 (ORR)	1996	-7.3%	-6.3%
Railtrack 2 (ORR) ⁴⁸⁰	1996	-1.8%	-0.7%
Water and Sewerage (Ofwat)	1989	-2.9%	NA
Average		-4.8%	NA
Average excluding water & sewerage		-5.1%	-4.3%

Source: Transco Price Control Review for 2002-7 – Report for Ofgem, Mazars, Neville, Russell, September 2001, Appendix D. In many cases above, the start date refers to the year of privatisation

⁴⁸⁰ The ORR provides two different estimates for Railtrack based on two alternative measures of output

- 23.3 The average compound reduction of the whole sample excluding water and sewerage companies is 5.1% in RUOE terms and 4.3% in RUOC terms⁴⁸¹. Adjusting for the impact of economies of scale gives an average RUOE reduction of 4.8% a year and an average RUOC reduction of 4.0% a year⁴⁸².
- 23.4 This result is consistent with a recent study conducted for Ofwat by Europe Economics⁴⁸³. They conclude that *“the evidence from analysis of UK regulated firms suggest that savings of the order of 3 per cent to 5 per cent per annum in real operating expenditure have been achieved since privatisation”*.
- 23.5 This view is also supported by Frontier Economics in its report on the impact of liberalisation on efficiency⁴⁸⁴. It concludes, *“when capital inputs are taken into account, real unit cost reductions are generally lower. This is consistent with the view that some degree of substitution of capital for labour inputs has occurred in these sectors over the period since privatisation. Nevertheless, substantial average annual cost reductions have been made. On balance we believe that this evidence is consistent with medium-term unit reductions relative to RPI of between 2% and 7% per year, for a constant level of service quality cost (and including capital inputs)”*.
- 23.6 Royal Mail stated in April 2002 that it believed this range is overstated. Frontier Economics responded to Royal Mail's concerns in May 2002. For the reasons put forward by Frontier Economics, we do not think the range is overstated⁴⁸⁵.
- 23.7 The CAA⁴⁸⁶ presents similar figures to those above, although in constant volume terms, the CAA's average RUOE growth is 3.2%, which is lower than the figure in

⁴⁸¹ We have excluded water and sewerage companies for two reasons. First, there is limited scope for competition in the water sector, which will reduce the scope for efficiency gains. Second, the water industry made very significant investments during the 1990s for quality reasons, which inflated costs in this industry without commensurate increases in output.

⁴⁸² Refer to paragraph 21.11. We have assumed a scale elasticity of 0.9 and volume growth in line with real long-run GDP growth of 2.25%

⁴⁸³ Scope for Efficiency Improvement in the Water and Sewerage Industries, Final Report, Europe Economics, March 2003

⁴⁸⁴ The Impact of Liberalisation on Efficiency, Frontier Economics, prepared for Postcomm January 2002. Page 30

⁴⁸⁵ Response to Consignia's comments, Frontier Economics, May 2002, page 12

⁴⁸⁶ Supporting paper 4: Top-down efficiency analysis, CAA, November 2004

Table 244. The CAA's figures exclude data for the gas transportation and distribution industry and use different start and end dates⁴⁸⁷.

Table 245: Compound annual RUOE reductions

Regulated Company	Period	RUOE reductions	RUOE adjusted for volume growth
Water	1992/03-2001/02	2.5% to 2.6%	2.5% to 2.6%
Sewerage	1992/93-2001/02	0.1% to 0.9%	0.0% to 0.9%
Electricity distribution	1990/91-2000/01	3.4% to 4.1%	3.1% to 3.8%
NGC	1990/91-2001/02	4.9% to 6.0%	4.6% to 5.7%
NIE	1992/93-1999/00	4.4%	3.9%
BT (exchange lines)	1990/91-2000/01	3.5%	3.4%
Average		3.4%	3.2%
Average excluding water and sewerage industries		4.3%	4.0%

Source: "Supporting paper 4: Top-down efficiency analysis", CAA, November 2004.

23.8 The above tables provide an indication of the cost reductions achieved by regulated utilities after the introduction of extensive and independent regulation and, in most cases, post privatisation and post market liberalisation.

23.9 There are two components underlying these reductions: one derives from to the achievement of long-term efficiency gains, similar to companies in non-regulated sectors, and the other relates to the effects of privatisation and the introduction of effective regulation and competition, which generally provide increased opportunities to make cost savings. We discuss each of these effects in the sub-sections below⁴⁸⁸.

Long-term gains

23.10 The table below provides a summary of efficiency gains for the UK economy.

⁴⁸⁷ Water and sewerage companies have been excluded for reasons set out above. Including gas and distribution would increase the average

⁴⁸⁸ The conclusions in the next sub sections are used extensively in the next section on total factor productivity

Table 246: UK economy TFP growth rates (volume-adjusted)

Period	Total factor productivity (annual growth)
UK 1974-1999	1.36%
UK 1995-1999 (down cycle period)	0.67%
UK Economy CEPA forecast 2005-2010	1.30%

Source: "Productivity Improvements in Distribution Network Operators", Cambridge Economic Policy Associates, November 2003, pages 24 to 26. Underlying data is the NISEC02 data set from NIESR

23.11 Alternative estimates by industry are provided in the table below.

Table 247: Annual sector TFP trend growth estimates, volume-adjusted

Sector	1974-1999	1990-1999
Coal & petroleum products	1.7%	3.3%
Chemicals & allied products	1.9%	1.3%
Basic metals & fabricated metal products	2.1%	0.7%
Tool machinery equipment	2.0%	1.8%
Textiles, clothing & leather	1.8%	1.0%
Food, drink & tobacco	1.0%	0.5%
Other manufacturing	1.8%	-0.2%
Agriculture, forestry & fishing	1.9%	0.7%
Mining & extraction	0.3%	4.6%
Electricity, gas & water	2.0%	3.2%
Manufacturing	2.1%	1.3%
Construction	1.7%	1.2%
Transport & communications	2.1%	3.8%
Distributive trades	0.4%	0.6%
Financial & business services	0.2%	0.9%
Miscellaneous	0.1%	0.5%
Non-market services	0.6%	2.3%
Total economy	1.1%	1.2%

Source: "Productivity Improvements in Distribution Network Operators", Cambridge Economic Policy Associates, November 2003, page 48.

23.12 For the purposes of the remainder of this report, we adopt CEPA's forecast of a long-run trend in UK TFP of 1.3% a year. For reasons set out in the next section, this is a more conservative assumption with respect to estimating efficient cost reductions that could be made by Royal Mail during this efficiency review. Note that these figures are expressed in TFP terms, and not in RUOE terms.

Privatisation, regulation and competition effects

- 23.13 There is a considerable debate around translating estimates such as those in the table above into the X of the RPI-X framework – in part because they reflect the future long-term efficiency gains of companies that are *already* close to the efficiency frontier as they generally operate in well-established competitive markets⁴⁸⁹.
- 23.14 This approach to setting X is only appropriate when company costs have converged to an efficiency frontier. Where companies are not on their efficient frontier, X should be based on the scope for further cost reductions (i.e. catch up efficiency gains) as well as on the scope for underlying long run efficiency gains. Such comparators can then be seen as representing the minimum bound for appropriate X factors⁴⁹⁰.
- 23.15 The term ‘privatisation effect’ is often used as shorthand for the combined impact on firms of privatisation, introduction of regulatory price pressure, and/ or exposure to competition. Economists have found it is difficult to disentangle the effects of a change in ownership (privatisation) from the effects of regulatory price pressure and/ or increased competition, as these changes have typically affected regulated sectors over the same period. For this reason, use of the term ‘privatisation effect’ has persisted, despite its misleading nature.
- 23.16 The regulatory literature shows that the ‘privatisation effect’, in the form of catch-up efficiency gains by regulated companies in the first five to ten years post privatisation, introduction of regulatory price pressure, and/ or exposure to competition, is significant. Europe Economics⁴⁹¹ has found that “*privatised infrastructure companies have reduced unit-operating expenditure by some 1.25% to 3.5% per annum more than might have been expected in the absence of a privatisation effect. The privatisation effect arises from a catch-up of whole industries towards greater efficiency following privatisation and the introduction of incentive regulation.*”

⁴⁸⁹ Technically, we are interested in out-performance and not raw levels of TFP growth. These concepts are explained further in Section 22.38.

⁴⁹⁰ Productivity improvements in Distribution Network Operators, CEPA, November 2003.

⁴⁹¹ Scope for Efficiency Improvement in the Water and Sewerage Industries, Final Report, Europe Economics, March 2003, page 1

- 23.17 To the extent that economists have been able to disentangle the various elements of the 'privatisation effect', there is widespread agreement that exposure to price pressure through effective regulation and/ or competition, rather than the change of ownership implied by privatisation, is the key driver in affecting the efficiency performance in regulated industries. NERA⁴⁹² in a review of a number of studies of privatised firms finds that both theory and evidence support the idea that the most important influence on cost efficiency is competition in the product market. This is also consistent with evidence from other industries⁴⁹³.
- 23.18 An implication of the literature is that where competition has been lacking and regulation insufficient, efficiency may not have improved as fast as if competitive pressure had been present.
- 23.19 This view is shared by Frontier Economics. It concludes⁴⁹⁴ "*the evidence from the economic literature and data analysis of the performance of former monopolies operating in a newly liberalised market suggests a powerful effect of liberalisation on efficiency*" and "*we find that there is significant support for the argument that these policy shocks [namely a change of ownership and regulation] stimulate efficiency improvements, although probably not as great as the effect of liberalisation*". Royal Mail disputes this finding. Frontier Economics has responded to Royal Mail on this issue. For the reasons put forward in its response, we agree with the findings of Frontier Economics⁴⁹⁵.
- 23.20 Regardless of the relative importance of the effects of privatisation, introduction of regulatory price pressure, and/ or exposure to competition, it is clear that firms that have been in public ownership and not subjected to effective competition or regulation are typically some distance from their efficient cost frontier. The implication for this price control is that Royal Mail (which is in public ownership and whilst it has been subjected to a form of price control since 2001, it has only been subjected to fully-considered incentive-based regulatory price pressure since April 2003) is also likely to remain at some distance from its efficient cost frontier. We return to this point in the next section.

⁴⁹² The Performance of Privatised Industries: Efficiency, Volume 3, A Report on the Centre of Policy Studies

⁴⁹³ For example, see 'Efficiency in Manufacturing and the Need for Global Competition', Baily and Gersbach, *Brooking Papers on Economic Activity: Microeconomics*, pages 307-358

⁴⁹⁴ The Frontier Economics Report

⁴⁹⁵ Response to Consignia's comments, Frontier Economics, May 2002

- 23.21 A number of studies perform a robust quantification of these privatisation, regulation and competition effects. The findings of these studies tend to be expressed either in TFP terms, or in RUOE/RUOC terms.
- 23.22 Europe Economics' study for Ofwat in March 2003 is perhaps one of the most comprehensive. Europe Economics performed a thorough review of the literature relating to privatisation, regulation and competition effects in regulated industries in the UK. It concluded that privatisation leads to efficiency gains once regulation has become effective, but that the impact can be mixed across different firms. In the absence of sufficient pre-existing evidence, Europe Economics performed its own analysis to determine the privatisation effect on real unit operating costs in the water and sewerage industry.
- 23.23 Europe Economics calculated medium-term (roughly 10-year) volume-adjusted RUOE trends for firms in the water industry, and in privatised industries with similar network infrastructures to the water industry – these were found in the electricity, sewerage, rail and telecoms industries. Europe Economics observed “a central range of 3 to 5 per cent per annum RUOE reduction is a fair interpretation of the data”⁴⁹⁶. It concluded that UK regulated infrastructure firms had achieved savings of this magnitude since privatisation. Europe Economics then calculated a long run RUOE trend for the water and sewerage industries of 1.5% to 1.75% a year (using a nature of work comparison), and inferred that the residual RUOE productivity growth of 1.25% to 3.5% a year was attributable to the privatisation and liberalisation effects across their entire sample of regulated firms⁴⁹⁷. LECG's own analysis supports a privatisation effect of this level.
- 23.24 Europe Economics concluded that this range was not directly applicable to RUOE in the water and sewerage industries for the years following 2003, as it was likely to pick up ‘easy win’ productivity gains and exceptionally high rates of capital substitution available to firms in the first few years following privatisation/deregulation which were unlikely to be available to the water or sewerage industries after 2003. Europe Economics therefore identified a low end estimate for RUOE after 2003 by arguing that there is at least some scope for minimal catch-up of efficiency in the water industry over the 10 years following 2003, which it estimated at 0.5% a year. Europe Economics identified an upper bound

⁴⁹⁶ Europe Economics, March 2003, page 44

⁴⁹⁷ Europe Economics, March 2003, page 87

of 2.5% a year for the water industry by arguing that the 3.5% upper bound of historic observed privatisation effects is likely to be inflated by two effects, and should be adjusted downwards:

- the first effect reflects a number of cases of 'easy wins' in newly privatised industries. Given that the water industry was privatised in 1989, these 'easy wins' are no longer likely to be available to the water industry; and
- the second effect relates to high levels of capital substitution in the industries used to derive the 3.5% figure. Europe Economics did not believe such high rates of capital substitution would be available to firms in the water and sewerage industries.

23.25 We believe that Royal Mail is in the early stages of making the transition from an inefficient, publicly owned organisation without significant price or competitive pressures from more efficient privately owned organisations. Consequently, as with other recently privatised industries there should be a number of 'easy wins' available to Royal Mail. It is also the case that, despite the fact that even fully-invested mail businesses are inevitably labour intensive, Royal Mail does face opportunities for capital substitution, as discussed in Section C. We believe that the 1.25% to 3.5% a year range for an RUOE 'privatisation effect' is applicable to Royal Mail.

23.26 We would expect privatisation and the introduction of effective regulation and/ or competition to have a greater impact on RUOE trend improvements than on TFP trend improvements. This is for two reasons. First, RUOE trend improvements are typically higher than TFP trends because all firms typically make some substitution from capital to labour over time, and while the reduced operating costs arising from this additional substitution are reflected in both of these measures, the related capital costs are not reflected in RUOE trends. Second, firms that have been in public ownership and not subject to price or competitive pressures may be under-capitalised, and so have scope for making substitution from capital to labour in excess of the economy as a whole.

23.27 Partly with the above point in mind, Europe Economics updated its estimates of the privatisation effect in the water and sewerage industries in November 2003. Europe Economics looked specifically at the historic TFP (as opposed to RUOE as shown above) privatisation effects relating to the UK electricity and water industries, making explicit assumptions with respect to the level of substitution of

capital for labour⁴⁹⁸. Europe Economics noted “*Exceptional rates of TFP improvement, capital substitution and risk substitution may all arise as part of the transitional effects of privatisation and the introduction of incentive regulation*”⁴⁹⁹. Europe Economics estimated the privatisation effect on future TFP trends in the water and sewerage industries at between 1.0% and 2.0%. Europe Economics found the related privatisation impact of capital substitution – which should be added to the TFP trend in generating an RUOE trend – is at least 0.8% a year and could reach 2.9% or higher⁵⁰⁰.

23.28 The Frontier Economics Report mentioned above, suggested that a reasonable productivity path for Royal Mail, based on the then-impending introduction of price control regulation and exposure to competition, would be a 15% improvement in efficiency in ‘the first 18 months’ (to July 2003), 4% a year efficiency gains for 5 years following that (to July 2008), and reversion to an underlying trend of 2% a year thereafter. This implies that the ‘liberalisation effect’ during the period from July 2003 to July 2008 would be of the order of 2% a year (4% less the underlying rate of 2% a year). Frontier Economics is not explicit whether these savings relate to RUOE, RUOC or TFP, however the implication of the context in which they are derived is that these savings relate to RUOE. Royal Mail disputes this finding. Frontier Economics has responded to Royal Mail on this issue. For the reasons put forward in its response, we believe that Frontier Economics findings have merit and were appropriately stated⁵⁰¹.

23.29 The CAA, in its November 2004 proposals relating to NATS, estimated the privatisation effect on total factor productivity at 1% a year, based on the experience in the electricity, gas and water industries from 1979 to 1999 as summarised in the table below. The CAA does not specify whether its figures are volume-adjusted, although since the CAA looks at the difference between these two figures this would not bias the conclusion unless there were significantly different volume growth in the utility sector between 1979-89 and 1990-1999. The CAA also does not discuss whether it sees the underlying cause of the privatisation effect as the change in ownership inherent in privatisation, or the

⁴⁹⁸ Office of Water Services, PR04 – Scope for Efficiency Improvement – Uncertainties and Measurement Issues, Europe Economics, November 2003

⁴⁹⁹ Europe Economics, November 2003, Page 21

⁵⁰⁰ Europe Economics, November 2003, Page 28, table 5.2, row ‘Capital substitution adjustment’

⁵⁰¹ Response to Consignia’s comments, Frontier Economics, May 2002

changes to price regulation and market competitiveness that have typically accompanied privatisation.

Table 248: UK utility sector TFP growth (%), 1979 to 1999

Period	Electricity, gas and water sector
1979 to 1989	2.43%
1990 to 1999	3.45%

Source: CAA "Top-down efficiency analysis", November 2004, Table 4

23.30 We believe that the CAA's estimate of the privatisation effect is understated, due to the inclusion of the water industry. First, there is limited scope for competition in the water sector, which will reduce the scope for efficiency gains. Second, the water industry made very significant investments during the 1990s for quality reasons, which inflated costs in this industry without commensurate increases in output. Overall, the inclusion of water in the analysis will decrease the estimate for the privatisation, liberalisation and regulation effect. Unfortunately, the NISEC02 dataset does not provide disaggregated electricity, gas and water information, so the effects of water productivity cannot be separately accounted for. The CAA has estimated a 'privatisation effect' in relation to TFP, rather than to RUOE. As indicated above, we would expect the privatisation effect in relation to RUOE to be higher than the 1% TFP figure identified by the CAA.

23.31 The CAA's methodology could be applied to other industries. We have performed a similar analysis in relation to the communications industry in the UK, of which BT has been a major component for decades (albeit one that has declined since the late 1980s due to competition in fixed line telephony and the rise of mobile telecommunications). BT was privatised in 1984, so we have performed our analysis on in the communications sector in the 15 years before 1984 and the 15 years following that year.

Table 249: UK communications sector TFP growth

	Growth (% a year)	Growth (% a year, volume-adjusted)
1969-1984	1.4%	1.2%
1984-1999	4.2%	3.7%

Source: NISEC02 data set NIESR data set, ONS, LECG analysis

- 23.32 Our assertion is that since 1984, competition in the communication sector has increased significantly. The difference in TFP productivity growth before and after 1984 will capture both the effects of BT's privatisation and an increase in competition more generally. Volume-adjusted productivity growth in the communications sector averaged 3.7% a year from 1984 to 1999, using a scale elasticity of 90%, compared with 1.2% a year for the preceding 15 years on the same basis. Using a scale elasticity of 60% gives a comparable figure for volume-adjusted productivity growth of 1.1% a year. We recognise that there is some margin of error relating to this figure, not least as we have not adjusted for any differences in the rate of technological change in the telecoms sector between these two periods. However, we note that any effect arising from a higher rate of adoption of technology by BT, rather than changes in the effectiveness of technology available to BT, is likely at least in part to arise from the effects of privatisation and effective regulation and competition. We also note that, for the reason described above, the RUOE equivalent of this figure would be higher than the 1.1% to 2.5% range identified above.
- 23.33 The various estimates of the privatisation, regulation and competition effect are summarised below.

Table 250: The privatisation, regulation and competition effect

Study	Estimate	Comments
Europe Economics	1.25% to 3.5%	RUOE. Applies to firms with 'easy win' productivity opportunities and potentially high levels of capital substitution
Frontier Economics	13.0%	RUOE. Estimate for Royal Mail, to apply in first 1.5 years following liberalisation/ regulation (net of underlying 2% annual productivity)
Frontier Economics	2.0%	RUOE. Estimate for Royal Mail for years 1.5 to 6.5 following liberalisation/ regulation (net of underlying 2% annual productivity improvement)
Europe Economics	1.0% to 2.0%	TFP. Relates to UK water and electricity industries in 2003, 14 years post-privatisation
CAA	1.0%	TFP. Low due to inclusion of water industry
LECG	1.1% to 2.5%	TFP. BT's performance after privatisation

Source: Europe Economics, Frontier Economics, CAA and LECG.

- 23.34 Although Royal Mail remains in public ownership, it has faced limited competition since 2002/03. In addition it has only been subjected to a fully considered incentive-based regulatory price control since April 2003⁵⁰². Royal Mail projects significant cost savings since April 2003, which perhaps arise from this initial exposure of Royal Mail to price pressure through regulation and competition.
- 23.35 These competitive pressures are set to increase, with Royal Mail facing full competition across its entire product range from January 2006. It is therefore reasonable to suppose that the kinds of catch-up efficiency gains described above are available to Royal Mail over the period of the next price control.
- 23.36 Based on the evidence above, we consider it likely that a productivity gap has arisen while Royal Mail has been in public ownership and without effective price regulation or competition, and that closing this gap will give rise a boost to RUOE of between 1.25% and 3.5% a year over the period of the forthcoming control⁵⁰³.

Efficiency targets set by UK regulators

- 23.37 We provide a summary of the efficiency assumptions that have been used in different UK price controls below. For sectors containing more than one regulated company (e.g. water) the average target has been provided.

⁵⁰² Postcomm did subject Royal Mail to a price freeze from 2001 to 2003

⁵⁰³ In selecting this range, and any point estimate we have considered input price inflation and opportunities for capital substitution. These issues are covered further in the next section.

Table 251: Efficiency assumptions in previous price control reviews, not volume adjusted

Company	Duration	Real reduction per annum	Cost Category
BAA	1992-1997	3.3%	Employees/passengers - average
BAA	1997-2002	4.0%	Employees/passengers - average
BAA	2003-2008	1.7%	Average operating costs/passengers
British Gas	1992-1997	2.5%	Total non-gas costs
BG Transco	1997-2002	3.1%	Operating expenditure
BG Transco	2002-2007	2.5%	Real operating expenditure
BGT	1997-2000	4.0%	Unit supply costs
BT	1993-1997	3.0%	Unit costs
BT	1997-2001	3.5%	Unit operating costs – average
Manchester Airport	1998-2003	4.6%	Staff cost/passenger
Manchester Airport	2003-2008	3.75%	Staff cost/passenger
NATS	2001-2005	2% - 5%	Operating expenditure
NATS	2006-2010	2% - 3%	Operating expenditure
NIE distribution	1997-2002	3.0%	Operating costs (MMC)
NIE distribution	2002-2007	3.0%	Operating costs (Ofreg)
NIE supply	1997-2001	1.5%	Operating costs (MMC)
NGC	1993-1997	5.0%	Operating costs
NGC	1997-2001	2.5%	Operating expenditure
NGC asset owner	2001-2006	3.5%	Controllable operating costs
REC distribution	1995–2000	2.0%	Unit operating costs
REC distribution	2000-2005	2.3%	Operating costs
REC distribution	2005-2010	1.5%	Operating expenditure
REC supply	1994-1998	2.0%	Unit operating costs
REC supply	1998-2000	2.0%	Operating costs
Railtrack	2001-2006	3.1%	Total 'steady-state' spend
Network Rail	2004-2009	7.0%	Renewals and controllable opex
Scottish Hydro	1995-2000	2.0%	Operating costs (MMC)
Scottish Transmission	1994-2000	2.0%	Controllable operating costs
Scottish Transmission	2000-2005	1.0% - 2.0%	Total operating costs
Water/Sewerage	1995-2000	2.0%	Operating expenditure
Water	2000-2005	2.8%	Base operating expenditure
Water and Sewerage	2000-2005	2.0%	Base operating expenditure
Water	2005-2010	1.4%	Operating expenditure
Sewerage	2005-2010	1.3%	Operating expenditure

Source: "Transco Price Control Review for 2002-7 – Report for Ofgem", Mazars Neville Russell, September 2001, Appendix D. LECG updated. Colour coding added to group common companies/regulatory reviews

- 23.38 The efficiency assumptions in the table above are based on a variety of different measures of efficiency, although in most cases they use some definition of operating or controllable costs. Efficiency targets have ranged from 1.3% to 7.0% and a straight average of the figures above gives an average efficiency assumption of 2.8% per annum in real terms⁵⁰⁴. Adjusting for volume growth using a scale elasticity of 0.9 and assuming output growth in line with real GDP growth of 2.25% a year, gives a volume-adjusted average efficiency target of 2.5% a year.
- 23.39 When compared to Table 244 and Table 245 above, it appears that the gap between efficiency targets assessed by regulators and the savings actually achieved by regulated firms has averaged approximately 0.7% to 2.3% a year (i.e. 3.2% to 4.8%, less 2.5%). We recognise that this comparison is only indicative due to the nature and obvious limitations of the calculation.

Regulatory price control targets

- 23.40 Past price control targets also act as a proxy for anticipated efficiency gains. The table below provides a cross-sector summary of past price control determinations, measured in terms of X factors and P_0 price reductions.

⁵⁰⁴ Care must be taken when interpreting this average, as we recognise it is based on a number of different cost measures

Table 252: Price control targets for selected UK utilities to 2004/05

	British Gas/ BT Transco	NGC	RECs Average	WaSCs Average	BT ⁵⁰⁵ Network
1984/85					-3.0
1985/86					-3.0
1986/87	-2.0				-3.0
1987/88	-2.0				-3.0
1988/89	-2.0				-3.0
1989/90	-2.0				-4.5
1990/91	-2.0	0.0	1.3	5.4	-4.5
1991/92	-2.0	0.0	1.3	5.4	-6.5
1992/93	-4.0	0.0	1.3	5.9	-7.5
1993/94	-4.0	-3.0	1.3	4.5	-7.5
1994/95	-4.0	-3.0	1.3	5.0	-7.5
1995/96	-4.0	-3.0	-14.0	1.8	-7.5
1996/97	-4.0	-3.0	-11.5	1.5	-7.5
1997/98	-23.0	-20.0	-3.0	1.4	-4.5
1998/99	-2.0	-4.0	-3.0	1.6	-4.5
1999/00	-2.0	-4.0	-3.0	1.5	-4.5
2000/01	-2.0	-4.0	-24.5	-12.7	-4.5
2001/02	-2.0	0.0	-3.0	-0.4	-10.2
2002/03	-4.0	-1.5	-3.0	0.3	-10.2
2003/04	-2.0	-1.5	-3.0	1.4	-10.2
2004/05	-2.0	-1.5	-3.0	1.8	-10.2
Average	-2.9 to -4.9 ⁵⁰⁶	-3.2	-4.3	1.6	-6.0

Source: The Frontier Economics Report, Table 2, LECG update. Figures rounded to one decimal place. Colour coding groups separate price control periods.

23.41 Ofgem has recently released final price control targets for regional electricity companies (RECs). Ofgem is proposing an average P_0 of +1.3% in April 2005 followed by an X of 0% for the period 2006 to 2010. Prices will not fall over the period, because Ofgem has allowed additional expenditure for increased investment, combined with additional tax and pension costs facing companies. Allowances for capital expenditure to maintain and improve Britain's electricity distribution networks will increase on average by 48% above current levels, and should lead to £5.7 billion being invested in the networks. Ofgem's estimate of the underlying year-on-year reduction in REC operating costs is 1.5%. As can be seen, care must be taken when interpreting price changes as a indicator of underlying efficiency, as efficiency is just one aspect that drives the determination of X – others include, but are not limited to, volume, quality of service considerations, and capital expenditure.

⁵⁰⁵ The 2001 Ofel Review of Network Charge Controls introduced six separate control baskets, the controls ranged from -7.5 to -13%. The figure of -10.25% represents the median

⁵⁰⁶ From 1997/98 the reviews relate BG Transco

- 23.42 The price control targets for the water and sewerage companies are affected by the substantial costs of quality enhancements required by legislation, which enter the price control set by Ofwat through a so-called 'k factor'. When these high levels of investment are taken into account, productivity growth also exceeds the economy wide average. Recently, Ofwat released final price control targets for the water and sewerage companies (WaSCs). Ofwat is proposing an average X of +4.2%, with the price rises being justified on the basis of a £16.8 billion capital expenditure programme over the price control period.
- 23.43 Excluding water and sewerage, the price control factors above suggest annual price reductions of between 2.9% and 6.0% in real terms, which in turn imply TFP growth in excess of the economy wide average of a similar order of magnitude⁵⁰⁷.
- 23.44 The analysis also suggests that there is no trend indicating reduced efficiency targets over successive price control periods. One might expect that after two price control periods most of the efficiency gains would have been accurately identified and attained. This does not appear to be the case. We also find that targets set at the second full price control review tend to be more aggressive than those set in the first. This can also be expected in the case of Royal Mail as Postcomm's understanding of the level and drivers of the costs of the business has developed significantly since the last price control review. It can be observed that the actual level of efficiency assumed in price control reviews (as well as the gains achieved by regulated companies) varies considerably – it is clear that there are industry and time specific factors which influence such decisions and that there is no generic efficiency assumption that applies to all cases.

Conclusions

- 23.45 Comparisons with other regulated companies are commonly used to provide high-level indications of the scale of future efficiency savings. A summary of our findings is provided in the table below.

⁵⁰⁷ We accept that the link between X and TFP growth is relatively weak

Table 253: Summary of cross sector regulatory efficiency savings

Benchmark	Range	Average	Average, constant volume*	Measure
Privatisation, competition and regulatory effect	1.25% - 3.5%	2.4%	2.4 %	RUOE – Europe Economics
Outturn regulated company savings*	1.6% - 8.8%	5.1%	4.8%	RUOE – Ofgem
Outturn regulated company savings*	3.4% - 6.0%	4.3%	4.0%	RUOE – CAA
Outturn regulated company savings*	0.7% - 9.4%	4.3%	4.0%	RUOC - Ofgem
Regulatory cost targets*	1.3% - 7.0%	2.8%	2.5%	Real controllable costs
Regulatory price targets*	2.9% - 6.0%	3.4%	3.1%	Average X / Po

Source: CEPA, Europe Economics, Frontier Economics and LECG analysis. Figures rounded to one decimal place. The range for regulatory price targets excludes WaSCs due to the distorting effect of high capital expenditure requirements. *Average is not the simple average of the high and low ends of the range presented in the table, but reflects the average of the full set of values within this range

- 23.46 Efficiency targets set by regulators tend on average to be lower than the cost reductions actually realised. We estimate that, across industries and across regulatory reviews, the efficiency targets incorporated into price controls have averaged some 2.5% per year in real constant volume terms. We estimate that actual cost reductions achieved, however, across the same periods and industries, have averaged between 4.0% and 4.8%, depending on precisely how they are measured.
- 23.47 It appears, therefore, that regulators have generally underestimated the scope for efficiency gains. This need not imply any weakness in the regulatory process – one of the original premises of RPI-X regulation is that it encourages companies to outperform against their efficiency targets.
- 23.48 In making comparisons between regulated companies it is necessary to consider the extent to which readily available efficiency gains have already been captured. The regulatory literature shows that significant catch-up efficiency gains have been achieved by regulated companies in the first five to ten years post

privatisation and/ or the introduction of regulatory and competitive price pressures.

- 23.49 This effect is (perhaps misleadingly) termed the “Privatisation Effect”, and has been estimated at between 1.25% and 3.5% a year in RUOE terms. Although it is referred to as an effect of privatisation, it can also be understood as an effect of reduced efficiency incentives for firms in public ownership and facing weak competitive pressures. It is the removal of the resulting embedded inefficiency that has allowed the gains to be achieved post privatisation and liberalisation. Overall, therefore, we see no reason to suppose that similar catch-up efficiency gains should not be available to Royal Mail, regardless of its ownership structure.
- 23.50 The results historically achieved in other regulated sectors, in conjunction with the more one-off gains generally achieved in the first 5 to 10 years of price controls, suggest that annual unit cost savings (in RUOE terms) of between 3% and 4% have typically been achievable in firms that are moving to an efficient frontier after an extended period of public ownership and absence of price pressure.

24 Forecasting Royal Mail's total factor productivity

Introduction

- 24.1 A form of top-down efficiency analysis commonly used in the regulatory context is the measurement of total factor productivity trends in industry sectors that undertake activities that are comparable to those in the firm or industry being examined. By combining these sector productivity trends into a weighted average, regulators can derive an estimate of underlying productivity trends in the firm or industry being examined, which, when combined with various adjustments, can be used to extrapolate productivity growth.
- 24.2 Under this methodology, a company's costs are typically split into no more than six or seven main activities or functions. For example, the performance of a company's transport operation can be compared to the TFP performance of the transportation industry, while the performance of its manufacturing operations can be compared to the TFP performance of an appropriate sector of manufacturing industry. The results from each area are then aggregated into a "sector composite estimate" for the whole company. This is often referred to as a "nature of work comparison".
- 24.3 In this section, we review how TFP analysis has been incorporated into efficiency reviews in other UK regulatory sectors. We provide an example of how TFP analysis has been applied by Ofwat in the water and sewerage sector. We summarise Royal Mail's approach to TFP analysis, and then set out our TFP analysis of Royal Mail using a nature of work approach.

Regulatory best practice

- 24.4 A number of UK industry regulators have commissioned high level assessments of the potential for productivity gains, based on comparisons with other regulated sectors or general economic sectors of the economy. Such studies have been done in two different ways, either using nature of work comparisons or by using simple productivity ratios such as RUOE. The table below summarises the results of the studies described in this report.

Table 254: Summary forecast TFP and RUOE trends

Regulatory Review	Date	Type of study	Source	TFP trend	RUOE trend
Railtrack	Dec 1999	Comparative sectors	Europe Economics	N/a	3% to 5%
Transco	Sept 2001	Nature of work	Europe Economics	1% to 3%	2% to 4%
Water & Sewerage	Mar 2003	Nature of work	Europe Economics	N/a	2% to 4.25%
Electricity Distribution	Dec 2003	Nature of work	CEPA	0.1% to 2.1%	0.7% to 3.7%
NATS	Nov 2004	Comparative & regulated sectors	CAA	1.5% to 2.0%	3.0% to 4.0%
Average				1.6%	3.0%

Source: Regulatory price control documents, Europe Economics, CEPA. TFP trends capture outperformance relative to the whole economy

24.5 These results have been used to provide a broad indication of the types of gains that could be achieved by regulated companies generally. The average TFP annual growth estimate is of an outperformance of the whole economy of around 1.6%, while the average RUOE trend is around 3.0% (the comparison between these two figures is, to some extent, misleading as the TFP data set is incomplete). It is argued that such gains result from a number of factors, including the degree of regulation, restructuring post privatisation, and market liberalisation.

24.6 The above figures are adjusted for the fact that, for the purposes of setting an RPI-based price control, it is necessary to look at the extent to which the relevant firm or industry outperforms TFP growth in the economy as a whole⁵⁰⁸. This is because the rate of RPI growth, to which regulated firms' prices are typically indexed, is a function of economy-wide growth in input prices and TFP. For a firm to maintain its profit percentage with an X equal to zero, in an RPI - X framework, requires the firm to achieve TFP growth at the same rate as the economy as a

⁵⁰⁸ Refer to CAA 'Supporting Paper 4: Top-down efficiency analysis', November 2004, page 2 and 'Scope for Efficiency Improvement in the Water and Sewerage Industries – Final Report', Europe Economics, March 2003

whole (on the assumption that input prices are also changing in line with the economy as a whole). As such, any X factor should only capture the extent to which that firm's TFP growth diverges from TFP growth across the economy as a whole⁵⁰⁹.

24.7 CEPA assesses this whole-economy TFP growth at 1.3% a year (refer to Table 246 above) and Europe Economics implicitly uses a figure for average TFP growth of 1.2% a year⁵¹⁰. A related point is that regulators must also consider whether changes in a firm's weighted average input prices are likely to deviate from changes in those prices across the economy as a whole.

24.8 Cross sector comparisons are commonly used by regulators to provide top-down indications of the scale of future efficiency savings achievable. Common features are:

- much of the work performed in this area appears to be based on studies performed by O'Mahony⁵¹¹, which in turn are based on the National Institute of Economic and Social Research's ("NIESR") NISEC02 dataset of total factor productivity across the UK;
- regulators generally consider explicitly the effects of unwinding inefficiency arising from years of public sector ownership, and absence of price regulation or market competition;
- regulators frequently apply nature of work analysis; and
- most of the companies in the comparison samples are private companies operating in competitive environments, suggesting they will have captured the readily achievable efficiency gains already. Short-term efficiency gains available to Royal Mail might be expected to be higher.

24.9 CEPA pointed out in its work for Ofgem that, if there are any one-off gains available from eliminating inefficiencies in the company or industry in question that would not be captured in the industries being used in the nature of work

⁵⁰⁹ The economics behind this point is laid out simply in CEPA's report for Ofgem, 'Productivity improvements in Distribution Network Operators', November 2003, Annex 3 (page 70)

⁵¹⁰ Scope for Efficiency Improvement in the Water and Sewerage Industries – Final Report, Europe Economics, March 2003, page 48

⁵¹¹ For example, refer to Britain's Productivity Performance 1950-1996: An International Perspective O' Mahony, NIESR, 1999

comparison, then the TFP estimates resulting from such an analysis will approximate X only in the long-term.

- 24.10 Firms in industries that have recently restructured or liberalised typically do have available to them such one-off gains, compared with firms that have been subject to regulatory incentives or competition for some time. Royal Mail has only been subject to regulatory efficiency incentives for a relatively short time and the competitive pressures on Royal Mail's cost base are still relatively light – although they are expected to intensify⁵¹². This might suggest that Royal Mail should be able to outperform the efficiency gains now being achieved in other regulated sectors, which have been subject to RPI-X incentives for much longer. We discuss such effects in more detail above in paragraph 23.13 and after.
- 24.11 The remainder of this section provides an assessment of how such TFP analysis could be applied to Royal Mail. The most recent and comprehensive top-down study is by Europe Economics, prepared for Ofwat in March 2003⁵¹³. We understand that Royal Mail's TFP analysis, which we refer to later in this section, is based on the Ofwat methodology. We provide a brief overview of Ofwat's methodology in the next section.

Ofwat study

- 24.12 The Europe Economics approach considered nature of work comparators. This involved the development of a composite TFP benchmark constructed as the weighted average of TFP improvements from sectors of the economy performing similar activities to those performed by the water and sewerage companies.
- 24.13 Europe Economics recognised that estimates for comparator sectors included an element of TFP growth from activities other than those relevant to the comparison being made. For example, TFP growth in the manufacturing activity in a car firm might be compared to TFP growth in other manufacturing sectors, even though the TFP growth in other manufacturing sectors will include the effects of changes in sales and marketing, overhead, and other activities. Overall, it decided that any

⁵¹² RM assumes that its delivered volumes will fall by around 1% per annum over the price control period under the business-as-usual scenario. End to end volumes will fall by around 5.8% per annum. RM's Strategic Plan, page 15

⁵¹³ Scope for Efficiency Improvement in the Water and Sewerage Industries, Final Report, Europe Economics, March 2003

required adjustments appeared to be small and would tend to increase TFP estimates.

- 24.14 From its nature of work comparison, Europe Economics concluded that the water and sewerage industries could be expected to achieve long-run TFP growth of between 0.8% and 1.4% a year more than the economy as a whole.
- 24.15 When using TFP indices it is common to adjust for differences between comparator companies. Europe Economics identified a number of factors, other than the nature of work comparison, which could influence the rate at which TFP gains could be realised. These are described below.
- 24.16 The first factor is the effect of fixed factors over the short run. Existing structures and asset bases may limit TFP improvements by existing companies, when compared with a hypothetical new business providing similar services which would be able to invest in state-of-the-art plant and equipment and would be able to develop working practices and structures for employees from scratch. Europe Economics assessed that there would be no impact on the water industry from such a factor.
- 24.17 The second factor is the regulatory/ competitive environment, which captures the structural influences on firms' incentives to exploit potential efficiencies. These influences differ across markets and across industries. Economic theory suggests these influences are high in very competitive industries or in industries that are subject to very tight price regulation, and that these influences are low in uncompetitive industries or industries subject to lax price regulation. The impact of this factor in the water industry was assessed by Europe Economics to be to reduce TFP growth by a small, but immaterial amount.
- 24.18 The third factor affecting the rate at which TFP gains can be made is the general economic and social environment, capturing the business environment of the country in which the firm is operating. However, because this factor by definition applies equally to all firms in a country, there will be no need for an adjustment for this factor if a nature of work comparison has been made between firms all operating in the same country. Europe Economics determined that no adjustment was required for the water industry in respect of this factor.

- 24.19 The fourth factor identified by Europe Economics was economies of scale, which allow TFP improvements when there are increases in output volumes. In the presence of fixed costs and roughly constant marginal costs, increases in volumes translate into falling unit costs, as the fixed costs that remain are spread over a larger number of units. Europe Economics did not make a direct adjustment in relation to economies of scale in its assessment of TFP improvements in the water industry, although it did make approximate adjustments to the TFP growth estimates in the comparator industries where it considered them significant and practical⁵¹⁴.
- 24.20 The last factor relevant to TFP growth is the initial level of efficiency of the industry in question. Industries that have historically operated at less than full efficiency have the potential for “catch-up” TFP growth. Many formerly state-owned firms have enjoyed strong TFP growth following privatisation, the introduction of price regulation, and/ or the introduction of competition – as discussed in paragraph 23.13 and after. This element of catch-up TFP growth is usually known as the privatisation effect. As discussed in paragraph 23.23 and following, the privatisation effect is estimated by Europe Economics to increase growth in real base service operating expenditure⁵¹⁵ by around 0.5% to 2.5% a year in the water sector, and to increase RUOE by 1.25% to 3.5% in other regulated sectors more generally.
- 24.21 In addition to the above determinants of TFP growth, Europe Economics points out that two factors should be taken into account when considering the implications of TFP trends on RUOE.
- 24.22 The first of these factors is changes in capital intensity over time, such as substitution between capital and other factors of production (primarily, but not exclusively, labour). Europe Economics estimates that this effect gives rise to a boost to real base service operating expenditure growth relative to TFP growth of around 1% a year in the water industry, and about 1.3% higher in the sewerage industry. The ‘privatisation effect’, as well as giving rise to higher rates of TFP growth in the short to medium term, can give rise to an additional component of RUOE growth due to high rates of substitution from capital to labour.

⁵¹⁴ Europe Economics, March 2003, page 33

⁵¹⁵ One of the two measures of operating expenditure used by Europe Economics in this study. The other measure incorporates capital maintenance expenditure

- 24.23 The second of these factors is changes in input prices over time, where trends in the weighted average input prices for a particular industry diverge from those in the economy as a whole (as mentioned in paragraph 24.6 above). Europe Economics estimates that, due to this effect, real base service operating expenditure will be around 0.3% a year lower than TFP growth in both the water and sewerage industries.
- 24.24 Europe Economics' analysis implies that, before consideration of any 'privatisation effect', there is scope for long-run reduction in real base service operating expenditure in the water industry of approximately 1.5% a year more than in the economy as a whole, and in the sewerage industry of approximately 1.75% a year. After taking into account the 'privatisation effect', Europe Economics estimates that there is scope for growth in the same metric between 2003 and 2013 of 2% to 4% a year in the water industry, and growth of 2.25% to 4.25% a year in the sewerage industry.
- 24.25 The table below provides details of the adjustments made by Europe Economics – many of Europe Economics' estimates are approximate, and so the figures in the table do not directly sum to the totals. Because Europe Economics has considered making an adjustment for economies of scale to these figures, the 'scope for reduction in annual real base service operating expenditure, 2003-13' can be considered to be a volume-adjusted figure.

Table 255: Europe Economics' forecast of water industry productivity growth

Component	Water %	Sewerage %
Nature of work benchmark (outperformance, volume-adjusted)	0.8 to 1.2	0.8 to 1.4
Regulatory and competitive environment	"Small downward adjustment"	"Small downward adjustment"
Effect of capital substitution before privatisation effect	Approx 1	Approx 1.3
Effect of input price mix	(0.3)	(0.3)
General economic and social environment	-	-
Effect of fixed factors	-	-
Economies of scale	-	-
Long-run annual scope for reduction in base service operating expenditure	Approx 1.5	Approx 1.75
Estimated initial level of efficiency (privatisation and competition effect)	0.5 to 2.5	0.5 to 2.5
Scope for reduction in annual real base service operating expenditure	2 to 4	2.25 to 4.25

Source: Europe Economics (2003) and LECG analysis

Royal Mail analysis

24.26 Royal Mail originally performed a TFP analysis, based on a nature of work methodology⁵¹⁶, as part of its submission to Postcomm in relation to the 2003 price control. Royal Mail has resubmitted this TFP analysis as part of its submission to the current price control⁵¹⁷. We note that Ofwat updated its TFP analysis as part of its 2004 Periodic Review, as discussed extensively above. Royal Mail has not updated its analysis in line with this work, and has not reflected or incorporated the current thinking of other regulators, such as the CAA.

24.27 Royal Mail's TFP analysis uses Europe Economics' methodology – as set out in Ofwat's 1999 price control review – as its starting point. We show Royal Mail's nature of work conclusions in the table below:

⁵¹⁶ The Performance of the UK Inland Mails Business for Consignia 2003, Royal Mail, Paper 1, June 2002, RM 3020

⁵¹⁷ Comparative analysis and trend analysis efficiency paper, RM 3106

Table 256: RM's TFP analysis

Nature of Work	Comparator	Volume adjusted TFP %	Weight	Weighted and adjusted TFP %
Network	Distributive trades	0.27	73%	0.20
Management	Electricity, gas and water	2.87	6%	0.17
Vehicles	Transport and communications	2.79	5%	0.14
Logistics	Distribution	0.27	7%	0.01
IT	Financial and business services	0.45	2%	0.02
Property	Construction	2.10	7%	0.15
Total			100%	0.68

Source: Royal Mail 3106, page 17

- 24.28 To complete its analysis, Royal Mail amends the weighted and adjusted TFP to take account of the capital substitution of labour, stating: "*With a capital substitution of labour of 0.2, the amended TFP is 0.9*"⁵¹⁸. Royal Mail concludes that this result is broadly in line with the level of productivity achieved by RML over the 10-year period to 1999/00.
- 24.29 Although Royal Mail does not state this explicitly in its submission, the inclusion of a capital substitution implies that it has historically under-invested in its business. This is because such an adjustment represents an overall productivity boost arising from future increases in the level of capital employed within Royal Mail towards an optimal level. As Europe Economics points out⁵¹⁹, such an adjustment is not required in a TFP analysis for a firm that has an optimal mix between capital and other factors of production (although such an adjustment is required in deriving partial factor productivity measures, such as RUOE, for firms undergoing substitution of capital for labour).

⁵¹⁸ RM 3106, page 17.

⁵¹⁹ Europe Economics, March 2003, Appendices page 26 – this point is implicit in Europe Economics' treatment of this issue.

24.30 Royal Mail argues that the postal sector has characteristics relating to the comparative analysis of output and input measures that are distinct from other regulated industries. The cost base of a regulated business with a geographic network can be divided into two main types: the costs relating to the area network infrastructure and the costs relating to support, management and sales services.

24.31 Royal Mail argues that “network” costs for the UK inland mails business relate principally to labour rather than capital. Royal Mail argues that while input prices have reduced in real terms for capital, labour input prices have increased in real terms. It is for this reason that Royal Mail has compared network costs with those labour-intensive services associated with distributive trades and services.

LECG analysis

24.32 We have updated the analysis presented above based on the National Institute’s most recent Sectoral Productivity dataset (NISEC02). In addition, we have adjusted Royal Mail’s analysis for several of the factors identified by Europe Economics in its work for Ofwat.

24.33 With respect to Royal Mail’s choice of comparator for the network element of costs we make the following observations:

- it is not clear that it is appropriate to compare mail centre and sorting activities to distributive trades and services. There has been a trend towards increasing automation within mail centres, which is expected to continue in Royal Mail’s Strategic Plan. As such, a more suitable comparator might be manufacturing, especially as the extent of automation within Royal Mail’s mail centres is expected to increase significantly over the price control period;
- distributive trades includes wholesale trade, retail trade, and hotels and catering. It is interesting to observe that TFP growth in the hotels and catering sector between 1974 and 1999 was minus 1.99%⁵²⁰. This has a significant impact on the sector average. It is unclear to us that the hotel sector is a suitable comparison to Royal Mail’s network; and
- the distributive trades sector is not the only labour intensive sector available as a comparator. Other potentially suitable comparators include financial

⁵²⁰ LECG analysis based on NISEC02 dataset – assuming a simple compound annual growth rate

services and business services. However, we note that including these sectors does not have a material impact on the resulting analysis (refer to Table 258 below).

24.34 Moreover, Royal Mail's Logistics costs, which primarily consist of vehicle costs and the transfer of post between vehicles at RDCs and mail centres using logistics computer networks, could be more appropriately linked to transport and communications costs that than to distributive trades.

24.35 In addition, the weights used by Royal Mail for the different cost elements of the nature of work comparison are out-of-date, and we have calculated weights based on the Baseline planning cost information provided in document 6003. In addition, when constructing the nature of work comparison, we believe that it is best practice to consider a range of scenarios. Incorporating each of the above points, therefore, gives the nature of work scenarios summarised in the table below.

Table 257: LECG nature of work scenarios

Nature of Work	Weight	Scenario 1 Comparators	Scenario 2 Comparators
Network – primarily delivery	40%	Distributive trades	Distributive trades (excluding hotel & catering), financial & business services
Network – primarily mail centre	30%	Distributive trades	Manufacturing
Management	7%	Electricity, gas & water	Electricity, gas & water
Vehicles	6%	Transport	Transport
Logistics	7%	Distributive trades	Transport & communications
IT	3%	Financial and business services	Financial and business services
Property	8%	Construction	Construction
Total	100%		

Source: Royal Mail BPM data, document 6079, and LECG analysis. Note: Weights do not add to 100% due to rounding. Split of Network costs based on ratio of total costs excluding depreciation, from document 6079

- 24.36 Our conclusions are presented as a range, based on the two scenarios above. We do not believe that it is necessarily appropriate to place equal weight to the two scenarios and believe that Scenario 2 provides a more robust nature of work comparison, for the reasons given above.

Economies of scale

- 24.37 For the reasons outlined in paragraph 21.11, it is important to adjust the comparator group for economies of scale. We do this using a scale elasticity factor of 90%, as outlined in Footnote 472.

Sectoral TFP trend growth estimates

- 24.38 The following table provides estimates for the trend in TFP growth for the relevant sub-sectors of the economy, adjusted for volume growth – the columns headed “1974-99” and “1990-99” are extracted from Table 247 above.

Table 258: Sectoral TFP growth estimates, adjusted for scale economies

	1974-99	1990-99	Weighted Average
Construction	1.7%	1.2%	1.6%
Distributive trades	0.4%	0.6%	0.5%
Electricity, gas & water	2.0%	3.2%	2.3%
Financial & business services	0.2%	0.9%	0.4%
Manufacturing	2.1%	1.3%	1.9%
Transport & communications	2.1%	3.8%	2.6%

Source: Productivity improvements in distribution network Operators, Final report, Ofgem, CEPA, November 2003, Page 48

- 24.39 There is some debate over the period over which TFP should be measured. Europe Economics appears to favour long periods, but tests the robustness of their results using sensitivity analysis. CEPA on the other hand, uses the period 1990 to 1999 to assess the likely TFP trend of UK Electricity Distribution Network Operators. We believe that there are arguments to justify either long or short periods. In our analysis we have adopted a time-weighted average, which has the effect of estimating trends based on the entire period 1974 to 1999, but with twice the weight on the period 1990 to 1999 than on the period from 1974 to 1990. Adopting a different assumption from this does not materially impact our assessment of TFP trends.

24.40 The “distributive trades” sector in the table above includes wholesale trade, retail trade, and hotels and catering. We believe that, for our nature of work comparison, it may not be appropriate to include the hotels and catering sector as there is limited scope for automation in this sector, unlike in mail centres and delivery offices. It is also our view that the activities in this sector differ more markedly from Royal Mail’s logistics, sorting and delivery activities to which we are seeking to compare this sector. In Scenario 2, therefore, we have excluded hotel and catering.

24.41 We have constructed a TFP trend for distributive trades excluding hotels and catering directly using the NISEC02 dataset, which allows us to construct the following estimates using compound average growth rates. The table below shows our analysis.

Table 259: Distributive trades TFP growth (CAGR, not volume adjusted)

	1974-99	1990-99	Weighted Average
Wholesale trade	2.0%	2.8%	2.2%
Retail trade	0.6%	0.3%	0.5%
Simple average wholesale & retail trade	1.3%	1.5%	1.4%
Hotel and catering	-2.0%	-2.5%	-2.1%

Note: The 1974-99 figure for “Wholesale trade” has been estimated by LECG, in the absence of source data for this period. Source: NISEC02 dataset, LECG analysis.

24.42 We do not have the information necessary to make a weighting of the wholesale trade and retail trade sectors for our purposes. We have adopted the approach of weighting equally wholesale and retail trade, to obtain an estimate of TFP growth (before adjusting for volume growth) for distributive trades, excluding hotels and catering, of 1.4%.

24.43 We performed this calculation on a compound annual growth rate basis, in contrast to CEPA’s analysis that calculated trend growth rates for these time series. However, when we calculated trend growth rates⁵²¹ for the retail trade and hotel and catering series (the two series for which there was sufficient information

⁵²¹ We used two variants of the regression technique – one using an independent normally distributed error term, and one using an autoregressive error with a one period lag. Refer to Appendix 30

to do this calculation), we found that the resulting annual growth rates did not differ significantly from the CAGR calculations.

- 24.44 To adjust for volume growth we have used Gross Domestic Product by Gross Value Added for the distributive trades sector as a proxy for output growth within the distributive trades sector⁵²². This includes output growth in the hotel and catering industry – we expect that the effect of including this output growth is to slightly increase the estimate of sector TFP growth, but we have not made an adjustment for this effect. Over the periods 1974-1999 and 1990-1999, we found compound growth in output in the distributive trades sector to be between 2.3% a year and 2.5% a year respectively, which gives a weighted average of 2.3% annual growth. Using the formula outlined in paragraph 21.11 above, our volume-adjusted estimate for distributive trades excluding hotels and catering is 1.1%. To generate our estimate of volume-adjusted TFP growth in the combined financial and business services and distributive trades excluding hotel and catering, we averaged this with the volume-adjusted weighted average TFP growth trend in the financial and business services industry, of 0.4%, to give a combined trend of 0.7%.
- 24.45 Similarly, growth in the “transport and communications” sector in Table 258 above is likely to be affected by differences in TFP growth between the transport and communications sectors, which is not applicable to the vehicle and logistics activities to which we are comparing this sector. We have therefore also calculated the compound annual growth rate in TFP for the transport sector alone, again directly using the NISEC02 dataset. This shows TFP growth in the transport sector of 2.8% a year from 1974-1999 and of 3.1% a year from 1990-1999, for an average volume-unadjusted growth rate of 2.9% a year.
- 24.46 As with the adjustments to the distributive trades TFP data, above, these percentages are compound annual growth rates, rather than the trend figures that CEPA has calculated. As with the retail and wholesale trades figures, we calculated trend growth in this index, and found that the average volume-unadjusted growth rate was slightly higher at between 3.1% a year and 3.3% a year. We have therefore taken a figure of 3.2% a year for our volume-unadjusted growth in the transportation sector.

⁵²² Office for National Statistics, data series GDQE

24.47 To adjust for volume growth we have again used Gross Domestic Product by Gross Value Added as a proxy for output growth within the transport sector⁵²³, as above, which shows time-weighted annual volume growth of 3.7% a year. Again, using the formula outlined in 21.11 above, our volume adjusted estimate for the transport sector alone is 2.7%, slightly higher than the 2.6% TFP growth identified for the combined transport and communications sectors.

Impact of labour intensity

24.48 There is some debate in the literature over whether labour-intensive industries should be expected to have higher or lower TFP trends than less labour-intensive industries.

24.49 The CAA points out⁵²⁴ that labour productivity growth is typically higher than TFP growth, and therefore some adjustment might be needed to TFP analyses of labour-intensive businesses. National Air Traffic Services (“NATS”) has argued, in response to the CAA that there is no statistically significant relationship between labour intensity and TFP growth at the sectoral level in the UK, and as such, no adjustment is required⁵²⁵. We have not made an adjustment for this factor in our analysis of an achievable TFP trend for Royal Mail, although on balance we consider this assumption to be conservative.

24.50 We have considered a further adjustment to our analysis in relation to Royal Mail’s labour intensity, arising from Royal Mail’s industrial relations situation. Specifically, we have considered whether to adjust our RUOE assessment for any potential inability to restrict the growth in costs per employee to the economy-wide average.

24.51 We have considered this issue in some detail in Section 16. We conclude that Royal Mail’s current level of wages is high in relation to comparable benchmarks. As such, we believe that operational change should be achievable without the requirement for above economy-wide pay increases. Consequently, we have not made any further adjustment to our top-down assessment of Royal Mail’s productivity and operating efficiency trends for these factors.

⁵²³ Office for National Statistics, series GDQH

⁵²⁴ Top-down efficiency analysis, November 2004, page 3

⁵²⁵ Response to the CAA’s Initial Proposals on NATS Price Control Review 2006-10, NATS, 28 February 2005, p38

Nature of work assessment

24.52 LECG's nature of work estimate under Scenario 1 is provided in the table below.

Table 260: LECG scenario 1 nature of work estimate

Nature of Work	Comparator	Volume adjusted TFP trend	Weight	Weighted adjusted TFP trend
Delivery network	Distributive trades	0.5%	40%	0.2%
Mail centre network	Distributive trades	0.5%	30%	0.1%
Management	Electricity, gas & water	2.3%	7%	0.2%
Vehicles	Transport	2.7%	6%	0.2%
Logistics	Distributive trades	0.5%	7%	0.0%
IT	Financial and business services	0.4%	3%	0.0%
Property	Construction	1.6%	8%	0.1%
Total			100%	0.8%
Outperformance of whole economy				(0.5%)

Note: Weights do not add to 100% due to rounding. Source: LECG analysis

24.53 LECG's nature of work estimate under Scenario 2 is provided in the table below. We have adopted the approach of weighting equally each comparator service within each industry component⁵²⁶.

⁵²⁶ For Delivery Network we have applied equal weights to Distributive Trades and Financial & Business Services to construct the TFP estimate (i.e. 50%)

Table 261: LECG scenario 2 nature of work estimate

Nature of Work	Comparator	Volume adjusted TFP trend	Weight	Weighted adjusted TFP trend
Delivery network	Financial & business services, distributive trades excluding hotel & catering	0.7%	40%	0.3%
Mail centre network	Manufacturing	1.9%	30%	0.6%
Management	Electricity, gas & water	2.3%	7%	0.2%
Vehicles	Transport	2.7%	6%	0.2%
Logistics	Transport	2.7%	7%	0.2%
IT	Financial & business services	0.4%	3%	0.0%
Property	Construction	1.6%	8%	0.1%
Total			100%	1.5%
Outperformance of whole economy				0.2%

Source: LECG analysis. Note: Weights do not add to 100% due to rounding. Figures in column 'Weighted adjusted TFP' do not add to 1.5 due to rounding.

- 24.54 Our assessment of a long-run TFP growth trend for Royal Mail based on this composite sectoral analysis is 0.8% a year to 1.5% a year, before making any adjustment for TFP growth across the economy as a whole, and -0.5% to 0.2% a year after making such an adjustment using CEPA's estimate of growth of 1.3% a year, as shown in Table 246 above.
- 24.55 Europe Economics identifies several adjustments that we believe it is appropriate to consider together in the context of applying this methodology to Royal Mail to derive an estimate of a short to medium-term achievable RUOE path. These adjustments are summarised in the table below, with brief explanations of our treatment, and together with our overall estimate of an achievable future trend in total factor productivity growth for Royal Mail.
- 24.56 For both our scenarios, we adopt the historic rate of capital substitution across the UK economy as a whole. The scope for Royal Mail to outperform the effects of this capital substitution, which arises from the historic under-investment in Royal

Mail, is captured in our assessment of the RUOE 'privatisation effect' that we apply to our calculations (see paragraph 23.25). Europe Economics estimates this economy-wide substitution effect from 1950 to 1999 in the UK of 1.2% a year⁵²⁷, while for the period 1989 to 1999 this effect averaged 0.8% a year⁵²⁸. We assume that the long-term trend in this figure for the UK economy as a whole is 1% a year. Adjusting for Royal Mail's labour intensity, using the method outlined by Europe Economics, gives an underlying long-run rate of capital substitution for Royal Mail of 0.8% a year⁵²⁹.

- 24.57 This figure differs from the 1% to 1.3% range identified by Europe Economics for the water and sewerage industries due to the lower degree of capital intensity in the postal industry than in the water and sewerage industries
- 24.58 In addition, an input price adjustment is typically required in translating TFP estimates to partial productivity estimates such as RUOE, as operating expenditure contains a higher proportion of labour costs than the factors of production taken as a whole, and unit labour costs tend to grow faster than prices of other inputs. Europe Economics identifies that, if operating expenditure were exclusively composed of factors of production with prices which grew at the same rate as labour costs, a downward adjustment of 0.4% to 0.6% a year would be required⁵³⁰. Operating costs include some elements with prices which grow more slowly than labour costs, however, and Europe Economics identified an adjustment factor of 0.3% a year. We believe that Royal Mail is more labour-intensive than the economy as a whole, and have therefore made a slightly larger adjustment of 0.4% a year.
- 24.59 We discussed, in paragraph 23.36 above, how we believed an appropriate estimate of the 'privatisation, regulation and competition effect' for Royal Mail, in RUOE terms, was 1.25% to 3.5% a year. We have applied that range in our calculations below

⁵²⁷ Labour productivity growth of 2.4% a year less TFP growth of 1.2% a year – Europe Economics, March 2003, Appendix page 27 and data in main report paragraphs 5.2.15 and 5.3.1

⁵²⁸ Labour productivity growth of 1.91% a year less TFP growth of 1.1% a year – Europe Economics, March 2003, tables 5.1 and 5.2

⁵²⁹ Key inputs to this calculation are that the capital share of value across the economy as a whole from 1989 to 1999, which we estimate at 30%, and we assume that Royal Mail's capital share of value is in line with the most labour-intensive sector of the UK economy, at 25%. See Europe Economics, March 2003, Appendix page 31

⁵³⁰ Europe Economics, March 2003, Appendices page 31

Table 262: LECG conclusions on an achievable RUOE path for Royal Mail based on analysis of TFP trends

Component	Scenario 1	Scenario 2	Comment
Nature of work benchmark (out-performance of whole economy, volume-adjusted)	(0.5%)	0.2%	Analysis as per Table 260 and Table 261
Regulatory and competitive environment	0.0%	0.0%	Captured in nature of work comparison
Effect of capital substitution before privatisation effect	0.8%	0.8%	See paragraph 24.56
Effect of input price mix	(0.4%)	(0.4%)	See paragraph 24.58
General economic and social environment	0.0%	0.0%	No adjustment as nature of work comparators are adjusted for volume effects
Effect of fixed factors	0.0%	0.0%	No regulatory precedent in other industries. Any effects will be picked up in effect of low initial level of efficiency
Economies of scale	0.0%	0.0%	No adjustment as nature of work comparators are adjusted for volume effects
Long-run annual scope for RUOE reduction	(0.1%)	0.6%	Out performance of whole economy, volume-adjusted
Estimated initial level of efficiency (privatisation and competition effect)	1.25%	3.5%	See paragraph 23.36. Includes both TFP impact and increased capital substitution due to competition
Short- to medium-run annual scope for RUOE reduction	1.1%	4.1%	Out performance of whole economy, volume-adjusted

Source: LECG analysis, Europe Economics, Royal Mail

Conclusion

24.60 A commonly used top-down technique in the regulatory context is to segment the business being reviewed into components for which the nature of work can be compared with other non-regulated companies. These comparisons are often made based on TFP trends. Achieved trends can be observed in other industries and aggregated to the company or industry in question.

- 24.61 Our estimate of achievable productivity paths for Royal Mail is approximate. There is scope for double counting between, for example, the nature of work comparison and the combined regulatory environment, competitive pressure and initial level of efficiency effects. Offsetting this, it is possible, for example, that we have underestimated the scope for Royal Mail to make productivity improvements by closing out low initial levels of efficiency. Because of the approximate nature of this estimate, it is important to use the above figures as one of a range of indicators in assessing the overall productivity improvements available to Royal Mail.
- 24.62 It should be noted that the range quoted above is stated in constant volume terms. If Royal Mail experiences increasing volumes, however, the level of productivity growth would be higher. The converse is also true.
- 24.63 Our analysis indicates that in the long run Royal Mail might achieve TFP changes of between 0.8% and 1.5% a year (as shown in Table 260 and Table 261), the average of which is 1.1% a year. In RUOE terms, our analysis indicates that Royal Mail might be expected to be able to achieve a trend of -0.1% to 0.6% a year, with an average of 0.3% a year, as shown in Table 262. Once again, this is stated in constant volume terms.
- 24.64 In the short to medium-term, Royal Mail faces significant opportunities arising from the unwinding of historic inefficiency arising from public ownership and the absence of price pressures from competitors. Factoring in these 'catch-up' efficiency gains provides an estimate, in RUOE terms, of efficiency gains between 1.1% and 4.1% a year, the average of which is 2.6% a year.
- 24.65 Efficiency savings at the average level would be broadly consistent with the rate of efficiency savings that Royal Mail is expected to achieve under the current price control. The estimate however, is lower than the rate of efficiency savings actually achieved by other regulated companies. On balance we expect that over the forthcoming price control, Royal Mail could achieve RUOE savings at or slightly above the 2.6% average of this range.

25 International benchmarking

Introduction

- 25.1 International benchmarking allows a comparison with companies involved in similar activities, and providing similar services to customers, in other countries. As such, it is superficially a highly attractive approach, especially where the company being regulated has UK monopoly elements, such that there are no directly relevant UK comparators. Royal Mail can be considered to fall into this category.
- 25.2 International benchmarking techniques have been investigated for a number of other UK regulated utilities such as Transco, certain airports, Railtrack/ Network Rail and BT. In this section, we first provide an overview of regulatory best practice in this area. We then explain the approach we have adopted to international benchmarking and the information we have used. We then review the available evidence for efficiency trends in terms of unit costs, letter prices and letters per employee. At the end of the section, we summarise key conclusions.

Regulatory best practice

- 25.3 Most regulators have sought to use international perspectives to help assess the scope for efficiency savings in the UK. However, the general conclusion has been that the significant differences between countries on issues such as scale economies, regulatory regime, required standards of service, extent of competition, cost allocation principles and different risk profiles make these efficiency comparisons unreliable for direct application. CEPA concludes in its recommendations to OPRPA that: *“the experience of using international cost comparisons by regulators in price reviews has frequently been unsatisfactory. The very different operating environments and standards that apply often invalidate the results.”*⁵³¹
- 25.4 As such, regulators have tended only to undertake international benchmarking at a relatively high level and, even then, these attempts have encountered significant difficulties. For example, international benchmarking was undertaken only at a high level for electricity transmission, because of comparability issues between NGC and the foreign companies. The results were not used directly in the

⁵³¹ Approaches to benchmarking infraco efficiency and performance – Report to the London Underground PPP Arbiter, CEPA, July 2003

calculation of efficiency savings, but only as a high level indicator of relative efficiency⁵³². A number of alternative examples also exist⁵³³.

- 25.5 The difficulties associated with international comparisons, particularly those arising due to different operating environments and data availability issues, highlighted by several of the studies referred to above, suggest that detailed econometric comparisons of Royal Mail to international postal operators would not yield results that could be used directly as part of the current study. The experience in relation to benchmarking airports and fixed line telecommunications are particularly instructive here.
- 25.6 High-level approaches to international benchmarking have been successfully applied in a UK regulatory context to provide crosschecks to detailed bottom-up analyses. For example, NERA's approach⁵³⁴ in benchmarking Railtrack's activities, by using international trends rather than absolute comparisons, is a useful one. Although this will not provide evidence as to the absolute level of efficient costs, it can provide a good indication of the scale and direction of cost improvements that are achievable, and can be combined relatively easily with the results from other methodologies.
- 25.7 Another approach is to look at international comparisons for individual processes or areas. Building on the experience of previous airports reviews, the CAA has recently suggested the use of such an approach in the future rather than attempting to use econometric techniques to compare overall airport costs⁵³⁵. Royal Mail's activities are clearly amenable to this approach, comparing the achievements in individual operational areas with what has been achieved by other postal authorities⁵³⁶.
- 25.8 These examples also suggest that international benchmarking can be of most use in considering specific initiatives and the potential efficiency gains they can

⁵³² Arthur Andersen performed a comparison of the performance of NGC to three US electric utilities as part of Ofgem's 2001 to 2006 price control review of NGC

⁵³³ The Application of Benchmarking to Airports, Phase 1: Data Collection and Assessment, NERA, June 2001 and The comparative efficiency of BT, NERA, July 2000

⁵³⁴ Review of overseas railway efficiency, NERA, July 2000

⁵³⁵ Airport regulation: looking to the future – learning from the past, CAA, May 2004

⁵³⁶ This approach is consistent with the international benchmarking undertaken for the ORR in the 2003 interim review of Network Rail

bring. In a way similar to that used in the 2003 rail interim review, international best practice can be investigated and the potential for it to be applied.

Approach

- 25.9 We have not performed a detailed comparison of the *absolute* level of unit costs across international postal operators. The generic issues that influence international comparability are particularly acute within the postal sector as each operator faces significantly different environments. These differences include the geography and topography of the delivery network, quality and service obligations, strength of labour unions and the market status (i.e. existence of competition, degree of regulation, etc). These in turn drive both the way in which postal services are provided and the level and structure of costs.
- 25.10 Postal services in the European Union are also changing. Since the adoption of the Postal Directive and its transposition into national legislation, a number of important market developments have taken place. Postal operators have moved towards a market-driven provision of postal services, in some cases accompanied by partial privatisation. Postal operators have increasingly diversified into non-universal services such as express and logistics services. However, the rate and extent of transformation varies considerably between EU Member States, making comparisons more difficult.
- 25.11 As such, we have not performed a detailed comparison of the *absolute* level of unit costs across international postal operators. However, we have considered unit cost trends.
- 25.12 During the course of our work, we also performed a limited review of country and postal performance metrics, based on readily available information. In addition to company accounts, we relied on a number of sources including the Universal Postal Union study (2002), the Rating the National Postal Services study (2003) by Postal Solutions and the Annual Survey (2003) by E-BISS International. These surveys provide information on a variety of performance metrics including mail volumes, media spending, macroeconomic data, and profitability and service levels. A summary of basic postal metrics is provided in Appendix 31.
- 25.13 We consider two metrics in detail: letter prices and domestic letters per employee. Our analysis of letter prices is based on a benchmarking exercise

conducted by Deutsche Post World Net (“the Deutsche Post Study”)⁵³⁷, and our review of letters per employee is based on a comparative benchmarking exercise conducted by Frontier Economics (“the Frontier Economics Report”).

- 25.14 We have also performed two surveys: one of international postal operators and the other of postal sector regulators. The objective of each survey is to identify areas of operational best practice – and the savings that can result from implementing them. The surveys are provided in Appendix 9 and Appendix 10. The results of these surveys, which are provided in Appendix 11, are integrated into our bottom-up review, which is contained within Part C of this report.

Cost information availability

- 25.15 Postal industry cost information is not readily available. In its report to the European Commission, NERA noted, *“in the increasingly competitive postal environment it is not surprising that postal operators are increasingly unwilling to reveal cost information to their competitors or customers”*⁵³⁸. NERA also indicated that there was some cost information in published annual reports and in other financial sources, but that this information was generally incomplete and inconsistent. NERA therefore sought to supplement the publicly available data by means of a questionnaire. However, the response to this was variable, leaving NERA with an incomplete and not fully consistent dataset. Due to the recentness of the NERA study, we have not sought to update its dataset. However, recognising the data issues encountered by NERA we have also considered certain cost information provided to us by Royal Mail⁵³⁹.

International cost trends

- 25.16 In this section, we first consider international cost trends using the NERA dataset. We then consider Royal Mail’s benchmark cost information.

NERA international cost trends

- 25.17 The table below provides a summary of European costs trends:

⁵³⁷ Letter prices in Europe – Current international letter price comparison, Deutsche Post World Net, January 2004

⁵³⁸ The NERA Report, page 60

⁵³⁹ RM 3094a

Table 263: International RUOC trends

Country	1998 €	1999 €	2000 €	2001 €	2002 €	2003 €	CAGR	VA CAGR ⁵⁴⁰
Austria	0.57	0.60	0.51	0.37	0.34	-	-12.5%	-7.0%
Denmark	0.41	0.41	0.41	0.40	0.40	0.39	-1.1%	-1.8%
Estonia	1.50	1.30	1.29	0.69	0.53	0.51	-19.6%	-2.7%
Finland	1.12	1.07	1.05	1.07	1.12	1.10	-0.5%	0.1%
France	-	0.81	0.87	0.93	-	-	6.8%	5.9%
Germany	0.51	0.50	0.43	0.43	0.46	0.44	-2.9%	-2.5%
Greece	-	0.66	0.67	0.71	0.76	-	4.9%	6.8%
Hungary	1.50	1.10	1.10	1.11	1.18	-	-5.7%	1.6%
Ireland	0.77	0.78	0.76	0.77	0.81	-	1.1%	3.3%
Italy	-	1.25	1.25	1.23	1.31	-	1.4%	1.3%
Latvia	-	1.61	0.73	0.65	0.68	1.24	-6.3%	-1.1%
Lithuania	2.22	2.22	2.24	2.20	1.94	2.03	-1.8%	0.3%
Malta	-	-	-	0.44	0.46	0.38	-7.1%	-1.8%
Netherlands	-	0.43	0.43	0.43	0.46	-	2.0%	1.8%
Portugal	-	-	0.52	0.53	0.58	-	5.7%	6.2%
Slovak Republic	-	-	1.04	0.99	1.34	-	13.3%	7.4%
Slovenia	0.51	0.48	0.43	0.41	0.37	0.30	-9.9%	-3.4%
Spain	-	-	-	0.37	0.35	0.34	-3.6%	-0.9%
Sweden	0.40	0.43	0.43	0.41	0.42	0.44	2.3%	1.7%
Average							-1.8%	0.8%

Source: NERA, "Economics of Postal Services", July 2004, p64. LECG Analysis. This table differs in minor ways from NERA, do to apparent minor inconsistencies between input data and RUOC figures.

25.18 To compensate for the effects of differential volume growth in the table above, in the final column of the table we show volume-adjusted CAGRs. Great care needs

⁵⁴⁰ Based on volume adjusted RUOC. That is, the productivity component of the trend has been isolated. We have adjusted our results into constant volume terms (using the method described earlier in this report) assuming that, on average, 65% of costs are volume variable based on NERA's overall findings

to be taken in interpreting even these numbers because of differences in coverage. Comparisons between countries will be distorted because the overall costs may include costs of activities other than those in the letter mail pipeline, whereas the denominator is simply letter mail volume. Consequently, an operator with a wide range of other activities will appear to have a higher unit cost than an operator with a narrower range of activities.

- 25.19 The general trend in unit costs over time is downwards rather than upwards – with an average decline of 1.8% in real terms⁵⁴¹. This decline can be explained, in part, by increasing mail volumes. Adjusting for volume, the general trend in unit costs is mixed, with only eight countries out of 19 showing a downward trend. Overall, the average rate of productivity improvement appears to be low. In part, we believe this is driven by the early stage of the liberalisation process across Europe.
- 25.20 In line with our observations of Royal Mail's unit cost trends it would appear that since Postcomm was given responsibility, under the Postal Services Act 2000, for the independent regulation of the postal services market in the UK in March 2001, Royal Mail's volume-adjusted operating efficiency has increased significantly. Refer to Section 22 for our review of Royal Mail's unit cost trends.
- 25.21 Trends in regulation of postal services vary widely across Member States. At an EU level, the regulatory framework for the sector has been laid down in the Postal Directive. Key features of the Directive are a gradual reduction of the maximum weight in the reserved area (currently 100g, to be reduced to 50g from 1 January 2006), a requirement for transparent and clearly separated cost accounting systems by universal service providers, and the definition of minimum quality of service standards. The NERA study finds, however, that regulatory trends, both at national and EU level, are only providing powerful incentives for some operators. This is consistent with our understanding that most mail volume is in the reserved areas and it would appear that few regulatory structures are explicitly pro-competition.
- 25.22 Postcomm has recently proposed to bring forward full market opening from 1 April 2007 to 1 January 2006 in the UK. Given the timing of market opening, we

⁵⁴¹ The analysis is conducted over a relatively short period. Consequently, it fails to identify operators who have made significant savings in the past. For example, Austria Post, TPG and Denmark Post are generally thought to be operating at a high level of efficiency

believe that it would be appropriate to compare Royal Mail to countries at similar stages of development. Sweden's trend is worth noting. The postal market in Sweden was fully liberalised in 1993. The Frontier Economics Report indicates that Sweden Post achieved real efficiency savings of around 6% per year between 1993 and 1995. If the period 1992 to 1995 is considered, which might be appropriate if it is assumed that productivity gains started to occur in 1992 in anticipation of liberalisation, then the company achieved savings of approximately 9% per annum.

- 25.23 The Netherlands and Germany have also opted to open the market earlier than required by the Postal Directive – which may have provided incentives for cost reduction. Overall Deutsche Post has achieved productivity gains of around 2.5% a year in constant volume terms whereas TPG appears to have increasing costs of 1.8% per annum on the same basis⁵⁴². TPG's results are misleading as it has already undergone a number of savings programmes in the past – and the recent cost trends may therefore reflect a company operating in a stable state. We also note that TPG's trend is inconsistent with Royal Mail's findings (see below) – this highlights NERA's concern that the data is of inconsistent quality.
- 25.24 The NERA study found that many postal operators have recently stated that obtaining an efficient cost level is one of their key business strategies – driven by increased competition and regulatory decisions (i.e. falling postal tariffs). We might expect that on average future efficiencies are likely to be higher than the historical trends.

Royal Mail international cost trends

- 25.25 Royal Mail's submission on international performance comparisons concludes *“other [international] operators have shown steeper productivity trajectories over the past 5 years [and] as a result of their productivity improvements, other operators have been able to drive greater cost reductions than RM over a five-year period and have reduced their real unit costs in the face of declining volumes”*⁵⁴³.
- 25.26 Royal Mail's analysis of cost trends against what it puts forward as being the most comparable comparators is summarised in the following table.

⁵⁴² From Table 263 above

⁵⁴³ RM 3094a

Table 264: Royal Mail cost reduction comparisons

Country	Change in addressed volume 1999-2003	Change in real operating cost 1999-2003	Change in real cost per addressed item 1999-2003
TPG	1.0%	-5.0%	-6.0%
USPS	0.3%	-4.5%	-4.8%
Deutsche Post	9.9%	-11.7%	-19.7%
Royal Mail	4.4%	4.9%	0.5%

Source: International Postal Benchmarking, McKinsey, page 6. Royal Mail reference 3094a.

- 25.27 Royal Mail's findings for Deutsche Post are consistent with NERA's findings when restated on an annual basis. The findings for TPG suggest savings of approximately 1.5% per year in real terms, which, whilst inconsistent with NERA's findings, is consistent with the general perception that TPG is an efficient operator. Royal Mail also states that TPG has a forward programme to reduce its cost base by 320m Euros by 2011⁵⁴⁴, which represents an overall reduction of 10% in real terms over the period.

Other international postal metrics

- 25.28 In this section, we consider productivity using two non-cost metrics: letter prices and domestic letters per employee. Our analysis of letter prices is based on the Deutsche Post Study. Our review of letters per employee is based on the Frontier Economics Report.

Deutsche Post World Net benchmarking study

- 25.29 In January 2004, Deutsche Post World Net ("Deutsche Post") performed a benchmarking study on letter prices in Europe⁵⁴⁵. It is possible that letter prices could provide a high level indicator of comparative efficiency – if appropriate adjustments are made to account for differences between operators.
- 25.30 In comparing letter prices, the study attempts to address many of the differences between countries. Specifically, Deutsche Post adjusts for labour costs, delivery quality, delivery frequency, mail volume, geographic factors, demographic factors, and the purchasing power of different exchange rates – to ensure the highest

⁵⁴⁴ RM 3094a

⁵⁴⁵ Letter prices in Europe – Current international letter price comparison, Deutsche Post World Net, January 2004

degree of objectivity possible. These aspects represent the cost-relevant factors and were recognised as key by the 1992 EU Commission's green paper on European postal services. The table below summarises Deutsche Post's results.

Table 265: Weighted consolidated letter price

Country	Letter prices in €
Norway	0.72
Finland	0.69
Greece	0.67
Portugal	0.67
Italy	0.65
Switzerland	0.65
Sweden	0.61
Austria	0.60
Denmark	0.59
Average	0.58
Ireland	0.55
Luxembourg	0.55
Germany	0.55
Belgium	0.54
France	0.53
UK	0.51
Netherlands	0.42
Spain	0.34

Source: Deutsche Post World Net benchmarking study

- 25.31 The results confirm Royal Mail's assertions that current postal prices in the UK are amongst the lowest in Europe – even after adjusting for country differences. This analysis is broadly consistent with evidence put forward by Royal Mail – showing a comparison of prices for UK first and second-class mail against the UK RPI index and a comparison of UK postal prices with those in Europe and some developed countries⁵⁴⁶. Royal Mail concludes that the prices of UK first and second Class public tariff mail have reduced in real terms by 8% to 15%

⁵⁴⁶ RM 3106

respectively over the last decade (i.e. on average around a 1% fall per annum). In terms of international benchmarks, Royal Mail finds that the comparison of prices across Europe and leading OECD countries shows the UK outperforms most other postal services (in terms of the inland letter prices below 20 grams). From this Royal Mail concludes that it must be “*close to the efficiency frontier of inland mails businesses world-wide*”.

- 25.32 Analysis and conclusions of this nature must be interpreted with extreme caution – as they may say little about the underlying *cost* efficiency. Prices can only ever be regarded as a broad proxy for cost – and hence relative efficiency – if prices reflect underlying cost structures.
- 25.33 The Postal Directive seeks to establish rules concerning the transparency of accounts for universal service provision (Article 1). These rules provide that the tariffs applied to the universal service should be objective, transparent, non-discriminatory and geared to costs (Recital 26 and Article 12). Article 14 of the Postal Directive also provides for certain accounting rules, in particular the separation of accounts for reserved universal services, non-reserved universal services and non-universal services and the allocation method of costs.
- 25.34 In July 2001, CTcon performed a study, on behalf of the European Commission, on the implementation of Article 14 in the national postal legislation of Member States⁵⁴⁷. CTcon found that all Member States were attempting to comply with the Postal Directive. It found that whilst the broad allocation principles of causality are similar across countries, there are differences in cost allocation methodologies, particularly the treatment of indirectly attributable and joint or common costs.
- 25.35 Differences in cost allocation methodologies, and the underlying nature of different regulatory regimes, will significantly influence the level of prices across Member States. In fact, Royal Mail argues that its prices must move towards a more granular cost-reflective pricing structure, and suggests that the cost of Social 1C (stamped) mail should increase from its current price of 28 pence to 41

⁵⁴⁷ Study of the cost accounting systems of providers of the universal postal service, CTcon, July 2003

pence over the forthcoming price control⁵⁴⁸. At this level, Royal Mail's conclusion of being at the efficiency frontier no longer appears to hold true.

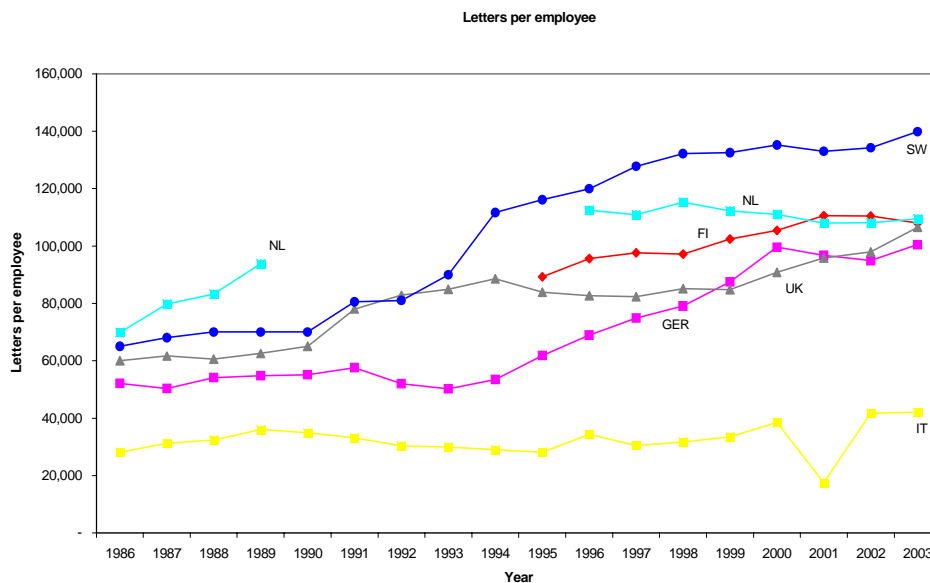
- 25.36 Without adjusting for cost allocation differences, and exogenous factors (i.e. such as how competition and regulation impacts the price setting process), it is clear that little weight should be attached to this type of benchmarking.

The Frontier Economics Report

- 25.37 Letters or mail items per employee over time have been used by Royal Mail as a measure of performance. The Frontier Economics Report benchmarks the number of letters delivered per employee. It notes that a range of country specific factors will influence the actual level of this variable – and consequently, comparisons should be conducted with some caution.
- 25.38 We note that Royal Mail disputed many of Frontier Economics' findings. Frontier Economics has responded to Royal Mail on the issues of concern. For the reasons put forward in its response, we believe that Frontier Economics'⁵⁴⁹ findings have merit and are well stated.
- 25.39 Frontier Economics compared the performance of the UK with the following countries: Germany, where some liberalisation has occurred and is comparable in terms of size to the UK; Italy, where there have been very limited moves for liberalisation until recently; the Netherlands, where direct mail is liberalised and the postal operator has been privatised; and Finland, where the legal framework for liberalisation has been introduced, although actual competition is very limited. Frontier Economics' analysis, updated by LECG, is provided graphically below:

⁵⁴⁸ RM's Strategic Plan

⁵⁴⁹ Response to Consignia's comments, Frontier Economics, May 2002

Figure 13: Domestic letters per employee 1986 – 1999

Source: Frontier Economics, updated by LECG using Universal Postal Union Database and Operators' annual reports.

- 25.40 Frontier Economics concludes *“it is notable that Sweden appears to have outperformed significantly the performance of all other countries in terms of letters/ employee. Productivity in the Netherlands has followed behind... whereas the performance of the UK and Germany is similar and has changed less markedly over the 15-year period. Both Germany and Finland have also seen an improvement after 1993 and 1995, whereas productivity in Britain has not shown any significant increase since 1994”*.
- 25.41 Frontier Economics also concludes that Sweden has consistently kept a higher level of quality of service, with the exception of 1996, when the percentage of letters delivered the next day was slightly below the Netherlands. They infer from this that *“faster liberalisation has not led to any deterioration in quality of service, compared to countries that have liberalised more slowly”*.
- 25.42 Our updated analysis is consistent with Frontier Economics' analysis – however it would appear that the performance of TPG, Finland Post, Deutsche Post and

Royal Mail has now converged. Sweden Post still significantly out performs the other operators⁵⁵⁰.

- 25.43 Frontier Economics' analysis also showed that Royal Mail had the worst quality of service performance since 1996 by some margin⁵⁵¹. Frontier Economics considered the percentage of mail delivered the next day. Its analysis shows that Sweden has consistently kept a higher level of quality of service, with the exception of 1996. Frontier Economics concludes that faster liberalisation has not led to any deterioration in quality of service, compared to countries that have liberalised more slowly. It appears that there need not be any trade-off between quality and productivity.

Conclusions

- 25.44 Due to the significant issues that influence data comparability, it is not possible to perform meaningful comparisons of the absolute level of unit costs across international postal operators. Consequently, our analysis has focus on unit cost trends instead. The general trend in unit costs over time is downwards rather than upwards (i.e. a trend towards increasing efficiency), with an average decline of 1.75% in real terms.
- 25.45 Overall, the average rate of productivity improvement across postal operators appears low – but we believe that the figure is biased by a number of operators starting from a relatively high level of efficiency, such as Denmark Post and Deutsche Post, and by a number of operators experiencing reductions in efficiency, as is the case in respect of the figures for France, Portugal and Greece.
- 25.46 Productivity trends are also influenced by the early stage of the liberalisation process. Comparing Royal Mail to countries at similar stages in the development of a competitive market suggests greater scope for savings. Other research suggests that, in anticipation of competition, Sweden Post achieved savings of approximately 9% annually over a four-year period; Deutsche Post has achieved

⁵⁵⁰ Different metrics might result in different conclusions. RM presents analysis of productivity in terms of *addressed* letters per FTE as opposed to *delivered* letters per FTE (source: Strategic Plan, page 13). It concludes that RM's productivity is significantly lower than both TPG's and Deutsche Post's. RM's productivity in terms of addressed letters per FTE in 2003 was 117,000, TPG's was 156,000 and Deutsche Post's was 130,000

⁵⁵¹ Royal Mail correctly indicates that Italy's next day delivery percentage is worse than Royal Mail's

cost savings of around 2.5% in constant volume terms; and work performed on behalf of Royal Mail indicates that TPG has achieved savings of around 1.5% per annum.

- 25.47 Letter prices are not an indicator of comparative efficiency – unless they are adjusted for cost allocation differences and other exogenous factors. We believe that little weight should be attached to price benchmarking.
- 25.48 There is evidence that both regulation and liberalisation provide powerful incentives for productivity growth and improved quality. Since the introduction of competition, it is clear that Sweden appears to have outperformed significantly the performance of all other countries in terms of letters per employee.

Part F: LECG conclusions

26 Efficient future costs

Introduction

- 26.1 This section draws together the results of the various analyses set out in preceding sections to arrive at an overall conclusion about the efficient level of future costs that we believe should be incorporated into Royal Mail's next price control.
- 26.2 The cost estimates are presented within this section in aggregate form for convenience. Cost levels are sensitive to the volume and mix of mail that Royal Mail handles in any year, and the cost levels presented here are those that would apply in the particular scenario adopted by Postcomm as to future volumes by product.
- 26.3 In order to allow cost levels to be projected across different volume scenarios we have modelled costs at the level of individual activities in each year; each split by cost type and by product (of which there are over a thousand). The level of detail involved is far greater than is, or could be, presented here. We have used Royal Mail's BPM in order to develop the level of detail required.
- 26.4 The cost projections that we have developed have two bases. Firstly, we have performed a detailed assessment of opening costs, which are then projected forward using only adjustments for volume and mix changes to give Baseline projections. These are then adjusted for the impact of specific initiatives to give overall projections on a bottom-up basis. Secondly, we have performed a top-down analysis of the future efficiency of Royal Mail's letters business. Our final conclusions are derived from considering the results both of these analyses together.
- 26.5 It should also be noted that the conclusions summarised within this section do not translate directly into a level for the price control. Although the 'X' factor in RPI-X regulation is in principle a function of the rate at which overall cost savings can be made, it will be influenced in this case by, among other things, conclusions as to the appropriate treatment of Royal Mail's current pension deficit, and by conclusions as to the appropriate allowance, if any, for profits.

Base Year and Baseline projections

26.6 In Sections 7 and 8 we assessed an appropriate level of Base Year costs, and then used those costs (allocated across activities) to drive a Baseline projection, using assumptions as to volumes and mix developed by Postcomm with assistance from Frontier Economics. The volume and mix assumptions are based on Frontier Economics' central volume case – shown in the table below in summary form:

Table 266: Projected volumes in millions

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Postcomm/Frontier Economics volumes	25,068	25,230	26,103	26,346	26,196	26,090

Source: Frontier Economics: volume submission of 22 March 2005

26.7 These volume assumptions (together with more detailed assumptions as to mix) drive the forward projection of Baseline costs. In preparing these projections, we have used an assumption that costs change immediately in response to changes in volume – rather than over the following two years as originally proposed by Royal Mail. The resulting figures are as follows:

Table 267: LECG Baseline operating costs for RML

In real terms and £m	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
LECG Baseline operating costs	5,613	5,593	5,581	5,619	5,583	5,513	5,428

Source: RM 2023a BPM2_v2.7, Royal Mail phasing file RM 2014, Frontier Economics volume submission of 22 March 2005, and LECG analysis

26.8 Although overall cost levels are broadly stable within this scenario, the increase in volumes means that unit costs are decreasing, as shown in the table below:

Table 268: LECG Baseline unit operating costs for RML

In real terms	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	CAGR
Base line	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)

Source: LECG analysis

26.9 The profile suggests that unit costs will fall by 1.4% per year in real terms over the period of the price control. This change does not relate to a change in

productivity. Changes in volume (“the volume effect”) and changes in product mix (“the mix effect”) explain the reduction in unit costs. The size of these effects depends on both the elasticity of scale⁵⁵² and the extent to which volumes and mix have changed over the period concerned. We estimate that the size of the volume effect is around 0.6% per year and that the size of the mix effect is around 0.8% per year.

Bottom-up analysis

- 26.10 Our bottom-up analysis is set out in Part C. It is based in large part on a detailed review of the initiatives contained within Royal Mail’s Strategic Plan. Many of these initiatives did not have support in sufficient detail to allow them to be examined in depth, and therefore this detailed review required the exercise of broad judgement.
- 26.11 Certain of the initiatives required significant investment, but lacked the support to demonstrate that the resulting benefits were sufficient to justify the investment itself. These initiatives have had to be excluded from our projections, although under a regulatory value approach to the price control, their exclusion would not constitute a barrier to Royal Mail pursuing these initiatives if it felt that the business case for doing so were strong enough.
- 26.12 The exclusion of these higher investment initiatives, together with any other initiatives that we judged were dependent on them, means that the resulting financial projections describe a period of incremental (rather than radical, investment-driven) change. That is not to say that the scale of change described is small: the large majority of the initiatives described within Royal Mail’s Strategic Plan have been incorporated, as have some additional initiatives that we believe have merit.
- 26.13 As indicated in Section 11, we have developed two sets of projections in this way. In some cases, we have identified alternative estimates of either the costs or benefits associated with the individual initiatives put forward by Royal Mail. Where we have, we have typically aggregated these alternative estimates into a “higher case” scenario for the savings achievable by Royal Mail over the five years to 2010/11. The “lower case” scenario generally comprises Royal Mail’s own figures.

⁵⁵² Taken as 0.6 – see discussion in Section 8 above

- 26.14 The table below summarises the results for the lower case scenario, combined with our Baseline projections.

Table 269: LECG bottom-up lower case scenario for RML

2003/04 prices	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	5,593	5,581	5,619	5,583	5,513	5,428	(0.6%)
Net operating cost savings	(51)	(186)	(262)	(314)	(347)	(383)	
Operating costs before one-offs	5,542	5,394	5,357	5,269	5,165	5,044	(1.9%)
One-off costs	48	77	58	51	3	2	
Operating costs after one-offs	5,591	5,471	5,415	5,320	5,168	5,047	(2.0%)
Capital expenditure	200	179	183	185	185	185	
Total cash costs	5,791	5,651	5,599	5,506	5,354	5,232	(2.0%)

Source: LECG analysis. Capital expenditure is shown net of proceeds from property disposals. Operating costs and capital expenditure costs are slightly different from those reported in Postcomm's Initial Proposals. Due to the capitalisation of assets under £2,500, Postcomm reports slightly higher capital expenditure figures (i.e. by £3.6m) and correspondingly lower operating expenditure.

- 26.15 The table below converts our lower case scenario into unit cost terms.

Table 270: LECG bottom-up lower case scenario for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)
RUOE before one-offs	0.221	0.214	0.205	0.200	0.197	0.193	(2.6%)
RUOE after one-offs	0.223	0.217	0.207	0.202	0.197	0.193	(2.8%)
RUOC	0.231	0.224	0.214	0.209	0.204	0.201	(2.8%)

Source: LECG analysis

26.16 Under our lower case scenario, RUOE after one-off expenditure declines at 2.8% a year and RUOC declines at a rate of 2.8% per annum. Removing the impact of volume growth and changes in product mix gives an underlying trend in RUOE and in RUOC of 1.4%.

26.17 The table below summarises the results of the higher case scenario, combined with our Baseline conclusions.

Table 271: LECG bottom-up higher case scenario for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	5,593	5,581	5,619	5,583	5,513	5,428	(0.6%)
Net operating cost savings	(80)	(249)	(349)	(476)	(654)	(759)	
Operating costs before one-offs	5,513	5,332	5,269	5,107	4,858	4,669	(3.3%)
One-off costs	44	93	93	99	42	50	
Operating costs after one-offs	5,558	5,424	5,362	5,206	4,900	4,718	(3.2%)
Capital expenditure	200	179	183	185	185	185	
Total cash costs	5,758	5,604	5,546	5,392	5,086	4,903	(3.2%)

Source: LECG analysis. Capital expenditure is shown net of proceeds from property disposals. Operating costs and capital expenditure costs are slightly different from those reported in Postcomm's Initial Proposals. Due to the capitalisation of assets under £2,500, Postcomm reports slightly higher capital expenditure figures (i.e. by £3.6m) and correspondingly lower operating expenditure.

26.18 The table below converts our higher case scenario into unit cost terms.

Table 272: LECG bottom-up higher case scenario for RML

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)
RUOE before one-offs	0.220	0.211	0.202	0.194	0.185	0.179	(4.0%)
RUOE after one-offs	0.222	0.215	0.205	0.198	0.187	0.181	(4.0%)
RUOC	0.230	0.222	0.212	0.205	0.194	0.188	(3.9%)

Source: LECG analysis

26.19 Under our higher case scenario, RUOE after one-off expenditure declines at 4.0% a year and RUOC declines at a rate of 3.9% per annum. Removing the impact of volume growth and changes in product mix gives an underlying trend in RUOE of 2.6% a year and in RUOC of 2.5% a year.

26.20 The analysis carried out on a bottom-up basis therefore supports a projection of forward productivity growth, adjusted for volume and mix effects, of between 1.4% and 2.6% in RUOE terms and between 1.4% and 2.5% on an RUOC basis. Even on the basis of this analysis alone, we would expect the scope for Royal Mail to generate improved productivity to lie closer to the top than to the bottom of these ranges.

Internal benchmarking

26.21 Notwithstanding the exclusion of the higher investment initiatives as described above, the programme of initiatives that is included within the two scenarios above can fairly be described as transformational. Several of the initiatives, however, refer primarily to the propagation of existing best practices.

26.22 We carried out our own analysis, described in Part D of this report, into the scope for savings to be realised in this way. We concluded that the level of savings achievable was as follows:

Table 273: Conclusions from internal benchmarking of delivery offices and mail centres

	Savings available	Reference
Delivery offices	£250 – 300 million	Paragraph 20.110
Mail centres	£100 – 150 million	Paragraphs 20.110 and 20.116
Total	£350 – 450 million	

Source: LECG analysis

- 26.23 As we noted in Section 20 above, we would not regard these targets as ambitious: they are based on existing best practice only, benchmarked against the bottom of the top decile, and scaled back by 15% (mail centres) to 20% (delivery offices) to allow for the possibility of residual error. Over a four-year period to 2009/10, we believe that these targets should be achievable.
- 26.24 Comparing the aggregate level of savings above with the savings from specific initiatives that we have identified as potentially relating to the propagation of best practice – or at least potentially relating to techniques which might already be in place in the best performing offices – gives the following:

Table 274: Opex savings 2010/11 from specific best practice initiatives

2003/04 prices	Lower case	Higher case	Section	Rationale
Area efficiency	£49 m	£49 m	13	Raising performance through targeted savings levels may involve moving towards existing best practice.
Production control	£38 m	£38 m	13	Five separate initiatives to raise productivity at MCs. Equivalent performance may be being achieved in top decile MCs already.
Automation utilisation	£88 m	£174 m	13*	Three separate initiatives aimed at improving utilisation of existing equipment, based on existing best practices.
Best practice deployment	£60 m	£200 m	15	Focuses on savings achievable through the deployment of existing best practices across delivery offices.
Walk route optimisation	-	£33 m	15	It may be that top decile delivery offices have optimal walk routings, even without having deployed specific route optimisation software.
Total	£235 m	£494 m		

Source: LECG analysis. * Excluding additional benefits arising at delivery office level from increased walk sorting, which goes beyond existing best practice.

- 26.25 The scale of savings identified by our internal benchmarking exercise is therefore broadly comparable to the level of savings available from best practice initiatives identified by Royal Mail itself. In part, some of this comparability arises because our higher case savings for the “Best practice deployment” is influenced by our internal benchmarking findings. However, on balance, though, we believe that the comparison supports the conclusion that the scope for efficiency gains is more likely to be closer to the higher scenario than to the lower.

Top-down analysis

- 26.26 Top-down analysis is necessary in cost efficiency studies because not all of the mechanisms available to a company for raising efficiency, or reducing costs, in the future can normally be foreseen at the start of that period. Looking at the sum of initiatives that can be identified at the outset of the price control period (which is the nature of the “bottom-up” analysis that we have carried out) is therefore likely to understate the actual scope for future efficiency gains.
- 26.27 Royal Mail’s own experience in the current price control period bears this out, as discussed in Section 6. Although the original targets for the specific initiatives

encapsulated in the Renewal Plan have not been met, the company has beaten the overall efficiency targets inherent in the price control. The implication is that additional initiatives, not specifically identified at the time the price control was set, have driven the additional efficiency gains.

- 26.28 The same phenomenon is also visible in the pattern of “one-off” costs in Table 269 and Table 271 above, which are high at the beginning of the period (reflecting the start of a number of initiatives) but reduce steadily towards the end of the period (reflecting fewer initiatives starting). In practice we would anticipate additional initiatives, not currently foreseen, being developed after the start of the next price control period and implemented thereafter.
- 26.29 For these reasons, bottom-up estimates of the scope for efficiency gains are more likely to provide a lower limit to the actual scope. Looking at the problem on a top-down basis then provides an alternative estimate of the scope for actual forward efficiency gains with which the bottom-up estimates can be compared. In principle, neither of the two approaches has, or needs to have, primacy, although by its nature the bottom-up analysis is generally more comprehensive.
- 26.30 Our top down conclusions are summarised in the table below. Numbers are expressed in constant volume and real terms.

Table 275: Summary of cross sector regulatory efficiency savings

Benchmark	RUOE trends
Royal Mail historical trends	2.9 %
Outturn regulated company savings	3.0% to 4.0%
Privatisation effect	1.25% to 3.5%
Total factor productivity	Above 2.6%
International cost trend evidence	2.5%

Source: LECG analysis

- 26.31 Across all of the regulated industries, significant opportunities for productivity gains have emerged in the periods immediately following the onset of price regulation, and when the prospect of competition has started to become real. These “catch-up” gains reflect the early identification and elimination of

embedded inefficiency built up during the periods when the companies were under public ownership.

26.32 Royal Mail is different from other regulated companies in that it faces potential competition while under public ownership. That does not mean, however, that the scope for increasing efficiency is any less. We would anticipate that the opportunities for “catch-up” gains in efficiency are as real for Royal Mail as they have been for other regulated companies. As such, we believe that Royal Mail’s performance over the current price control, which coincides with a period of competitive pressures and price regulation, provides a lower bound for the level of efficiencies that can be expected over the forthcoming price control.

26.33 Cost control targets imposed by regulators are rarely welcomed by the companies they regulate, and are often described publicly by the regulated companies as unachievable. Notwithstanding this, these targets are generally exceeded, as our analysis has shown. The average productivity gains achieved by other regulated companies are therefore instructive. We believe that this range should form the upper bound for the level of efficiencies that can be expected over the forthcoming price control.

26.34 On balance, the results of the comparative top-down analysis suggest an RUOE trend of between 3.0% and 4.0% a year in constant volume terms.

Conclusions

26.35 We have used three main inputs to determine the level of future *operating* expenditure efficiencies that Royal Mail can achieve. The table below shows our conclusions from each of these elements of work.

Table 276: Summary of findings relating to Royal Mail's future RUOE savings, assuming constant volume and mix

	Annual % decrease in RUOE
Top down assessment	3.0 % to 4.0%
Bottom up review of RML's Strategic Plan	1.2% to 2.6%
Internal benchmarking (assuming achieved over 4 years)*	2.7% to 3.5%
Internal benchmarking (assuming achieved over 5 years)*	2.2% to 2.8%
Conclusion	2.75% to 3.25%

Note: Figures are adjusted for volume and mix effects. * The internal benchmarking trend is not strictly an RUOE trend. The trend only relates to mail centre and delivery office labour costs. Other parts of RML's network and other types of costs (e.g. vehicles) were not included in the internal benchmarking exercise.

- 26.36 Top-down analysis is necessary in cost efficiency studies because not all of the mechanisms available to a company for raising efficiency, or reducing costs, over a forward period can normally be foreseen at the start of that period. Looking at the sum of initiatives that can be identified at the outset of the price control period (which is the nature of the "bottom-up" analysis that we have carried out) is therefore likely to understate the actual scope for forward efficiency gains.
- 26.37 Royal Mail's own experience in the current price control period bears this out, as discussed in Section 6. Although the original targets for the specific initiatives encapsulated in the Renewal Plan have not been met, the company has beaten the overall efficiency targets inherent in the price control. The implication is that additional initiatives, not specifically identified at the time the price control was set, have driven the additional efficiency gains.
- 26.38 The same phenomenon is also visible in the pattern of "one-off" costs in the tables above, which are high at the beginning of the period (reflecting the start of a number of initiatives) but reduce steadily towards the end of the period (reflecting fewer initiatives starting). In practice we would anticipate additional initiatives, not currently foreseen, being developed after the start of the next price control period and implemented thereafter.

26.39 For these reasons, bottom-up estimates of the scope for efficiency gains are more likely to provide a lower limit to the actual scope. We believe that even our high bottom-up case is conservative because we have not incorporated a number of best practice initiatives that we would expect Royal Mail to implement.

LECG conclusions for regulated activities assuming and RUOE of 3.0%

26.40 Taking the results of all of the analysis presented above together, we assess the scope for operating efficiency savings within Royal Mail at 2.75% to 3.25% (before volume and mix effects and in real terms) annually for the period covered by the next price control. For our initial conclusions we have selected the mid point for this range.

26.41 Incorporating the effects of volume and mix changes, this translates to an RUOE trend of 4.4% for RML. This cost trend is stated before the impact of one-off costs and capital costs. Our forecast of one-costs and capital expenditure is based on our bottom-up assessment, under the high case.

26.42 We have allocated efficiencies to activity costs mostly on a direct basis and in line with Royal Mail's allocation of savings to activities. Where we have been unable to allocate savings on a direct basis, savings have been allocated on an equi-proportional basis. Activity costs are then allocated to products in the same proportion as the allocation prior to efficiency savings. Again this is the same approach adopted by Royal Mail.

26.43 We have used Postcomm's initial proposals on which products are to be "regulated" – to determine total regulated costs (i.e. the sum of regulated product costs). Refer to Appendix 4 for a summary of regulated products.

26.44 The table below sets out our initial conclusions for RML's activities assuming an RUOE of 3.0% in constant volume terms.

Table 277: LECG profile of RML costs assuming RUOE of 3.0%

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	5,593	5,581	5,619	5,583	5,513	5,428	(0.6%)
Net operating cost savings	(81)	(243)	(401)	(554)	(703)	(847)	
Operating costs before one-offs	5,513	5,338	5,218	5,029	4,810	4,581	(3.6%)
One-off costs	44	93	93	99	42	50	
Operating costs after one-offs	5,557	5,430	5,311	5,129	4,852	4,630	(3.6%)
Capital expenditure	200	179	183	185	185	185	
Total cash costs	5,757	5,610	5,494	5,314	5,037	4,815	(3.5%)

Source: LECG analysis. Operating costs and capital expenditure costs are slightly different from those reported in Postcomm's Initial Proposals. Due to the capitalisation of assets under £2,500, Postcomm reports slightly higher capital expenditure figures (i.e. by £3.6m) and correspondingly lower operating expenditure.

26.45 The table below converts the case above into unit cost terms.

Table 278: LECG profile of RML unit costs assuming RUOE of 3.0%

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	0.223	0.221	0.215	0.212	0.210	0.208	(1.4%)
RUOE before one-offs	0.220	0.212	0.200	0.191	0.184	0.176	(4.4%)
RUOE after one-offs	0.222	0.215	0.203	0.195	0.185	0.177	(4.4%)
RUOC	0.230	0.222	0.210	0.202	0.192	0.185	(4.3%)

Source: LECG analysis

26.46 The table below sets out our initial conclusions for the efficient profile of regulated costs.

Table 279: LECG profile of regulated costs (assuming RUOE of 3% in constant volume and mix terms for RML)

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	5,065	5,059	5,095	5,055	5,007	4,925	(0.6%)
Net operating cost savings	(75)	(227)	(372)	(511)	(649)	(780)	
Operating costs before one-offs	4,990	4,832	4,723	4,544	4,358	4,145	(3.6%)
One-off costs	40	84	84	90	38	45	
Operating costs after one-offs	5,030	4,916	4,807	4,634	4,396	4,190	(3.6%)
Capital expenditure	181	162	166	167	168	167	
Total cash costs	5,211	5,078	4,973	4,801	4,564	4,357	(3.5%)

Source: LECG analysis. Operating costs and capital expenditure costs are slightly different from those reported in Postcomm's Initial Proposals. Due to the capitalisation of assets under £2,500, Postcomm reports slightly higher capital expenditure figures (i.e. by £3.6m) and correspondingly lower operating expenditure.

26.47 The table below converts regulated costs into unit cost terms.

Table 280: LECG profile of Royal Mail's regulated unit costs (assuming RUOE of 3% in constant volume and mix terms for RML)

	05/06	06/07	07/08	08/09	09/10	10/11	CAGR
Baseline	0.247	0.246	0.243	0.243	0.242	0.242	(0.4%)
RUOE before one-offs	0.243	0.235	0.225	0.218	0.211	0.204	(3.5%)
RUOE after one-offs	0.245	0.239	0.229	0.223	0.213	0.206	(3.4%)
RUOC	0.254	0.247	0.237	0.231	0.221	0.215	(3.3%)

Source: LECG analysis

26.48 The regulated activities report a lower RUOC reduction than for RML as a whole, due to differences in Baseline costs. This is due to the underlying mix and volume assumptions. The overall efficiency assumptions are consistently stated.

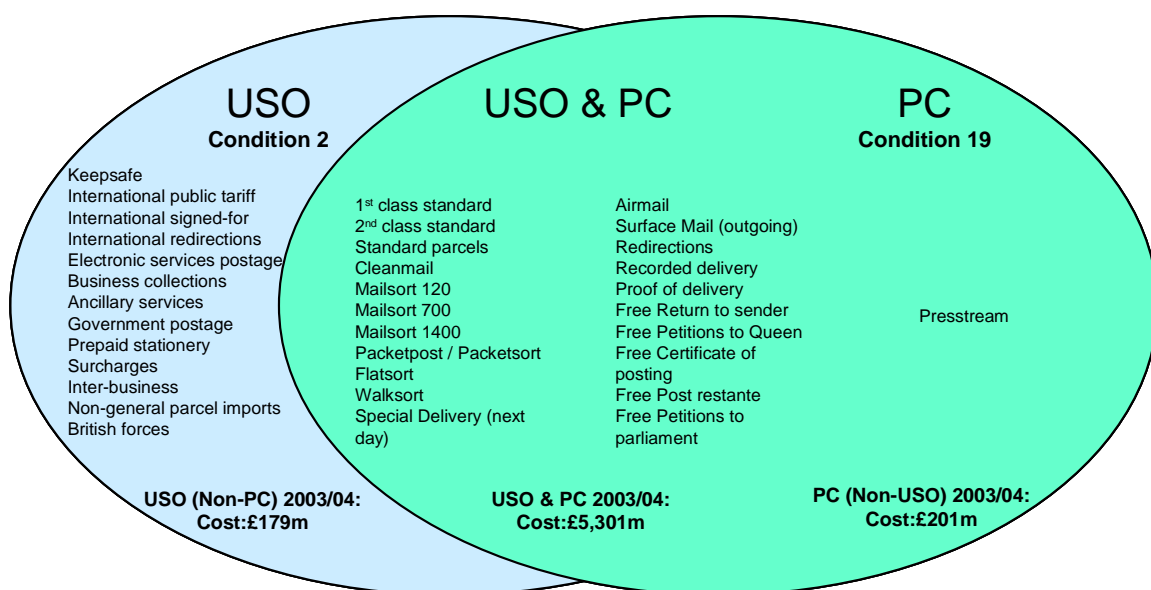
For example, in constant volume and mix terms, both the regulated activities and RML are forecast to lower RUOC by around 2.9% (i.e. 3.3% less 0.4% and 4.3% less 1.4% respectively).

Appendices

Appendix 1: Current USO and price-controlled products

A.1.1 The figure below defines Royal Mail's current regulated business. This includes the UK inland mails services and outgoing international products, which are defined under Condition 2 of Royal Mail's licence and Condition 19 of Royal Mail's licence (which identifies the price controlled products). In addition, access products are defined within Condition 9 of Royal Mail's licence.

Figure 14: Royal Mail's regulated business



Source: Postcomm

A.1.2 The figure below defines Royal Mail's current non-regulated activities in 2003/04.

Figure 15: Royal Mail's non regulated products and services

Other Letter Products	
Door to Door	Perishable Biological 1C
Bespoke Pouch Services	Perishable Biological 2C
International Sorted Sundles	Presstream
Swiftair	International Zone and Format
Spring Mail	International Mail Options
International Priority	AC Mail Sorted
Airsure	International Special Collection
International Country Mail	Prepaid Stationery 1C
International Admail	Prepaid Stationery 2C
Special Delivery 9am	NRG
Mailmedia	Mailsort 120 3C
Articles for the Blind	

Source: Postcomm

Appendix 2: Information sources

A.2.1 For the purposes of this report, we have relied upon the following data sources, *inter alia*:

- Royal Mail's response to Postcomm's 2006 Royal Mail Price and Service Quality Control Review, Initial Business Plan Questionnaire. This sought information in two stages. Stage 1 requested a Strategic Plan for Royal Mail's business to 2011, including high level financial forecasts, and historical cost, volume and revenue information by the end of July 2004. Stage 2 requested more detailed projected information to 2011 by the end of October 2004;
- Royal Mail's response to Postcomm's formal Requirement to Furnish Information dated 24 January 2005
- Royal Mail's responses to approximately to over 500 questions contained in 12 supplementary information requests submitted, by Postcomm on behalf of LECG, between August 2004 and January 2005;
- information provided by Royal Mail via email in response to requests submitted by Postcomm and LECG;
- Royal Mail's Letters Strategic Plan Discussion Draft (dated 7 December 2004) and supporting documentation, as provided on 28 January 2005;
- Royal Mail's Business Planning Model (BPM) – a macro-driven suite of spreadsheet models, used by Royal Mail to forecast future profitability at a product level – and Baseline Planning Costs (BPC) model;
- Royal Mail's analysis of historical pipeline costs;
- Royal Mail's forecast of volumes between 2004/05 and 2010/11;
- information gained from meetings with senior Royal Mail staff members including: Adam Crozier (Chief Executive); Stephen Agar (Head of Regulation); Alex Smith (Head of Strategy); and Tony McCarthy (Head of Human Resources).
- information gained from approximately 15 other working meetings with Royal Mail staff members between August 2004 and February 2005,

covering a range of areas including Base Year costs, cost modeling, internal recharging, operations, property and human resources;

- information provided at a workshop on costing and ABC in Rugby (14 and 15 August 2004);
- information gained during site visits to four delivery offices (West Kensington, South Coulsden, Rugby and Lutterworth), four mail centres (Gatwick, Croydon, Paddington and Birmingham) and the National Distribution Centre;
- information prepared by Postcomm and its consultants (WS Atkins) at the time of the previous price control review;
- other information prepared by Postcomm including the 2006 Price and Service Quality Review consultation paper (September 2004);
- information gained from meetings with Postcomm Commissioners;
- information provided at the Efficiency Business (E-BISS) conference on best practice in delivery (Rome 13 to 15 September 2004);
- information gained from meetings with staff members at TPG (8 and 9 November 2004);
- information gained from additional international benchmarking meetings with other postal operators;
- information gained from meetings with stakeholders including Postwatch, CWU, CMA, UK Mail, DX and Direct Marketing Association between August and March 2004;
- alternative volume forecasts for Royal Mail provided by Frontier Economics;
- Royal Mail's Licence ("Licence Granted to Royal Mail Group plc, Condition 16 Postal Services Act 2000");
- The EC Postal Services Directive (97/67/EC) and the Amended Postal Directive 2002/39/EC;
- Reports by other consultancies and public bodies in the public domain including reports prepared by Arthur D Little, CBI, CEPA, CIPD, Europe Economics, Frontier Economics, NERA, Office of National Statistics, Ofgem, Ofwat, ORR, and Oxera among others;

- information proprietary to LECG in relation to regulation and the postal industry, including best practice in econometric benchmarking; and
- other information in the public domain relating to regulation and the postal industry.

Appendix 3: Royal Mail's historical cost trends by pipeline activity

- A.3.1 Royal Mail has restated prior year costs – at a high level - for material changes in the cost allocation methodology. Royal Mail has reallocated project costs, unused accommodation and communal accommodation costs in 2003/04 to reflect the breakdown of costs for 2001-2003. Costs are stated before exceptional items for the UK Letters business. For 2002/03 and 2003/04 the total reconciles directly to “Total Mails” in the 2003/04 Regulatory Accounts. Reconciling figures for 2001/02 and 2002/03 have not been provided.

Table 281: Royal Mail's historical cost trends by pipeline activity

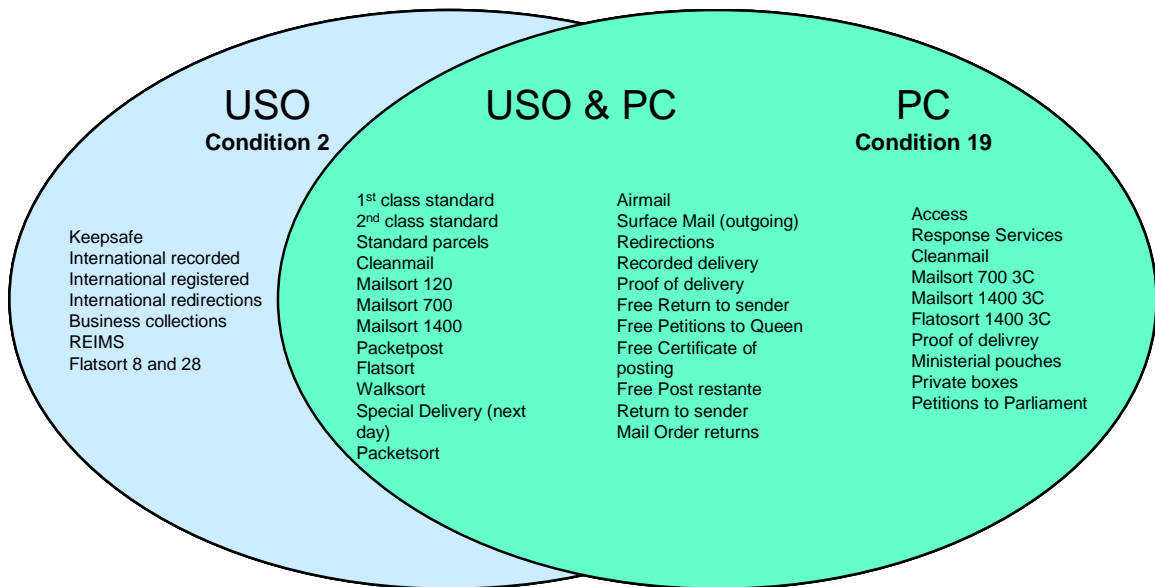
	2000/01 (£m)	2001/02 (£m)	2002/03 (£m)	2003/04 (£m)	CAGR
MC collection & consolidation	304.0	291.5	261.1	307.0	0.3%
MC outward sorting manual	360.9	430.8	408.3	386.2	2.3%
MC outward sorting mechanical	169.7	202.6	249.0	186.9	3.3%
Outward foreign	400.6	385.9	322.2	319.8	(7.2%)
MC shared (IW & OW)	79.5	1.1	13.7	27.0	(30.2%)
MC network	245.1	277.3	276.3	258.0	1.7%
MC inward sorting manual	221.3	260.6	260.0	213.8	(1.1%)
MC inward sorting mechanical	78.4	73.4	58.6	91.0	5.1%
RDC collection & consolidation	13.7	13.5	12.8	14.0	0.7%
RDC inward sorting	29.4	28.9	27.4	30.0	0.7%
RDC outward sorting	63.7	62.6	59.4	65.0	0.7%
RDC network	81.0	79.7	76.2	62.0	(8.5%)
Walk bundling centre	10.7	8.4	8.2	8.0	(9.4%)
Local distribution	107.4	110.4	103.2	133.0	7.4%
Delivery indoor work	1044.0	1018.4	1126.2	1097.0	1.7%
Delivery outdoor work	1401.7	1401.7	1349.7	1338.5	(1.5%)
Pipeline overheads	127.8	336.9	565.4	505.0	58.1%
Product compensation	10.7	14.7	13.4	15.0	12.1%
Marketing	286.5	418.7	381.4	358.4	7.7%
Inter business POL	266.3	266.6	240.5	213.0	(7.2%)
Other overheads	602.9	352.6	163.4	213.8	(29.2%)
Other	245.0	237.2	232.3	252.0	0.9%
Non RML	5.3	42.0	0.0	0	(100.0%)
Total	6,155	6,316	6,209	6,095	(0.3%)

Source: Royal Mail historical pipeline cost analysis (RM 6079)

Appendix 4: Postcomm proposed USO and price-controlled products

A.4.1 This Appendix defines Postcomm’s initial proposals for the scope of Royal Mail’s regulated business.

Figure 16: Postcomm’s proposals for Royal Mail’s regulated business



Source: Postcomm

A.4.2 The figure below defines Royal Mails initial proposals for the scope of non-regulated activities in 2003/04.

Figure 17: Postcomm's proposals for Royal Mail's non regulated products and services

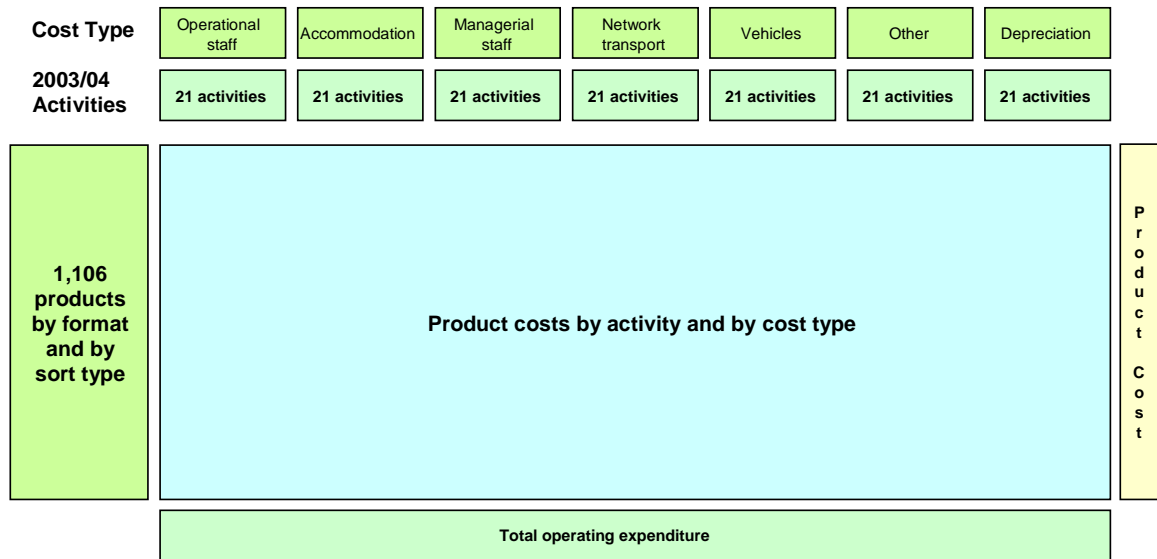
Other Letter Products	
Door to Door	Perishable Biological 1C
Bespoke Pouch Services	Perishable Biological 2C
International Sorted Sundles	Presstream
Swiftair	International Zone and Format
Spring Mail	International Mail Options
International Priority	AC Mail Sorted
Airsure	International Special Collection
International Country Mail	Prepaid Stationery 1C
International Admail	Prepaid Stationery 2C
Special Delivery 9am	NRG
Mailmedia	Mailsort 120 3C
Articles for the Blind	

Source: Postcomm

Appendix 5: BPC schematic

A.5.1 The BPC dataset has the following structure.

Figure 18: Schematic of BPQ



A.5.2 From this data set, total product costs can be derived (as illustrated by the yellow shaded box on the right). Applying USO factors to product costs allows regulated costs to be derived.

Appendix 6: BPC by activity

A.6.1 The table below summarises Royal Mail's BPC costs by activity.

Table 282: Baseline planning costs by activity

	2003/04 (£m)
RDC Collection & Consolidation	13.8
RDC Outward Sorting	62.5
RDC Network	64.7
RDC Inward Sorting	30.5
MC Collection & Consolidation	307.4
MC Outward Sorting – Mechanical	110.8
MC Outward Sorting – Manual	363.9
MC Network	256.1
MC Inward Sorting – Mechanical	72.6
MC Inward Sorting – Manual	202.5
MC Shared (IW & OW)	27.4
Local Distribution	133.0
Delivery Indoor Work	912.0
Delivery Outdoor Work	1324.8
Marketing	352.2
Pipeline Overheads	770.3
Other Overheads	222.7
Outward Foreign	313.2
Walk Bundling Centre	8.4
Interbusiness Post Office®	213.3
Other	333.0
Total	6095.1

Source: RM Baseline planning costs (RM 6003)

Appendix 7: Project costs by activity and cost type

A.7.1 The table below summarises our approach to allocating one-off project costs to activities and cost types.

Table 283: Allocation of project costs to cost types and activities

Project costs	Total £m	Cost type	Activities
Transport Review	23	All equi-proportionally	Other
SDD	14	All equi-proportionally	Delivery outdoors
WAND	5	All equi-proportionally	Outward foreign
Address Interpretation	6	All equi-proportionally	MC outward sorting mechanical MC Inward sorting mechanical
Flat Sorting	3	All equi-proportionally	MC outward sorting mechanical MC Inward sorting mechanical
ESP	17	All equi-proportionally	Pipeline Overheads
Mail Centre Review	9	All equi-proportionally	MC outward sorting mechanical MC outward sorting manual MC Inward sorting mechanical MC Inward sorting manual
Total	77		

Source: RM 6101 and LECG analysis

Appendix 8: Base Year costs by activity

A.8.1 The table below summarises our assessment of Base Year costs by activity.

Table 284: Royal Mail Base Year costs by activity

	Unadjusted Baseline £m	Adjustments £m	Adjusted Base Year £m
RDC Collection & Consolidation	13.8	0.1	13.9
RDC Outward Sorting	62.5	0.6	63.1
RDC Network	64.7	0.4	65.2
RDC Inward Sorting	30.5	0.3	30.8
MC Collection & Consolidation	307.4	3.1	310.5
MC Outward Sorting - Mechanical	110.8	-12.5	98.3
MC Outward Sorting - Manual	363.9	-0.4	363.5
MC Network	256.1	1.1	257.3
MC Inward Sorting - Mechanical	72.6	-7.4	65.2
MC Inward Sorting - Manual	202.5	-0.1	202.4
MC Shared (IW & OW) ⁵⁵³	27.4	-27.4	0.0
Local Distribution	133.0	1.3	134.3
Delivery Indoor Work	912.0	7.3	919.3
Delivery Outdoor Work	1,324.8	2.7	1,327.6
Marketing	352.2	-4.7	347.5
Pipeline Overheads	770.3	-36.1	734.2
Other Overheads	222.7	-79.5	143.1
Outward Foreign	313.2	-6.8	306.4
Walk Bundling Centre	8.4	0.1	8.5
Interbusiness POL	213.3	0.0	213.3
Other	333.0	-84.9	248.1
Total	6,095.1	-242.8	5,852.5

Source: LECG analysis

⁵⁵³ The adjusted operating costs for MC Shared (IW & OW) is nil as all costs relating to this activity are included under the 'Depreciation' cost type

Appendix 9: International postal operator survey

Introduction

- A.9.1 The following questions were sent to international postal operators. To ensure respondents understood the purpose of the survey, we included the following in the preamble to these questions: "Please note that this (survey) is in the context of working with the UK postal regulator who are looking for comparators for Royal Mail. Please let us know if you do not wish your information to be used by the UK regulator."
- A.9.2 In response, Norway Post provided information but requested that it should not be used directly in this context, and New Zealand Post preferred not to provide information.

Mail sorting centres

- A.9.3 Do you have a programme to reduce the number of mail sorting centres you have? If so, what is the planned level of reduction?
- A.9.4 What is the main reason for doing so?

Handling of meter franked postings

- A.9.5 Is it treated in the same way as other mail or do you have a different initial handling process for meter postings compared with regular stamped or bulk mail? If so, please describe how you process this stream of mail from customer collection through to sortation.

Automation performance

- A.9.6 Please can you provide some typical performance levels that you are achieving (in % rates or throughputs) for: OCR read rates; and letter sorting machine throughputs (by machine type).
- A.9.7 Please can you identify *a small, medium and large mail centre* and for each of them provide the following information:
- typical mail volumes handled per week in that mail centre;
 - number of employees (full-time equivalent, if including a lot of part-time staff); and

- what is automated (e.g. initial handling, address reading/coding, OCR sorting of letters/packets/flats, delivery sequencing, and tray conveyance/robotic handling of containers?)

Revenue protection

- A.9.8 What system do you use to check that the right postage payment has been made? What benefits have been achieved?
- A.9.9 Do you do revenue protection activity on customer's premises (e.g. large mailing houses)?

Automation of flats

- A.9.10 Have you automated the handling and sorting of large flat letters? What percentage of mail volume does this account for?

Production management

- A.9.11 Do you have a system for production management? If so, please describe.
- A.9.12 Who manages it and how is it used?

Mis-sorting

- A.9.13 Do you have in-process quality checking to identify levels of mis-sorts in different parts of the sorting centre operation? If so, how does it work? Is it different for automated streams to manual sorting streams of mail?

Reducing manual sorting

- A.9.14 Do you have ways of influencing the amount of mail that can be easily automated?
- A.9.15 Do you have incentives for customers to use standard sized envelopes, correct addresses, full post coding and printed rather than hand-written addresses? If so, then please describe.
- A.9.16 What processes have you put in place to minimise or eliminate hand stamping of mail and segregating mail manually, and how successful has this been?

Sorting - other

- A.9.17 Over the last three years what initiatives have you implemented to improve cost efficiency. For each initiative, what cost savings have been achieved?

A.9.18 Looking forward - what initiatives do you plan to implement? What are the expected savings and benefits of each initiative?

Transport of mail

A.9.19 Do you measure how much spare capacity is available in your transport network? How much spare capacity do you plan for to deal with fluctuating requirements?

A.9.20 Do you use this to: market for other logistics products; convey empty containers; and/or account for unplanned fluctuations in volumes?

A.9.21 For the long distance transport of mail do you use:

- vehicles – your own or contracted to another transport operator;
- trains – your own or contracted to another transport operator; and/or
- air services – your own or contracted to another transport operator?

A.9.22 Do you use the concept of “owner-driver vehicles” in your fleet (i.e. small contractors)?

A.9.23 Do you have transport optimisation software - what savings were made when you introduced it - or what impact did it have on your business?

Transport - other

A.9.24 Over the last three years what initiatives have you implemented to improve cost efficiency. For each initiative, what cost savings have been achieved?

A.9.25 Looking forward - what initiatives do you plan to implement? What are the expected savings and benefits of each initiative?

Operations - other

A.9.26 Do you have any operations, which you have “franchised” or “contracted out”? If so, please describe

A.9.27 How do you manage the problem of letters or packets that cannot be delivered because of wrong addressing or “old” address databases being used? Do you measure this? If so, how big is this problem?

A.9.28 Do you have a policy on reducing mail handling and standards for containerisation? If so, please describe.

A.9.29 Over the last three years what initiatives have you implemented to improve cost efficiency. For each initiative, what cost savings have been achieved?

A.9.30 Looking forward - what initiatives do you plan to implement? What are the expected savings and benefits of each initiative?

Delivery sequencing

A.9.31 What percentage of ordinary machineable mail is normally sequenced by machine sequencing?

A.9.32 What was your target efficiency saving from introduction of machine sequencing?

Delivery sequence database

A.9.33 Do you have a complete delivery sequence database?

Delivery offices

A.9.34 How many delivery offices do you have? Can you give the figures over the last three years?

A.9.35 Do you expect to reduce the number of delivery offices in future years?

A.9.36 Do you have a system for optimising the location of delivery offices?

Delivery routing

A.9.37 Do you use a system for planning and optimising delivery routes?

A.9.38 What were your target savings from using this system?

Sorting to delivery routes

A.9.39 What percentage of mail arrives at the delivery office, already sorted into the delivery route?

Delivery operations - other

A.9.40 Over the last three years what initiatives have you implemented to improve cost efficiency. For each initiative, what cost savings have been achieved?

A.9.41 Looking forward - what initiatives do you plan to implement? What are the expected savings and benefits of each initiative?

Print and deliver

- A.9.42 Do you have large mailing customers who provide you with postings of mail that they have produced (printed and enveloped) in delivery sequence order, based on sequence data you have provided them?
- A.9.43 Is this mail routed straight through your operational system to the delivery postman?
- A.9.44 Do you offer a similar print and deliver product or service for customers who supply you data for mailings electronically?

Collections (from street boxes)

- A.9.45 How do you measure productivity and performance for collections vehicles and staff?
- A.9.46 How many collections do you make from most street boxes per day?
- town/city centres;
 - urban areas; and
 - rural areas?
- A.9.47 Is this fixed? Do you review this based on use? Do you measure the volumes of mail posted in each post box? If so, how

- A.9.48 Do you use any form of routing optimisation for collection vehicles?

Weekends (Saturday and Sunday)

- A.9.49 What operation do you provide on Saturdays including collections?
- A.9.50 What operation do you provide on Sundays including collection?
- A.9.51 How is your weekend mail measured for quality of service?

Access to postal services - other

- A.9.52 Over the last three years what initiatives have you implemented to improve cost efficiency? For each initiative, what cost savings have been achieved?
- A.9.53 Looking forward - what initiatives do you plan to implement? What are the expected savings and benefits of each initiative?

Management information systems

A.9.54 Do you use a real-time on-line web-based management information system for key elements of control and performance monitoring? What does it measure? Delete those that do not apply.

- traffic volumes;
- staff costs;
- quality measures;
- budget levels; and
- forecast levels.

Outsourcing

A.9.55 Have you outsourced any part of your mail operations? If so, please describe and what are your targeted/achieved benefits?

A.9.56 Have you outsourced any part of your support services? If so, please describe and what are your targeted/achieved benefits?

HR Issues

A.9.57 Do you operate in an unionised environment? If so, how does this impact on your attempts to introduce savings or efficiency initiatives?

A.9.58 How do you involve and engage the unions in the process of managing change?

A.9.59 What is your percentage level of sick absence from work? How do you measure sick absence and what is included? Have you been able to reduce this level recently? If so, how?

A.9.60 How do you align your staff/manpower resources to future needs and to daily and weekly fluctuating traffic volumes?

A.9.61 What kinds of incentive schemes do you operate for employees at all levels? Do you feel you have really been able to incentivise employees to provide an efficient operation?

A.9.62 Do you have any experience of operating gainshare schemes? Have you considered them a measurable success?

A.9.63 Do you have experience of implementing "Working" Team Leaders or very "flat" leadership structures?

Appendix 10: International postal regulator survey

- A.10.1 The following questions were sent to international postal regulators.
- A.10.2 Have you performed a review of overall cost efficiency at the postal operator in your jurisdiction recently? Do you have any views on the level of expected efficiency savings, in the regulated sector of the mail industry, over the next 5 years? We would use this information to compare techniques used to measure cost efficiency and to benchmark expected efficiency savings to our estimates for Royal Mail. To aid the comparison of cost efficiency studies, it would be helpful to have an indication of the parts of the business to which any efficiency measures relate and an explanation of the methodology used to calculate the efficiency measures.
- A.10.3 Have you performed any benchmarking studies recently – comparing the postal operator in your country with other postal operators or with other organisations outside the post sector (e.g. benchmarking of operational processes, benchmarking of labour productivity, benchmarking support cost levels etc)? If yes, are you willing to share the results of these studies? Again, we would use this information to compare techniques and benchmark Royal Mail's performance.
- A.10.4 Have you performed any studies on the variability of costs in relation to changes in mail volumes? If so, to what extent are costs thought to be variable?
- A.10.5 Do you have any views on the major drivers of future efficiency in the postal sector in your country over the next 5 years?
- A.10.6 Have you performed any analysis of historical levels of efficiency (e.g. analysis of unit cost trends over time)? If so, would you be willing to share this analysis? To help us to interpret any trend analysis, it would be helpful to have an indication of volumes over the relevant period – so that volume effects can be isolated. While it is difficult to compare unit costs across countries (because of differences in network configurations, quality and service standards etc), the rate of historical efficiency may provide an effective benchmark for future levels of efficiency. We are aware that the European Commission has recently published some work from a consulting firm examining in detail costs of postal services in different countries.

Appendix 11: International benchmarking survey results

Introduction

- A.11.1 A key input for our bottom-up review of Royal Mail's operations is benchmarking against other postal organisations outside the UK. This appendix provides a fact base relating to postal organisations in Europe and the English-speaking world outside Europe.
- A.11.2 We have drawn on various sources in the content that follows. The primary source, however, is an international benchmarking survey we conducted in October 2004, and unless otherwise specified content is derived from that survey. Appendix 9 provides a description our survey methodology.
- A.11.3 We have taken every care in preparing the following material. However, we have not systematically reviewed the material with the firms in question (i.e. we have not requested each source to verify whether the summary is accurately stated). We recognise, therefore, that it is possible that isolated elements of the international benchmarking may be misstated, which may be due to our misinterpretation of the information that has been provided by the relevant firms.
- A.11.4 To ensure an element of confidentiality we have made a partial attempt to make the data anonymous – but recognise that this is almost impossible to achieve. In the main sections of the report – the data has not been made anonymous. Again we recognise that this data has not been formally verified by the relevant Postal Operators. On matters of importance, we will seek confirmation prior to Postcomm's final proposals.
- A.11.5 In this appendix we summarise our findings under the following headings:
- Implementation of major change programmes;
 - Collections;
 - Sorting;
 - Transport;
 - Outsourcing; and
 - HR issues.

Implementation of major change programmes

- A.11.6 Major change projects and programmes have been notoriously difficult to introduce successfully in postal organisations, due to a combination of factors that include the large scale of such organisations, interdependency of operations within the postal pipeline, union and HR issues, initiative overload, technological advances and customer or quality problems. However, there are good examples from the recent past, and current activity in other major postal operators, that demonstrate that these kinds of large scale changes can be effected successfully against very challenging timelines. In fact, TPG Post and Deutsche Post are currently the two most consistently successful and publicly recognised and awarded postal operators in Europe, largely because they have been very strongly led, with clear and commercially driven business focuses, specific visions and goals, and a determination to deliver for their shareholders and stakeholders.
- A.11.7 For the above reasons we have identified Deutsche Post and TPG as the main benchmarks for Royal Mail in terms of progressive innovative development and major change. The problems they have faced are very similar – both Deutsche Post and TPG have strong unions and many legacy problems from a public sector monopoly culture. However, in the last decade, both organisations have steadily moved ahead of Royal Mail in almost every area. This is quite striking when compared with the position in the early 90s when many independent observers would have put Royal Mail at the top of most of the league tables.
- A.11.8 This view is supported by ADL, which states: “In Europe, leaders in successful business transformation (which includes technology) include TPG and Deutsche Post⁵⁵⁴”.

Major changes implemented by Deutsche Post

- A.11.9 Between 1991 and 2001, Deutsche Post underwent a huge operational turnaround following reunification with the former East Germany. Prior to reunification there were over 1000 processing sites, outward and inward sorting was in some cases separated geographically, only 24% of mail was machine sorted, and J + 1 performance was less than 75%.
- A.11.10 Against that background, some of the turnaround statistics demonstrate what was achieved. In 1993, a complete new five-digit delivery coding system was

⁵⁵⁴ ADL Report, page 6

introduced. Between 1994 and 1998 the sorting and transport network was re-engineered: 83 new sorting centres were built, often outside big cities to reduce costs, and based on a standard single-storey design, and which combined processing with new automated equipment. In addition, 100,000 transport routes were rendered obsolete; and a new computerised circulation system and four new transport networks were introduced.

A.11.11 Between 1995 and 1998, in its first round of delivery office optimisation, Deutsche Post rationalised its depots from 11,500 down to 3,450. Deutsche Post then embarked on its first round of delivery route optimisation. This used Giro software, and concentrated initially on optimising travel-out and travel-in times, plus establishing a reliable and accurate delivery point sequence database. This provided the platform for introduction of delivery point sequencing machines. Deutsche Post introduced over 500 carrier sequence bar-code sorters ("CSBCSs") in a 3 year period between 2000 and 2003, and is now concluding a programme of implementation of a further 200 CSBCSs which began in July 2003. The period 2000-2003 has seen significant manpower reductions, particularly in operational roles, with a reduction in those on Civil Service contracts and a significant switch to part-time staff for shift working in mail centres.

A.11.12 Deutsche Post is now embarking on a further major project, called 'TVZ', to re-structure the delivery operation and further reduce delivery office depots, and to switch to more part-time delivery-only operatives by separating the preparation from delivery. Deutsche Post is continuing with a programme to outsource transport⁵⁵⁵.

Major changes implemented by TPG

A.11.13 In 2000, TPG Post had just introduced a major mail centre automation programme when it realised it faced a major strategic challenge: mail volumes were starting to fall and cost per item was going up, as most of TPG's operating costs were fixed. As the delivery operation was the largest part of the operation, TPG decided to focus on cost reductions that might be achievable through mail sequencing options. This led TPG to re-structure its delivery organisation. Preliminary planning and reviewing of options against the context of the wider business strategy took place in 2001/2, following which TPG decided in early

⁵⁵⁵ Deutsche Post presentations and www.deutschepost.de

2003 to trial different manual and machine sequencing methods. TPG planned to implement the whole programme within 2 years. TPG is currently on target to meet this timetable.

A.11.14 TPG's unions are strong and latterly, the introduction of mail sequencing machines has coincided with a review of the firm's administrative organisation and regional structures, and with the introduction of a large number of part-time deliverers and a reduction in the number of delivery depots. In order to achieve these challenging and often unpopular changes, TPG has been very focused, engaged its staff, involved its works council and specific union members on project teams, used rigorous programme and project disciplines, and kept a tight rein on their objectives⁵⁵⁶.

Collections

A.11.15 The first step in the journey of a letter is the insertion of mail into the postal pipeline. This represents a relatively small component of the costs of a typical postal organisation – according to NERA, “On average collection costs account for 12% of total mail costs”⁵⁵⁷ – but does have a disproportionate effect on customer perceptions of the postal organisation.

A.11.16 From the international benchmarking exercise, the main opportunities for Royal Mail in the area of access and collections appear to be in:

- reducing the frequency of street box collections to once a day, in all but the busiest town/ city boxes; and
- reviewing weekend operations to look at the feasibility of only working on Saturday and Sunday evening.

A.11.17 In addition, further implementation of work sharing with mailers and hybrid or electronic messaging could have the effects both of reducing and ultimately eliminating some collection and transport costs, and of preventing loss of major volumes and revenue to customers, consolidators or other competitors.

Print and deliver

A.11.18 The term “print and deliver” is a shorthand description for a generic set of initiatives stretching from customer work-sharing to hybrid mail. The common

⁵⁵⁶ Recent presentations by TPG Post and www.tpg.com

⁵⁵⁷ NERA, ‘The Economics of Postal Services’, 2004, page 152

factor across these generic initiatives is the elimination or reduction of the sorting and handling requirements in the postal chain through different arrangements for access to postal services.

- A.11.19 ADL see significant opportunities in this field, indicating, “*the collection stage may be eliminated entirely as postal operators offer print and mail services (to some extent, encroaching on mailing houses’ business) and insert the physical mail into their network where it minimises their costs.*”⁵⁵⁸.
- A.11.20 Post A is one of the leading international benchmarks for work sharing programmes for bulk or large mailing customers. For example, it is possible as part of the Post A’s discount mailing services, to get a large discount for sorting mail right down to the carrier route sequence and also for entering the posting into the mail pipeline close to its the final destination. Clearly, this can make a very significant impact on the volumes of mail requiring transport and sortation⁵⁵⁹. Such arrangements do require the postal operator to supply an electronic database that includes the carrier route sequence to the customer.
- A.11.21 Post B offer a similar service, through a firm called EDI Post, which undertakes to print and bar code the items for sequenced delivery. The Australian Automobile Association lodges 2.5m items monthly using this service. Many postal operators have services, which provide discounts for some kind of work sharing, short of sequenced sorting. Royal Mail also has well-established discounts for bulk mailings, including those built into pricing for the Mailsort and Walk sort products, however these discounts apply only for sorting to walk route level, using Postcodes, and not to mail, which is sequenced to the delivery route⁵⁶⁰. ADL states that 35% of Royal Mail volumes originate with customers who pre-sort their mail.
- A.11.22 A related but different initiative is hybrid mail, of which ADL say, “*The most significant change in collection is the elimination of this stage through concepts such as hybrid mail*”⁵⁶¹.

⁵⁵⁸ Ibid

⁵⁵⁹ www.usps.com

⁵⁶⁰ www.royalmail.com

⁵⁶¹ Ibid

- A.11.23 'Hybrid mail' refers to the use by customers of electronic access to postal services through supplying electronic data to the postal operator, who then prints and delivers the mail. Typically, a large mailer would send a complete mailing electronically to the postal operator. The postal operator would then use print sites as close as possible to the final delivery destination, where it would print and envelope the mail and insert it into the final stages of the mail pipeline. As with 'work sharing', such an arrangement virtually cuts out transport and sorting costs, and reduces sorting and sequencing costs as mail pieces are enveloped in sequence order.
- A.11.24 In Europe, Post C has been one of the leading posts to provide electronic options for its customers. Its hybrid services, which include a range of different EDI, multi-letter, hybrid and e-services, are provided through a wholly owned subsidiary of Post C, Atkos Ltd, which has a track record of and continues to be a fast growing part of their successful organisation. Electronic messaging has grown about 30% to 40% each year for the last three years and now accounts for a turnover of 127m euros, which is nearly a quarter of Post C's total mail revenue⁵⁶². Many of these services have been developed primarily for Government and public administrative bodies, where there are many potential applications.
- A.11.25 ADL notes in its report on technological innovation in the postal sector, "*Linked to hybrid mail is the complete electronic transfer of documents, with postal operators such as TPG, Norway Post and the Swedish Royal Mail offering electronic transfer of invoices and secure e-mail services*"⁵⁶³. Indeed some other companies (not traditional postal companies) are offering a wide range of electronic transfer and messaging services as part of their information and document management services – these services include, for example, invoicing of customers.
- A.11.26 Postal operators also risk losing volumes if they mishandle the collections interface. Although collection costs represent a relatively small proportion of the total pipeline costs, these activities account for nearly all the crucial customer contact, and therefore is key to customer perception. Performing this task poorly, or failing to adopt innovations as quickly as competitors, could lead to falling volumes.

⁵⁶² www.posti.fi

⁵⁶³ Ibid

- A.11.27 A pre-condition for these kinds of services is a reliable sequence delivery database that is constantly kept up to date and accurate.
- A.11.28 The challenge for Royal Mail is to decide whether to exploit those opportunities with hybrid and other electronic services based on providing a distributed print and enveloping capability, or whether to encourage large customers to develop these capabilities themselves with some kind of workshare agreement, in the hope of sharing the savings. If RM do not exploit these opportunities, then it is possible that large customers or competitors will do and this would represent large volumes of mail and revenue that could be lost.

Table 285: Print and deliver summary of survey results

Post	Pre-sequenced mail direct from customers?	Routed directly to delivery postmen?	Similar product for data supplied electronically?
Post B	Yes, Automobile Association lodges 2.5m items monthly	Yes	No – but EDI Post do undertake printing services
Post D	No	No	Yes
Post E	Few mailers have sufficient volumes for this to make a meaningful impact on operations. Some utility companies provide statements in block face numerical order	The block faced mail from utilities does go directly to the letter carrier but then it is sequenced into a sorting frame	N/A
Post C	Yes	Partly	Yes (see text)
Post F	Not yet but intended		
Post A	Carrier routed mail	Yes (see text)	No
Post G	Yes, but not sequenced	Yes	Yes

Source: LECG Survey October 2004

Collections productivity

- A.11.29 Collections, whether from street boxes or businesses, have often not been closely managed or measured for performance or quality by postal organisations. However, there are examples of good practice. Post E uses an Integrated Route

Measurement Application (“IRMA”) system to structure and measure collection routes. These collection routes are optimised and integrated with delivery routes, often using an application of the same software tools as those used to design optimal delivery routes. Bar codes on street letterboxes are used to ensure 100% clearance each day.

- A.11.30 Others such as Post K have been using hand-held scanners for collection staff for a long time in order to measure productivity of all outdoor work, including deliveries. Post F also measures performance through bar code scanning but the productivity is only measured on a consolidated level (not per route). Post A use a Collection Box Management System (“CBMS”) to measure productivity and Post J use time standards established for their own staff, which establish workload and against which they can measure productivity (known as the IBIS time assessment system). Post J has also outsourced some of their collections activities and here the price is determined by the tender process rather than by direct reference to the activities to be undertaken.
- A.11.31 At Royal Mail, efficiency is sometimes measured at unit level on a cost per item basis. Royal Mail is rolling out scanners with Access Bar Coding (ABC), with a future intention of using the resulting information for managing performance.

Frequency of collections

- A.11.32 The majority of postal organisations outside the UK have rationalised the frequency of collections from street letter boxes to once a day, usually with the exception of main boxes in towns or cities where there may be two or more collections a day. The frequency decision for each collection point is usually based on regular samples or specific counts of collection volumes at defined periods in order to identify high volume boxes, which need additional clearances.
- A.11.33 This pattern is adopted (with some slight variations) by Post B, Post D, Post E, Post C, Post F, Post A and Post G. None of these count volumes per collection point all the time, but each of these postal operators makes periodical surveys, samples or particular counts to determine collection frequencies.
- A.11.34 In Post E, rural areas are not served by street boxes, but mail is picked up from customer boxes or post offices.

- A.11.35 In Switzerland and most parts of Scandinavia, rural delivery staff pick up mail being posted on their delivery route from residential delivery customers.
- A.11.36 By contrast, Royal Mail currently collects up to 5 times a day in town areas, up to 3 times a day in urban areas and once or twice a day in rural areas. Although the number of clearances is determined by the amount of mail posted into the box, this is not measured on a regular basis and only usually undertaken when there is a perceived need to change existing arrangements.

Table 286: Frequency of collections summary of survey results

Post	Productivity and performance measures for collection vehicles and staff?	How many collections from most street boxes per day?	Is this fixed? Do you review it based on use? Are collection box volumes measured? If so, how?
Post B		One everywhere except higher volume boxes in town centres receive additional clearances	Yes, box usage is measured by a survey over a defined period. Customers are advised via a notice placed on the box
Post D		Town centres two & elsewhere one	Yes, but when box justifies it we make two collections. Periodical counting of the box.
Post E	Pick up routes are structured with IRMA (IRMA) designed to restructure Mail Service Courier routes. Bar codes on street letterboxes are used to ensure 100% clearance each day.	City Centres 1-3; Suburban areas 1-2; Rural areas – no street letter boxes, mail is picked up from customer boxes or post offices.	Yes, schedules for weekday, Sat and Sun. Volumes are not measured regularly but utilisation is reviewed as part of a restructure process.
Post C	No special staff and measurement for collection	Town/ city 1-2; Urban 1; Rural 1	Yes, yes – by sample counts
Post F	Performance through BC scanning, productivity only on consolidated level	Town/ city 2-3; Urban 2; Rural 1	Yes, fixed for a year. Reviewed once a year or ad hoc for special circumstances. Measured by manual counting
Post A	Collection Box Management System (CBMS) and the demonstrated proficiencies of our collection employees	Town/ city 3; Urban 2; Rural 1	Yes, by local postal facilities
Post G		Town/ city 2; Urban/ rural 1	Yes – fixed.

Source: LECG Survey October 2004

Routing of collections

A.11.37 Few other international postal operators have implemented systematic optimisation of collection routes – where this has happened, this has usually

taken place as part of any vehicle and/ or capacity utilisation initiative. Both Post E and Post F are extending their delivery route optimisation projects to cover collection routing, however neither organisation anticipates large cost reduction opportunities. Interestingly, Post A and Post J, who both make extensive use of optimisation software, report that they do not have an equivalent tool for collections.

- A.11.38 The picture across all operators on this issue is mixed, although it is believed that Royal Mail is about to start making use of a routing optimisation tool for planning vehicle routes.

Table 287: Routing of collections summary of survey results

Post	Routing tool?
Post B	Not currently
Post D	No
Post E	We will be looking at using the new route optimiser to optimise these routes but due to the nature of pickup operations (interlinked with delivery and other pickups) this may be limited
Post C	Collections and pick up services combined as much as possible
Post F	Yes, based on Georoute
Post A	No
Post G	No

Source: LECG Survey October 2004

Weekend operations

- A.11.39 Few of the operators benchmarked provide extensive weekend operations and services. The exceptions are the Post A and Post J who provide similar services to Royal Mail, with delivery and collections on Saturday along with some collections and outward services on Sunday. Others, like Post B, provide no services on Saturday and a minimal collection on a Sunday, while Post E is actively trying to eliminate weekend working. Post C is mainly focused on newspaper delivery on the weekends, while Post F does only special collections on Saturdays and nothing on Sundays.
- A.11.40 Royal Mail currently provides delivery and collection services on Saturday – and operates its transport network on that day consistent with its universal service

obligations. It also provides a limited collection and network service on a Sunday, plus mail centre sorting operations.

Table 288: Weekend operations summary of survey results

Post	Saturday operations (including collections)	Sunday operations (including collections)	Weekend quality of service measures?
Post B	Nil	Mail is collected from Street Posting Boxes and mail centres process mail	As per delivery weekday standards
Post D	Collections and Despatch	None	
Post E	Collections are made at street boxes that have sufficient volumes to require clearance – otherwise boxes are cleared on Mondays as normal. Trying to eliminate weekend clearances wherever possible. Some internet fulfilment parcels are delivered on Saturday at the request of the purchaser (at time or order)	Collections are made at street boxes that have sufficient volumes to require clearance – otherwise boxes are cleared on Mondays as normal. Trying to eliminate weekend clearances wherever possible. Some parcels are delivered on Sundays to alleviate high volumes on Monday.	Mail inducted on Saturdays and Sundays is treated as if it is inducted on Monday for service measures. There is no delivery of mail on the weekend.
Post C	Express delivery, early morning newspaper delivery	Early morning newspaper delivery	Early morning newspaper delivery has special Q of S measurement system and customer complaints system.
Post F	Collection of boxes, delivery of newspapers and special products (postogram)	None	Delivery on Monday
Post A	Full service	Express mail and minimal collected boxes	No measures are in place
Post G	All activities	No delivery. Sorting centre starts in the evening	As usual on Saturday. Not on Sunday.

Source: LECG Survey October 2004

Sorting

A.11.41 Traditionally, sorting has been a very high profile part of the letter mail operation, largely because of the investment that has been put into large mail centres, where

there are also large numbers of employees. In fact, while crucially important, it is much less significant in cost terms than delivery. “On average sorting costs account for 16% of total letter mail costs”⁵⁶⁴.

A.11.42 ADL indicates that there is significant cost saving opportunities in the area of sorting. They state, “for incumbent operators sorting technology has the greatest potential for creating cost savings throughout the delivery chain. Automated sorting technology, based on Optical Character Recognition (“OCR”) is well established in postal operations – however the technology still has potential for further improvement, for several reasons:

- read rates can be up to 80% (for hand-written mail) but the high cost of unreadable mail provides strong user interest in continuing to improve this;
- knock-on benefits throughout the chain multiply the impact of relatively small technical performance improvements;
- the core OCR technology continues to improve with the falling cost of computing power and improving software algorithms;
- the minimum efficient size of a sorting machine is diminishing, which may enable new postal network designs, as well as allowing smaller mailing houses to pre-sort physical mail.”⁵⁶⁵

Mail centre rationalisation

A.11.43 Mail centre rationalisation has been driven by a number of factors. The key driver is the need to concentrate enough volumes into larger centres in order to justify and fully utilise expensive automated sorting machinery. At the same time, mail centre rationalisation has provided the opportunity to move out of smaller, uneconomic town/ city centre locations to more suitable and cheaper out-of-town green- or brown-field sites where purpose-built single storey facilities can be erected. In the early 1990s, Post J took this approach, as it was developing an entirely new network of 83 standardised and modular mail centres (small, medium, large or extra large) after inheriting a large variety of different and unsuitable offices on reunification. Other drivers for rationalisation have been the prospect of volume reduction and the need to contain or reduce costs, along with opportunities arising out of any operational re-design – this was the reason for

⁵⁶⁴ NERA 2004, Ibid

⁵⁶⁵ The ADL Report, page 4

Post L's rationalisation, which culminated in its decision in the 1990s to create six new mail sorting centres. Post E was able to release space by implementing lean management techniques.

A.11.44 The optimal number of mail sorting centres depends not just on volume and equipment considerations, but also on location, transport links, availability of employees and other factors.

A.11.45 However, while most other postal operators have been quite successful in identifying and implementing new rationalised mail centre networks, Royal Mail's network has remained relatively stable in terms of numbers for a number of years, and many of those are in very expensive locations. Some of Royal Mail's mail centres remain in probably unsuitable, multi-storey operations.

Table 289: Mail centre rationalisation summary of survey results

Post	Programme to reduce sorting centres?	Main reason for doing so?	Comments
Post J	83 mail centres, recently down to 82. Were 1000 pre-reunification in 1991	The 83 new mail centres are all of a standard design (in 4 sizes) and introduced over a period of just over 3 years (1995 – 1998)	
Post L	6 main mail centres established in 2000	No current plans to change this.	Organisation being rationalised to match this (i.e. to 6 regions)
Post F	No, discussion closed (have 5)		
Post E	Recently reduced by 1 in each of three largest cities. Down to 19 and no more plans at the moment	Reduce operating costs and real estate costs by taking advantage of floor space savings from implementing lean production techniques	During the past 5 years, Post E has progressively adopted lean production techniques and process management.
Post C	Now 8 and reducing to 6	Decreasing letter volumes and optimising the next generation letter sorting machine investment	

Source: LECG Survey October 2004

Handling of meter franked postings

- A.11.46 Post D and Post C treat meter postings in the same way as Royal Mail. Post F has separate collection and preparation for stamped and bulk mail (in specific bags) but uses the same processes for sorting.

Table 290: Handling of meter franked postings summary of survey results

Post	Typical performance levels being achieved	Gross performance of small, medium and large mail centres (items per FTE/per week)
Post F	OCR read rates: 85% on bulk mail; 70-75% on residential mail; Letter sorting m/c throughputs; 25000 NF (28000 indexed); 16000 GF	Large (15m) = 16,667 Medium (7.5m) = 18,750 Small (4.5m) = 15,000
Post C	NEC LSMs and Myller Martin Flat sorters	
Post D	OCR read rates: 83% (25k/30k per hour); Letter sorting m/c 88% (37k/42k per hour)	Large (23m) = 29,487 Medium (8m) = 29,629 Small (0.5m) = 21,739

Source: LECG Survey October 2004

Automation performance

- A.11.47 There are many possible ways to look at automation performance, including actual machine sorting rates and throughput rates, to 'global gross throughput rates' as identified in the table below in a number of cases. Managing a large mail centre effectively requires a whole 'basket' of performance measures to correspond with the range of variables that can be influenced and proactively managed. For example, variables that mail centre managers typically monitor include the resourcing profile (including the skills mix of staff and part-time vs. full-time mix), aligning staff to workload, adherence to a work plan, machine utilisation and effectiveness, reject rates, levels of machine vs. manual sorting, materials handling and miscellaneous work, plus non-productive movement.

Revenue protection

- A.11.48 Little evidence was adduced from the survey on this topic. Post F claim to have achieved an increase of 3% in revenue through revenue protection activities relating to stamped, meter and bulk mail, through a mix of manual and automated methods.

Flats automation

- A.11.49 According to ADL, automated sorting of flats generally lags behind letters in terms of their technology⁵⁶⁶. USPS has recently implemented Automated Flat Sorting machines (AFSM 100)⁵⁶⁷, generating savings of \$292.5m per year⁵⁶⁷. Post J has also implemented flat sorting machines, although we do not have sufficient information for a detailed benchmark.
- A.11.50 The slow take-up of such equipment has been due to the size of the flat sorting equipment, which has proved prohibitive in all but the largest sites. However, new technologies and smaller tilt-tray machines now provide more options for automated sorting of this stream of mail. Post A is also embarking on an ambitious programme for automated flat sequencing, called the Flat Sequencing System ("FSS"), which it is developing and researching alongside a system to sequence letters and flats in delivery order, known as Delivery Point Packaging ("DPP"). These are currently being evaluated with prototypes planned for testing in 2005 and field-testing at a postal facility in 2006⁵⁶⁸.

Table 291: Flats automation summary of survey results

Post	Automated flats?	% of mail volume	Comments
Post F	Only in the large mail centre Brussels		100% after the new sorting centres in 2007
Post C	In 3 centres		
Post H	Verbal report		
Post D	Yes	58% of all flat mail is sorted automatically	Two sorting machines installed at the major Mail sorting centre in Lisbon for processing all non-priority flat letters and all priority mail whose origin is the postal region of Lisbon and inbound mail.
Post A	Yes		Saved \$292.5m

Source: LECG Survey October 2004

⁵⁶⁶ The ADL Report, page 17

⁵⁶⁷ www.usps.com

⁵⁶⁸ Described by USPS in presentation to conference, Rome, October 2004

Production management

- A.11.51 Production management tools are used to set resourcing levels and prioritise activities in mail centres on an hour-by-hour basis, trading off anticipated volumes and throughput times to find the optimal resourcing level. Such tools can also give a forward view on required resourcing levels as forecasts come in and are adjusted. The Scandinavian posts have a well-deserved reputation for accurate and efficient real-time, on-line management information systems that greatly assist production management, by providing the information to whomever needs it at the time that they need to make a decision.

Table 292: Production management summary of survey results

Post	Production management system?	Main purpose?	Who manages it and how is it used?
Post F	Yes, AVCS – in the plant	Throughput, inventory, flow, priority and productivity control	Central planning and performance and by local planning and production managers
Post C	Yes, but new SAP-based system under development		
Post D	Yes	Maximising the sorting equipment utilisation, efficiency of the mail streams operations, leftovers monitoring, mail volumes	Middle management of each mail centre and it is used daily

Source: LECG Survey October 2004

Initiatives to improve cost efficiency

- A.11.52 In addition to the specific questions above relating to sorting efficiency, we also asked the benchmark organisations whether they had other initiatives in progress that aimed at increasing sorting efficiency. The Post F identified an initiative based on the application of Industrial Engineering (“IE”) principles and mail centre layouts for which it claimed 5% productivity increase. Large mail centres can often lead to a lot of unproductive walking time and inefficient movement of work and people around the site.

Table 293: Initiatives to improve cost efficiency summary of survey results

Post	Recent initiatives	Future initiatives
Post F	Production control on efficiency per work centre and per shift and application of IE principles on flows, layout and work methods. Average productivity increase of 5%	New sorting centres = 90% automation and round sorting
Post D	Implementation of best operation processes practices, increase of mail sequencing, installation of transportation devices to move mail around mail centres	
Post A	Flat sequencing automation project in the planning stages for introduction over next 2 years	

Source: LECG Survey October 2004

Transport of Mail

- A.11.53 Transport of mail is often neglected as it is one of the less visible parts of the mail pipeline operation. However, it remains a significant cost factor as well as being an area that is difficult to manage and control effectively. NERA indicates in its 2004 report that *“our econometric results suggest that transport costs, which on average account for 7 per cent of letter mail costs, are characterised by economies of density as well as returns to scale”*.
- A.11.54 Transport is one of the areas where work can be more easily outsourced or contracted out and *“transport can benefit from route planning and optimisation software, as well as satellite tracking technology to monitor progress and performance”*⁵⁶⁹.
- A.11.55 Software systems can also be designed to assist in capacity management and in ensuring effective utilisation of available vehicles and capacity.

Spare capacity

- A.11.56 The information obtained from our survey on capacity utilisation is outlined in the table below. Detailed information was only available for Post F, where spare capacity was only 10%.

⁵⁶⁹ The ADL Report, page 4

Table 294: Spare capacity summary of survey results

Post	Measure spare capacity?	How much do you plan to deal with fluctuations?	What do you use this for?
Post F	10% spare capacity and 60% truck effectiveness		Empty containers and for unplanned fluctuations
Post E	Utilisation is measure for every major highway service. Compare planned allocation for air transport with what was actually used.	We do not plan extra capacity but do adjust capacity seasonally. Extra daily volumes are handled through added highway services (overloads) or use of alternative air carriers.	

Source: LECG Survey October 2004

Long distance transport of mail and owner-driver vehicles

A.11.57 The information obtained from our survey, as outlined in the table below, shows a variety of modes are used for long distance transport.

Table 295: Long distance transport of mail and owner-driver vehicles summary of survey results

Post	Long-distance transport modes?	Owner-driver vehicles?
Post L	300 own vehicles and 200 chartered vehicles	No
Post F	No trains	No
Post E	All long haul is contracted to another transport operator. Trains are contracted as are air services	Yes – mostly for short haul/ regional runs
Post C	Vehicles are contracted, no trains, air services to Northern Finland are contracted	Yes
Post D	For long distance we use air service contracted to another transport operator	No

Source: LECG Survey October 2004

Transport optimisation

A.11.58 Finland has used transport optimisation software but Post D and Post E have not. Post F is just starting. Giro Inc tell us there is a potential connection between this kind of optimisation, the collection route optimisation and the delivery route optimisation, all of which use related principles.

Transport initiatives

A.11.59 Survey respondents identified a number of other transport-related cost-saving initiatives, outlined below.

Table 296: Transport initiatives summary of survey results

Post	Recent initiatives	Future initiatives
Post F	Reduction of general costs of maintenance, increase effectiveness of drivers and trucks (scale effects), reduction of spare capacity = 5% cost saving	Route optimisation, further capacity optimisation (flexibility of labour), reduction of maintenance costs (outsourcing and market other logistics products still open)
Post E	Mode shift air-to-road saved \$7m/year; Fixed air container rates saved \$3m/year; Loose loading saved \$3m/year	Logistics trailer – expected \$1m/ year; Expanded air-to-road - expected \$5m/ year
Post C	Outsourcing	

Source: LECG Survey October 2004

Delivery

A.11.60 On pure cost grounds, the delivery operation is by far the most important part of the postal pipeline. It usually represents around 50% of total costs⁵⁷⁰ and 70-80% of operational costs. Equally, unlike mail centre sorting, most of the cost in delivery is human resources, so reaching efficiency in delivery operations represents a significant people management challenge. On the other hand, this area is often described as the core of the postal business, and is very visible to customers. Another feature of delivery is that the proportion of outdoor (delivery) costs, which are notoriously difficult to control or manage, is high. In Europe, most deliveries are made to the customer's door (although there is variation in the use of roadside boxes between European countries). This provides a cost challenge that is difficult to avoid without changing the USO and reducing the frequency of deliveries – although this route has been taken by non-USO providers such as City Mail in Sweden and Sandd in Holland (both doing 1-2 deliveries per week). Outside Europe, delivery to the door is not the norm, in the English-speaking world at least – variants include lane-end mailboxes in the Country A, street-side deliveries in Country B and rural cluster delivery boxes in Country E and elsewhere.

A.11.61 Royal Mail has recently reduced the frequency of deliveries from two per day in town/ urban areas to one delivery per day as part of the SDD project. Even so, because delivery represents such a big percentage of the overall costs, there will always be scope for making significant cost savings through re-design of the operation, new models, efficiency measures, delivery route optimisation, reducing fixed costs, and so on. These challenges are detailed below by topic.

Delivery offices – rationalisation and location

A.11.62 In summary, every other benchmarked international post (except Post A) is planning for a rationalisation or reduction in the number of delivery offices, to be achieved through different structural or efficiency measures. Sometimes this is being driven by a need to cut fixed costs and increase flexibility around facilities, in other cases it is about an operational re-design to deliver higher-quality services to customers. This includes the introduction of mechanised sequence sorting (in Post L) and separating preparation from delivery (in Post L and Post J).

A.11.63 Reductions in the number of delivery offices of between 5% and 65% are being planned in other postal companies, often against a background of significant reductions that have already been achieved. These reductions also typically will have a consequential impact on the number and location of mail sorting centres. According to ADL “by sorting down to the delivery route, it is possible to centralise and reduce the number of sorting centres, while also reducing the time and cost of the delivery stage. Post K, by sequence sorting to delivery route, are intending to reduce the number of sorting centres from eight down to four by 2005”. Currently, Royal Mail has 1,403 delivery offices and 1,059 SPDOs, and has not engaged in a systematic delivery office reduction programme.

Table 297: Delivery office rationalisation survey results

Post	Variation over last 3 years	Prospect for future	Comments
Post J	Recent 3 years have been nearly constant at 3,300 delivery offices.	This is expected to reduce by just less than 10% to approximately 3,000.	Through combining letter and parcel deliveries and also the project TVZ – separating preparation from delivery
Post L	180 pre-sorting centres 550 delivery offices	100 preparation centres, where sequencing takes place 2000 depots where sequenced mail can be collected	Major reduction in delivery offices will be achieved through new structure based on machine sequencing and concentrating preparation sites
Post B	Re-classification into main delivery centres and traditional small post offices	Current number of 316 main DOs to be reduced	To achieve efficiencies from centralised network and to reduce capital costs
Post D	Stabilised numerically but modernised and equipped	Reduction of current 409 DOs by 5-10%	Merging and amalgamation of small into larger delivery offices
Post E	Re-classification into main urban*, small urban, retail* and sorting plant	Plans include a net 9% reduction of buildings between 2005 and 2015. Aiming to use more owned than leased buildings	Aim to consolidate those marked with * and trend towards moving from 40/ 50 to Super Depots of 150-300 carriers
Post C	21% reduction from 700 to 550	Planning to reduce further to 500	Aim is to standardise the facilities
Post F	Currently settled at 545 after some mergers	Major reductions planned for 25-55% fewer DOs	Part of a major re-design and reorganisation of delivery
Post A	In 2003 there were 544 fewer offices than in 2001 (1.4% reduction from a total of 38,123)	No current plans to reduce the number of delivery offices	
Post G	15% reduction in number of offices and re-classified as urban, rural and combined	Plans to reduce by a further 21% through closing the smallest rural offices in the main.	Rationalisation of delivery offices is based around municipal boundaries but developing new criteria

Source: LECG Survey October 2004, TPG Presentations Rome and Postcomm visit, November 2004

A.11.64 Optimising the delivery office network often goes hand in hand with delivery office rationalisation. The impulse behind both initiatives is a need to achieve efficiencies in delivery offices and upstream in the sortation and transport processes. Most postal organisations have major plans in these areas, as highlighted above. Other European countries, including Post G make significant use of mopeds. By contrast, Royal Mail does not currently have a clear plan for re-designing its delivery structure, although it has just completed Single Day Delivery (SDD) project, which may have implications for the structure of the delivery network.

Table 298: Delivery office location survey results

Post	Optimising location	Tools used	Comments
Post J	Yes	Using a geographic location-planning tool with mathematical algorithm for optimisation. The tool finds the optimal number and the optimal location of the delivery depots and the optimal allocation of the delivery area.	This tool has just been re-launched and it is anticipated that this will become a “state of the art” planning tool for use in the next few years to optimise locations. The TVZ project will result in high savings from travel-in/travel-out times
Post L	Yes	Initially, optimised number and location of major sorting centres then modelled the delivery (distribution) operation to identify required centres needed in order to concentrate preparation.	Driven by the structural changes which no longer require fixed delivery offices for new (often part-time) deliverers who only perform deliveries with preparation concentrated on 286 decentralised sequence sorting machines
Post B	Yes	GIS and other data	Amalgamation of data sources against current metrics
Post D	No		Studying the use of Georoute (which it has used for route optimisation)
Post E	No	Use two key parameters: cost of transport to and from route start points and availability of reasonably-priced land	New delivery models being recently trialled (see Burlington Depot 8 details) has location implications
Post C	Yes	Basic planning tools	Aim to have a standardised concept
Post F	Not yet	Reviewing several options	Part of a major reorganisation of the whole pipeline now underway
Post A	No	Currently trialling COR using GIS system Maptitude	Again by extension this will enable them to do some location planning through “what if” routing scenarios
Post G	No	Planning rationalisation and new offices based on policy (town and urban) and municipality boundaries.	

Source: LECG Survey October 2004, TPG Presentation Rome and Postcomm visit November 2004

Delivery route optimisation

- A.11.65 In many ways, this topic goes together with the previous one of rationalising and optimising the location of delivery offices. What is then needed is a “what if” scenario planning software tool, based on Geographic Information System (“GIS”) and workload assumptions, that enables delivery operations planners to look at a number of options and identify the best one to balance service, cost and operational requirements.

A.11.66 In summary, most leading posts are using some form of delivery route optimisation software in a systematic way, and in so doing they typically identify significant levels of potential efficiency savings.

A.11.67 Royal Mail has developed and partially used similar software (under the project Pegasus) but this was not fully deployed or systematically used in the delivery offices in which it was deployed.

Table 299: Delivery route optimisation survey results

Post	Routing optimisation tool	Target savings in delivery costs	Comments
Post B	No		Trialled various tools but so far not able to match what operational experience can provide
Post D	Yes. DAG/ Estudios systems which use GIS and volumes	Not allocated to this project alone	One of the early users of optimisation tools
Post E	Yes. First users 15 years ago. LCRMS (& Postcards) & IRMA. Now evaluating new tools to replace these.	After 15 years of route optimisation it still believes a new tool may give it a further 1 to 2 % savings	CPC have the most complete experience of using these tools
Post C	Yes, Digital Map	2-5% savings	
Post F	Yes, Georoute	30% reduction in number of employees. This is the target for all the changes	Currently deploying this. Major issue with unions
Post A	Not currently, but COR is being developed and implemented	3-4%, based on benefits from sequencing and efficiency	Normal standards are for any route to be reviewed at least once per year and a carrier can demand a review at any time
Post J	Have been using "Giro" tools for last 5 years. This is now being integrated with the workload assessment tool (IBIS) and their GIS	Initially they planned to save 1.25% of the overall working time in delivery and so far have saved around 10% of travel time only.	Now starting to focus on the actual delivery route time, having achieved significant savings on the travel out and travel in times.

Source: LECG Survey October 2004, TPG Presentation Rome and Postcomm visit November 2004

Sorting to delivery route

A.11.68 In summary, most postal operators have for many years had the capability to sort mail to delivery routes by means of their first or second generation of automatic

letter sorting machines. According to Arthur D Little, “*the majority of cost in this (postal delivery) chain is in the inward sort to delivery stages*”⁵⁷¹. In particular, sorting to walk route (usually called the ‘primary sort’), when it is done manually in the delivery office, is expensive in labour time, creates a bottle-neck at a time-critical stage of the operation and is often where quality is endangered through significant levels of mis-sorting.

A.11.69 The leading benchmark organisations, Post J and Post L, are route sorting between 80% and 93% of their mail. This contrasts with Royal Mail who reports a figure of 52% being sorted to a postman’s walk.

Table 300: Sorting to delivery route survey results

Post	Percentage sorted direct to routes/walks	Comments
Post J	More than 80%	This is a percentage of all mail, which is sorted at source to route level, including that which is machine-sequenced.
Post L	93% letters, 70% flats	Currently, mail is manually sequenced. However, sort-and-sequence machines are being introduced at this time
Post B	67% is classed as round sorted (to routes or delivery points – large users)	Use a delivery point identifier (DPID), which is not geographical but unique to each delivery point. Manual sequencing on vertical VSORT frames.
Post D	25%	This is to routes and ready to be sequenced manually (by vertical sorting)
Post E	Presort products are 50% of mail volumes processed at delivery depots.	Manually sequenced thereafter on vertical sorting equipment (currently being renewed - more ergonomically designed work stations)
Post C	35%	Using their ABC alphabetical sorting system
Post F	None currently	Planning for 70-80% when machines at new sorting centres are operational. Use vertical sorting frames to manually sequence.
Post A	60% of total volume	The rest being unmachineable or unaddressed (unaddressed is a small % of total). Use vertical sorting frames to merge and manually sequence
Post G	50-60%	Aiming for 100% & vertical sorting frames to sequence.

Source: LECG Survey October 2004, TPG Presentation Rome and Postcomm visit November 2004

⁵⁷¹ Ibid

Machine sequence sorting

- A.11.70 Sequencing preparation, the sorting of mail into the sequence in which it will be delivered by the delivery staff member, has historically been done by hand and represented a very high proportion of delivery costs. Both Post L and Post J have identified the introduction of machine sequence sorting as a major cost reduction opportunity, albeit one that requires significant investment. The first postal operators to develop this capability were Post A and Singapore Post. Post A achieved a saving of 4% of city carrier routes through sequencing, which equates to a very significant level of financial savings. After Singapore Post, Post K was the next postal organisation to introduce a complete sequencing solution and this, together with its lean production techniques, as part of its target to improve mail productivity by 25%⁵⁷².
- A.11.71 Both Post L and Post J have invested very heavily in automation in this area, with the expectation of a high return. Equally, as mentioned at the beginning of this appendix, the timelines that both organisations have adopted to implement machine sequencing have been very ambitious. Post J decided in 2000 to proceed with this initiative and have now around 700 carrier sequence barcode sorter (CSBCS) machines in operation. Post L made the decision to proceed in 2002/3 and are now well into implementation with a planned completion in 2005.

⁵⁷² Pushing the Envelope, Accenture, published by Montgomery Research 2004, page 140

Table 301: Machine sequence sorting survey results

Post	% Machineable mail sequenced	Target efficiency saving	Comments
Post J	89% of machineable mail	Not disclosed	Since 2000, 517 carrier sequence barcode sorters (were introduced with a throughput of 9,300 pieces/hour. A further 202 were ordered in 2003 ready for operation in 2004. This will allow DP to sequence 70% of all letters automatically
Post L	Introducing 286 Solystic machines in 140 delivery offices. Currently, 110 machines in operation on 52 sites, with 6 delivery offices receiving machine sequenced mail	Not disclosed, although overall net reduction of 5,000 jobs in deliveries as part of a 265 m euro target savings in production costs	Still at piloting level but savings are reported to be on schedule and machine performance is higher than expected with lower reject levels than expected
Post B	None	N/A	
Post D	3% so far	100 FTE in 2005	
Post E	None	N/A	
Post C	35% into ABC order for delivery	25% of delivery office presorting time and costs	This only leaves street numerical sequencing to do
Post F	None	N/A	
Post A	82% sequencing	4% of city carrier routes eliminated	

Source: LECG Survey October 2004, TPG Presentation Rome and Postcomm visit November 2004

Delivery sequence database

- A.11.72 A delivery sequence database contains the full set of information required to walk sequence mail. This is a key enabler not only for machine sequence sorting but also for work-sharing and hybrid solutions. There is another important side benefit of this, in that mailing houses can use the delivery sequence database to ensure their mailing lists (including householder information) are 'clean'. For postal organisations (such as Royal Mail) that do not charge for undeliverable mail, this could represent a significant cost saving. Even Post B, who do not machine sequence mail, have introduced a delivery sequence database for the above reasons.

Table 302: Delivery sequence database survey results

Post	Sequence Database?	Comments
Post J	Yes	To service their machine sequencing capability
Post L	Yes	To service their machine sequencing capability
Post B	Yes	Structured in a hierarchy of office, round, route then sequence
Post D	No	
Post E	Yes	For Urban Core areas only, no sequence for Rural and Suburban Mail Contractors. Database covers 8m out of 13m delivery points
Post C	Not complete	
Post F	No	
Post A	Yes	
Post G	No	

Source: LECG Survey October 2004, TPG Presentation Rome and Postcomm visit November 2004

Other recent delivery-related initiatives

- A.11.73 This table shows a range of other delivery-related initiatives reported by our survey respondees, describing various savings projects, not all of which have disclosed cost savings targets. Of particular note is the mention by Post A of the delivery operations information system (DOIS), which was deployed, on a pilot basis between June and December of 1999 to 345 sites in six Post A Districts. DOIS helped to ensure equitable allocation of resources to cover daily workloads. This reduced operating costs through improved scheduling and deployment of letter carriers, based on daily workload and correctly established route structures. It also enabled more effective route inspections and route adjustments and improved productivity through a balanced distribution of workload across delivery units and routes. National deployment was approved in August 2000 and it was deployed to all 80 districts by September 2002. Business performance data showed a 1.5% improvement of productivity at DOIS sites, which translated into \$193.9m productivity savings for the year⁵⁷³.

⁵⁷³ Pushing the Envelope, Volume 1, page 146

Table 303: Other recent delivery-related initiatives survey results

Post	Initiative	Cost savings
Post J	Major project to combine letter and parcel deliveries wherever possible	90% of routes covered in 18 months resulting in a reduction of 3,400 routes
Post L	Project Briefpost 2000 introduced 6 new sorting centres and machinery with the aim of maximising automatic sorting to a postman's route	Saved 140m euro per year based on investment costs of 545m euro.
Post B	Increasing motorcycle street deliveries; purpose-designed delivery centres; introduction of vertical slot sorting; implementation of mechanised round sorting; increased outsourcing of cleaning and contract delivery; implementation of portable data terminals for delivered signature capture; introduction of employment contracts for delivery managers & restructuring the team leader concept	
Post D	Mail sorted into delivery route; increased automatic sequence sorting; optimisation of delivery	500 FTEs
Post E	Increased uptake of private vehicles; Meal on route when in corporate vehicles; New Parcel delivery model with changes in work rules and operation design begun to be implemented in 2004; Numerous other smaller projects	Overall cost savings in 03/04 was a reduction of 2% in routes in those offices which were restructured; Savings to be determined; Hitherto, carriers returned to office for their meals
Post C	ABC sorting system, versions 2-3, new sorting frames, new vehicles	
Post F	New transportation vehicles, new worktables, new working methods, flow optimisation, automation	All incorporated in the 30% cost reduction of employees
Post A	Delivery operations information system (DOIS) and the Manager Service Point Program (MSP)	37% return on investment
Post G	Optimisation of the internal activities, reduction of internal staff, outsourcing of the registered items, unaddressed mail, telegrams delivering.	All these leading to a reduction of delivery rounds

Source: LECG Survey October 2004, TPG Presentation Rome and Postcomm visit November 2004

Planned future initiatives to improve delivery cost efficiency

A.11.74 As with the table immediately above, the table below lists planned initiatives that other postal operators have identified for making savings through improved cost efficiency.

Table 304: Future initiatives to improve delivery cost efficiency

Post	Initiatives	Target Savings
Post J	TVZ Project to separate preparation from delivery in which the number of delivery depots will be reduced significantly and replaced by transfer points where prepared mail will be given to staff who will only deliver	
Post L	Currently focusing on the complete introduction of machine sequence sorting, together with a reorganisation of the overhead structure to rationalise it around 6 regions with a much flatter structure. Introduction of new part-time deliverers and overall headcount reduction	
Post B	Re-design of Core Delivery Processes (identifying best practice & process improvement – especially outdoor equipment); Maximisation of DPID to VSORT (upstream sorting); Future delivery design – develop delivery network principles that support an agreed infrastructure footprint to assist in reducing asset, facility and distribution costs of operating the delivery network	Expected benefit is a 6% reduction of mail required for manual sorting in delivery facilities
Post D	Increasing mail sorted into the delivery route, increased use of automatic sequence sorting, optimisation of delivery	Total savings target is 250 FTE
Post E	Overall aim is to eliminate waste in operations; Depot Processing Strategy – aligning inbound mail processing plant operations with the local network and delivery; Letter carrier Workstation – more efficient tool for sequencing mail; New delivery models, such as the Letter Carrier Model and Parcel Delivery Model; Implementation of a new route optimisation tool	Not disclosed
Post C	ABC – next version, SAP/ ERP production planning and HR systems, new collective labour agreement and initiatives programme	
Post F	Flexibility of labour, automation (round sorting, sequencing) outsourcing of low skilled labour, route optimisation, scale effects, reduction of service points	
Post A	Morning standard operating procedures (AM-SOP) and Flats automation	Not yet determined
Post G	Sorting mechanisation and route optimisation	Reduce internal staff; Reduce postmen

Source: LECG Survey October 2004, TPG Presentation Rome and Postcomm visit November 2004

Outsourcing

- A.11.75 There are broadly two types of outsourcing that could be implemented in a postal organisation – outsourcing of mail operations, and outsourcing of support services. We consider these in turn.

Outsourcing mail operations

A.11.76 Several postal organisations have outsourced elements of their mail operations. For example, Post J experimented with contracting out parcel deliveries in the 1990s but brought this activity back in house due to difficulties with maintaining quality of service. Equally, Post E and Post A contract out some rural deliveries.

Table 305: Outsourcing mail operations survey results

Post	Outsourcing mail operations?	Targeted/ achieved savings?
Post F	No	
Post E	All air transportation; Long haul ground transportation; Parcel delivery, mail collection and letter carrier support in small urban cities (less than 100,000 pop); On 1 Jan 2004 we "in-sourced" all of our rural delivery that was previously outsourced to independent owners/ drivers. This was part of a collective bargaining process settlement	No current measure
Post C	All trunk transports and partly customised pick up and delivery services	Cost savings (unspecified)
Post A	We have instituted a rate structure to provide an incentive to our mailers to deliver mail to each delivery facility. This rate incentive is for letters, flats and parcels.	Reduced mail processing hours

Source: LECG Survey October 2004

Outsourcing support services

A.11.77 Several postal organisations have also outsourced support services, as summarised below.

Table 306: Outsourcing support services survey results

Post	Outsourcing support services?	Target/ achieved benefits?
Post F	Yes	Economies of scale, effectiveness improvement
Post E	HR Benefits Management; Pension; Employee Assistance; Payroll; Information Technology and systems	Obtaining external expertise; Reduced costs; Efficient management
Post C	Sorting machine maintenance	Cost savings and quality
Post H	Verbal report	
Post A	Highway Contract transportation	

Source: LECG Survey October 2004

HR Issues

A.11.78 This appendix began by highlighting the importance of the effective implementation of major change. If this is not managed well, then the initiatives to improve efficiency, which have been outlined, will not deliver the desired benefits. Alongside strong initiative design, and rigorous project management, an essential enabler is an effective HR change management strategy that ensures all those who are affected by change are engaged in the process and committed to the outcome and the new way of working. An international benchmarking workshop organised by E-BISS International on the theme of “Change and People Management” held in Stockholm in September 2003 provided clear evidence that all postal operators face these challenges of change management and engaging with staff and unions.

A.11.79 According to delegates to a conference in Stockholm in September 2003, called “E-BISS Change and People Management Benchmarking Workshop”, some of the lessons learnt included the need to ensure maximum participation of staff throughout a change process, clear leadership and vision, effective two-way communications, commitment from the top of the organisation and some kind of partnership with the unions involving honesty, transparency and, above all, trust.

Union Issues

A.11.80 Handling union issues is a crucial aspect of change management and requires clear and careful strategies. The inputs to the international benchmarking survey illustrate that all posts have to find a way of working with the unions in their

particular organisational culture. Details of the union issues faced by selected postal organisations are set out in the table below.

Table 307: Union issues survey results

Post	Unionised?	Impact?	How involve and engage unions?
Post F	Yes	Influences the speed of implementation (slower) and it reduces flexibility for try outs (trial and error) but it puts pressure on better preparation and it emphasises the human aspects (social impact)	Every step is negotiated and there are written agreements on all the aspects of change. There are formal procedures and forums of discussion both on a local and on the national level. There are also several information sessions explaining proposed changes
Post E	Yes	Savings and efficiencies are achieved but the process can take longer than otherwise due to consultation requirements. Sometimes the nature of the change depends on negotiations with the union during the normal collective bargaining cycle	There is an extensive consultation framework in place at various levels to review proposed initiatives and their impacts. For the delivery operations a joint development process was recently established that allows both parties to propose, develop and test operational changes together. This process has yielded major operational improvements in the parcel delivery operation but the time and financial investments can be large. The alternative though was no/ little improvement over many years – so the investment was beneficial
Post C	Yes		Union shop stewards participate in development projects. Regular meetings and discussion with union key persons
Post A	Yes		There is a constant flow of communication between the Post A and its unions

Source: LECG Survey October 2004

Sickness Levels

- A.11.81 Sick absence can represent a major cost for postal organisations. Unfortunately, different postal organisations have different measures relating to sick absence. Previous surveys have shown levels between 4% and 10.5%⁵⁷⁴. Sometimes, as in Post A, the level changes due to a re-definition of what should count as sick absence. Some differences include the fact that in most of continental Europe,

⁵⁷⁴ E-BISS International, January 2004

even one day absences have to be accompanied by a doctor's note, while in the UK a longer absence is required before a doctor's note must be provided. Many postal organisations have also used positive incentives for full attendance.

Table 308: Sickness survey results

Post	% Sickness	How measured?	Reduction achieved?
Post F	10%	Including long and short-term sickness and special leave	By special arrangements for older and sick employees. There are also more strict control procedures
Post E	Not disclosed	By Statistics Country E guidelines based on lost days per employee. Included are various paid sick leaves, special leaves, such as family and bereavement and injury on duty	N/A
Post C	3-6% in different functions, total 4.5%		No
Post A	YTD at 24.9.04 is 4.07%	Tracked weekly on FLASH report	No. We have seen the rate rise due to changes in the laws set forth by our government

Source: LECG Survey October 2004

Other HR issues

- A.11.82 There appears to be a trend in postal organisations towards developing more flexible approaches to staffing and scheduling, with a trend away from long-term permanent and fixed contracts, towards more variable, shorter-term and temporary type contracts. This is typically accompanied by many more part-time roles to provide opportunities for workers who have other responsibilities, such as housewives, parents, carers, students and so on.
- A.11.83 There is little evidence of use of gainshare schemes from these respondents. Clearly in Post J, most of the employees are also shareholders since the IPO in 2002.

Table 309: Other HR survey results

Post	Manpower alignment?	Incentive/ gainshare Schemes?	Team working and team leaders and flat leadership structures?
Post F	Use of temporary contracts, interims and partly by overtime	One individual bonus incentive scheme for managers. About to start a team incentive system related to quality performance. Feel that there is a lack of incentives for non-management employees. No gainshare	Have had "working" team leaders for a long time. Opinions on effectiveness are divided. No specific flat leadership initiatives.
Post E	Extensive forecasting based on predictions of volume- historical and current trends. An extensive part-time and temporary workforce that is extended or called in depending on workload requirements.	For the largest union there is no incentive plan. All other levels (supervisors, admin and management) have some forms of incentives. These are based on the corporation meeting its financial, customer satisfaction and service performance targets. No gainshare	We are just starting to transform into an extensive process-based organisation. This incorporates implementing team leaders. It is too early to provide realistic outcomes.
Post C	SAP/ERP system under development	In some units all employees already have BSC-linked incentives. Target to launch to all employees. No gainshare	We are reorganising and the result will be that 1-2 levels cut down and 15-20% of supervisors will go.
Post A	DOIS in the delivery area	Management is rated on the National Performance Assessment (NPA) programme. Our craft employees receive longevity payments. No gainshare	We have quality of Work Life/Employee Involvement teams with our rural carrier craft

Source: LECG Survey October 2004

Appendix 12: International Delivery Workshop summary

Introduction

- A.12.1 The following summary was prepared by Derek Osborn. Derek Osborn provided key support to the international benchmarking team. Derek has over 23 years experience in a variety of senior management operational and project roles in Royal Mail in the UK and over 10 years of experience in international consultancy across the postal world.
- A.12.2 The E-BISS International Delivery Workshop took place in Rome on 14-15 October 2004.
- A.12.3 We have taken every care in preparing the following material. However, we have not systematically reviewed the material with the delegates in question (i.e. we have not requested each source to verify whether the summary is accurately stated). Hence, what follows reflects our interpretation of the workshop, and it may not reflect the actual views of delegates. In line with the previous appendix, we have attempted to make the data partially anonymous.

Overview

- A.12.4 Delegates from 16 posts took part in the workshop: Post B, Post F, Post E, Post D, Post J, Post C, Post M, Post N Post, Post H, Post P, Post G, Royal Mail, Post I, Post O, Post L and Post A. Postcomm and LECG also sent delegates to this conference.
- A.12.5 Our general view from this workshop was that all posts are suffering from a decline in mail volume and are looking for ways to reduce costs, in particular to move towards more flexibility and variable costs with less fixed cost elements. One of the means to do this is by using new technology to reduce indoor work and thus increase the options for sourcing the outdoor work.
- A.12.6 Another is to integrate the services of mail delivery with parcel delivery. The major challenge remains, however, to ensure the unions are convinced that work flexibility is an important tool to overcome the effects of this declining revenue.
- A.12.7 Post G indicated that its current business objective is to put its customers first by providing integrated services and looking for means to improve customer satisfaction and to consolidate the Group's profitability. Post G increased its

revenue per employee by 53% between 1998 and 2003 and has undergone a great quality transformation with quality of service figures reaching above 90% for most streams and priority mail is nearly there at over 87%. This has improved morale significantly for staff that are now happy and proud to be working for Post G. New equipment, better training, greater product range and improvements in Quality of Service have led to a positive shift in perception amongst the general public and staff.

Challenges, initiatives and aims by country

A.12.8 Each participating post identified its key challenges and current issues, together with their recent/planned initiatives and their aims for the workshop. Here is a summary, in note form. Note that this is our summary from discussions and from the presentations. Each individual post has not confirmed these views.

Post B

Challenges	Reached a growth plateau with less to no growth forecast
	How to control costs with no growth
	Interface with Asia for expanding their market
<hr/>	
Initiatives	Implemented a lot of technology in their network
	Further consolidation: technology from mail centres into delivery offices
<hr/>	
Aims	Indoor – outdoor split of the work process
	How far can we go in automation and sequencing

Post F

Challenges Reorganising delivery offices using geo-route (route optimisation)

Renewal of sorting centres starting in 2006 with sequencing eventually (50%)

Focusing on business clients mainly

Initiatives The reorganisation of Delivery offices worked well with 20%-30% improvements

Quality improvement +10% (80-90%)

Aims What are the strategies and new technologies used by other posts

Post E

Challenges Mail revenue is declining; a lot of attention is now being put on parcels

Cost in delivery is up due to additional delivery points

Initiatives Changed parcel delivery

Learnt through involvement in a joint working party over past 3 years

Aims Looking for opportunities and new ideas

Post D

Challenges Preparing for privatisation in 3 years

Need to work better across business units

Initiatives Implementing best practice

Introducing Optimisation systems (system like geo-route)

Aims Want to understand sequencing. How are postmen of other posts reacting?

How are other posts dealing with the Unions when they are limiting the much needed work flexibility

Post J

Challenges Preparing for full opening of market

 Continuous productivity improvement (joining delivery of parcels with mail)

 Increasing flexibility in costs (more variable and less fixed costs)

 Improving quality (Goal for 2008: best quality for best price)

Initiatives Route optimisation

Aims Experience of other posts in the optimisation process

Post C

Challenges Increasing quality targets

 What is the right balance between traditional mail business and the promotion of e-technology

 What is the next generation of sorting equipment from 2007-2012

Initiatives ABC sorting has given the biggest saving of all cost saving programs

Aims What are the strategic routes of other posts

Post M

Challenges How to get away from the government umbrella in order to become more commercial

 High fixed costs at the same time as falling volumes and revenues

Initiatives Initiatives Involving the workers in the change, knowing that volume is declining

Aims How do other posts engage workers for change

Post N

Challenges Mail volume is declining but parcels are increasing, giving the problem of weight NZ wants to grow with the market and can count on unions to cooperate

More customer focused – what products do they want

Look at end-to-end process – sequencing or customers sequencing

Initiatives Focused on improving quality of line manager

Amalgamation of delivery offices to reduce cost in delivery

Good address database – now selling them

Aims How best to use new technology

Post H

Challenges Challenges Good profits for the 1st time in 10 years. How to explain to the public why the Post needs these profits? Especially with market liberalisation in 2007

Looking at flexibility in the workforce to allow a more flexible cost base

Initiatives Acquisition of a big logistics company

Put parcels and post together leading to big profits

Aims Looking for productivity increase (less indoor, more outdoor): “It’s in to be out”.

Post P

A.12.9 First attendance to such workshop and therefore came to conference to listen and understand

Royal Mail

Challenges	Regulation and Competition
	How to satisfy our customers and motivate all employees
	The 3-year “renewal programme” comes to an end soon. What next

Initiatives	Single Day Delivery (SDD)
	Review of the transport network
	Mail Centres efficiency review
	All contributed to increased profits

Aims	Want to understand the changed mix between indoor and outdoor
	Engaging staff, unions: how to get them all going in the same direction

Post I

Challenges	Be profitable and improve image, as customers did not like recent changes
	Keeping same cost per item but with reduced volume
	Motivating staff and maintaining high quality of service

Initiatives	Lots of changes but it takes time. You think things should take 1 year but it really takes 3 years
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Aims	Want to learn how to shorten time of the change process
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Post O

Challenges Reducing costs and increasing revenue (getting clients back)
 Reorganising parcels division
 Last mile: Do we have to go to every house, every day?

Initiatives Initiatives Start with the reorganisation of the Parcels division;
 Planning a complete reorganisation of the Operations in Mail
 division

Aims To learn from others how they solve their problems

Post L

Challenges Defend the business against competition
 Improve quality and make cost savings
 Maintain revenue
 Machine sorting saves money but reduces flexibility

Initiatives N/a

Aims Following the different developments in the posts (Market
 Research)

Post A

Challenges	<p>Rising costs, decline in first class mail volume</p> <p>Significant competition everywhere – “cherry picking”</p> <p>Legislation – they are non-profit making. The economic business model of Post A is based on first class mail and this is reducing. Legislation should take this into account</p> <p>USO – requires delivery 6 days a week</p>
Initiatives	<p>82% sequencing</p> <p>Looking at the sequencing of flats and packets</p> <p>Changing measurement from time based to volume based</p> <p>Cut disputes with unions by constant communications and involvement, consistency in plans and strategy</p>
Aims	-

Overview of key discussions

- A.12.10 Post A gave an update on how it is currently organising its delivery. Machine sequencing of letters has reduced the number of city carrier routes by 4%. What to do with the sequencing of flats? There were two options:
- Delivery Point packaging (DPP): flats and letters are sequenced on the same machine. This saves time in the street, but is very time consuming in the office.
 - Flats Sequencing System (FSS): flats are separately sequenced and merged in the street. This system gives the postman the chance to give the delivery a last quality check.
- A.12.11 FSS appears to be better initially than DPP, as for the latter there is an investment involved of 5.6 billion USD upfront before reaching at the end a Return of Investment (ROI) of 92%.
- A.12.12 Post L presented its “Masterplan for Distribution”. The challenge of Post L is to maintain the current Operating revenues for Mail in spite of the drop in volume, foreseen to be up to 18% in 2007. Post L chose to introduce sequence sorting with small machines in the delivery offices, creating depots (a new distribution

network of garages, stores, newspaper depots to drop the sequenced mail) close to the routes and getting the mail delivered by cheap part-timers. Total savings are expected to reach 15% of total distribution cost. Depots are managed by a “postman-plus” (i.e. a postman of the nearest delivery office who uses 50% of his time to train and control the work of the new delivery people). He is the link between the delivery office and the depot(s).

A.12.13 Post G explained the delivery system in Country G. The rural delivery network is totally independent from the urban network. Postmen work 6 hours per day for 6 days whatever the volume. If there is too much mail to take out, it can be picked up at designated boxes, located on his route. Where possible the sorting will be done in the sorting centres not in the delivery offices. There is a separate delivery for big clients and large buildings. Mail is given to the doorman/concierge of the building, but manual operations from the postman remain required especially when legal implications are taken place. Post G put as objective “to work according to the quality perceived by the client” and is therefore looking for an “ISO 9000 in Delivery”.

A.12.14 Post E gave an introduction to some recent delivery initiatives in Country E. One of the initiatives has been implemented while the second has been held back pending agreement with unions:

- merging parcels and packet streams: to avoid duplication of effort, in particular where two vehicle routes overlapped; and
- adjusting indoor / outdoor workloads to reduce to and from travel time (full-time / part-time workforce).

A.12.15 After analysis of volume and density of the networks, a partial merger of parcel and letter networks was introduced whereby duplicate vehicle areas were merged to one vehicle. This initiative was in response to changing mail usage patterns where volume is decreasing by 1% to 2% per year, parcels are increasing by 1% to 3% resulting in cost increases per item of 3% to 5%.

A.12.16 The second initiative, adjusting the indoor/ outdoor balance, was trialled but not implemented. This initiative aimed to reduce the amount of time spent travelling to and from the DO by postmen. CPC merged indoor work and adjusted outdoor work so that a fulltime postman would sort (depending on volume) 1 to 3 rounds and deliver one of these while part time postmen would deliver an enlarged

delivery round. The part time postman would come in to the office only once per week, saving on both travel time and meal breaks. Advantages of this system include:

- increased flexibility to manage volume fluctuations;
- minimise non-productive time like travel time;
- simple changes such as using private vehicles / taxis result in significant travel cost reductions; and
- allows a reduction in outside work for postmen (from 4.5 to 4.0 hours)

A.12.17 Post J demonstrated a similar system to CPC. In merging the letter and parcel networks Post J have had to balance the compromise between increasing efficiencies of one product and affecting the quality / efficiency of the other. Parcel and letter route optimisation tools are merged to create a suitable system for the new mode of delivery.

A.12.18 Post J is also aiming to separate sequencing from delivery, in particular where there are long distances between the DO and the route. The initiative requires a shift to a part time labour force, which has caused some concern due to increased staff turnover and reduced quality. Post J have shifted 2000 of 60000 routes to outdoors only part time, for these routes a 75% saving in travel time has been achieved. This initiative is viable in areas where duplicate parcel and letter networks exist – mainly high-density urban areas. Part time staff collect mail from 'depots'.

A.12.19 Workshop participants made the following comments regarding Post J presentations:

- managing a PT workforce is difficult and heavy on management resource, increased turnover, admin costs etc;
- shifting away from full time workers reduces long term legacy issues such as medical insurance and pensions (Post A noted that it pays US\$1B in medical cover to retired employees);
- these initiatives are about improving delivery efficiency; neither considers the needs of the customer;

- the shift toward a part time workforce needs to be balanced with understanding the socio-demographic characteristics of the host country – many simply do not have the labour capacity to attempt this switch; and
- variations on the part time theme – such as work share (vertical v horizontal part time) – should be explored as these may allow more flex for posts and workers.

A.12.20 Post N gave a masterclass on the “levers” and “drivers” of cost in mail delivery. Delivery costs have to be reduced and labour cost is one of the major levers. Two separate entities can be distinguished in the delivery process: indoor work (called the Factory) and outdoor (called the Last Mile). For Indoor, workload is directly related to mail volume. For outdoor, volume fluctuations do not so directly influence the workload per route. To understand and master the drivers of the delivery workload it is essential to measure and capture daily what the postman is doing every day (“on street” and “off” street), knowing that every route consists of a different workload. This measurement will give an objective basis to change and helps to identify how to cut costs within the delivery process.

A.12.21 Post J explained the Change process within Post J: objectives, methodology and results obtained. Changes in delivery were necessary as mail volume declines and customer needs become more stringent. Delivery improvement must be based on objective information and therefore it is essential to evaluate every route separately: measurement of work standards, volume and terrain. In other words: realities check in the field with the local postman. However, work measurement must be used for the right purpose, not to test the postman.

A.12.22 Delivery improvement will also be obtained if targets are defined in an objective way and if everybody can reach the targets. A flexible resource pool is put in place in order to overcome temporarily the work overload and to speed up the “cultural shift” (helping to think outside the “box”). The change process was tested in a few delivery offices and feedback was asked in order to get the change accepted (to overcome a negative attitude due to “pride” of the postmen involved). It is the task of management to sell the benefits of the process before starting the change process.

A.12.23 Planmatics gave an introduction to optimisation with an informative explanation of some of the academic origins of how the techniques were developed and used initially. The main value of optimisation consists in being able to take all the

inputs, with parameters and constraints defined by the users, and then to suggest a unique “best option” recommendation, based on the optimal configuration in order to get the best output results. It can be done at all levels and also in conjunction with simulation. Planmatics has been responsible for proven solutions in different postal environments, including work undertaken for Post A, Post J and Post E.

A.12.24 Potential savings through better alignment of staff (labour) to workload can be up to 15%. One way of achieving this was through systematic internal benchmarking by clustering similar offices together and comparing performance, using mathematical optimisation techniques allowing a rigorous analysis of the multiple variables that impact on a delivery office, for example. This approach could be used very powerfully in the context of continuous improvement activity.

A.12.25 Post H and Post I gave an overview of the latest developments in Scandinavia. Post H has made impressive progress, largely through the use of business process re-engineering, which consists among other items, of the following steps:

- each postman reports to his supervisor every process he is doing (this is checked by HQ on its validity);
- the postman then discusses how much time he needs on each process. A “Best practice” databank is available to compare his time with others;
- the time for each process is recalculated and used to fill in the time of his round; and
- a target of 10 to 15% saving needs to be reached either through his own calculations or based on what HQ has calculated.

A.12.26 The advantage of this process is that with the use of objective information (databank), the postman can calculate his own optimal delivery process. The delivery workload prior to the reorganisation consisted of a lot of tasks one after the other, whereby 57% was dedicated to indoor work. After the reorganisation it was more structured so that only 40% of the workload was related to indoor work, resulting immediately in considerable savings. Overall objective is a 30% time indoor 70% outdoor.

A.12.27 In Post I, efficiency increased by working harder and sorting faster. As quality of service always has been high in Country I, they have to be very careful that when

changing the process, they don't jeopardise what is done well and thus their obtained quality level. They are concentrating very much on the human factors of change, to ensure more effective communications and training, so that the change works and the people are taken with them.

- A.12.28 Post L elaborated on the decision process of whether to use sorting machines or manual sorting frames and if sequencing should take place in the sorting centres or in the delivery offices. Post L chose machines because it is more economically profitable, it gives more flexibility than frames and there is room for technical improvements during its lifetime. One crucial condition was that there are now and in the future enough machineable letters to make the investment profitable.
- A.12.29 Post A explained how the "Carrier Optimal Routing" (COR) works in Post A. The model allows for the possibility to model a lot of "trial and errors" and/ or "what ifs". It is both a simulation tool and an optimisation tool. It requires a lot of preparation and data collection of all items related to the route. With regards the city carrier route a full week count inspection is done in cooperation of the manager of the office. This, together with delivery point sequencing and the use of the COR model, significant savings are realised resulting in longer routes per postman.
- A.12.30 Post C informed the participants about the "Service Quality Improvement" of Post C over the last years. With respect to delivery, postmen work average 180 minutes indoor and 280 minutes outdoors but within flexible hours of approx 7h30 a day. Around 70% of indoor cost is variable against only 20% for outdoors. The official target is to finish delivery at 4:00pm; the internal target, however, is to finish at 1:00 pm. Except in big cities, parcel and mail delivery are joint. There are 4 delivery times for parcels (in main cities) in order to meet customers' requirements. Delivery of newspapers in cities is done separately. In rural areas the challenge is to combine mail & parcels delivery with the early delivery of the newspapers. The way to do this is to change the service target from J+1 to J+2. Or newspaper delivery has a priority towards mail delivery. A request for changing the target has been forwarded to the government.
- A.12.31 With respect to complaints handling, call centres answer 80% of the questions (not all are complaints). Others are forwarded to the delivery office concerned. In the past all complaints were registered and included in the Balance Score Card. Now only the time to answer the complaint is measured.

- A.12.32 Customer Satisfaction measurement is done by phone interviews only. To know however customers needs, a questionnaire is circulated among the population. In spite of the great efforts and heavy investments to improve the service, consumer perception remains the same and did not even change when the number of post offices was reduced. The biggest impact on the satisfaction of the customer was the TIME of delivery. Therefore, for the post, it was imperative to deliver before 1:00 pm although often nobody is home. Business customers demand early delivery, but do not want to pay for it. For 70% of the consumers it doesn't matter when it is delivered.
- A.12.33 Post O spoke about "People and Change Management within Delivery". It is a 4-year project with the aim of introducing effective team working. To achieve this requires a significant investment in training with the aim of breaking even after 2 years (given the initial investment). Team leaders get additional pay and are also allowed 1h per day spent on team leading. The idea is that they absorb many of the day-to-day supervisory tasks, such as covering absence and sickness. There is one team leader per office. So far, this programme has significantly reduced the sick absence rate and it also gives the possibility to hire more part timers.

Appendix 13: Change Management Conference summary

Introduction

- A.13.1 The following summary was prepared by Derek Osborn. Derek Osborn provided key support to the international benchmarking team. Derek has over 23 years experience in a variety of senior management operational and project roles in Royal Mail in the UK and over 10 years of experience in international consultancy across the postal world. The Change Management conference took place in Stockholm between the 8th and 10th September 2003. This appendix provides a summary from discussions and from the presentations.
- A.13.2 We have taken every care in preparing the following material. However, we have not systematically reviewed the material with the delegates in question (i.e. we have not requested each source to verify whether the summary is accurately stated). Hence, what follows reflects our interpretation of the workshop, and it may not reflect the actual views of delegates. In line with the previous appendix, we have attempted to make the data partially anonymous.

Overview

- A.13.3 Delegates include Post Q who delegated not only senior managers but also union leaders of the Post. Other participating posts were: Post R, Post J, Post C, Post S, Post M, Post N, Post I and Post O.
- A.13.4 In summary, it appears that the cultural and political differences have a major influence on how change processes are tackled. However all posts faced very similar challenges although with some different perspectives, answers and solutions. Nobody can ignore the need for change. Change can only be successfully implemented if there is both strong and good leadership and where commitment from the top is crucial. Also, crucially, partnerships with unions in order to engage them with the change, requires honesty, transparency and, above all, trust.
- A.13.5 Post N presented how they handled communications and their relations with the unions. A major impact was created by a new legislation (the Employment Contract Act) in 1991, deregulating the labour market completely and reducing the power of unions considerably. A new framework was developed under the new CEO (1993) defining a Purpose, a Vision, Business principles and the

performance areas. The underlying principles that Post N created opened the relations with unions. The unions are recognised as partners, as “leaders of choice”, appointed by the field to represent them and therefore they need trust and respect when dealing with them.

- A.13.6 Post O indicated that it is difficult to convince people of Post O to “Change” if there is no real reason to: Image is good, Quality of service is fine, Customer satisfaction is fine and employee satisfaction is high. However, change was still necessary and Post O explained that Change was introduced bottom upwards using their concept of “Change Pioneers” (i.e. staff who volunteered to be involved in the process and who are making all kind of proposals and suggestions to a Core Team about how they think they can improve their work and environment). This “Bottom up” approach is a very interesting and, it appears, effective way to involve people instead of imposing Change top down.
- A.13.7 Post S reported that they do not apply the kind of negotiation model as encountered in other countries: Management informs the unions what will change and executes it. As from 1998 new employment terms are in place in line with the private sector. Main priorities within Human Resources are personal development and maintaining job satisfaction. This resulted already in a strong reduction of personnel turnover and less overtime (learning to work better and to be better organised). The bonus system has been replaced by taking care of aspects directly involving the social environment of the staff like sponsoring local events and small gifts for the person and his family. Since the transformation from public sector into private sector, there is more (management) freedom, more flexibility for the benefit of the individual.
- A.13.8 Post J reported on a workshop where local managers were sharing experiences on the merging of Mail branches. Post J has reduced its total staff numbers in Country J by 50% mainly through: merging small adjacent offices; introducing machinery in local offices; and outsourcing some of the workload (e.g. emptying the mailboxes, etc).
- A.13.9 Such workshops were organised not only to deal with this pressure and to keep these people motivated to embrace the change, but also to get advice from colleagues on how to manage these continuing changes in the (merged) branches. Some of the options deployed to deal with the consequences of such mergers for employees were: hold a modest integration event at which, for

instance, a presentation on changes and their psychological background is given (which could be followed by a discussion); external assistance for the know-how of such presentations (if necessary, by a company physician); arrange with social services to offer one-to-one psychological counselling; have superiors discuss the future with their staff (indicate alternatives, executives as “psychologists”); have a “farewell bash”, drawing a line under the past - “Phase of new beginnings”; “Sell” the strategy “Who moved my cheese?” in a suitable form (Book by Spencer Johnson “Who moved my cheese? An Amazing Way to deal with Change in in Your Work and in Your Life”, published by Ariston-Verlag, at €14,90); and be willing to become involved in unconventional events.

- A.13.10 Post M explained how the change programme was implemented in a small organisation like Post M. She sees it as a combination of evolution and revolution. The process needed a cultural framework. Post M defined the early stages that they used to start the change programme: worked with the top team; focus groups; questionnaires; analyses; formation of a change team; and values and behaviours created by the staff.
- A.13.11 Although the planning and motivation to change were present and a lot of expectations created, the Change went too slow and stopped. A revolution was required in the existing communication towards people (more, how and when), in each other’s behaviour (to be challenged), in management capabilities (to be assessed) and in the existing HR policies. Post M eventually succeeded in seeing significant change largely due to: the relationships between staff; persistence; the ability to adapt, alter the approach; the ability to remain totally focused on their objective.
- A.13.12 Post I started its presentation by stating that the “Culture” of the organisation naturally resists “change” and that the only way to influence “Culture” is to accept it as it is and to go forward from there on. The workforce learned to follow instructions not to follow their own judgement to do what needs to be done. Production traditionally mastered the Postal business; today because of the Change a conflict of power and influence arises between them and the other divisions like Marketing, Sales, and Human Resources.
- A.13.13 Post I asked 1500 managers to write down what they felt about change in order to find out how to deal with all these ideas and reflections. Debates and discussions in the presence of the CEO, using Case studies, helped middle management to

understand the complexity of what needed to happen. Post I summarised the actions in change as follows: change is at hand when people have changed; you need people to take part in change; you need to give reason, arguments, support, comfort; you need dialogue; dialogue is built on, and builds, trust; trust is not something you find the moment you need it, it takes time to build trust into your organisation; and start now with activities to support an ongoing dialogue within the organisation.

- A.13.14 Post C gave an overview of what its organisation has undertaken and is undertaking to make change happen. The first time in the mid nineties tools like process management, quality management, balance scorecards and knowledge management were introduced, giving an explosion of changes but in which people sometimes overlooked the global picture. Everybody was keen to develop but the “customer” was forgotten. A new approach was necessary. They began by redefining the values and culture of the company, linking them to concrete goals and bringing them in line with day-to-day practice. They introduced a very innovative matrix measuring achievement of the values with regards customer, expertise, financial performance and the company’s processes. The values for successful performance were defined as: customer orientation (fulfilling customer needs); reliability (keeping its promises); and development (of individuals, of high-qualitative and competitive solutions).
- A.13.15 Post R explained a thorough methodology of how to build up and make Change happen in Operations: step by step, each project with a target and objective to meet. All new projects were creating new functions and new responsibilities, but directed under one overall umbrella or project programme: Net effect was Optimisation of all the changes.

Appendix 14: TPG case study

Introduction

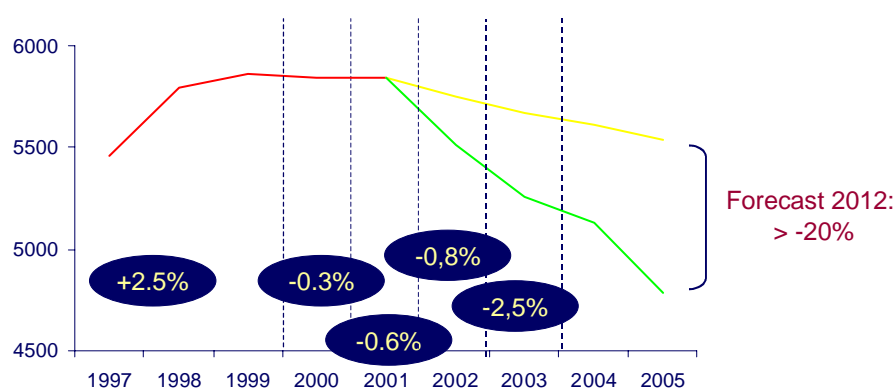
A.14.1 A team comprising of Jeremy Cains and Sophie Yorke (Postcomm), Chris Osborne (LECG) and Peter Portnoi (Sirius Solutions) visited TPG on the 8/9 November. The visit consisted of a tour of the Amsterdam Mail Centre at Sloterdijk together with a presentation on the programme that TPG has undertaken to modernise its operations, followed by a tour of the delivery office at Leiden – again, followed by a brief presentation. The team's key observations are set out below. TPG has not reviewed these observations.

Context

A.14.2 TPG has, in the past 4-5 years, implemented an extensive investment and operating cost reduction plan. The context for this plan, Project BriefPost, originally developed in the year 2000, was the perception that volumes would fall in response both to increasing competition and to general substitution. Projections prepared then suggested that, without radical change, costs per unit would rise by between 18% and 34%.

A.14.3 In 1991, TPG had 12 sorting centres across the Netherlands, in which processing of approximately 25% of mail was automated. At that time, there were approximately 800 delivery offices, although since the mid-1990s TPG has only used 540 delivery offices.

Figure 19: Mail Volume Forecasts prepared 2000/01



Source: TPG

- A.14.4 The plan developed in 1991 called for progressive modernisation up to 2012. The long-term nature of the plan is reported to have been crucial in gaining acceptance by the unions, and in allowing headcount reductions to be achieved generally through natural wastage. TPG has negotiated a no-strike, no-redundancy deal with its union.
- A.14.5 Also important to the plan was a loosening in service levels such that – in particular – domestic mail was delivered by 5pm on the working day after posting, rather than in the morning of the working day after posting. This not only created the opportunity to streamline delivery operations (see below); it also meant that TPG's sorting machines could be fully utilised through a much longer time window than would otherwise be the case.
- A.14.6 It was also clear that the relatively small size of the Netherlands was an important factor in determining the manner in which TPG launched a radical overhaul of its operations. In particular, transport times, which are low relative to other postal organisations outside the Netherlands, allow a longer sorting window and (for a given service level) improve the economics of mechanised sorting.
- A.14.7 TPG reported that its current (2004) volume projects are for falls of around 3% per year, of which some two thirds reflects market shrinkage, and one third reflects the impact of competition.
- A.14.8 TPG offers customers both a 24-hour and 48-hour service standard. TPG does not offer customers a discount for pre-sorted mail, which arrives at mail centres trayed. The only mail that requires traying at the mail centre is collections from street boxes – other mail is trayed by large mailers or at one of 184 consolidation centres that operate as delivery offices by day. TPG also offers services such as one whereby it opens mail to particular recipients, scans it electronically and forwards it by email to that recipient. TPG does not currently face competition for items weighing up to 100 grams.
- A.14.9 TPG's organisational structure has four units as part of postal operations – Distribution, Sorting, Parcels and Transport. Parcels are delivered by a separate workforce and are combined with other 'doorbell' items (items that require customer attendance).

Mail centre operations

- A.14.10 TPG's mail centre operations are characterised by investment-driven scale economies. TPG has consolidated its operation into 6 regional mail centres, all of which have a high degree of automation, and all of which were designed (to an essentially common design) with an effective floor plan to accommodate the required machinery. TPG anticipates a potential further reduction to 5 mail centres as a response to falling volumes.
- A.14.11 The Amsterdam Mail Centre, which we visited, handles about 4 million outward and 4 million inward items each day. Of these, about 500,000 items are collected from post boxes and the remainder is collected from firms and post office retail outlets. The mail centre employs 900 FTEs. Mail centres in the Netherlands do not handle registered mail, and parcels are sorted elsewhere.
- A.14.12 The degree of automation at the Amsterdam Mail Centre was visually impressive. In this centre, 14 letter-sorting machines process mail up to A4 size to the level of individual walks. Some 10 flat sorting machines handle larger or thicker items, again with large enough plan sizes to allow sorting to the individual walk level. It was reported to us that 82% of mail is now machine sorted (although this understates the position, as it excludes the 10% of mail that is pre-sorted by customers) – this high figure has apparently been achieved through the use of 8 distinct OCRs in the Amsterdam Mail Centre used sequentially so that the OCRs later in the sequence clear up any reading failures earlier in the sequence. This suite of equipment obtains read rates close to 100% – these read rates improved when TPG switched its software supplier. Video coding is required for less than 5% of machineable mail and this figure is still declining.
- A.14.13 The investment plan for this initiative is reported to have cost a total of €545 million, including investment in buildings and machines, and to have resulted in annual savings of the order of €140 million. Cost reductions were reported to be keeping pace with volume decreases (although this observation is inconsistent with the per unit costs reported by NERA in its pan-European study of postal operators).
- A.14.14 Upstream transportation has also been re-organised and TPG reported that some 50% of its 800 drivers own their own vehicles, including 300 who own trucks.

- A.14.15 Base staffing at the Amsterdam Mail Centre is based on the lowest volumes by shift that the mail centre handles, with any volumes above these lowest levels handled through overtime and casuals, who together represent about 20% of staffing. This arrangement enables a more flexible staffing profile to cater for variations, reduce fixed costs and increase efficiency.
- A.14.16 Business customers are 'encouraged' to collect their mail by being given the opportunity to receive their mail earlier than would otherwise be the case via conventional delivery.
- A.14.17 TPG told us that the size/ shape of buildings and scale of operations in the other five mail centres varies, but the type of equipment and processes followed does not.

Delivery operations

- A.14.18 The delivery office that we visited – in Leiden – had three small Solystic sorting machines each running plan sizes of 20. Using these machines allowed the incoming (walk sorted) letter mail to be walk sequenced. This equipment is capable of handling 10 walks in approximately 45 minutes, with each batch of mail taking three passes, giving 224 selections. The rejection rate of the Solystic machines is below 2%.
- A.14.19 The walk-sequenced mail then has to be merged with the flats (themselves walk sorted) in order to produce a merged bundle of mail for delivery. TPG is looking at new frames to support a different method of merging. TPG reported that some 80% of letter mail was walk sequenced in delivery offices, with the remaining 20% sequenced at the mail centre using spare machine capacity. As a result of mechanisation, preparation that formerly took a delivery operative 3 hours now takes him/ her 1.5 hours. This reduction in time has enabled the activities undertaken by delivery staff on a typical day to be reworked.
- A.14.20 The use of the sequencing machines cuts the time otherwise associated with manual sorting in delivery offices, but the more important driver of savings is the "de-skilling" of the delivery role. New mail deliverers are paid at the minimum wage, and work on a part time basis. TPG anticipate the creation of some 9,000 FTE roles, spread across 22,000 to 25,000 individuals.

- A.14.21 The traditional delivery staff members are being retained, and their numbers reduced through voluntary redundancy and natural wastage. Given the time savings associated with mechanised walk sequencing, their role has been expanded to deal with mail preparation for several deliverers. Some long-standing delivery staff members have been designated team leaders, and in that role have taken on a coaching capacity. TPG estimates that it will take ten years to reduce the number of traditional postmen to target levels.
- A.14.22 Plans see a reduction from around 550 delivery offices today to less than 100 delivery offices ultimately, supported by the creation of some 2000 depots where sequenced mail can be collected by deliverers. By late 2004, TPG had installed sequencing machines in 184 of its delivery offices, and was running between 200 and 300 delivery offices in total at that time. TPG anticipates that the roll out of between three and six sorting machines per delivery unit would be completed by 2005 and the programme is currently on target.
- A.14.23 This change has been enabled by a move to later domestic deliveries, with a service standard of delivery prior to 5pm. Rather than a single sort and deliver cycle at each delivery office where all the staff start work at the same time, there are 4 staggered start times through the morning.
- A.14.24 Under the old system, delivery staff sorted from 7am to 9am, and delivered that mail between 9.30am and midday. A second round of sorting took place from 12.45pm to 2pm, followed by a second delivery round (to addresses which did not receive a delivery during the morning round) from 2.30pm to 4pm.
- A.14.25 TPG chose the Solystic equipment after trials in 2000 and 2001, in which this equipment was tested against Siemens equipment and manual sorting to best-in-class frames. TPG plan to implement 286 of these sorting machines, of which the 143rd was installed in the first week of November 2004.
- A.14.26 In the past two years TPG has restructured its workforce from an original 25,000 delivery staff to 20,000 delivery staff, through more efficient route planning and other efficiency measures. The walk sequencing initiative, when fully-implemented, will need 11,000 full time delivery staff and 9,000 full-time equivalent part-timers, with the part-time workload covered by between 22,000 to 25,000 delivery staff.

A.14.27 Savings are estimated at some €200 million per year made up of €80 million from sequence savings, €80 million from delivery and €40 million from sorting. Total savings including distribution were €320 million.

A.14.28 Registered mail does not go through the regular delivery office network.

Implications

A.14.29 Key implications for the efficiency review include:

- technology-driven improvements in efficiency are feasible;
- long term planning appears to have been critical, not least in allowing progressive change at a speed that allows union buy-in;
- significant network rationalisation has been necessary to provide the scale economies that drive greater efficiency; and
- change to service levels has been a key part of creating an environment within which efficiency gains can be realised.

A.14.30 Equally, there is at least one significant caveat to bear in mind when trying to extrapolate from what has been done at TPG to what could be done at RM: the relatively small size of the Netherlands is a significant advantage. Transport between mail centres is relatively fast, and the transportation network relatively simple. As a result, the time available for mechanised sorting is greater and machine utilisation better than would otherwise be the case.

Appendix 15: Royal Mail's pipeline costs by cost type

Introduction

- A.15.1 Royal Mail has restated prior year costs – at a high level – for material changes in the cost allocation methodology. Costs are stated before exceptional items for the UK Letters business. For 2002/03 and 2003/04 the total reconciles directly to “Total Mails” in the 2003/04 regulatory accounts. Reconciling figures for 2001/02 and 2002/03 have not been provided.
- A.15.2 The breakdown of pipeline costs in this section does not directly agree to those stated in Appendix 3. The 2003/04 costs in Appendix 3 have been restated by Royal Mail to ensure meaningful comparisons with prior years. Specifically Royal Mail has reallocated project cost, unused accommodation and communal accommodation costs as per the breakdown for 2001-03.

Collections

- A.15.3 Royal Mail's activity dictionary describes the collection activity as “the input of mail pieces to the network via a collection point”. By a collection point, Royal Mail means a location (pillar box, post office counter, or customer) where mail is collected for transporting to the office of collection. Two primary activities can be identified:
- “Mail Centre collection and consolidation” is designed to record the costs associated with the collection of mail from collection points by an official motor vehicle. The activity includes the gathering of mail from mail boxes and Post Office® counters in town centres and rural areas, and the collection of mail directly from originating business customers; and
 - “RDC collection and consolidation” incorporates the gathering of bulk mail from large customers for entry to the network and the routing of mail between outward and inward mail centres. The operational management of the RDC collection activity transferred to Logistic Services during 2001. Costs are recovered via the internal trading mechanism.
- A.15.4 A breakdown of collection costs by activity is provided in the Table 310 below:

Table 310: Royal Mail collection and consolidation costs 2003/04

Type of Cost	MC £m	RDC £m	Total £m
Staff	223	7.4	231
Accommodation	7	0.1	7
Vehicles	77	6.2	83
Depreciation	0	0.0	0
Other	0	0.1	1
Total	307	13.8	321

Source: Royal Mail Royal Mail 6037 Baseline Planning Costs. Cost in this section don not match the costs in Section 12 as Royal Mail has restated 2003/04 costs to facilitate meaningful historical cost comparisons.

Sorting

A.15.5 Royal Mail's financial systems identify eight major activities of the sorting process. We summarise these below:

- “Mail Centre outward – mechanical”, which involves sorting the mail for various parts of the country and the rest of the world. It is carried out using the equipment described above;
- “Mail Centre outward – manual” relates to costs associated with outward primary and outward secondary sortation;
- “Mail Centre inward – mechanical” relates to the costs associated with the automated sorting of mail to delivery area at the receiving mail centre;
- “Mail Centre Inward – manual” includes the costs associated with the manual sorting of mail to delivery area at the receiving mail centre;
- “RDC outward” relates to costs for the equivalent operation of an outward Mail Centre for the pre-sorted range of products. Pre-sorted products are collected in bags from customer premises. The level of pre-sorting varies, and can be sorted to inward Mail Centre as a minimum, and to individual delivery office walk as a maximum; and
- “RDC inward” relates to the receiving of pre-sorted mail from the Mail Centres in the RDC’s region through the transport network.

A.15.6 The table below gives a breakdown of sorting costs by activity area.

Table 311: Royal Mail sorting costs 2003/04

Type of Cost	Staff £m	Accom £m	Vehicle £m	Depn £m	Other £m	Total £m
MC outward mechanical	79.9	15.8	-	7.1	8.0	110.8
MC outward manual	355.2	6.9	-	0.9	0.9	363.9
MC inward mechanical	57.6	8.2	-	3.8	3.0	72.6
MC inward manual	197.7	4.0	-	0.4	0.5	202.6
RDC outward	45.2	8.5	7.4	-	1.4	62.5
RDC inward	23.4	6.1	-	-	1.0	30.5
MC shared (IW &OW)	-	-	-	27.4	0.0	27.4
Outward foreign	33.8	15.2	1.7	2.3	260.2	313.2
Total	792.8	64.7	9.1	41.9	275.0	1,183.5

Source: Royal Mail Royal Mail 6037 Baseline Planning Costs. Cost in this section don not match the costs in Section 13 as Royal Mail has restated 2003/04 costs to facilitate meaningful historical cost comparisons.

Transport

A.15.7 Royal Mail's ABC costing system identifies three primary transport activities:

- "Mail Centre network" involves the transportation of mail between mail centres. Network distribution utilises three main modes of transport: rail, air and road. The largest volume of mail is transported by road.
- "RDC network" is designed to record the costs associated with the collection of mail from bulk mailers to RDCs and onward transportation to mail centres. This may involve sorting and consolidation at the RDC;
- "Local distribution" incorporates the distribution of mail pieces from mail centres to delivery offices.

A.15.8 A breakdown of transport costs by activity area is provided in the table below:

Table 312: Royal Mail transport costs 2003/04

Type of Cost	MC Network £m	RDC Network £m	Local Distribution £m	Total £m
Staff	91	31	92	214
Accommodation	4	1	3	7
Vehicles	161	33	38	231
Depreciation	0	0	0	0
Other	1	0	0	1
Total	256	65	133	454

Source: Royal Mail Royal Mail 6037 Baseline Planning Costs. Cost in this section don not match the costs in Section 14 as Royal Mail has restated 2003/04 costs to facilitate meaningful historical cost comparisons.

Delivery

A.15.9 Royal Mail’s ABC costing system identifies three primary delivery activities – delivery outdoor work, delivery indoor work, and walk bundling:

- “Delivery Indoor” involves the preparation of mail for delivery. This includes completing the walk sorting of mail, which is referred to as the “inward primary sorting” activity. On completion of the inward primary sort, staff “prep” the mail for delivery. This involves putting the mail into the sequence it will be delivered (referred to as walk sequencing) and preparing for the delivery of packets, special deliveries, and unaddressed “door-to-door” materials;
- “Delivery Outdoor” involves the actual delivery of mail. Delivery staff travel to their first delivery point by foot, bicycle or in a vehicle. Mail is delivered along pre-assigned routes, and in some cases, delivery staff also make collections; and
- “Walk Bundling” includes the costs incurred at Walk Bundling Centres that consolidate door-to-door items for individual delivery walks⁵⁷⁵.

A.15.10 A breakdown of delivery costs by activity area is provided in the table below:

⁵⁷⁵ As noted earlier in the report, Royal Mail indicated that Walk Bundling is not a delivery activity.

Table 313: Royal Mail delivery costs 2003/04

Type of Cost	Delivery Indoor £m	Delivery Outdoor £m	Walk Bundling £m	Total £m
Staff	859	1,194	8	2,061
Accommodation	48	9	0	57
Vehicles	-	100	0	100
Depreciation	5	-	-	5
Other	1	22	-	23
Total	912	1,325	9	2,246

Source: Royal Mail Royal Mail 6037 Baseline Planning Costs. Cost in this section don not match the costs in Section 15 as Royal Mail has restated 2003/04 costs to facilitate meaningful historical cost comparisons.

Appendix 16: LECG overhead benchmarking exercise

Introduction

- A.16.1 In this Appendix, we review RML's overhead costs against external benchmarks to assess whether the levels of costs it incurs are appropriate given its size and nature.
- A.16.2 Other UK regulators have generally accepted the use of overhead benchmarking as an input into the determination of efficient costs. Examples of overhead benchmarking studies performed in previous regulatory reviews include Arthur Andersen's reviews of the electricity and gas transmission companies and OXERA's review of Network Rail⁵⁷⁶. There is no *a priori* reason to expect that similar approaches could not be applied to Royal Mail.

Methodology

- A.16.3 In determining which areas to benchmark, we considered two factors: the significance of the overhead cost category and the availability of satisfactory benchmarks. Based on these criteria, we conducted benchmarking reviews of four areas: finance, human resources, legal and marketing costs. We have also benchmarked communications, strategy and regulation costs at a higher level due to their smaller size.
- A.16.4 We have not benchmarked IT costs because we were unable to find directly comparable benchmarks. We note, however, that Royal Mail has recently outsourced the majority of IT costs⁵⁷⁷. Further savings in this area, therefore, might be constrained.
- A.16.5 We have identified industry best-practice benchmarks through a variety of sources including recent efficiency studies conducted for other UK regulators, academic literature, trade journals and the Internet. For the benchmarking exercise, we have used cost and employee information for RMG and RML for the year ending 31 March 2004.

⁵⁷⁶ Report on Transco's operating costs for the 2002/03 to 2006/07 Price Control Period – Final Report, Arthur Andersen, September 2001; Review of NGC's operating cost efficiency for the 2002 to 2006 price control, Arthur Andersen, July 2000; Benchmarking of operating expenditure, OXERA, July 2003

⁵⁷⁷ RM 3064. The majority of services previously provided by the Business Systems unit of TSI were outsourced to PRISM. For the Mail business, the services outsourced represent 80% of the charge for ex Business System services

- A.16.6 Best practice performance is represented in a number of forms in the studies we have obtained. The most common, are measures that compare overhead cost as a proportion of total company revenue or operating costs. Other measures compare the number of staff employed in the function as a proportion of the total number of staff employed.
- A.16.7 In some overhead areas, it could be argued that the functions performed are largely independent of the total number of employees in the organisation. Examples of this might include certain finance, regulatory and company secretariat costs. For such areas, staff based measures are less useful, particularly for organisations that are highly labour intensive⁵⁷⁸. In most of the overhead areas we have considered, we have used a cost based benchmarking measure. The exception is human resources where both staff and cost based benchmarking measures have been assessed.
- A.16.8 For each overhead area, we present a range of possible adjustments. The use of third party evidence to determine a point estimate for efficient overhead costs may not take into account the range and variability of factors relevant to an exercise of this sort. As a result, we consider that it is more appropriate to reflect our results as a range, the bounds of which represent possible views as to the minimum and maximum levels of efficient overhead costs. The bounds of our range are represented by two scenarios. In our *low savings scenario*, we compare RML to median benchmark performance. This scenario represents our conservative view of available cost savings. In our *high savings scenario*, we compare RML to a more challenging (e.g. top quartile) benchmark. This scenario represents an alternative view and is likely to be towards the top end of the range of achievable cost savings.
- A.16.9 We have calculated the appropriate level of RML's expenditure by comparing overhead costs, in each area for 2003/04, to benchmark performance. This has been done by considering an efficiency ratio. The efficiency ratio is calculated by dividing the "benchmark ratio" by the ratio for RML. An efficiency ratio of less than one indicates that RML is inefficient, and *visa versa*. For example, if RML's finance costs equated to 1% of total revenue and the external benchmark

⁵⁷⁸ RMG is more labour-intensive than most firms found in the benchmarking studies we reviewed – using FTEs per £bn revenue as a measure of labour intensity. Based on 2003/04 information, RMG has approximately 22,700 FTEs per £bn revenue. In comparison, the average of the ANAO finance benchmarking study was 4,723 FTEs per £bn revenue

suggested that the average across all industries was 0.5% of total revenue, the efficiency ratio would be 0.5 (i.e. 0.5% / 1%).

A.16.10 We have estimated the potential cost saving for each overhead function by applying the efficiency ratio to the level of costs incurred by RML in 2003/04. This provides an estimate of the level of costs that RML would have incurred if it were operating at the benchmark level of efficiency.

A.16.11 In general, we assume that potential cost improvements are achieved in a linear fashion over the period to 2010/11. This is a conservative assumption for two reasons. First, many regulators consider that such savings occur immediately (i.e. the cost adjustment is made in the Base Year). Second, we assume that there is no improvement in the underlying benchmark over the period 2006/07 to 2010/11. This is unlikely to be the case.

A.16.12 Our review of each of the overhead function is set out below.

Finance function benchmarking

A.16.13 RMG's Finance business unit provides finance services for the whole Group and provides certain non-finance services such as Strategy and Regulation. The total cost of the Finance business unit for 2003/04 was £107.2m⁵⁷⁹.

A.16.14 We have adjusted the finance costs of RML to take into account non-finance services provided by the Finance business unit (i.e. Strategy and Regulation) and finance services provided by other business units. The table below shows the finance costs used in this benchmarking exercise.

⁵⁷⁹ RM 6050

Table 314: RML finance costs as used in LECG benchmarking exercise

Cost	£ m
Recharge from Finance to RML for 2003/04 (RM 3060)	22.3
Allocation from Finance to RML for 2003/04 (RM 6050)	45.7
Regulation costs reported within Finance (RM 6085)	(2.3)
RML Strategy costs reported within Finance (RM 6085)	(3.9)
RML Insurance costs reported within Finance (RM 6085)	(10.0)
RML Payroll costs reported within P&OD (RM 6085)	16.2
Total RML finance costs used in benchmarking exercise	68.1

Source: RM 3060, RM 6050, RM 6085, LECG analysis

- A.16.15 The finance cost included in our benchmarking exercise is approximately 68% of the costs of providing the finance function for RMG⁵⁸⁰. We understand that the costs include the following activities: financial budgeting and analysis; asset management; financial reporting; accounts payable; accounts receivable; payroll; finance operations; treasury; tax; and investment⁵⁸¹.
- A.16.16 The finance function metrics we have used are stated in the table below and are based on RML revenues of £6,437m and total operating expenditures of £6,095m. Both are sourced from the 2003/04 Regulatory Accounts. For comparison, the metrics for RMG are also shown.

Table 315: RML finance function benchmarking metrics

Metric	RML	RMG
Finance costs as a percentage of total revenue	1.06%	1.13%
Finance costs as a percentage of total operating costs	1.12%	1.15%

Source: RM 6085, Letters business Regulatory Accounts 2003/04, Royal Mail Group management accounts 2003/04, LECG analysis

- A.16.17 Royal Mail did not provide us with any benchmarking studies in relation to the finance function (other than a PwC study completed before the previous efficiency study, which benchmarked some individual finance and human resources

⁵⁸⁰ Finance costs for RMG are assumed to be £99.1m based on: Total Finance business unit costs of £107.2m (RM 6050), Regulation costs (£2.3m), Strategy costs (£11.8m), Insurance costs (£14.1m) and Payroll costs (£19.9m) (all RM 6085)

⁵⁸¹ RM 6085

functions but did not consider the costs of the total finance function). We have identified the following sources of financial benchmarks:

- KPMG's benchmarking study of the corporate function of NATS⁵⁸². This is a recently released benchmarking study commissioned by the CAA as part of their price control review of NATS. KPMG conducted a benchmarking exercise of NATS' finance, IT and property costs. The finance function benchmarking information, which was based on survey data collected from nearly 400 organisations, appears to cover the same areas (i.e. transaction processing, financial reporting and business decision making) as the cost information set out in Table 314 above.
- Working Council for Chief Financial Officers (WCCFO) 2003 finance benchmarking study⁵⁸³. This benchmarking study contains finance metrics derived from a survey of over 300 of the world's largest corporations. The WCCFO study includes costs for the following finance functions: transaction processing (accounts payable, accounts receivable, payroll and expenses), risk management, speciality services (e.g. tax, treasury), financial planning and reporting, decision support, financial systems, and financial management (e.g. CFO). The study appears to cover the same activities that are included in RML's finance function. The study contains separate benchmarks for three different revenue bands, of which the US\$5bn and above would appear to be the most appropriate for benchmarking RML.
- Australian National Audit Office (ANAO) 2002 finance benchmarking study⁵⁸⁴. This study benchmarks the performance of a group of Commonwealth organisations against a set of global organisations. The global benchmark metrics used by the ANAO are based on the Global Best Practices[®] Knowledge Base⁵⁸⁵ and comprise information on more than 550 organisations from around the world. The Global Best Practices[®] Knowledge Base covers the following finance functions: financial budgeting and analysis, fixed assets, accounts payable, close the books and financial

⁵⁸² Civil Aviation Authority: Benchmarking the corporate function of NATS, KPMG, 2004

⁵⁸³ 2003 Finance Benchmarking Initiative, Working Council for Chief Financial Officers, 2003

⁵⁸⁴ Benchmarking the Finance Function Follow-on Report, Australian National Audit Office, 2002

⁵⁸⁵ The Global Best Practices[®] Knowledge Base was created and originally operated by Arthur Andersen, is now operated by PwC, and can be accessed at www.globalbestpractices.com

reporting, accounts receivable, payroll, travel and related costs, billing and tax. OXERA used benchmark metrics from a previous ANAO finance benchmarking study in its efficiency review of Network Rail.

- Arthur Andersen's efficiency reviews of NGC⁵⁸⁶ and Transco⁵⁸⁷. Arthur Andersen also published finance benchmark metrics taken from its Global Best Practices[®] Knowledge Base. The metrics in each case were based on a targeted sample group (e.g. in the case of Transco the group consisted of 22 companies in the gas, electricity distribution and water industries)⁵⁸⁸.
- PwC's 2001 financial management benchmarking programme⁵⁸⁹. The Financial Management Benchmarking Programme is a consolidation of various benchmarking studies performed by PwC and comprises data from over 1600 organisations, across 50 countries and multiple industries. The study contains separate benchmarks for four different revenue bands, of which the US\$1bn and above would appear to be the most appropriate for comparison to RML.

A.16.18 We consider that most of the functions that comprise the finance overhead area are independent of the total number of employees. For example, the costs of the accounts receivable and payable transactions, financial planning, budgeting and reporting, asset management, and decision support are all more likely to depend on the level of revenue or the size of the asset base, rather than the number of employees. Of the finance functions, only the costs associated with payroll (approximately 20% of total finance costs) would appear to be directly impacted by the number of employees. We consider that a cost based metric (i.e. finance costs as a function of revenue) is the most appropriate for benchmarking finance related costs.

A.16.19 The table below shows the finance costs as a percentage of total revenue from the external studies. RML has a ratio of 1.06%.

⁵⁸⁶ Review of NGC's operating cost efficiency, Arthur Andersen, 2000

⁵⁸⁷ Report on Transco's Operating Costs, Arthur Andersen, 2001

⁵⁸⁸ Report on Transco's Operating Costs, Arthur Andersen, 2001, Appendix 2, paragraph 2.12

⁵⁸⁹ Financial Management Benchmarking Programme, Best Practice Findings, PwC, 2001

Table 316: Finance function benchmarking metrics (finance function as a % of total revenue)

Sources	Median	Top quartile
KPMG 2004 (£625m and above)	0.68%	0.46%
WCCFO 2003 (US\$5bn and above)	0.86%	0.51%
ANAO 2001 ⁵⁹⁰	1.02%	0.60%
PwC 2001 (US\$1bn and above)	0.40%	-
Arthur Andersen 2000 (NGC review)	0.60%	0.30%

Source: KPMG, WCCFO, ANAO, PwC, Arthur Andersen, LECG analysis

A.16.20 The measures from the PwC and Arthur Andersen studies are particularly low and would present very challenging benchmarks for RML. Arthur Andersen used a targeted survey to obtain metrics appropriate for benchmarking electricity and gas transmission utilities – which might not be strictly comparable to RML. The PwC study does not provide a clear description of the finance functions covered by its benchmark metric. We have not been able to confirm that the metric is strictly comparable to RML.

A.16.21 The WCCFO and KPMG metrics appear to be more appropriate than the ANAO metric. This is because, given the presence of economies of scale⁵⁹¹, it is preferable to use metrics that consider size. The WCCFO and KPMG studies are also the most recent.

A.16.22 We have averaged the WCCFO and KPMG metrics. We have based our low savings and high savings benchmarks on the median and top quartile metrics respectively. Our findings are presented in the table below.

⁵⁹⁰ The ANAO study presents finance function costs as a percentage of total operating cost (but not as a percentage of total revenue). To obtain a comparable measure, we have adjusted the raw ANAO metrics (Median: 1.07%, Top quartile: 0.63%) using an assumed profit margin of 5%. This is broadly consistent with the RMG profit margin and is a conservative assumption as it is likely to understate the average profit margin of the organisations in the ANAO study and thus overstate the benchmark

⁵⁹¹ For support, see both the WCCFO and PwC studies where finance costs as a percentage of revenue decreased as the revenue band increased. For example, in the WCCFO study, the median finance costs as a percentage of revenue were 3.33% for the US\$1bn and below revenue band, 1.67% for the US\$1 to US\$5bn revenue band and 0.86% for the US\$5bn and above revenue band

Table 317: Finance function metrics used in LECG benchmarking exercise

Benchmark metric and sources	Low savings (Median)	High savings (Top quartile)
Mean of WCCFO and KPMG	0.77%	0.49%

Source: KPMG, WCCFO, LECG analysis

A.16.23 The table below shows the performance of RML against the relevant benchmark metrics.

Table 318: RML performance against finance function benchmarks

Benchmark	Benchmark ratio	RML ratio	Efficiency ratio	Implied savings
Low savings (Median)	0.77%	1.06%	0.73	£18.7m
High savings (Top quartile)	0.49%	1.06%	0.46	£36.9m

Source: LECG analysis

A.16.24 Our analysis suggests that RML currently incurs an inefficient level of finance function costs – relative to best practice.

Human resources (HR) benchmarking

A.16.25 The P&OD business unit provides most HR-related services, although some HR-related services are provided within RML. The HR functions covered by our benchmarking exercise include: recruitment; turnover and leavers management; training and development; absence management; health and safety; and general HR management.

A.16.26 We have adjusted the total P&OD costs to account for non-HR services provided by P&OD (e.g. payroll costs accounted for by Royal Mail within P&OD but covered in the finance cost benchmarking above) and HR services provided by other business units. The table below summarises the HR costs used in our benchmarking exercise.

Table 319: RML HR costs as used in LECG benchmarking exercise

Cost	£m
Recharge from P&OD to RML for 2003/04 (RM 6050)	47.7
Allocation from P&OD to RML for 2003/04 (RM 6050)	57.0
RML share of Payroll costs (RM 6085)	(16.2)
Internal RML HR costs (RM 6085)	6.2
Total HR costs used in benchmarking exercise	94.7

Source: RM 6050, RM 6085, LECG analysis

A.16.27 We have used the total HR cost (i.e. £94.7m) identified in the table above, and revenue and total operating expenditure contain in the 2003/04 Regulatory Accounts to calculate the cost metrics for the HR function. We have used a total of 2,155 HR FTEs to calculate the FTE ratio for RMG⁵⁹². We have not been provided with sufficient information to estimate an FTE ratio at RML level. The table below summarises the relevant benchmarking metrics we have used.

Table 320: RML HR function benchmarking metrics

Metric	RML	RMG
HR costs as a percentage of total revenue	1.47%	1.46%
HR costs as a percentage of total operating costs	1.55%	1.49%
FTEs per HR FTE	Na	92

Source: RM 6085, Letters business Regulatory Accounts 2003/04, LECG analysis

A.16.28 Royal Mail has provided some benchmarking information in relation to the HR function. In its Strategic Overview Presentation, Royal Mail states that the target for the HR function is 130 FTEs per HR FTE⁵⁹³ - which represents an “average” performance target. Based on Royal Mail’s information, we understand that a ratio of 220 FTEs per HR FTE represents best in class HR function performance.

A.16.29 To benchmark HR function costs we have used the following surveys:

- BNA HR Department Benchmarking and Analysis 2004⁵⁹⁴. This study involves a large survey of 950 organisations across 20 different industries.

⁵⁹² RM 6085

⁵⁹³ RM 5001

⁵⁹⁴ HR Department Benchmarking and Analysis 2004, BNA in collaboration with the Society for Human Resource Management, 2004

BNA present benchmarking metrics for companies of different workforce size. We have used the 2,500 and above band for benchmarking RML;

- WCCFO, Sales, General and Administration (SG&A) benchmarking metrics⁵⁹⁵. As part of the 2003 finance benchmarking initiative (mentioned above), WCCFO benchmarked a number of other corporate functions including HR. Again, we consider the metrics for the US\$5bn and above revenue band as the most appropriate for RML;
- PwC / Saratoga Workforce Diagnostic System 2003⁵⁹⁶. This study is based on data collected from more than 300 organisations representing a variety of industries. The metrics do not cover the costs or headcount involved in training or health and safety; and
- EP-Saratoga Human Effectiveness Report on the Post Office 1999/2000⁵⁹⁷. This is a benchmarking study conducted for Royal Mail by EP-Saratoga (now part of PwC). The benchmarking metrics contained in the study were based on a targeted group of UK companies seen to be most comparable to RML.

A.16.30 The table below summarises a range of HR benchmarking metrics taken from the sources identified above.

⁵⁹⁵ 2003 Finance Benchmarking Initiative, Working Council for Chief Financial Officers, 2003

⁵⁹⁶ Workforce Diagnostic System, PwC, 2003

⁵⁹⁷ Human Effectiveness Report on the Post Office© 1999/2000, EP-Saratoga, 2000, RM 3008

Table 321: HR function benchmarking metrics

Benchmark metric and sources	Median	Top quartile
HR costs as a percentage of operating costs		
BNA, 2,500 employees and above (2004)	0.60%	0.30%
WCCFO SG&A metrics, US\$5bn and above (2004)	0.93%	0.21%
PwC / Saratoga workplace diagnostic system (2001)	0.65%	-
EP-Saratoga study for Royal Mail (2000)	0.56%	0.30%
FTEs per HR FTE		
BNA, 2,500 employees and above (2004)	167	500
PwC / Saratoga workplace diagnostic system (2003)	85	-
EP-Saratoga study for Royal Mail (2000)	100	109

Source: EP-Saratoga, PwC, BNA, WCCFO, RM 3008, LECG analysis

- A.16.31 The size of many HR activities will depend on the number of FTEs in the organisation, including, for example, the costs of recruitment, training, turnover management, health and safety and absence management. In performing our analysis, we have chosen to use both a cost measure and an FTE measure. The FTE measure alone will not take into account the productivity or cost effectiveness of the HR department.
- A.16.32 For the cost measure, we have based our low savings cost benchmark on the mean of the BNA and WCCFO median measures – which is a conservative assumption. Our high savings cost benchmark is based on the mean of the BNA and WCCFO top quartile measures. The HR benchmarks used are presented in the table below.

Table 322: HR function metrics used in LECG benchmarking exercise

Benchmark metric and sources	Low savings (Median)	High savings (Top quartile)
Mean of BNA and WCCFO	0.77%	0.26%

Source: BNA, WCCFO, LECG analysis

- A.16.33 The table below shows Royal Mail's performance against these benchmarks.

Table 323: RML performance against HR function benchmarks

Benchmark	Benchmark ratio	RML ratio	Efficiency score	Implied savings
Low savings (Median)	0.77%	1.55%	0.49	£47.9m
High savings (Top quartile)	0.26%	1.55%	0.16	£79.2m

Source: LECG analysis

A.16.34 For the FTE measure, our low savings scenario is based on Royal Mail's own target. For our high savings scenario we have used the median performance as identified by BNA. The BNA study is the most up to date of the studies that presented an FTE benchmark. The table below shows Royal Mail's performance against these benchmarks.

Table 324: RML performance against HR FTE benchmarks

Benchmark	Benchmark ratio	RMG ratio	Efficiency score	Implied savings
Low savings (RM target)	130	92	0.71	£27.4m
High savings (BNA median)	167	92	0.55	£42.2m

Source: LECG analysis

A.16.35 Both the cost and FTE benchmarks suggest that RML incurs an inefficient level of HR costs. Even under the low savings case, the extent of the inefficiency implied by the benchmarking exercise is between £27m and £48m based on 2003/04 costs. The top quartile cost benchmark suggests that an even greater proportion of the HR costs are incurred inefficiently.

Legal

A.16.36 CAS incurs all legal costs (both internal and external) on behalf of each RMG business unit. In 2003/04, RMG's legal costs totalled £24.4m⁵⁹⁸. We have estimated RML's proportion of legal costs using information on the level of CAS recharges and overhead costs. The table below shows the legal costs used in our benchmarking exercise.

⁵⁹⁸ RM 6085

Table 325: RML legal costs as used in LECG benchmarking exercise

Cost	£m
External legal recharge from CAS to RML for 2003/04	8.7
RML share of Internal legal charge from CAS for 2003/04	5.0
Total Legal costs used in benchmarking exercise	13.7

Source: RM 3038, RM 6031, RM 6050, RM 6085, LECG analysis

A.16.37 The table below shows the legal cost metrics used for RML and, for comparison, RMG. To calculate the metrics for RML, we have used RML revenue (£6,437m) and operating expenditure (£6,095m) from the 2003/04 Regulatory Accounts.

Table 326: RML legal cost benchmarking metrics

Metric	RML	RMG
Legal costs as a percentage of total revenue	0.21%	0.28%
Legal costs as a percentage of total operating costs	0.22%	0.28%

Source: RM 3038, RM 6031, RM 6050, RM 6085, RML's business Regulatory Accounts 2003/04, Royal Mail Group management accounts 2003/04, LECG analysis

A.16.38 For the purposes of benchmarking the legal costs, we have identified the following studies:

- WCCFO Sales, General and Administration (SG&A) benchmarking metrics 2004. This study defines legal expenses as internal legal expenses (e.g. staff costs, systems costs, overhead) and external legal expenses (e.g. expenses incurred in engaging outside counsel and experts). It appears to cover the same scope of legal activities as CAS. Again, we have used the US\$5bn and above revenue band for comparison to RML;
- PwC Global Law Department survey 2001⁵⁹⁹. This study captures data on the internal and external legal costs incurred by 18 law departments across various industries and regions. We have shown the median figures for both the European region and worldwide. Both express legal costs as a percentage of revenue; and
- Global Counsel 3000 Best Practice survey 1999⁶⁰⁰. This study was used by Arthur Andersen in its review of Transco's operating cost efficiency.

⁵⁹⁹ Global Law Department Survey, PwC, 2001.

⁶⁰⁰ Best Practice Survey, Global Counsel 3000, 1999

A.16.39 The table below shows the benchmark metrics from the above studies:

Table 327: Legal cost benchmarking metric (legal costs as a percentage of total revenue)

Source	Median	Top quartile
WCCFO SG&A metrics, US\$5bn and above (2004)	0.19%	0.11%
PwC Global Law Department survey, Europe (2001)	0.20%	-
PwC Global Law Department survey, Worldwide (2001)	0.40%	-
Global Counsel 3000 (1999)	0.15%	-

Source: WCCFO, PwC, Global Counsel 3000

A.16.40 We have based our low savings and high savings benchmarks on the WCCFO study. The median figures for companies with greater than US\$5bn revenue from the WCCFO study and for European companies from the PwC study, are broadly consistent. We have also used the WCCFO study because it reports both median and top quartile figures and because it is the most recent. The table below shows the performance of RML against the WCCFO legal cost benchmarks.

Table 328: RML performance against legal cost benchmarks

Benchmark	Benchmark ratio	RML ratio	Efficiency score	Implied saving
Low savings (WCCFO median)	0.19%	0.21%	0.90	£1.4m
High savings (WCCFO top quartile)	0.11%	0.21%	0.52	£6.6m

Source: LECG analysis

A.16.41 When compared to the low savings benchmark, the legal costs incurred by RML in 2003/04 appear approximately efficient. When compared to the high savings benchmark the legal costs incurred by RML appear inefficient.

Marketing

A.16.42 RML incurs marketing costs directly. We have had difficulty reconciling the marketing cost information that Royal Mail has provided to us. RM 6068 states that the total of level of marketing costs for 2003/04 was £229m, however the

BPC suggests that the figure is £358m. We were unable to resolve this inconsistency with Royal Mail⁶⁰¹.

A.16.43 Given revenue for RML of £6,437m⁶⁰², marketing costs, as a percentage of total revenues for 2003/04, fall in the range 3.6% to 5.6%. To benchmark this level of marketing expenditure, we have used the following marketing benchmarking surveys:

- Marketing Leadership Council's Detailed Marketing Investment Benchmarks⁶⁰³. This report provides details of marketing investment drawn from the Marketing Leadership Council's 2003 Benchmarking Survey. The implications that can be drawn from study are limited due to a sample size of six;
- UK Chartered Institute of Marketing (CIM), Marketing Rewards Survey 2004⁶⁰⁴. This study is based on survey responses from over 1,000 organisations. The CIM study reports marketing spend as a percentage of revenue for different industries and revenue bands. The over £500m band appears to be the most appropriate for benchmarking RML; and
- WCCFO Sales, General and Administration (SG&A) benchmarking metrics 2004. The WCCFO study provides information on marketing expenditure as a percentage of revenue. Again, we have used the US\$5bn and above revenue band.

A.16.44 The table below shows the benchmark metrics from the above studies:

⁶⁰¹ At the time of writing we had not received clarification from Royal Mail about the composition of marketing costs or a reconciliation of the information in RM 6068 and the total for marketing costs in the BPC

⁶⁰² RML, Regulatory Accounts 2003/04

⁶⁰³ Detailed Marketing Investment Benchmarks, Marketing Leadership Council of the Corporate Executive Board, 2004, RM 3108

⁶⁰⁴ Marketing Rewards Survey, Chartered Institute of Marketing, 2004

Table 329: Marketing cost benchmarking metric (marketing costs as % of total revenue)

Sources	Median	Top quartile
Marketing Leadership Council (2003)	1.19%	-
WCCFO SG&A metrics, US\$5bn and above (2004)	2.50%	1.09%
CIM, Whole sample (2004)	1.66%	0.71%
CIM, £500m and above (2004)	0.25%	-

Source: RM 3108, WCCFO, and CIM

- A.16.45 The current level of marketing costs for RML appears to be significantly above benchmark – even using the lower 3.6% RML benchmark. We have based our low savings and high savings scenarios on the WCCFO median and top quartile metrics respectively – which again provides the most conservative benchmark.
- A.16.46 The low saving benchmark suggests that the marketing costs incurred by RML in 2003/04 were £68m too high, while the high saving benchmark suggests they were £158m too high.

Table 330: RML performance against marketing cost benchmarks

Benchmark	Benchmark ratio	RML ratio	Efficiency score	Implied saving
Low savings (Median)	2.50%	3.55%	0.70	£67.6m
High savings (Top quartile)	1.09%	3.55%	0.31	£158.3m

Source: LECG analysis

- A.16.47 The level of inefficiently incurred marketing costs identified by this benchmarking exercise would be even greater if the actual level of marketing costs incurred by RML turned out to be the £358m as suggested in the BPC. In this case, the benchmarking exercise suggests that between £197m and £288m of 2003/04 marketing costs were inefficiently incurred.

Communications

- A.16.48 CAS incurs all communications costs on behalf of RMG business units. Communication costs cover internal communications, external and media

relations, and corporate affairs⁶⁰⁵. For 2003/04, total RMG communications costs were £9.9m⁶⁰⁶. Given the level of costs in this area we have not performed a full benchmarking review of the communications costs incurred by RML.

- A.16.49 We did identify one benchmarking source for communications costs: the Council of Public Relations Firms 2003 Public Relations Client survey⁶⁰⁷. The average level of communications spending of the Council of Public Relations Firms survey respondents was 0.13% of total revenue. We note that this is similar to the proportion that RMG spent on communications.

Strategy and regulation

- A.16.50 Towards the end of 2002/03, RMG established a Strategy and Regulatory Affairs department. For the year ending 2003/04, this department had costs of £2.3m, had 44 employees, and was responsible for quality of service measurement and the relationship with Postcomm⁶⁰⁸. In addition, RMG incurred £11.8m in strategy costs, the majority of which were the costs of external consultancy fees. Only £3.9m related to RML⁶⁰⁹.
- A.16.51 Given the level of costs in these areas, we have not performed a full benchmarking review of the costs incurred by RML. We have reviewed the level of regulatory and strategy costs of Network Rail⁶¹⁰ and NGC⁶¹¹ as reported in previous efficiency studies and conclude that the costs of RML in these areas appear to be broadly comparable.

Total overhead costs

- A.16.52 In addition to our detailed review of overhead functions, we have reviewed the level of total overhead costs. Such aggregate overhead cost reviews have been performed in previous regulatory efficiency studies⁶¹². They provide some support

⁶⁰⁵ RM 6085

⁶⁰⁶ RM 6085

⁶⁰⁷ 2003 Public Relations Client survey, Council of Public Relations Firms, 2003. Arthur Andersen used a previous version of this study to benchmark communication costs in its 2000 review of Transco

⁶⁰⁸ RM 6085

⁶⁰⁹ RM 6085

⁶¹⁰ Benchmarking of operating expenditure, OXERA, 2003, page 19

⁶¹¹ Review of NGC's operating cost efficiency, Arthur Andersen, 2000

⁶¹² For example, Arthur Andersen performed an aggregate overhead cost review in its Transco efficiency study

to the more detailed functional benchmarking studies. In summary, however, we found data on the level of total overhead costs difficult to obtain and where we did obtain this information, we were not always able to verify that the definition of total overhead costs was the same as we have applied to RML.

A.16.53 We did obtain some benchmark information on European postal operators from NERA's study of costs in the postal industry⁶¹³. The NERA study provides details of overhead costs for nine European postal operators. Of these nine, five were from countries that were admitted to the EU in May 2004. For these five countries, the proportion of costs described as overhead ranged from 5% to 44%. This wide range suggests that different operators have defined overheads in different ways. As such, we do not consider this data reliable.

A.16.54 Information for the postal operators from the remaining four countries (France, Greece, Luxembourg⁶¹⁴ and Spain) is shown in the table below. We attempted to find information on other European postal operators through review of annual reports, but in general, data was not disclosed in the required format to generate meaningful analysis.

Table 331: Overhead costs as a % of total operating costs for a selection of European postal operators

European postal operators	%
La Poste, France (2001)	14.0
ELTA, Greece (2002)	10.7
P&T, Luxembourg (2001)	11.5
Correos, Spain (2003)	18.5
Average	13.7

Source: NERA, LECG analysis

A.16.55 We estimate that RML overhead costs account for 17.5% of total operating costs. Compared to the average level of the European postal operators (i.e. 13.7%), RML appears to be inefficient. This would imply that overhead costs should be approximately £234m lower in 2003/04. This conclusion is broadly consistent with the results of our functional benchmarking exercise – which are shown in the

⁶¹³ The NERA Report

⁶¹⁴ We recognise that the postal operators of Greece and Luxembourg are considerably smaller than RM and may not provide appropriate direct comparisons

following section. Due to the difficulties in obtaining truly comparable data, we recognise that this cross check is not particularly robust.

Conclusions

A.16.56 Based on the results of our functional benchmarking exercise, it would appear that there is considerable potential for Royal Mail to improve overhead function efficiency. Our benchmarking exercise indicates that RML's finance, HR, legal and marketing costs are all significantly above benchmark levels. The table below summarises the results of our benchmarking exercise. Savings are based on 2003/04 costs.

Table 332: Summary of LECG overhead benchmarking exercise

Overhead area	Low savings £m	High savings £m
Finance	18.7	36.9
Human resources	47.9	79.2
Legal	1.4	6.6
Marketing	67.6	158.3
Total	135.6	280.9

Source: LECG analysis

Appendix 17: Capital expenditure plans

A.17.1 The table below summarises Royal Mail's proposed capital expenditure requirements.

Table 333: Royal Mail's proposed capital expenditure, 2005 to 2011

2003/04 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Collections							
Information rich environment	0.2	0.4	0.5	0.5	5.0	-	6.4
Collection customer handshake	0.4	0.7	3.0	0.1	-	-	3.8
Predictability	0.1	0.8	1.1	0.3	-	-	2.1
Optimise collection efficiency	0.3	0.4	0.1	0.3	1.0	-	1.8
Revised postbox design	0.1	-	-	-	-	-	-
Optimising collection times	3.1	-	-	-	-	-	-
Sorting							
Mail centre network and functionality	3.0	4.0	75.0	95.0	58.0	38.0	270.0
[>]	[>]	[>]	[>]	[>]	[>]	[>]	[>]
3D automation	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Materials handling	6.6	14.6	14.6	14.6	14.6	14.6	73.0
Customer handshake - intell. mail	0.4	3.5	8.0	3.5	1.5	1.0	17.5
Baseline automation quality	18.5	14.5	-	-	-	-	14.5
Automation utilisation	7.7	3.8	6.3	-	-	-	10.1
Production control	10.0	5.0	-	-	-	-	5.0
Sort plans	2.0	3.0	-	-	-	-	3.0
Transport							
In cab communications	3.0	7.0	5.0	5.0	5.0	5.0	27.0
Delivery							
Delivery network and equipment	23.0	23.0	40.0	40.0	20.0	20.0	143.0
Walk sequencing	[>]	[>]	[>]	[>]	[>]	[>]	[>]
Delivery span	3.0	3.0	10.0	15.0	15.0	-	43.0
RFID phases 1 & 2	8.0	10.0	-	-	-	-	10.0
Bagless network pre-sort	1.0	-	-	-	-	-	-
Total	122.5	228.3	310.5	226.6	237.8	154.4	1,157.6

Source: Royal Mail 5045 and 5062 to 5092

A.17.2 The table below summarises LECG's capital allowance, by initiative.

Table 334: LECG's proposed capital expenditure, 2005 to 2011 – lower and higher case

2003/04 prices £m	05/06	06/07	07/08	08/09	09/10	10/11	Total 06-11
Collection							
Information rich environment	-	-	-	-	-	-	-
Collection customer handshake	-	-	-	-	-	-	-
Predictability	0.1	0.8	1.1	0.3	-	-	2.1
Optimise collection efficiency	0.3	0.4	0.1	0.3	1.0	-	1.8
Revised postbox design	0.1	-	-	-	-	-	-
Optimising collection times	3.1	-	-	-	-	-	-
Sorting							
Mail centre network and functionality	-	-	-	-	-	-	-
Obsolescence investment	-	-	-	-	-	-	-
3D automation	-	34.0	6.8	-	-	-	40.8
Materials handling	6.6	14.6	14.6	14.6	14.6	14.6	73.0
Customer handshake - intell. mail	0.4	3.5	8.0	3.5	1.5	1.0	17.5
Baseline automation quality	18.5	14.5	-	-	-	-	14.5
Automation utilisation	7.7	3.8	6.3	-	-	-	10.1
Production control	10.0	5.0	-	-	-	-	5.0
Sort plans	2.0	3.0	-	-	-	-	3.0
Transport							
In cab communications	-	-	-	-	-	-	-
Delivery							
Delivery network and equipment	-	-	-	-	-	-	-
Walk sequencing	-	-	-	-	-	-	-
Delivery span	-	-	-	-	-	-	-
RFID phases 1 & 2	8.0	10.0	-	-	-	-	10.0
Bagless network pre-sort	1.0	-	-	-	-	-	-
Total	57.7	89.6	36.9	18.7	17.1	15.6	177.8

Source: Royal Mail 5045 and 5062 to 5092. LECG analysis. Note: Red – excluded. Blue – LECG identifies different savings than Royal Mail. Excludes one-off inflows from property disposals.

Appendix 18: Quantitative benchmarking regulatory best practice

- A.18.1 From our review of the cost efficiency analysis approaches adopted by other UK utility regulators in recent price control reviews, it appears that where possible to do so, internal regional or zonal comparisons of costs can be used as a significant indicator of efficiency. This is particularly important where there is only a small number of external comparators or a national monopoly. For example, this has been recognised by CEPA in its recommendations to the Office of the PPP Arbiter: *“In many ways, one of the most powerful tools available to regulators – and we would suggest the Arbiter – is to compare the costs across companies’ operating units – of either producing intermediate outputs or undertaking smaller repeatable capital schemes.”*⁶¹⁵
- A.18.2 Where suitable and sufficient data is available there is an increasing use by regulatory agencies of advanced quantitative approaches. These usually involve estimation of detailed econometric equations representing cost relationships. In its consideration of the different approaches used by other regulators the CAA, for example, noted: *“While the Monopolies and Merger Commission remarked in 1997 that “it appears to us that the application of econometric and other techniques in the present circumstances has not been capable of producing useful results” the Competition Commission commented five years later much more favourably on the use of benchmarking for the assessment of efficiency gains by OFWAT.”*⁶¹⁶
- A.18.3 Where possible, parametric and non-parametric techniques have been used together to provide complementary results. For example, Ofgem’s current review of the electricity DNOs combined DEA (non-parametric) and frontier (parametric) approaches in its comparison between the costs of individual DNOs. NERA also attempted both approaches in its efficiency assessment of BT’s fixed line business.
- A.18.4 To date, such techniques have tended to be applied to the comparison of different companies within the same industry. This has been either where the industry has

⁶¹⁵ Productivity improvements in Distribution Network Operators, CEPA, November 2003

⁶¹⁶ The use of benchmarking in the Airports Reviews: consultation paper, CEPA, December 2000, at paragraph 1.37 (references in original omitted)

been split on geographic lines such as is the case with the water industry and electricity distribution; or through international comparisons, as has been attempted in telecommunications, comparing BT's efficiency with those of local exchange carriers in the US. Internal benchmarking (looking at the same process across different geographical locations within the same company) is developing as an approach. For example, this is being developed for considering the efficiency across different areas of the maintenance and renewal of the rail network⁶¹⁷.

- A.18.5 In its work for the electricity distribution review Ofgem identified three key principles on how to use these techniques for the purposes of benchmarking. It advocates the use of techniques that provide results consistent with other approaches, which have explanatory clarity, and ensure that the input data used for the analysis is comparable (e.g. normalised).
- A.18.6 It should also be noted that the significant data requirements of these approaches mean that the robustness and usefulness of the results evolves over time and between different reviews. The econometric modelling systems used by Ofgem and Ofwat to benchmark regulated companies have developed and been refined on this basis over time, including through consultation with the companies involved. This can result in both a better definition of the relevant relationships (through on going research into cost drivers) and through the collection of improved data sets. A similar evolution in the usefulness of econometric benchmarking techniques could be expected in relation to Royal Mail.
- A.18.7 Overall, we would summarise emerging good practice and its application to Postcomm's review of Royal Mail as follows:
- there is preference amongst regulators to combine quantitative techniques with other techniques, subject to data availability. Through such an approach, we will be able to determine which units are the most efficient and to provide evidence on the key drivers of efficiency;
 - there appears to be emerging consensus that both DEA and Frontier Analysis (either stochastic or deterministic) should be used. While DEA is theoretically appealing and easy to implement it cannot be relied on in

⁶¹⁷ UK Regulatory Price Review: The Role of Efficiency Estimate. Railways and Air Transport Session, Andrew Smith, LBS Conference, 6 July 2004

isolation due to difficulties in assessing the significance of results⁶¹⁸. On the other hand, the complicating factor that may lead to the rejection of the econometric techniques is the reliability and sufficiency of the data;

- there are situations when either one of the two main approaches may collapse. DEA is undermined for particular observations, which represent unusual or unique combinations of factors relative to the rest of the sample (for example, NERA's rejection of DEA in the benchmarking of BT's fixed line business). On the other hand, econometric analyses require certain functional assumptions about inputs that will not be possible in the presence of insufficient data. This has discouraged regulators in the past from applying them;
- there are situations when the techniques will produce inconsistent results. In this situation, it would appear to be best practice to rely on the econometric approaches (subject to investigation). The least squares estimates used, as the base for DFA, is relatively robust for the purposes of estimating the underlying relationships between costs and output;
- the analysis using quantitative techniques should not be seen as a black box. When choosing variables, it is important to take account of the relevant industry's economics; and
- econometric models can be refined and become more extensive through time as variables are tested more thoroughly and better knowledge about the cost drivers and the interaction between them is obtained. This is evident from the fact that both Ofwat and Ofgem have improved their cost modelling technique.

A.18.8 Overall, we believe that our approach to internal benchmarking is consistent with those applied in other regulated situations.

⁶¹⁸ This was also Ofgem's conclusion at the LBS Conference. See UK Regulatory Price Review: The Role of Efficiency Estimate, LBS Conference, 6 July 2004

Appendix 19: Theoretical background to efficiency analysis

Introduction

A.19.1 In this appendix, we first summarise the theoretical background to efficiency analysis and benchmarking. We then provide a graphical representation of economic efficiency, and provide an example of efficiency in a postal context.

Technical definition of efficiency

A.19.2 This appendix provides an overview of the theoretical underpinnings of cost and efficiency analysis. In economics' literature, the modelling of production, costs, and profits follows a theoretically well-defined sequence. It starts with a production function, and assumes that all firms are able to obtain maximum output from the inputs they use, given the available technology.

A.19.3 The second step introduces the concept of cost minimisation, with the assumption that all firms are able to minimise their costs. This means that all firms select the input mix that minimises the cost of producing the required level of output, given available technology and input prices. In other words, all firms are assumed to allocate inputs efficiently.

A.19.4 Finally, the literature turns to the analysis of profit maximisation, with the assumption that firms correctly select the level of output that maximises profits.

A.19.5 Most firms, however, are unable to follow such theoretical prescriptions. For example, not all firms use the minimum level of inputs to produce their output, given available technology. This can be due to a variety of reasons, including: resource constraints, poor management, etc.

A.19.6 As a result, there are firms that could theoretically produce more output using the same inputs and available technology. Such firms are said to be *technically inefficient*. Technical efficiency relates to the ability of the firm to produce the maximum output with a given set of inputs. We can estimate technical efficiency empirically using DEA, regression analysis, or productivity indices.

A.19.7 Firms may also be unable to allocate their inputs efficiently. That is, they are unable to produce at a minimum cost, given input prices and available technology. Again, this can be due to a variety of reasons, including: incompetent management or as a response by the firm to political pressure to use expensive

inputs. Such firms are said to be *allocatively inefficient*. A firm might be allocatively efficient but technically inefficient. A firm might have the right input mix but it might fail to produce an optimal level of output. Allocative efficiency cannot be estimated empirically on its own.

- A.19.8 *Economic efficiency* can only be realised if both technical and allocative efficiency are achieved. Economic efficiency ensures that scarce resources are used in ways that reflect their relative scarcity and values in alternative uses and maximise their contribution to overall value creation. A firm cannot maximise its profits unless it is economically efficient. We can estimate economic efficiency empirically using the concept of a cost frontier, using techniques such as DEA and regression analysis.
- A.19.9 So what type of efficiency should be measured? Delivery offices and mail centres have limited choice over the quantity or price of their output. Prices are national and the level of output depends on the demand of customers – which is an exogenous factor largely outside of their control.⁶¹⁹ This implies that Royal Mail can only maximise its profits by minimising its costs for a given level of output⁶²⁰ - which implies that we should measure economic efficiency as opposed to technical efficiency⁶²¹.
- A.19.10 Economic efficiency can be assessed by reference to a cost frontier. The distance of each mail centre or delivery office from the frontier can be determined quantitatively – from which it is possible to assess the cost of economic inefficiency directly. In the following section, we summarise the benchmarking techniques we have used to estimate the cost frontier and to measure total economic inefficiency.
- A.19.11 An important assumption of all benchmarking approaches is that they presuppose the existence within the sample of observations, which are efficient with respect to the other sample units. To the extent that all delivery offices or mail centres are less than 100% efficient – perhaps because they share inefficient corporate

⁶¹⁹ We understand that the quality of output is a factor that delivery offices and mail centres can control

⁶²⁰ Regulated companies can be said to maximise profits subject to a revenue constraints. Under this scenario, minimising costs and maximising constrained profits are analogous

⁶²¹ In terms of Figure 20 this requires the determination of whether mail centres or delivery offices are operating at a point such as C or not

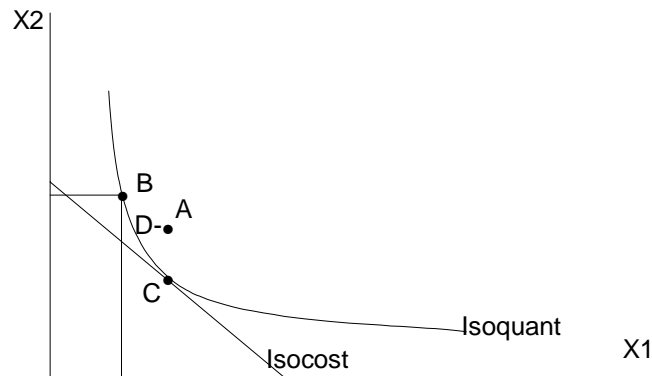
practices – internal benchmarking alone will tend to *underestimate* the potential cost reductions.

Graphical representation

- A.19.12 Let us assume that three production units consume two inputs (x_1, x_2) and a given technology to produce a product (y). Let the prices of the two inputs be p_1 and p_2 .
- A.19.13 The curve labelled “isoquant” in Figure 1 below defines the set of all possible combinations of inputs that are just sufficient to produce a given amount of output, which we will call y^* .⁶²² A production unit that produces y^* using input combinations that lie on the isoquant is technically efficient. A production unit that produces y^* using input combinations that lie above the isoquant is technically inefficient. A production unit cannot produce y^* using input combinations that lie below the isoquant.
- A.19.14 The curve labelled “isocost” in Figure 1 below defines the set of all possible input combinations that have the same level of cost, given that the input prices are (p_1, p_2).⁶²³ A production unit that produces a given amount of output, y^* , using input combinations that lie on the lowest feasible isocost is said to be allocatively efficient.
- A.19.15 Figure 20 shows the position of three production units that share the same technology and have the same input prices and the same profit-maximising level of output, y^* .

⁶²² The slope of the isoquant is called the technical marginal rate of substitution. It is the rate at which one input can be substituted for the other, while keeping output constant. The isoquant is a curve with a negative and non-constant slope. The slope is not constant because the marginal product of each input is decreasing

⁶²³ The slope of the isocost is given by the ratio of the two prices, and it is therefore constant at any given time. This is why the isocost is a straight line

Figure 20: A graphical representation of efficiency

Source: LECG

- A.19.16 Production unit C is operating on both the isoquant and isocost curves. In other words, C is using the optimal input mix to produce y^* , given the available technology and given input prices. This production unit is maximising its profits, and it is said to be economically efficient.
- A.19.17 Production unit A is operating above both the isoquant and isocost curves. Given the available technology, A should be either producing more than y^* or using fewer inputs to produce y^* . In other words, A is producing too little at too high cost, and is said to be economically inefficient.
- A.19.18 Finally, production unit B is operating on the isoquant but above the isocost. B is technically efficient, because it could not produce more than y^* given the available inputs and technology. However, B is allocatively inefficient because it uses too much of input x_2 and too little of x_1 , so that it does not achieve the minimum level of cost associated with the production of y^* , given technology and input prices. A minimum level of cost can only be achieved at point C.
- A.19.19 In summary, for any given technology, input price level and output level there is only one input mix that is compatible with economic efficiency, and that is the mix that corresponds to the point of tangency between the isoquant and the lowest isocost, which is point C in Figure 20.

Efficiency explained in a Royal Mail context

- A.19.20 Let us assume that we are comparing three delivery offices (DO1, DO2 and DO3) and let us assume that they share the same technology, face the same input prices and deliver the same amount and mix of mail, same geography, etc. Let us also assume for the purposes of this illustration that there are only two inputs

into the delivery process, vans (x_1) and postmen (x_2). Let us assume further that the daily rental for a van (which includes maintenance, petrol, etc) is twice the daily wage for a postman.

- A.19.21 Applying these assumptions to Figure 20 above, the isoquant curve represents the optimal combinations of postmen and vans with which the three delivery offices can (just) deliver the mail. The isocost curve represents the combinations of postmen and vans that yield the same level of cost.
- A.19.22 Let us now assume that DO1 is operating at point C in Figure 20 above. It uses the optimal mix of postmen and vans to deliver the mail, and is economically efficient. Therefore, this delivery office is the benchmark against which the other two delivery offices will be measured.⁶²⁴
- A.19.23 Suppose that DO2 is economically inefficient and is operating at point A in Figure 20 above. Given the available technology, DO2 should be delivering its mail with fewer inputs. If DO2 were to reduce the number of vans and move to a point such as D on the isoquant, then it would become technically efficient. Its costs however would be too high because point D is above the lowest possible isocost associated with the given amount of output. At point D, DO2 would be using too many vans and too few postmen, given the relative prices of these two inputs. In order to become economically efficient DO2 would need to move from point A to point C – which requires a reduction in the number of postmen but not the number of vans.
- A.19.24 Let us suppose that DO3 is operating at point B - which is technically efficient, but allocatively inefficient. In order to maximise its profits, DO3 would need to change its input mix, moving down the isoquant to point C. This could be achieved by reducing the number of postmen and increasing the number of vans.

⁶²⁴ This requires an assumption that there are some technically efficient delivery offices within the sample being compared

Appendix 20: Internal benchmarking technical summary

Introduction

- A.20.1 In this appendix, we provide a more technical summary of the benchmarking techniques we have used in this report. Our summary covers DFA, SFA and DEA methodologies. We also provide an overview of the issues and limitations that are commonly raised when applying quantitative benchmarking techniques.

Regression analysis issues and limitations

- A.20.2 Regression analysis requires us to define a functional form of the cost function. Although this is a limitation in general, it is important to note that the analysis of costs must be based on considerations of economic theory. There are a number of functional forms, which could fulfil this requirement. The selected functional form has to be consistent with the data and the economics of the mail operations in general. Based on economic theory, we have used statistical tools to test for the appropriateness of alternative functional forms. The functional form that we have selected is thus the one that fits the data best, and it is consistent with both economic theory and regulatory practice.
- A.20.3 Regression analysis measures economic efficiency (at least from the input perspective) directly when we use costs rather than individual factor inputs as the dependent variable. Consequently, technical and allocative efficiency cannot be identified separately. This is not a problem here. Given the characteristics of delivery offices and mail centres we are only required to estimate economic efficiency⁶²⁵.

Deterministic frontier analysis

- A.20.4 DFA works by estimating a cost function using the most widely known regression technique - ordinary least squares ("OLS"). A cost function is estimated with cost as the dependent variable and all the relevant cost drivers as the regressors. After applying a technical transformation, an efficiency score can be produced for each sample unit, which is for each delivery office or mail centre. This efficiency score is constructed from the residuals of the regression. The concept behind this technique is that part of the observed costs (the residual) of a production unit,

⁶²⁵ It is actually possible to estimate models that allow for the identification of technical and allocative efficiency. These are complex multi-equation models

which cannot be explained by the cost drivers (the regressors), must be due to inefficiency.

- A.20.5 For each delivery office or mail centre the residual from the regression measures the difference between the necessary cost and the actual cost. The sample unit with the lowest (most negative) residual is chosen as the benchmark, and the residuals are rescaled by subtracting from the residual for each sample unit from the benchmark residual. For each sample unit (that is, for each delivery office or mail centre) the proportion of actual cost that is efficiency is measured as the inverse of the rescaled residual.
- A.20.6 There are a number of reasons that cause actual costs to differ, and not all of these reasons should be ascribed to inefficiency. Consider, for example, a mail centre with a sorting machine that breaks down. It might take some time for the machine to be returned to service, and in the meantime the mail needs to be sorted by hand, so costs increase. Arguably, this random event has nothing to do with inefficiency. By default, DFA assigns this random event to inefficiency, although in practice one could make some general allowance for such inaccuracies. For example, Ofwat has estimated the proportion of residual that is error to be 10% in the case of its water models and 20% in the case of its sewerage models, in which it has only 10 companies to observe⁶²⁶. A popular alternative, that allows explicit estimation of the relative importance of error and efficiency, is SFA.
- A.20.7 DFA is, however, a valuable starting point for SFA, because the estimated parameters of the cost function are statistically correct. This means that the technique can be used to determine: a) the most significant cost drivers, and b) what is the correct functional form for the cost function.
- A.20.8 The information on the cost drivers is important, and is used to inform the variable selection in DEA⁶²⁷. Moreover, the efficiency scores and rankings resulting from DFA are deterministic⁶²⁸, in common with DEA scores. Both techniques typically benchmark each unit against the most efficient unit, which is given a score of one.

⁶²⁶ Future Water & Sewerage Charges, 2005-10, Final Determinations, Ofwat, page 153

⁶²⁷ Regression analysis will allow us to determine which input variables significantly affect costs. Only significant variables have been included in the DEA analysis

⁶²⁸ That is, they are not purged of the effect of random events

The efficiency rankings from DEA and DFA can be compared – which helps to validate results.

DFA issues and limitations

A.20.9 Although this method is based on regression, it assumes that all the distance between a sample unit and the frontier is caused by inefficiency. In other words, it does not allow for the effect of random events on costs, in either the benchmark observation or the company being benchmarked. This is also true of DEA. The only way to account for random effects on costs is to use SFA. SFA will naturally yield higher efficiency scores because it allows for the effect of random occurrences on cost performance to be separated from the effect of inefficiency. We have compared efficiency scores and rankings from the different techniques, to minimise the likelihood of inconsistencies. The degree of correlation between the efficiency scores and rankings under the various techniques are all very high.

A.20.10 An alternative to the use of SFA is to make an estimate of the proportion of the gross inefficiency estimate, which could be due to various errors or omissions and then to make an allowance by various means. Such allowances might include, adjusting the level of the benchmark, reducing the estimated potential efficiency savings, or requiring that only a proportion of the apparent inefficiency be made up during the price control period. Other UK regulators typically use a combination of these methods, although their rationale for the third of these methods may involve other factors as well.

Stochastic frontier analysis

A.20.11 SFA allows an efficiency frontier to be created that controls for random occurrences. However, in order to achieve this, it is necessary to make assumptions on the distributional form of the inefficiency component – which may be subjective. It is possible that alternative assumptions about this distributional form could lead to different conclusions about the scope for efficiency changes. If the data do not allow one to choose which form is appropriate, one would carry out sensitivity analysis to estimate the degree of uncertainty created by this problem⁶²⁹.

⁶²⁹ We did not have this problem with the delivery office data

SFA issues and limitations

A.20.12 SFA allows for the existence of random effects on costs, but requires assumptions on how efficiency is distributed among firms – following stochastic distributions. There are many such distributions, and it is important to assess which distribution best fits the data. The data for delivery offices show that the term from which efficiency is derived follows the pattern of the normal distribution.

A.20.13 In general, we cannot assume that the decomposition of the error term is correct. Even if there are no errors in efficiency measurements, some inefficiency may be wrongly regarded as “noise”. That is, in separating the effect of random occurrences on costs from the effect of inefficiency, some inefficiency might be wrongly classified as random occurrences. This would tend to underestimate the level of economic inefficiency. Where there are outliers that appear unusually efficient, perhaps because of measurement error it can happen that all the residual is mistakenly attributed to random disturbances. In our analysis of delivery offices we have not experienced this problem, as the proportion of the error term which is efficiency is high at 83%, leaving only 17% of the total error to be caused by stochastic disturbances.

Data envelopment analysis

A.20.14 Data envelopment analysis is a linear programming approach to estimating the relative efficiency of companies over a variety of outputs and inputs. The idea behind DEA is quite simple – and can be illustrated by considering the following two statements:

- if we already know that 100 units A can produce 50 units K. Then 120 units A must be able to produce 50 units K since $120 > 100$, or 30 units K can be produced by the same 100 units A because $30 < 50$; and
- if we already know that 100 units A can produce 80 units K, and 200 units A can produce 130 units K. How many units of A do we need to produce 120 units K?

A.20.15 By solving the problem above, $(A-100)/(120-80)=(200-100)/(130-80)$, we can determine that we require 120 units A. DEA assumes these two statements are true. It uses mathematical programming techniques to generate all possible input-output combinations, and compares your warehouse to the best possible.

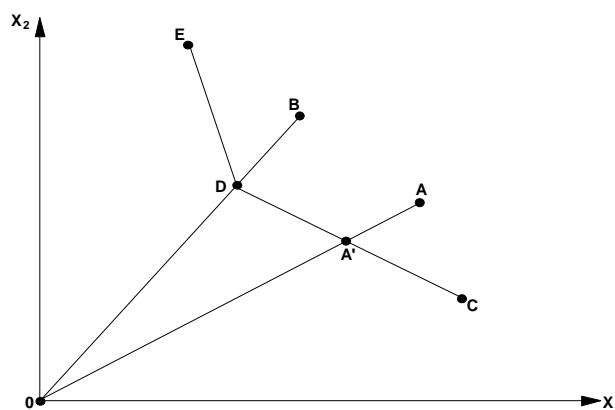
A.20.16 DEA allows for the inclusion of both controllable and non-controllable cost drivers. This is important because if non-controllable factors, such as those determined by geography, are not taken into account the resulting efficiency rankings will be statistically biased.

A.20.17 DEA models can incorporate different constant returns to scale (“CRS”) or variable returns to scale (“VRS”) assumptions. This is important, given that economies of scale may play an important role in the sorting and delivery of mail⁶³⁰. Scale inefficiencies arising due to the USO must be correctly identified, as they represent a constraint on Royal Mail. They do not represent an economic inefficiency that can be rectified.

Graphical example

A.20.18 Figure 21 below illustrates how DEA builds a cost frontier in a simple hypothetical setting. Let us assume that there are five units (A to E), each producing one unit of a single output (y) using two inputs (x_1 and x_2). Points C, D and E are efficient. For example, C uses more of x_1 but less of x_2 than D, while B is inefficient compared to D since it uses more of both x_1 and x_2 .

Figure 21: DEA 2 input minimisation model



Source: LECG

A.20.19 The term “data envelopment analysis” arises because DEA can be thought of as fitting a frontier which *envelopes* the data. In the figure above, the frontier is

⁶³⁰ The NERA Report finds evidence of economies of scale, density and scope in mail services

defined by CDE, the lowest cost points. Points C, D and E of the frontier are real production units. These units are linked together in a continuum by the line segments CD and DE, on which lie all the possible linear combination of inputs that minimise the cost of producing y . Each point on the segments CD and DE represent hypothetical rather than real production units.⁶³¹ The efficiency of a real unit such as A is measured by comparing it with its corresponding hypothetical benchmark unit which is A'. The distance AA' is a measure of the efficiency of unit A. Although our simple example allowed for only two inputs, x_1 and x_2 , this is rarely the case. DEA can easily accommodate production processes that require multiple inputs.

Technical specification

A.20.20 Our methodology sets efficiency targets for each office. We have assumed the following. Let the office being considered have a cost level of C_0 , outputs Q_0^k for each output k , a non-controllable input and a non-additive factor Z_0 (e.g. the wage level). For each office there is a composite reference set consisting of a weighted combination of other offices indexed by the subscript j with weights w_j . The relationship between the inputs, outputs, and non-additive factors has the following properties under input minimisation and constant returns to scale assumptions:

- the reference composite has costs of $\sum w_j C_j = \theta C_0$ with $\theta \leq 1$. θ is the efficiency score;
- the reference set produces at least as much of every output where $\sum w_j Q_j^k \geq Q_0^k$ for each output k ;
- if there are non-controllable inputs I^k (e.g. RM2000) the composite has no more than the equivalent level of each non-controllable input $\sum w_j I_j^k \leq I_0^k$; and
- the reference composite has "non-additive" factors which are no more favourable than those facing the office under consideration: $\sum w_j Z_j^k \geq S Z_0^k$ where S is the "scale factor" = $\sum w_j$. This weak inequality applies where Z^k is unfavourable (type 6 variable within the software), such as the wage level or road length. Where Z^k is favourable (type 5 variable within the software) to cost efficiency the inequality is reversed.

⁶³¹ These are the "linear combinations" discussed above

A.20.21 We have used a well-established simplex algorithm to minimise θ subject to the above constraints. To ensure the consistency of the efficiency savings and in keeping with the approach undertaken in the previous section of the study, we have focused on the restricted sample excluding the observations claimed as of poor data quality by Royal Mail.

DEA issues and limitations

A.20.22 DEA is a non-parametric technique and does not allow us to quantify the impact specific drivers have on costs. That is, cost elasticity and the degree of scale economies cannot be estimated by DEA. However, to some extent this is an advantage. That is, non-parametric techniques do not require the imposition of a functional form on the cost relationship. By combining DEA with DFA and SFA, we have been able to determine the parameters of the cost function.

A.20.23 DEA can be implemented with very small samples, but the efficiency estimates are likely to be biased upwards in such cases, especially for outliers (extreme observations). There are 70 mail centres and 1,383 delivery offices in the datasets provided by Royal Mail, and therefore this issue is not significant in the present context.

A.20.24 The efficiency estimates are sensitive to the choice of the variables (i.e. input, output, quality, and environmental variables) input into the model. To inform this choice we have used regression analysis to examine the statistical significance of different variables, and which variables should enter DEA.

A.20.25 As more variables are included in the models, the number of units/ firms on the frontier tends to increase. It is important to examine the sensitivity of the efficiency scores and rank order of the units/ firms to the model's specification. We have performed a sensitivity analysis with DFA, assessing the incremental impact that the various cost drivers have on costs. The results from this procedure have informed variables selection in DEA.

A.20.26 The efficiency estimates are sensitive to whether one assumes constant or variables returns to scale. The results from DFA have provided information on the existence of returns to scale.

- A.20.27 DEA *per se* does not allow any inference on the factors that affect costs, in particular their statistical significance. We have therefore combined DEA with parametric techniques.
- A.20.28 Before performing the analysis, the relative importance of competing explanatory factors needs to be considered. There is no DEA specific test to assess each factor's appropriateness. Again, the regression analysis we have performed has helped to determine the DEA model's specification.
- A.20.29 We have addressed all of DEA's most common shortcomings by combining DEA with regression analysis.

Appendix 21: Royal Mail’s views on delivery office variables

Variable Category	Material Cost Driver	Controllable or non-controllable	Is the information readily available	Information quality	Proxy variables
Total volume by class	No. Mail from different classes treated same in DO, and class split has no impact on workload or efficiency	RM central and local management have no control over variable	Information is not measured	Information is not measured	N/A
Total volume split between mechanised/ manual	No. There are no machines in DOs. Do not confuse with % walk sort	N/A	Information is not measured	Information is not measured	N/A
Total volume split by letters/ flats/ packets	Yes. This split should be reflected in analysis. Packets and flats require more work to sort than letters. Weighted volume measure takes account of LFP split	RM central and local management have no direct control over variable. But can influence customer behaviour through Size Based Pricing	Information is readily available. Split is already reflected in weighted volume measure	Traffic split is measured by manager at each DO. Quality of information is poor in some cases	N/A
Total volume split by indoor/ outdoor	Yes. The split is likely to be important because some DOs process mail through indoor, which is given to another DO/SPDO for (outdoor) delivery. The weighted volume is a measure of indoor volume	No local management control. Variable under control of central management. However, decisions are based on whether DO has enough space to do indoor sorting, and this is constrained by existing accommodation.	Information is not held centrally or in consistent way	Information is not measured	No alternative variables

Total volume by walk sort/ other	This relevant to indoor workload requirements. If mail arrives, walk sorted at DO then less work at indoor stage. However, split is already reflected in weighted volume measure	No local management control. Variable under control of central management	Information is available but split is already reflected in weighted volume measure	Traffic split is measured by manager at each DO. Quality of information is poor in some cases	N/A
Special delivery volume	This product stream is labour intensive, although volumes relative to other products are small. But split is already reflected in weighted volume measure	RM has no control over variable	Information is readily available. But split is already reflected in weighted volume measure	Traffic split is measured by manager at each DO. Quality of information is better than other traffic splits	N/A
Indoor/outdoor/collection total costs	Yes - offices have different workload requirements	Variable under control of central management (e.g. whether collections are done from DO or MC)	Information is available	Staff pay for DO recorded against cost centre. This split by function based on staff hours recorded against each activity. Managers record time against wrong activities	N/A

Non staff costs or proxy measure	Yes. However, vehicle and building costs are dwarfed by staff costs	Vehicle costs are largely dictated by number of business deliveries and geography of area. Local management has some control over vehicle costs. Central management has control over vehicle and building costs	Building costs (rateable values) are available by office. Reliable vehicle costs are not available by DO	Building costs held by property services	Number of vehicles by DO can be used as proxy for vehicle costs. The quality of this information is probably reasonable
Full-time staff (number and hours)	Yes. It is possible that FT staff are better trained, but downside is less flexibility to resource shifts	Variable under control of local management	Information is not available at DO level	Information held at national level but no split by DO is available from business warehouse	No alternative available
Part-time staff (number and hours)	Yes. It is possible that FT staff are better trained, but downside is less flexibility to resource shifts	Variable under control of local management	Information is not available at DO level	Information held at national level but no split by DO is available from business warehouse	No alternative available
Casual staff (number and hours)	Yes. Casual pay rates are low in comparison with other rates. However, productivity might also be lower	Variable under control of local management	Information is available	This information is recorded against each cost centre. Quality of information is reasonable	N/A
Agency staff (number and hours)	Yes. Agency pay rates are high in comparison with other rates, and productivity might be low	Variable under control of local management	Information is available	This information is recorded against each cost centre. Quality of information is reasonable	N/A

Indoor vs. outdoor hours spend	Yes. This split is used to split costs by indoor/outdoor	Variable under control of central management (e.g. whether indoor work is done in different office)	Information is available	This split by function based on staff hours recorded against each activity. DO managers have habit of recording time against wrong activities	N/A
Overtime hours worked at DO	Yes. Overtime pay is not that much different from ordinary pay (overtime does not get pension contribution) and is often lower after shift allowances are taken into account	Variable under control of local management	Information is available	This information is recorded against each cost centre. Quality of information is reasonable.	N/A
Staff turnover (New hires + leavers + retired)	Yes - This would affect productivity of labour	Local management can influence rate by improving working environment. But largely a product of local labour market, which is out of RM control.	Information available for 2002. No later information is known about	Information was compiled by central group that has been disbanded	N/A
Staff composition by grade	No. Staff costs provided excludes management costs. Management costs are not held at DO level - cost centres are centralised	Variable under control of central management	Information is unavailable	Information is gathered at national level	No reliable information is available
Split of staff costs by Overtime/Part Time/Agency/Casuals	Yes - different staff types are paid different rates	Pay rates are controlled by central management	Information is available.	This information is recorded against each cost centre. Quality of information is reasonable	N/A

Royal Mail pay scales and London weighting	Yes. Would explain some of cost difference between offices, e.g. London and other defined areas	Variable under control of central management	Calculated for each office as total ordinary pay divided by total ordinary hours	This information is recorded against each cost centre. Quality of information is reasonable	N/A
Surface area	Yes. Should be included and used in conjunction with number of delivery points	Central management can influence number of DOs nationwide and hence average surface area covered	Information is available	Royal Mail sources information from GIS mapping systems. Data quality is good	N/A
Number of delivery routes	Number of delivery routes is driven by exogenous factors such as number of DPs, surface area, road distance and proportion of urban area. These drivers should be included in analysis	Central management can influence number of DOs nationwide and hence the number of delivery points	It is changing all the time and difficult to match historical costs against current/historical number of delivery routes	Information is held by office but not updated consistently	Number of delivery routes is driven by exogenous factors such as number of DPs, surface area, road distance and proportion of urban area
Length of road	Yes. Should be included and used in conjunction with number of delivery points and other geographical variables	RM has no control over variable	Information is available	Royal Mail sources information from GIS mapping systems. Data quality is good	N/A
Surface areas covered by type: Major city centre; Other city centre; urban; suburban; and rural	Yes. But zonal definition is reflection of geographic variables that are represented elsewhere	RM has no control over variable	Information is available	Information gathered at centralised level. Information quality is good	N/A
Business delivery points	Yes. This is an important cost driver. Influences volume per DP and mode of transport for delivery	RM has no control over variable	Information is available	Information gathered at centralised level. Information quality is reasonably good	N/A

Proportion of businesses that warrant firm delivery	Yes. This is a more significant driver than number of business delivery points, but not easy to measure	RM has control over definition of what "warrants" a firm delivery. Local management also has control over what additional (non-business) DPs are visited on firms delivery because it is efficient to do so	Information is not available	N/A	No reliable information is available
Percentage of workload attributable to delivery activities	Yes. However cannot split workload, e.g. weighted volume, in this way	Variable under control of central management, e.g. whether indoor work is done in different office	Information is not available.	N/A	Weighted volume could be used for indoor workload measure and number of delivery points for outdoor delivery
Percentage of mail that is sorted in one office and delivered at another	Yes. This has impact on indoor and outdoor costs	Variable under control of central management. However, decisions are based on whether DO has enough space to do indoor sorting, and this is constrained by existing accommodation	Information is not immediately available. Not sure about timescales for gathering information	Information is not measured	No reliable information is available
Average volume per delivery point	Yes. Number of delivery points (independent of volume) in the main cost driver for outdoor delivery. Volume per delivery point affects call rate and indoor costs	RM has no control over variable	Information already provided to Postcomm	Volumes are measured and recorded by each DO manager. Measurement error is very large in some cases, and about 50% of observations should be discounted	Number of delivery points split by business/residential can be used to estimate volume.

Number of SPDOs assigned to parent office	Yes. This could give indication of whether costs and explanatory variables are correctly matched. The more SPDOs, the less likely this mapping is correct	Central management has some control over siting of SPDOs and reporting structures	Information is available	Information gathered at centralised level. Information quality is good	N/A
Number of DOs mapped onto cost centre	Yes. This could give indication of whether costs and explanatory variables are correctly matched. The more DOs, the less likely this mapping is correct	Central management has control over cost centre mapping	Information is available	Information gathered at centralised level. Information quality is good	N/A
The impact of high volume Response Services activity on a delivery office	Yes. This might distort workload in a few offices	Local management has no control. Central management can set mech plan	Information is not available	Information help by customer but significant task to summarise by location	No reliable information is available
Delivery offices using "new frames" (RM 2000)	Yes. This influences sorting time for indoor activities	Local management has no control. Sorting frames are constrained by floor space in each office. Many DOs would need to move to new buildings to have space for RM2000s	Information is available	Information is supplied by each DO manager and probably not updated on consistent basis. Quality of information is unknown	N/A
Size and layout of delivery office buildings	Yes. Distances between workstations are high in multi floor offices	Local management has no control. Central management owns decision to locate DO	Information not readily available	Unknown	Number of delivery routes could be used as proxy for building size

Non-delivery activities	Yes. A split of delivery/non-delivery activities should be considered	Central management decides whether collection and local distribution activities are based from DO or other unit	Information is available	DO managers responsible for recording split of work by activity. Information quality likely to be poor.	N/A
Postman walks and "stem time"	Yes. But this is function of surface area and road distance which represented elsewhere (these are primary drivers)	Central management can influence number of DOs nationwide and hence average surface area covered by each DO	Specific stem distances for each delivery route are not measured	N/A	This is function of surface area and road distance
Type and number of vehicles used	Yes. Vehicles are needed for firms, rural, packet and walk support. Different offices have different requirements for vehicles and this would explain cost differences	Vehicle numbers are largely dictated by number of business deliveries and geography of area. Local management has some control over vehicle costs	Number of vehicles by location is available but no further split is available on consistent basis	Information is supplied by each DO manager and probably not updated on consistent basis. Quality of information is unknown	N/A
Local wage rates	Yes. RM wage rate vs. local wage rate can explain productivity differences between locations (if RM pay rate is low relative to local wage rate then productivity might be negatively impacted)	RM has no control over variable	Information readily available for 2002. No later information is known about	RM commissions National Earnings Survey Group to produce pay rates by postcode. This has not been updated for last year	N/A
Local unemployment rate	Yes. This would reflect quality of labour employed at each DO, and hence relative productivity	RM has no control over variable	RM does not hold this information	N/A	No reliable information is available

Source: PCR3 6002 delivery office Variables

Appendix 22: Royal Mail’s views on mail centre variables

Variable Category	Material Cost Driver?	Controllable or non-controllable?	Is the information readily available?	Information quality?	Proxy variables
By class	Yes. This split should be reflected in analysis. First class specification requires this mail to be handled in a very short time frame processing window	RM has no control over variable	Information is available but not readily	Information gathered by traffic managers in each MC	NA
Mechanised/manual	Yes. This split should be reflected in analysis. There is a difference in Mechanised and Manual processing. Some Location have Flat sorting machines, but currently all packets are manually sorted	Central management controls number and type of machines by location. This is determined by the mail flow received and the presentation format from customers	This is split is reflected by the weighted volume measure	Information gathered by traffic managers in each MC. Quality of information is improving	NA
Letters/Flats/Packets	Yes - this split should be reflected in analysis. Packets and flats require more work to sort than letters. But weighted volume measure takes account of LFP split and relative workload of each stream	Central and local management have no direct control over variable. But can influence customer behaviour through SBP whereby prices better reflect costs	This is split is reflected by the weighted volume measure	Information gathered by traffic managers in each MC. Quality of information is improving	NA
Inward/outward	Yes - this split should be reflected in analysis. Inward and Outward mails will be handled at different times of the day and the inward mail handling is influenced by the presentation from the outward processes	RM has no control over variable.	This is split is reflected by the weighted volume measure	Information gathered by traffic managers in each MC. Quality of information is improving.	NA

Split between business and box collections	Yes - box collections contain very mixed mail and potentially less clarity of address and presentation, and different processes involved	RM has no control over variable	Information is not measured	No information is available	No info avail.
Other 1: Special Delivery Volume	Yes - This product stream is labour intensive, although volumes relative to other products are small. Split is already reflected in weighted volume measure	RM has no control over variable	This split is reflected by the weighted volume measure	By mail centre. Fairly accurate from the Track & Trace system	NA
Inward/outward sortation costs	Yes - this split should be reflected in analysis. Inward and Outward mails will be handled at different times of the day and the inward mail handling is influenced by the presentation from the outward processes	Central/local management has some control over work and how much sorting is done at outward rather than inward. Local management has some control over percentage of mail through mech processes	This is available, see next column	Nationally (Business level) from the Costing system. This has dependencies on quality of the RCS hours data	NA
Non staff costs or proxy measure (such as number of vehicles as opposed to vehicle costs)	Vehicles not a real feature in mail centres (staff costs provided are limited to processing activities). Accommodation, Plant, and Machinery are material but these costs are not consistently recorded at present	Central management has control over building costs	This is available, see next column	Nationally from the Costing system. This has dependencies on quality of the RCS hours data which is known to be flawed	NA
Full-time staff (number and hours)	Yes - this would have material impact on costs. Different labour types have different pay rates, and some times of labour might be more productive than others	Variable under control of local management	Information is not available at MC level	Information held at national level but no split is available from business warehouse	NA

Part-time staff (number and hours)	Yes - this would have material impact on costs. Different labour types have different pay rates, and some times of labour might be more productive than others.	Variable under control of local management.	Information is not available at MC level.	Information held at national level but no split is available from business warehouse	NA
Casual staff (number and hours)	Yes - this would have material impact on costs. Different labour types have different pay rates, and some times of labour might be more productive than others	Variable under control of local management	Information is not available at MC level	Information held at national level but no split is available from business warehouse	NA
Agency staff (number and hours)	Yes - this would have material impact on costs. Different labour types have different pay rates, and some times of labour might be more productive than others	Variable under control of local management	Information is not available at MC level	Information held at national level but no split is available from business warehouse	NA
Overtime hours worked at MC	Yes - this would have material impact on costs. Different labour types have different pay rates, and some times of labour might be more productive than others	Variable under control of local management	Information is not available at MC level	Information held at national level but no split is available from business warehouse	NA
Staff Turnover (New hires + leavers + retired)	Yes - this could have material impact on costs. High turnover loses knowledge and capabilities	Local management can influence rate by improving working environment. But largely a product of local labour market, which is out of RM control	Information available for 2002. No later information is known about	Information was compiled by central group that has been disbanded	N/A
Staff composition by grade (even a high-level split such as postmen versus managers)	No - staff costs provided exclude management costs. Management costs are not held at MC level - cost centres are centralised.	Variable under control of central management	Information is unavailable	Information is gathered at national level	No reliable info

Split of staff costs by Overtime/Part Time/Agency/"Casuals"	This would have material impact on costs. Different labour types have different pay rates, and some times of labour might be more productive than others	Limited influence - more dictated by the local labour market	Information is measured	Nationally from the Costing system. This has dependencies on quality of the RCS hours data which is known to be flawed	NA
Royal Mail pay scales and London weighting	Yes - would explain some of cost difference between offices (e.g. London and other defined areas)	Variable under control of central management	Calculated for each office as total ordinary pay divided by total ordinary hours	This information is recorded against each cost centre. Quality of information is reasonable	N/A
Surface area covered	Yes - impacts on collection time window	Central management has control over number of MCs and hence average surface area. The more surface area, the harder to meet quality of service	Information is available	Measured using GIS	NA
Distance from other MC's	Yes - This could have material impact on costs. Rather than distance per se, the timing of mail arrival etc into the office can be impacted	Central management has control over number of MCs and hence average distance	Information is available, suggested variable is max journey distance or journey time between MC and other MCs	By mail centre, accurate	NA
Volume or Proportion of mail that is local, neighbouring or distant	Yes - this would have material impact on costs. Differential handling requirements and meeting dispatch times for distant locations can impact costs	Central management has control over number of MCs and hence proportion of mail by category	Information is available	Volume measured by MC sampling	NA

Differentiation of functions by mail centre	Yes- MCs with a DO or OE could have different cost functions	Central management has control over functions within MCs	Information is available	By mail centre, accurate	NA
Workloads attributable to sorting and non-sorting activities	Yes but no workload breakdown by function.				
Equipment at each MC (how many sorting machines of each type)	Yes - this would have material impact on costs. Availability of machines by type will dictate how mail can be handled and hence the cost	Variable is in control of central management but constrained by space	Information is measured	By mail centre, reasonably accurate	NA
Mail walk sorted at inward MC	Yes - this would have material impact on costs compared to offices that do less walk sorting	Central and local management has some control	Information not held centrally. Weighted volume measure should reflect variable	Volume measured by MC sampling	Na
Floor space and number of levels in MC	Yes - this could have material impact on costs. This can restrict the handling methods used and multi storey will dictate that mail has to be transported around the mail centre more than in a single level office	Central management has control over design of each MC, but constrained by past	Information is available but not yet sourced	Unknown	NA
Local wage rates	Yes RM wage rate vs. local wage rate can explain productivity differences ("technical efficiency") between location (e.g. if RM pay rate is low relative to local wage rate then productivity might be negatively impacted)	RM has no control over variable	Information readily available for 2002. No later information is known about.	RM commissions National Earnings Survey Group to produce pay rates by postcode. This has not been updated	N/A
Local unemployment rate	Yes - this would reflect quality of labour employed at each MC, and hence relative productivity	RM has no control over variable	RM does not hold this information	N/A	No reliable info

Surface areas covered by type	This unlikely to have a major impact on MC costs	RM has no control over variable	Information is available	By mail centre, reasonably accurate	NA
Whether there is a delivery office inside the MC	This should not have material impact on costs. The delivery office should be discretely identified	Central management has control over design of each MC, but constrained by past	Information is available	By mail centre, reasonably accurate. MCs with multiple functions are more likely to have incorrect allocation of resources to activities	NA

Source: ER P1 6004 MC Variables Response

Appendix 23: Internal benchmarking data quality

Introduction

A.23.1 In this appendix, we assess the overall quality of Royal Mail's data for both delivery offices and mail centres.

Delivery office data quality

A.23.2 Royal Mail has provided total costs and hour data, disaggregated by activity⁶³² and by type of hours.⁶³³ Delivery office managers, using the Resource Control System (RSC), record costs by activity daily. Royal Mail has indicated, however, that there is an issue with this data: *"An issue with RCS is the difficulty in accurately monitoring the time against each activity. Staff are frequently moved at short/ no notice between activities to meet changing work demands, and this is impractical to measure, especially in larger office"*⁶³⁴.

A.23.3 Due to this data limitation, we have not included variables by type of delivery activity, or by type of hours in our benchmarking models. We have therefore estimated total labour cost, and assessed the total level of efficiency at the delivery office level, rather than producing separate estimates by type of activity.

A.23.4 Royal Mail also advised us against using disaggregated volume estimates in our benchmarking models⁶³⁵ – again due to poor measurement issues. Instead, Royal Mail provided us with a weighted volume figure, obtained using an engineering weighting system based on workload figures. With respect to the weighted volume, Royal Mail state: *"Without visiting each DO and conducting a detailed data gathering exercise, it is not possible to produce a "corrected" estimate of each DO volume with any degree of confidence. Attempts to adjust the volume data to account for measurement error are likely to fail because of the disparate causes of data inaccuracy, some of which include a human element, e.g. different messages given to DO managers about the significance of volume*

⁶³² RM provided information on the following activities: indoor; outdoor; meal relief and training; access and consolidation; local distribution; and delivery support

⁶³³ RM provided the following split of hours: ordinary hours; overtime hours; casuals; scheduled hours; allowances; and agency hours

⁶³⁴ File PCR3 6024 DO data for internal benchmarking.pb.051004.doc

⁶³⁵ The following disaggregated "delivered volume" figures were provided by the Royal Mail: Walksorted letters, flats and packets; manual letters, flats and packets; special delivery; and business reply

*measurement (different operational areas might not place the same emphasis on volume measurement) and how the manager reacts to these messages*⁶³⁶.

- A.23.5 Given the fact that different mail types drive labour costs in different proportions, it would have been preferable to use disaggregated volume figures in our analysis.⁶³⁷ We understand however that the process of disaggregation adds another layer of inaccuracy in the measurement of disaggregated volume figures. Our data cleaning process confirms this, and we have therefore excluded all disaggregated data from our analysis.
- A.23.6 Royal Mail also identified that 240 delivery offices that had experienced year-on-year changes in volume in excess of $\pm 15\%$. We have analysed the characteristics of these offices in some detail and found that they tend to be smaller and more efficient. Our efficiency analysis indicates that nine out of the top ten most efficient offices belong with this group. The table below sets out the relative efficiency, based on our analysis, of offices with poor data quality:

Table 335: Proportion of offices with poor quality data per quartile

LECG efficiency ranking quartile	Percentage of offices with poor data
1 st Quartile	45.8%
2 nd Quartile	22.5%
3 rd Quartile	16.7%
4 th Quartile	15.0%
Total	100.0%

Source: LECG Analysis

- A.23.7 The table above shows that 46% of the delivery offices identified as having poor volume data fall within the first quartile of efficient delivery offices. The proportion of poor-quality-data offices in each quartile declines, as "inefficiency" becomes

⁶³⁶ File PCR3 6024 DO data for internal benchmarking.pb.051004.doc, paragraph 3.7

⁶³⁷ The following disaggregated "delivered volume" figures were provided by the Royal Mail: Walksorted letters, flats and packets; manual letters, flats and packets; special delivery; and business reply

greater. If these offices had been included in our analysis, efficiency savings would be greater. They have been excluded on grounds of prudence, since they would provide unreliable benchmarks.

A.23.8 To test the sensitivity of our results to poor data volumes, we have considered two scenarios. The first scenario estimates costs and efficiencies including all delivery offices (henceforth referred to as the “whole sample” scenario). The second scenario removes the poor volume delivery offices (henceforth we call this the “restricted sample” scenario).

A.23.9 Estimated potential efficiency savings are higher when the poorer quality offices are included in the analysis, which can be explained as follows:

- higher volume figures provide a higher efficiency target for delivery offices to attain. When we exclude the group of offices, which contain a high proportion of apparent high performers, the remaining offices will have a lower overall efficiency targets;
- the restricted scenario includes fewer delivery offices. Accordingly, any potential efficiency of the 240 excluded offices is not assessed. To remedy this effect, the average inefficiency of the included offices could be applied to the excluded offices; and
- the identification of poor quality data, insofar as it is based upon identification of infeasible volumes incorporates a selection biased against the more efficient offices. This creates a danger that in using the restricted sample we are omitting some of the most efficient offices. There would then be two offsetting effects: our overall inefficiency estimates would be understated for the majority of the offices, but the assumption that the excluded offices have the same true efficiency distribution as the included ones would not be so appropriate and we would be underestimating the potential savings for the poor data offices. The net effect, in principle, could be either positive or negative.

A.23.10 The medium-term incentive effects of simply excluding from the analysis of offices that Royal Mail claim to be of low quality needs some consideration. Simply excluding the offices that are claimed to have low quality data creates an incentive on Royal Mail to reduce data quality, and to bias their identification of low data quality towards offices, which appear to perform better.

- A.23.11 We further assessed data quality through a process of data review. This is the process of analysing the data with the intention of identifying outlying or irregular data points. We did this by, for example, calculating summary statistics for each variable; by producing pair-wise scatter plots between pairs of variables; and by computing data correlation matrices. We did not eliminate any delivery offices from the analysis at this stage and evaluated all the variables, including variables known to be of poor data quality. We asked Royal Mail to comment on all outlying or irregular data points.
- A.23.12 As a first step, we produced summary statistics for each variable, to identify any irregular data points. Our analysis identified a number of variables that had minimum values that appeared illogical. For example, a number of mail volume measures and the vehicle variables had negative values⁶³⁸.
- A.23.13 *A priori*, we would expect to find high correlations between certain variables. For example, we expect to find a positive relationship and a high and positive correlation between total costs, wage rates and number of hours worked. By constructing scatter plots and correlation matrices, we were able to verify that the pattern in the data corresponded to our initial expectations. This process allowed us to check that the data was internally consistent or at least to eliminate major inconsistencies.
- A.23.14 To identify outliers (which may indicate errors and which can have a disproportionate effect on the accuracy of estimates), we plotted an exhaustive number of pair-wise scatter plots. For a data point to be an outlier, it has to obviously deviate from the trend (or pattern) in the scatter plot. We divided outliers into two categories – those that had zero values and those that had not. In total, we found 511 delivery offices that had potentially outlying data points, of which 392 had zero values in at least one variable and 119 were non-zero outliers.

⁶³⁸ RM advised that delivery office managers supply the information on vehicles, and that the data quality is not good. In the course of our empirical analysis, we eliminated those two delivery offices with negative vehicle numbers (these belonged with the 240 delivery offices with poor quality data and were not part of the restricted sample); we also performed a sensitivity analysis for the impact of this variable on the estimates. The illogical values for the disaggregated volume variables confirmed the poor quality of these data, and that we should not use disaggregated figures in the analysis

- A.23.15 Of the 392 “zero” outliers, a large number (302 delivery offices) recorded a zero in the “percent of delivery routes that are firm” variable, which had been identified as unreliable by Royal Mail itself, and was not used in the empirical analysis.
- A.23.16 Royal Mail indicated that for geographic variables, a zero value represented missing observations, and which it did not have data. The 28 Northern Ireland offices had zero values for the road length variable, which is an important cost driver. Accordingly, these delivery offices had to be removed from the analysis.
- A.23.17 Royal Mail informed us that non-geographic zero values should be treated as genuine observations. For example, it is possible that some delivery offices could have no sorting frames,⁶³⁹ no redirections,⁶⁴⁰ or no agency staff. Royal Mail recognises that it is possible that some zero values could be data mistakes, but have indicated that it is not possible to perform a full audit of the dataset.
- A.23.18 We have worked on the assumption that a zero observation is not a misstatement. In our final analysis there are very few offices with zero values on the variables that were used in the regressions.
- A.23.19 Within our set of non-zero outliers, we found five offices that appeared particularly large in terms of costs and volumes. Further analysis revealed that these delivery offices were aggregations of a number of offices. For example, the delivery offices in Coventry have been aggregated into one, as have the delivery offices in Northampton, Derby, EC1-EC4, Stockport and Belfast.
- A.23.20 As outliers in terms of physical size, there is a danger that these observations will have an undue influence on the analysis. To prevent this, we have adjusted each aggregated delivery office and have tested whether replacing the aggregated offices with their adjusted counterparts affected our results. The adjustment process proceeded as follows: we removed each outlying aggregated delivery office and replaced it with a weighted observation. This replacement observation had the characteristics of an average delivery office from which the aggregate is composed, because it was obtained by dividing every scaled variable by the number of offices that formed the aggregate office. For example, EC1-EC4 is an aggregate composed of four DOs. We have therefore divided all the appropriate

⁶³⁹ There are two delivery offices, which appear to have no sorting frames: Redditch and Leicester Oadby

⁶⁴⁰ Broxburn (East of Scotland) is the only delivery office with zero redirections

variables by four, and used this new office as a representative office instead. We found that our results were completely insensitive to the inclusion of the representative offices.

Mail centre data quality

- A.23.21 Royal Mail has provided total costs and hour data, disaggregated by activity⁶⁴¹ and by type of hours.⁶⁴² Mail centre managers, using the Resource Control System (RSC), record costs by activity daily. Royal Mail has indicated, however, that there is an issue with this data: *“An issue with RCS is the difficulty in accurately monitoring the time against each activity. Staff are frequently moved at short/ no notice between activities to meet changing work demands, and this is impractical to measure, especially in larger office. This is especially a problem in MCs where many discreet activities take place simultaneously”*⁶⁴³.
- A.23.22 Due to this data limitation, we have not included variables by type of operational traffic stream, or by type of hours in our benchmarking models. With respect to costs, Royal Mail states: *“As a consequence of inherent problems with measuring staff hours, it is inappropriate to assess a highly disaggregated split of MC costs by activity”*⁶⁴⁴.
- A.23.23 Consequently, our mail centre model is restricted to assessing efficiency of total labour costs at the mail centre level. At Royal Mail’s direction, we have not attempted to assess efficiency at the activity level.
- A.23.24 Royal Mail also advised that disaggregated volume estimates should not be included within the benchmarking models⁶⁴⁵ – again due to poor measurement issues. Royal Mail state: *“Royal Mail has less confidence in the inward volume measure because it does not have centralised control over measurement and*

⁶⁴¹ RM provided information on the following activities: outward processing; inward processing; meal relief and training; and processing support

⁶⁴² RM provided the following split of hours: ordinary hours; overtime hours; casuals; scheduled hours; allowances; and agency hours

⁶⁴³ File PCR3 6074 MC data for internal benchmarking.pb.191004.doc

⁶⁴⁴ File PCR3 6074 MC data for internal benchmarking.pb.191004.doc, paragraph 2.5

⁶⁴⁵ The following disaggregated “mc volume” figures were provided by the Royal Mail: manual and mech letters, flats and packets; manual letters, flats and packets; special delivery; priority services; and through bags

process (the local MC manager or area manager is responsible for measurement in each MC)⁶⁴⁶.

- A.23.25 As such, Royal Mail advised us to use its weighted volume estimates, which are obtained using an engineering weighting system based on workload figures. Our review of the data confirmed that disaggregated volume estimates were inaccurate. We gave excluded all disaggregated data from our analysis.
- A.23.26 Following the methodology described previously for delivery offices, we further assessed data quality through a process of data review. Again, we did not eliminate any mail centres from the analysis at this stage and evaluated all the variables. We asked Royal Mail to comment on all outlying or irregular data points.
- A.23.27 We produced summary statistics for each variable, to identify any irregular or outlying data points. Our analysis identified a number of such data points. For example, we found that for six mail centres the total weighted volume differed from the sum of the stated single components (inward + outward volumes)⁶⁴⁷. Further graphical analysis identified 13 mail centres with outlying or irregular data points, including the six mentioned above⁶⁴⁸.
- A.23.28 Royal Mail recognised that there were recording errors in the data file and provided an amended dataset. Royal Mail also confirmed that: a number of very large figures for year-on-year volume and pay changes for three mail centres⁶⁴⁹ were genuine figures; that all variables for the London Central mail centre were correctly stated; and that, in relation to those values of the quality of service measures for specific mail centres that are very low (Wave 4c for London South, and Outward despatch for London West), “The source cannot be verified and therefore the observation should be treated with caution”⁶⁵⁰.
- A.23.29 Royal Mail indicated that for geographic variables, a zero value represented missing observations, and which it did not have data. The Belfast mail centre in

⁶⁴⁶ File PCR3 6074 MC data for internal benchmarking.pb.191004.doc, paragraph 3.2

⁶⁴⁷ These mail centres were Bristol, Gatwick, Glasgow, Swansea, Inverness, and Southend

⁶⁴⁸ The additional mail centres were Bolton, Canterbury, Dartford, Edinburgh, London South, London West, and London Central

⁶⁴⁹ Bolton, Canterbury and London South

⁶⁵⁰ Document PCR3 6110, pages 4-5

Northern Ireland offices had zero values for the percentage of urban area variable, which is an important cost driver. Accordingly, this mail centre had to be removed from the analysis.

A.23.30 Royal Mail also informed us that non-geographic zero values should be treated as genuine observations. For example, it is possible that some mail centres could have no automated machinery⁶⁵¹, or no agency staff. Royal Mail recognises that it is possible that some zero values could be data mistakes, but have indicated that it is not possible to perform a full audit of the dataset.

⁶⁵¹ Inverness is only mail centre with zero automated machinery

Appendix 24: Delivery office benchmarking results

Introduction

A.24.1 In this appendix, we assess the relative efficiency of delivery offices using the quantitative techniques discussed above. We first discuss the specification of the delivery cost equation and its functional form. We then present the results of our DFA, SFA and DEA analysis.

Key variables

A.24.2 The purpose of our econometric analysis is to derive a functional relationship (in the form a mathematical equation) relating delivery office costs to cost drivers. We have attempted to take into account as many cost drivers as possible, including those identified as relevant by Royal Mail. Variables tested for inclusion in the final cost equation include:

- number of delivery points (NDP);
- percentage of delivery points that are businesses (BUSNDP);
- weighted volume of mail per delivery point (VOLNDP);
- length of road per delivery point, in meters (ROADNDP);
- delivery zones: major city centre, urban, suburban, rural and deep rural (DELZONE1 to DELZONE5)⁶⁵²;
- mail redirection, measured as number of pieces of mail that have been redirected (REDIRECTIONS);
- proportion of mail that has been walk sorted at the mail centre (PCT_WKS);
- average distance between delivery office and mail centre, in km (MC_DO);
- number of sorting frames which are RM2000 (FRAMES);
- number of vehicles available at the delivery office (VEHICLES);
- variations in input prices is covered by the variable average wage rate paid by delivery office (WAGE);

⁶⁵² Delivery zones are modelled using dummy variables. A value of one indicates that the delivery office is in a particular zone. Otherwise, the value is zero

- competitiveness of local labour market/ labour force average quality index which is represented by the variable average local wage rate for manual worker (LOCALW)⁶⁵³; and
- a quality of service measure which captures the percentage of all due mail delivered on time (ADMDELIV).

A.24.3 We chose variables for inclusion in the final equations according to the following criteria. First, we assessed whether the sign of the estimated variable was consistent with our industry knowledge. Second, we tested the statistical significance of each variable. Only variables, which were found to be providing additional explanatory power, were retained. Variables of marginal significance were included to further improve the explanatory power of the model. This reduces the potential proportion of cost that might be attributed to inefficiency, making the method conservative. In line with best practice, only variables outside of local managements control were included in the cost equation.

Functional form

A.24.4 The term functional form refers to the mathematical relationship assumed between the cost drivers and the cost itself. The simplest form is a linear equation. This form has been used, for example in the analysis of electricity distribution businesses and in the analysis of NHS hospitals.

A.24.5 Another common functional form is the Cobb-Douglas form, which is linear in the logarithms of the main variables. This has the property that a percentage increment in a cost driver produces the same percentage increment in cost. The ratio of these percentage increments is the cost elasticity, which is constant by construction. These "linear in logarithm" forms are the most common form used in Ofwat's models of the England and Wales water industry.

A.24.6 An alternative form, which is used mainly in academic studies, is the transcendental log ("trans-log") form, which has linear and quadratic terms in logarithms and includes additional terms. For example, if X_1 and X_2 are cost drivers, the trans-log form includes not only $\log(X_1)$ and $\log(X_2)$, but also squared terms like $\{\log(X_1)\}^2$, $\{\log(X_2)\}^2$ and cross-product terms like $(\log(X_1) \times \log(X_2))$.

⁶⁵³ This variable has been obtained by multiplying the ratio of local to RM wages by the wage rate paid by the RM

A.24.7 This functional form is less restrictive in terms of the relationship assumed, but it does have the following disadvantages:

- the number of parameters to be estimated escalates rapidly as the number of cost drivers increases, with increasing problems of multicollinearity⁶⁵⁴ and unstable coefficient estimates;
- the resulting equations are often thought to be over-parameterised⁶⁵⁵. The coefficients can be somewhat arbitrary and contrary to technical and economic knowledge;
- the improvement in explanatory power is generally very small; and
- the interpretation of coefficients can be difficult, making it hard to carry out sanity checks.

A.24.8 We have estimated cost equations using each of the functional forms identified above and have used statistical tests to decide which functional form provides the best empirical fit. Our findings are as follows:

- comparing the linear and the Cobb Douglas functional forms, we found that statistically⁶⁵⁶ the Cobb Douglas fits the data best;
- we estimated both a full and a truncated version of the trans-log form. Even in its truncated form, this model was found to suffer from severe problems of multicollinearity and over-parameterisation. The additional parameters to be estimated added little to the explanatory power of the model and made interpretation of the results more difficult.

A.24.9 We conclude that it would be hard to have confidence in the efficiency estimates resulting from the use of the trans-log functional form. We have selected the Cobb-Douglas equation as the most appropriate function form.

Deterministic Frontier Analysis

A.24.10 We have estimated DFA cost equations for both the whole and restricted samples (i.e. including and excluding poor quality volume data). We found that the

⁶⁵⁴ Multicollinearity arises because the regressors are highly correlated with each other. The individual coefficients become unstable and subject to high standard errors

⁶⁵⁵ That is, to contain too many regressors and therefore too many parameters to be estimated

⁶⁵⁶ Davidson and MacKinnon test. Refer to R. Davidson and J.G. MacKinnon, Several Tests for Model Specification in the Presence of Alternative Hypotheses, *Econometrica*, Vol. 49, 1981, pages 781-793

inclusion of poor volume data changed the coefficients of our estimated model. Although the differences were not large, they were statistically significant. We found, however, that our restricted DFA model was more statistically robust, and the estimated coefficients conformed more closely to economic theory. Accordingly, our delivery office efficiency analysis is based on the restricted sample. We also estimated the cost function with aggregated and disaggregated delivery office information, to consider the issue of the five large delivery offices. We found that the results were statistically the same. The table below provides a summary of sample statistics for our proposed DFA cost model using the restricted sample⁶⁵⁷.

Table 336: Restricted sample statistics

	MEAN	ST DEV	MIN	MAX
TOTAL COST	1,664,178	1,465,022	180,822	15,893,587
NDP	20,756	15,893	1,696	210478
BUSNDP	7%	4%	2%	67%
VOLNDP	936	349	399	5699
ROADNDP	16.39	15.92	2.25	176.27
WAGE	6.82	0.47	6.37	8.47
LOCALW	8.52	0.69	6.85	10.46
FRAMES	41	39	0	453
REDIRECTIONS	688	554	0	5333
VEHICLES	17.21	15.76	0	190
DELZONE1	0.04		0	1
DELZONE2	0.24		0	1
DELZONE3	0.48		0	1
DELZONE4	0.23		0	1
DELZONE5	0.01		0	1
ADMDELIV	84%	0.22	2%	100%

Source: LECG analysis based on 1,108 observations

⁶⁵⁷ The percentage of mail that is walk sorted at mail centre, and the average distance between MC and DO where not significant and were excluded from the final model

A.24.11 We also report sample statistics for those 240 delivery offices that Royal Mail classified as having poor volume quality data. It is evident that the structure of the two samples is different, with poor quality data offices being much smaller in terms of costs and scale, with about twice the distance per delivery point, and with a heavier concentration of rural offices.

Table 337: Sample statistics for delivery offices with poor volume data

	MEAN	ST DEV	MIN	MAX
TOTAL COST	707,227	645,460	129,534	4,626,996
NDP	9,915	9,937	867	78,023
BUSNDP	8%	3%	2%	42%
VOLNDP	967	345	498	3,747
ROADNDP	39.15	33.76	2.23	166.63
WAGE	6.74	0.31	6.34	8.40
LOCALW	8.21	0.64	6.84	10.36
FRAMES	24	24	0	212
REDIRECTIONS	282	261	25	1,563
VEHICLES	11	9	-2	55
DELZONE1	0.03		0	1
DELZONE2	0.06		0	1
DELZONE3	0.29		0	1
DELZONE4	0.49		0	1
DELZONE5	0.13		0	1
ADMDELIV	93%	15%	7%	100%

Source: LECG analysis based on 240 observations

A.24.12 Our final DFA model, excludes the 240 delivery offices with poor quality volume data. Our model is presented in the table below. In finalising our model we have also considered two vehicle scenarios: one including vehicles and the other excluding vehicles. Columns 2 to 4 refer to the specification containing the vehicles variable, and columns 5 to 7 to the specification excluding the vehicles variable.

Table 338: Estimated DFA cost equation

Variable	Coeff.	T-ratio	P Value	Coeff.	T-ratio	P Value
Column number	2	3	4	5	6	7
Constant	-2.60	-6.16	0.00	-2.78	-6.71	0.00
WAGE	1.08	10.23	0.00	1.09	10.69	0.00
LOCALW	0.10	1.41	0.16	0.12	1.58	0.12
VOLNDP	0.67	18.63	0.00	0.67	18.15	0.00
NDP	1.01	49.95	0.00	1.02	51.52	0.00
ROADNDP	0.07	4.55	0.00	0.08	5.66	0.00
DELZONE1	-0.08	-1.02	0.31	-0.10	-1.28	0.20
DELZONE2	-0.13	-1.95	0.05	-0.13	-1.99	0.05
DELZONE3	-0.10	-1.58	0.11	-0.10	-1.57	0.12
DELZONE4	-0.12	-1.88	0.06	-0.11	-1.88	0.06
BUSNDP	0.10	6.99	0.00	0.11	7.34	0.00
REDIRECTIONS	0.03	1.58	0.11	0.03	1.59	0.11
FRAMES	-0.002	-1.66	0.10	-0.002	-1.41	0.16
VEHICLES	0.02	2.119	0.03			
Number of observations		1108			1108	
R ²		0.965			0.965	
Adj. R ²		0.965			0.964	

Source: LECG analysis.

- A.24.13 Our analysis satisfies a number of prior views about the nature of the delivery office cost function. With respect to the scale and volume indicators, we note that the coefficient on delivery points (NDP) shows a cost elasticity close to one. This implies that there is close to constant returns to scale on the operation of delivery offices. Other things equal, an office with twice the delivery points should have twice the expenditure. We also find that the coefficient on volume per delivery point (VOLNDP) confirms that economies of density exist. That is, a 10% increase in volume (per NDP) increases labour costs by 6.7% only. The cost elasticity of 0.67 is close to the estimated value of 0.60 reported to us by Royal Mail for its whole business.

A.24.14 With respect to workload per unit of output we find that:

- the coefficient of the log of road length per delivery point (ROADNDP) shows an elasticity of 0.08, meaning that a 10% increase in the road distance between delivery points increases labour costs by 0.8% only. This is small though statistically significant;
- the percentage of delivery points that are businesses (BUSNDP) is highly significant. A 10% increase in the percentage of business delivery points increases labour costs by 1.1%⁶⁵⁸;
- the number of redirections by office has a small effect, though it is not significant at the 5% or even 10% level⁶⁵⁹. We also find that the number of RM2000 sorting frames has a very small coefficient, which is not significant at even 15% significance level. The variables statistical insignificance does not mean that it is necessarily unrelated to costs. It may be that costs would be higher without the RM2000 sorting frames, but that there is not enough variation in the variable for it to be statistically significant in the regression. We have retained all of these variables in the cost equation, since exclusion could lead to a small bias in the efficiency estimate, given prior views from Royal Mail about its relevance; and
- the coefficient for the number of vehicles is inconsistent with economic expectations. If delivery offices substitute vehicles for labour, we would expect coefficient to have a negative sign, which it does not. We accept that vehicles may be an indicator of work that cannot be done on foot or bicycle in ways not captured by other variables. This variable makes only a small contribution to the explanatory power of the model even though it is statistically significant. Given the issues we have raised concerning the quality of this variable, we have excluded it from our analysis. Sensitivity analysis indicates that excluding this variable has an immaterial impact on the overall efficiency results.

A.24.15 The dummy variables for the type of delivery zone (DELZONE1, 2, and 3) are indicators of workload for unit of output. The coefficients provide an assessment of the impact on unit labour costs relative to deep rural areas. We have not tested whether these coefficients can be restricted to be the same, as we do not have a prior view that this should be the case⁶⁶⁰. The delivery zone coefficients can be interpreted as follows:

- DELZONE 1 refers to major city centres. The coefficient indicates that major city centres have delivery office labour costs 10% below those deep rural areas. We find that this variable is not statistically significant at the usual standard of 10% or 5%;
- DELZONE 2 refers to urban centres. The coefficient indicates that urban centres have delivery labour costs approximately 13% below those in deep rural areas. This provides an indication of the associate cost advantage of relatively high population densities;
- DELZONE 3 refers to suburban areas. The coefficient indicates that suburban centres have delivery labour costs approximately 10% below those in deep rural areas. Again, we do not find this coefficient to be statistically significant; and
- DELZONE 4 refers to normal rural areas. The coefficient indicates that normal rural centres have delivery labour costs approximately 12% below those in deep rural areas.

A.24.16 We find that the cost of labour (LWAGE) coefficient is very close to its theoretically expected value of one. This implies that a percentage rise in the wage rate increases costs by the same amount. The competitiveness of local labour market and index of average labour quality (LOCALW) measures the local wage for manual workers. When the competitive wage increases, and everything

⁶⁵⁸ The BUSNDP variable is bounded between zero and one. We have therefore transformed it into an unbounded variable as follows: $BUSNDP = BUSNDP / (0.7 - BUSNDP)$, where 0.7 is just above the highest recorded value for BUSNDP. The logarithm of this unbounded variable enters the regression. To calculate the elasticity of cost with respect to the percentage of business delivery points, one has to multiply the regression coefficient by the ratio $(0.7 / (0.7 - BUSNDP))$

⁶⁵⁹ Technically, the statistical significance level is the "probability of falsely rejecting the null hypothesis" (that the variable has no effect.) The normal standard in the context of testing economic theories is 5%, but this can lead to the danger of falsely accepting the null, which we would wish to avoid this context

⁶⁶⁰ On the contrary, as different delivery zones reflect different population densities, there is an expectation that the coefficients of these dummy variables should be different from one another

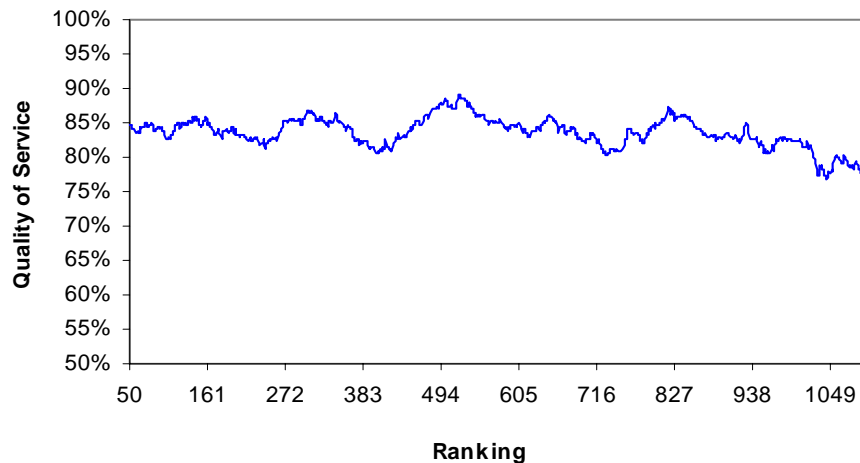
else (including the wage paid by Royal Mail) remains constant, we would expect that the workers pool available to Royal Mail would be less skilled and capable, as the most capable workers would have an incentive to take higher paying jobs. This LOCALW coefficient implies that a 10% rise in the local labour market wage increases Royal Mail's costs by 1%, but it is not statistically significant⁶⁶¹.

A.24.17 We would expect that, other things being equal, a higher quality of service would be compatible with higher costs. If the data reflected different conscious decisions to set a particular quality of service then we should expect quality of service to have a positive coefficient in the regression equation. In this case, it would be reasonable to include a quality of service variable as a cost driver in the regression model.

A.24.18 An alternative view is that delivery office managers struggle to balance quality of service and other operational matters. The more successful ones will tend to have both a higher cost efficiency and a better quality of service. Under this assumption, quality of service is not an exogenous cost driver and should be excluded from the cost equation. In fact, the quality of service variable, measured as the proportion of all due mail delivered on time did have a negative coefficient in the regressions, so we concluded that the second view was the better model we excluded quality of service from our models. We plotted a moving average of quality of service against the efficiency rankings attained from the DFA analysis. The results confirm that the least efficient offices also have the lowest quality of service.

⁶⁶¹ We note that the local wage was obtained by multiplying the local wage ratio by the wage rate paid by the RM. Although the ratio refers to 2002, and the RM wage to 2003, we expect these to change little between years as adjustment to relative wages takes place over an extended period.

Figure 22: Moving average of quality of service against efficiency rankings of delivery offices



Source: LECG analysis

A.24.19 A widely used indicator of a model's explanatory power is the coefficient of determination or R^2 . This measures the proportion of the variability of the dependent variable that can be explained by the variables included in the model⁶⁶². The R^2 of the regression equation is 0.965, meaning that 96.5% of the variability of the dependent variable (that is, total cost) is explained by the model.

A.24.20 We found that only including the scale variable (i.e. the number of delivery points) had an R^2 of 0.84. This suggests that most of the explanatory power is due to this scale variable. The addition of the other variables reduces the unexplained variation from 16% to 3.5%. That is, nearly 80% of the variation in *unit* costs has been explained by the cost driver variables.

A.24.21 The explanatory power of our model is high in comparison with other regulatory efficiency models. For example, many of Ofwat's models have an explanatory power in the range 25% to 45%. The water distribution unit cost equation has an R^2 of 0.26, the water resources and treatment model has an R^2 of 0.27, and the sewerage network model has an R^2 of 0.46.

A.24.22 The delivery office with the largest negative residual is Darwen – which indicates that it is most efficient delivery office. The value of the residual for Darwen is –

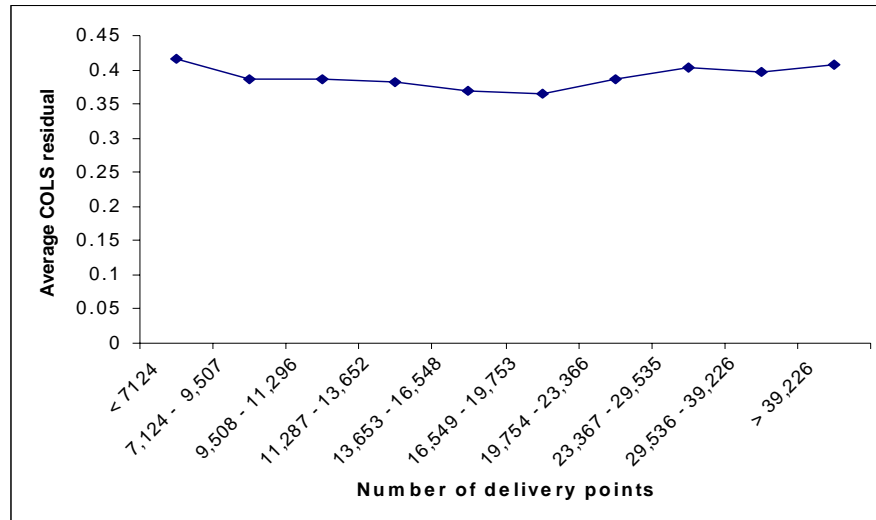
⁶⁶² We understand that the measure can be affected by several factors, including whether the dependent variable has been deflated by a scale

0.50. The fact that the residual of this “best” office is drawn from a random distribution provides us with a strong argument for not using the extreme value as the efficiency benchmark. The DFA residuals follow a random distribution, with mean zero (this is the mean of the residuals of any OLS regression) and standard deviation of 0.133. As a test, we simulated a normal distribution of residuals with the same mean and standard deviation as that of the DFA residuals. From twenty simulations, we obtained a range for the minimum residual between -0.38 and -0.54. This implies that the position of the “best office” benchmark is different in different samples. Such uncertainty, equivalent to 16 percentage points, makes it a poor benchmark.

A.24.23 By comparison, the first decile shows much greater stability as an appropriate efficiency benchmark. This benchmark uses worst delivery office in the top 10%. Simulations of the position of the benchmark residual for the top decile gave a range of only three percentage points, a much more secure basis for setting targets. In other words, the benchmark residual for the top decile is the 110th largest negative residual. The values of the 110th largest negative residual in the 20 normal distributions that we simulated differed by three percentage points only.

A.24.24 This reason, together with the fact that the “best” delivery office has a much higher efficiency (100% by construction) than the second “best” (88%), provides a good reason for using the decile as the benchmark when using a deterministic frontier. We have therefore calculated efficiency scores using the top decile as the efficiency benchmark (i.e. the worst delivery office in the top 10%). Doing this and setting the inefficiencies of the top 10% all to zero, the average inefficiency for all offices falls to 15% of aggregate costs. Appendix 26 provides a summary of the best and worst delivery offices.

A.24.25 In order to assess whether there is a systematic relationship between size and efficiency we have computed the average scores for ten groups of delivery offices, with each group representing one decile of the distribution of the NDP variable. The distribution of inefficiency scores by scale of operation, as measured by the number of delivery points, indicates that very small and very large offices do have higher inefficiency scores. Inefficiency is almost 5 percentage points higher on average in the smallest (and largest) offices with respect to average sized ones. Thus, very small and very large delivery offices perform relatively better than the rest.

Figure 23: Effect of scale on residual

Source: LECG Analysis

Stochastic frontier analysis

- A.24.26 In order to assess the robustness of the DFA estimates and efficiency scores, we have estimated a stochastic frontier model, assuming different functional forms for the inefficiency term.
- A.24.27 SFA can be run with four different distributional assumptions for the efficiency term: half normal, truncated normal, exponential and gamma. The model with the gamma distribution failed to converge. The model with a truncated normal distribution for the efficiency scores had very poor starting values and convergence had to be forced after the maximum number of iterations had been exceeded. The results for the truncated normal have therefore not been reported. Finally, a histogram plot of DFA residuals shows that they do not follow an exponential distribution. Rather they appear to be normally distributed.
- A.24.28 The results for the restricted sample are reported in table below, with insignificant coefficients reported in bold. For ease of comparison, we have also added the DFA results, as presented in Table 215.

Table 339: Estimation results: DFA and SFA

Variable	DFA		SFA (Half Normal)	
	Coeff	T-ratio	Coeff	T-ratio
Constant	-2.78	-6.71	-2.63	-10.45
WAGE	1.09	10.69	1.03	10.67
LOCALW	0.12	1.58	0.10	1.36
VOLNDP	0.67	18.15	0.66	34.32
NDP	1.02	51.52	1.01	135.76
ROADNDP	0.08	5.66	0.08	5.89
DELZONE1	-0.10	-1.28	-0.10	-1.95
DELZONE2	-0.13	-1.99	-0.13	-2.58
DELZONE3	-0.10	-1.57	-0.09	-2.19
DELZONE4	-0.11	-1.88	-0.11	-2.87
BUSNDP	0.11	7.34	0.10	7.43
REDIRECTIONS	0.03	1.59	0.04	12.41
FRAMES	-0.002	-1.41	-0.001	-1.29
N	1108		1108	
Log-L			677.3	
Proportion of error that is inefficiency	1 (implicitly)		0.83	

Source: LECG Analysis

A.24.29 There are two points of relevance regarding these results. First, the coefficients between the two models are very similar; the t-ratios however differ because the SFA model is estimated with maximum likelihood and without adjustments for heteroscedasticity. Second, the proportion of the total error that is attributable to inefficiency, which (by construction) is 100% under DFA, is 83% under the half-normal SFA model. Our efficiency results are reported in the conclusions section below.

Data Envelopment Analysis

A.24.30 The technique used to perform DEA is one of cost minimisation with either constant or variable returns to scale. Since DEA is a non-parametric technique with no agreed model selection process, the choice of variables to include is based upon our econometric analysis, as reported above.

A.24.31 Our DEA analysis was carried out using a program written in Fortran77 by Professor John Cubbin. This was originally developed in 1987 and has been

applied extensively since then⁶⁶³. When comparisons have been possible between other DEA models, its results have been consistent with those using other algorithms.⁶⁶⁴ Professor Cubbin's program has an advantage over other widely available software in that it can incorporate non-controllable factors other than those which have the characteristics of either inputs or outputs (referred to as "non-additive" factors below)⁶⁶⁵.

A.24.32 The software works by using the well-established simplex algorithm to minimise θ subject to the above constraints. To ensure the consistency of the efficiency savings and in keeping with the approach undertaken in the previous section of the study, we have focused on the restricted sample excluding the observations claimed as of poor data quality by Royal Mail.

A.24.33 Our findings show that the number of delivery offices classified as efficient remains consistent over the two separate samples of data, the whole sample and the restricted sample. Not only does the number of efficient offices remain similar but also in the case for constant returns to scale, the set of efficient offices are identical for those offices that are common in both samples. Furthermore, the correlation in the rankings between the two samples is very high at 99.99%.

A.24.34 The table below provides a summary of the efficiency savings for each of the two samples of data under the assumption of constant and variable returns to scale.

⁶⁶³ Professor Cubbin's model has been applied in the Halifax Building Society, the Metropolitan Police, Local Education Authorities, Local Authority refuse collection services, prisons, electricity distribution and Training and Enterprise Councils

⁶⁶⁴ We understand that different numerical values for the same data and model have never been an issue, even in contested cases

⁶⁶⁵ The software allows for six types of variable 1) regular (controllable) input; 2) non-controllable input; 3) non-controllable output; 4) regular (controllable) output; 5) favourable non additive variable; 6) unfavourable non-additive. For types, 1-4 adding together two observations creates values in the composite, which are the *sum* of the two observations (e.g. labour hours or mail volume). For types 5 and 6 the composite will take on the *average* value (e.g. hourly wage rate.) Most other DEA software does not have this capability

Table 340: Summary of efficiency savings under DEA⁶⁶⁶

Sample	Returns to scale	Number of Efficient Offices	Efficiency Savings £'000	Efficiency savings as % of total DO labour cost
Whole Sample	CRS	76	£481,766	23.93%
	VRS	148	£362,358	18.00%
Restricted sample	CRS	80	£404,239	22.32%
	VRS	153	£282,955	15.63%

Source: LECG Analysis

- A.24.35 The criteria for a more efficient group are more restrictive for the variable returns to scale formulation. Under variable returns to scale, the reference group need to be of similar average size to the observation being considered. Consequently, more offices will be classified as efficient, and the scores of the others will be higher under assumption of variable returns to scale. As expected, therefore, the estimated potential efficiency savings under the assumption of variable returns to scale are systematically lower than the projected savings under constant returns to scale. The number of delivery offices identified as efficient has increased considerably, in line with our prior expectation
- A.24.36 In both the whole and restricted samples, the set of efficient delivery offices identified under constant returns to scale remain as the efficient offices under variable returns to scale. Due to the nature of the constant returns to scale specification, we expect the decrease in projected efficiency savings associated with variable returns to scale to be driven by the reclassification of smaller offices as being more efficient.
- A.24.37 The above results do not take any account of the dummy variables relating to delivery zones as used in the regression analysis. Royal Mail has strongly indicated that delivery office location is a key driver of cost in its operations. As such, we have extended our analysis to account for this geographical variability in delivery office location. The regression analysis above indicated that urban, suburban, and rural areas had similar cost levels but major city centres and deep rural areas had higher costs. Consequently, we need to avoid estimating

⁶⁶⁶ These projected efficiency figures are accrued only to the specific set of delivery offices in the sample rather than the entire delivery office network

efficiency savings by comparing a delivery office in a deep rural location with an efficient office located in a suburb or vice versa.

A.24.38 We have split the restricted sample into five sub-samples, reflecting the different delivery zones. The findings are summarised in the table below. The results show that the total projected savings remain relatively consistent across samples and across delivery zones. Based on the assumption of constant returns to scale, the total projected efficiency savings by delivery zones are broadly in line with the findings in Table 340, with no more than a 6.5% difference between the two projected figures for all samples.

Table 341: Summary of efficiency savings by delivery zone under CRS

Delivery Zone	Number of Efficient Offices	Efficiency Savings £'000	Efficiency Savings as % of total DO labour cost
City Centre	25	£7,430	6.18%
Urban	47	£69,438	15.63%
Suburban	44	£239,585	24.71%
Rural	43	£36,659	14.04%
Deep Rural	9	£133	2.33%
Total	168	£353,244	19.61%

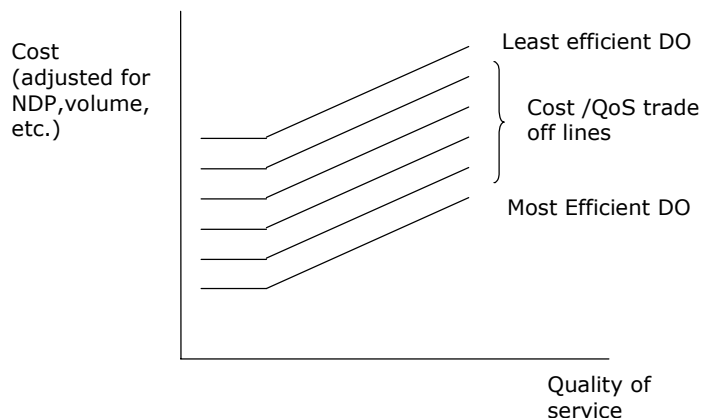
Source: LECG Analysis based on 1108 observations

Appendix 25: Quality of service and empirical relationships

Introduction

- A.25.1 In a perfect world, we might expect to observe 100% quality of service and totally efficient delivery offices⁶⁶⁷. In practice, managerial effectiveness varies and at the margin, managers may face a trade off between cost and quality of service. This is illustrated in the figure below.

Figure 24: Trade offs facing DOs of different efficiencies



Source: LECG

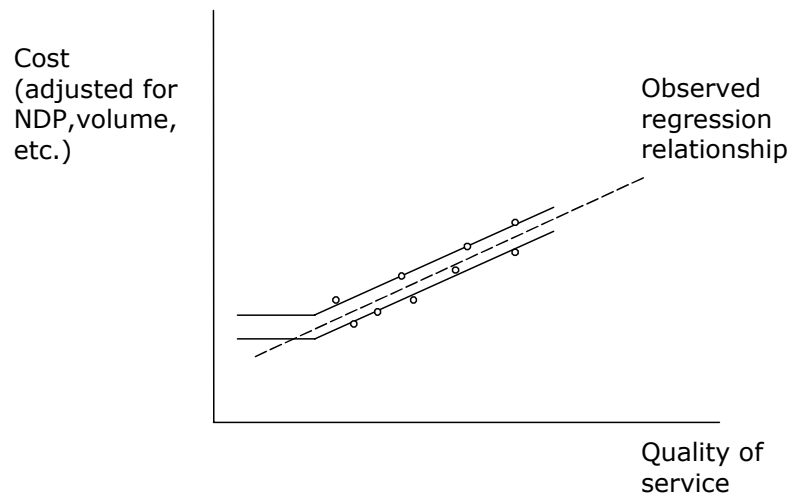
- A.25.2 In this figure, we take the effectiveness of each local deliver office manager as given, but this effectiveness cannot (by assumption) be observed directly.
- A.25.3 Each DO manager can choose to improve quality of service. After some range, where quality *might* be free (not essential to the analysis), it is reasonable to assume that extra quality requires more resources in terms of staff time, etc. Depending on local preferences or guidance from superiors, managers may choose different points on the trade off.
- A.25.4 Now consider some different scenarios. These are not exhaustive, simply for purposes of illustration of the possibilities.

⁶⁶⁷ This Appendix refers primarily to delivery offices, but the principles apply equally to mail centres

Scenario 1

A.25.5 In Scenario 1, we assume little variation in effectiveness and large variation in position of trade off. This is illustrated in the figure below

Figure 2: Scenario 1: Little efficiency variation, costs determined largely by choice of QoS Error!



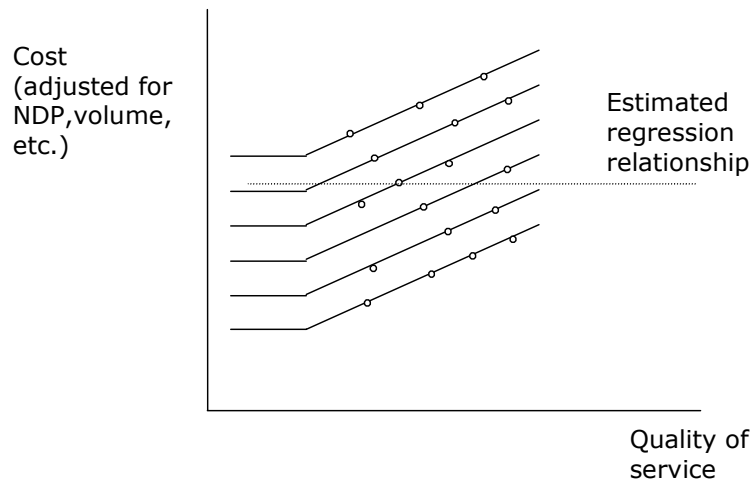
Source: LECG

A.25.6 In this case, we would be able to observe a positive relationship between costs and quality of service reflecting the trade off available to managers.

Scenario 2

A.25.7 Compare this with scenario 2, (in the figure below) where there is a large variation in efficiency, and managers are choosing different points on the trade off. In this case, we may well observe no aggregate relationship between costs and quality of service. We could observe the trade off only if we had data on the (unobservable) management effectiveness variable.

Figure 3: Scenario 2: Large variation in effectiveness, costs dominated by relative effectiveness



Source: LECG

- A.25.8 In Scenario 2, the variation in costs due to variation in the effectiveness of management swamps the cost/ quality of service trade off and no relationship is apparent (unless we have an independent measure of managerial effectiveness for each delivery office).

Scenario 3

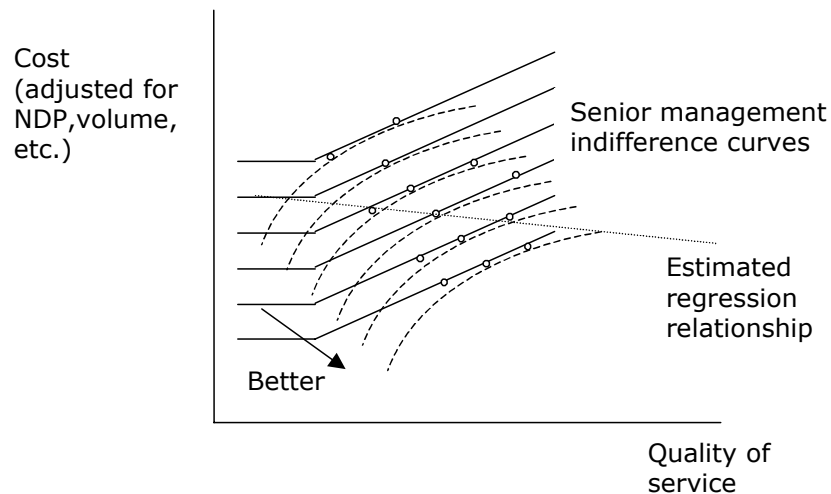
- A.25.9 Scenario 3 is more complicated. We suppose that senior management convey to local management that they prefer both lower costs and higher quality of service. The arrow in the figure below shows the direction of more preferred states.
- A.25.10 In such a case it would be quite possible to see a slight negative relationship between quality of service and adjusted costs, which is roughly what emerges from the regression. Further investigation reveals that this negative relationship seems to be concentrated mainly amongst the highest cost (least efficient) offices.

Some implications

- A.25.11 If it were the case that our benchmark offices were all below average in terms of quality of service this would be a source of upward bias in our estimates of potential efficiency gains.

A.25.12 This is not the case, however. There are delivery offices within the top 10% with extremely good quality of service records. The data would therefore suggest (unless this can be refuted by Royal Mail) that there is some potential for improving both cost efficiency and quality of service at the same time. Indeed, it may well be that for many delivery offices (especially the least efficient) improving managerial effectiveness can be expected to impact positively on both aspects of overall efficiency.

Figure 4: Scenario 3: Large variation in efficiency, costs dominated by relative efficiency, plus managerial preferences



Source: LECG

Appendix 26: Delivery office benchmarking rankings

A.26.1 The table below summarises the top 10% delivery office rankings using DFA.

Table 342: DFA top 10% delivery office rankings

Delivery Office	Rank	Delivery Office	Rank	Delivery Office	Rank
Darwen	1	South Shore	38	Darlington	75
Bingley	2	Morden	39	Sutton-In-Ashfield	76
Northwood	3	Mitcham	40	Sandbach	77
Droitwich	4	Bethnal Green	41	Potters Bar	78
Kingswinford	5	Selby	42	Nantwich	79
Newcastle City	6	Wetherby	43	Northolt	80
Derby and rural	7	Knaresborough	44	Worcester City	81
Washington	8	Deeside	45	Leicester Central	82
Cardiff	9	Epsom	46	Salford	83
Cramlington	10	Homerton	47	Tadcaster	84
Beverley	11	Bristol 1	48	Pinner	85
Blyth	12	Tong Road	49	Houghton Le Spring	86
Northallerton	13	Diss	50	Parkstone	87
Hackney	14	Durham	51	Hucknall	88
Bolton Central	15	Brightlingsea	52	Winsford	89
Bradford North 1	16	Glasgow G1 - G4	53	Thirsk	90
Swadlincote	17	Dore	54	Brechin	91
Shepperton	18	Accrington	55	Hounslow	92
Chertsey	19	Heanor	56	Wednesbury	93
Slaithwaite	20	Romford	57	Heathfield	94
Swan House	21	Hull City	58	Whitstable	95
Poplar	22	Spalding	59	Leicester West	96
Seaham	23	Immingham	60	Alnwick	97
Spennymoor	24	Attleborough	61	Pudsey	98
Port Ellen rural	25	Leytonstone	62	Gainsborough	99
Southall	26	Evesham	63	Congleton	100
Scissett	27	Bourne	64	Shirley	101
North Tyneside	28	Preston West	65	Oldham	102
York Central	29	Morley	66	Swanscombe	103
Manor Park	30	Leicester North	67	Crewe	104
Heaton	31	Gateshead	68	Stowmarket	105
Redfern Park	32	Kings Norton	69	Chiswick	106
Jarrow	33	York Birch Park	70	Hereford and rural	107
Coalville	34	Cleckheaton	71	Hayes	108
Walworth	35	Ashington	72	Earl Shilton	109
Halifax	36	Sheffield South	73	Staines	110
Forest Hall	37	Henley On Thames	74	Aldridge	111

Source: LECG analysis

A.26.2 The table below summarises the bottom 10% delivery office rankings using DFA.

Table 343: DFA bottom 10% delivery office rankings

Delivery Office	Rank	Delivery Office	Rank	Delivery Office	Rank
Bognor Regis	998	Blackpool	1035	Chelmsford	1072
Abingdon	999	South Kensington	1036	High Wycombe	1073
Peacehaven	1000	West Norwood	1037	St Helens	1074
Aylesbury Vale	1001	Newmarket	1038	Hawick	1075
Wimbledon	1002	Polegate	1039	Billericay	1076
Glasgow G33 / 34	1003	Kilburn	1040	Victoria	1077
Orpington	1004	Steyning	1041	Rugby	1078
Eccles	1005	Leighton Buzzard	1042	Nwdo	1079
Hawsworth	1006	Coldstream	1043	Acton	1080
Maidstone	1007	Streatham	1044	Brentwood	1081
Ely	1008	Keith	1045	Waterlooville	1082
Newport East	1009	Glasgow G15	1046	Kings Langley	1083
Gosport	1010	Kiln Farm	1047	Hazel Grove	1084
Slough	1011	Southend-On-Sea	1048	Dagenham	1085
Hove	1012	Glasgow G40	1049	Enfield	1086
Sidcup	1013	WC	1050	Llandrindod Wells	1087
Grange Over Sands	1014	Harlow Sawbridgeworth	1051	Kirkwall	1088
Penzance	1015	Cambridge	1052	Woking	1089
Ware	1016	Watford (WD)	1053	Colwyn Bay	1090
Chislehurst	1017	Birkenhead	1054	West Reading	1091
Putney	1018	Wootton Bassett	1055	Brinklow (Mk)	1092
Paddington	1019	Newhaven	1056	Whitland	1093
Bridge Of Weir	1020	Pangbourne	1057	Leamington Spa	1094
EC1-EC4	1021	Didcot	1058	Ongar	1095
Ashford (Kent)	1022	Saffron Walden	1059	Burnley	1096
Cricklewood	1023	Basildon	1060	Barnet	1097
Barking	1024	Daventry	1061	Lerwick	1098
Okehampton	1025	New Mills	1062	Aylesbury	1099
Hoylake	1026	Carmarthen	1063	Bangor (LI)	1100
Hampstead	1027	Moreton	1064	Broxburn	1101
Stafford	1028	Bath	1065	Prenton	1102
Rainham (Me)	1029	Taunton	1066	Bletchley	1103
Burslem	1030	Henfield	1067	Luton	1104
Wellingborough	1031	Chatham	1068	Sandwich	1105
South Ockendon	1032	Southwark	1069	Dolgellau	1106
Wembley	1033	Loughton	1070	Colchester	1107
Moortown	1034	Hastings	1071	Rothsay	1108

Source: LECG analysis

Appendix 27: Mail centre benchmarking results

A.27.1 In this appendix, we assess the relative efficiency of mail centres using the quantitative techniques discussed above. We first discuss the specification of the delivery cost equation and its functional form. We then present the results of our DFA, SFA and DEA analysis.

Key variables

A.27.2 The list of potential cost drivers for mail centres, which attempts to take into account as many cost drivers as possible, including those identified as relevant by Royal Mail, includes the following variables tested in the regression:

- weighted volume expressed as a natural logarithm (LVOL);
- percentage of inward, outward and total mail which is mechanised (INW_MECH, OUT_MECH, MECH);
- percentage of mail that is walk sorted (WKS)
- total number of sorting machines;
- automation category⁶⁶⁸;
- mail distribution (inward): percentage of mail from RDC (INW_RDC), from the mail centre area (INW_INT), from neighbouring areas (INW_NEI), and from distant areas (INW_DIS);
- mail distribution (outward): percentage of mail to the mail centre area (OUT_INT), to neighbouring areas (OUT_NEI) and to distant areas (OUT_DIS);
- mail centre surface area, in square kilometres (AREA);
- percentage of surface area that is urban (PC_URBAN);
- mail centre floor space, in square meters (SPACE);
- whether the mail centre building has more than 1 floor (MULTI);
- whether there is a delivery office in the mail centre (DODUM);
- whether there is an office of exchange in the mail centre (DODUM);

⁶⁶⁸ This variable has the following values: 1= IMPEX mail centre; 2=IMP mail centre; 3=MTT mail centre; 4=V3 mail centre; 5>manual sorting

- maximum journey time between mail centres, in minutes (MC_MT);
- maximum distance between mail centre and its delivery offices, in kilometres (MC_DO);
- average wage rate paid by Royal Mail (WAGE);
- competitiveness of local labour market/ labour force average quality index which is represented by the variable average local wage rate for manual worker (LOCALW); and
- quality of service measures which capture the percentage of days in which final despatch (QL_DESP), or wave 4c despatch (QL_WAVE4), are completed on time; and
- the quality of service measure for stamped and metered mail delivered on time (QL_STMT).

A.27.3 We chose variables for inclusion in the final equations according to the following criteria. First, we assessed whether the sign of the estimated variable was consistent with our industry knowledge. Second, we tested the statistical significance of each variable. Only variables that were found to be providing additional explanatory power were retained. In line with the normal practice, only variables outside of local management's control were included in the cost equation.

Functional form

A.27.4 We have estimated cost equations for the mail centres using the linear, Cobb-Douglas and trans-log functional forms and have used statistical tests to decide which functional form provides the best empirical fit. Our findings are as follows:

- comparing the linear and the Cobb Douglas functional forms, we found that statistically⁶⁶⁹ the Cobb Douglas fits the data best;
- we estimated both a full and a truncated version of the trans-log form. Even in its truncated form, this model was found to suffer from severe problems of multicollinearity and over-parameterisation. The additional parameters to be estimated added little to the explanatory power of the model and made interpretation of the results more difficult.

⁶⁶⁹ We used the Davidson and McKinnon test, *op. cit*

- A.27.5 It would be hard to have confidence in the efficiency estimates resulting from the use of the trans-log functional form. We have selected the Cobb-Douglas equation as the most appropriate function form.

Deterministic Frontier Analysis

- A.27.6 We have estimated DFA cost equations for 69 mail centres, excluding Belfast mail centre because data on geographic variables (i.e. the percentage of the mail centre area that is urban) are not available for Northern Ireland. We tested whether the inclusion of London Central mail centre produced significantly different estimation results, and potential cost savings. Although the differences in the estimated coefficients of the cost functions when London Central was excluded were not large, they were statistically significant. We found, however, that the potential cost savings for the 68 mail centres other than London Central were similar whether they were computed based on the model that included London Central or on the model that excluded it. For reason of completeness, and to be able to compute potential cost savings for London Central on the same basis, our analysis includes London Central.
- A.27.7 The table below provides a summary of sample statistics for key variables.

Table 344: Mail centre DFA restricted sample statistics

	MEAN	ST DEV	MIN	MAX
TOT_COST	10,189,448	9,379,142	2,073,300	70,377,288
WTD_VOL1	56,178,431	30,703,550	12,279,497	175,593,213
INW_MECH	70%	12%	0%	100%
OUT_MECH	70%	10%	0%	79%
TOT_MECH	70%	10%	0%	82%
PCT_WKS	41%	7%	3%	54%
TOT_EQUI	9.20	4.44	0%	25
INW_RDC	44%	8%	19%	68%
INW_INT	13%	4%	7%	30%
INW_NEI	20%	9%	0%	46%
INW_DIST	23%	6%	13%	45%
OUT_INT	24%	8%	7%	54%
OUT_NEI	35%	14%	0%	62%
OUT_DIS	41%	11%	26%	71%
AREA	3,350	4,598	9	24,982
PC_URBAN	20%	22%	2%	99%
SPACE	13,628	7,454	2,693	42,401
MULTI	12%		0	1
DODUM	72%		0	1
OEDUM	13%		0	1
MC_DO	58.01	62.08	1.75	413.00
MCDIS_MT	511	88	353	690
WAGE	6.82	0.55	6.42	9.15
LOCWAGE	8.41	0.76	6.75	10.48
QL_DESP	88%	11%	41%	100%
QL_WAVE	87%	11%	54%	100%
QL_STMET	90%	3%	75%	95%

Source: LECG analysis based on 1,108 observations

- A.27.8 Our final DFA model is presented in the table below. The estimating sample is composed of 69 mail centres, much smaller than the sample of delivery offices. Due to the size of the sample, it is important not to include unnecessary

parameters, to free up degrees of freedom⁶⁷⁰. Consequently, after testing the hypothesis that the coefficient on the wage is equal to its theoretical value of one⁶⁷¹, we rescaled the dependent variable expressing it as the ratio of total staff costs to the wage rate paid by Royal Mail. This reduced the number of explanatory variables by one.

Table 345: Mail centre estimated DFA cost equation

Variable	Coefficient	T-ratio	P Value
Constant	-8.71	-5.39	0.00
Dummy for small MCs	5.02	2.58	0.01
Volume	1.25	13.98	0.00
Volume * Dummy for small MCs	-0.28	-2.63	0.01
Percent of intra-MC inward mail	0.81	1.61	0.11
Percent of mail that is walk sorted at MC	0.89	3.05	0.00
Percent of MC area that is urban	0.39	3.86	0.00
Number of observations		69	
R ²		0.959	
Adj. R ²		0.955	

Source: LECG analysis

- A.27.9 Statistical testing showed that the impact of mail volume on costs, that is the scale elasticity, is different between small and large offices. The cost function for mail centres, therefore, allows two different scale elasticities: one for large offices (i.e. which is given by the coefficient on “Volume”), and one for small offices (i.e. which is equal to the sum of the two coefficients, “Volume” and “Volume * Dummy for small MCs”).
- A.27.10 We tested a number of different scenarios, and found that the scale elasticity becomes bigger than one at around the median value for the volume variable. Consequently, small mail centres are defined as those 35 with weighted volume below the median value. Large mail centres have an output elasticity of 1.25,

⁶⁷⁰ Given the small number of observations, we need to consider the “degrees of freedom” in the estimated equation. This technical issue constrains the number of explanatory variables that can be included in the regression

⁶⁷¹ This means that the wage elasticity of total cost is one (i.e. a 1% wage increase rises costs by 1%)

which indicates that they suffer from diseconomies of scale. That is a 10% increase in volume would increase staff costs by 12.5%. Small mail centres have an output elasticity of 0.96⁶⁷². That is a 10% increase in volume would raise staff costs by 9.6%.

A.27.11 With respect to the measures of workload per unit of output, we found that:

- Mail distribution variables might have an impact on the time window by which the mail has to be sorted and therefore on costs. These variables were all found to be insignificant, but the coefficient on percent of intra-MC inward mail is only marginally insignificant. We incorporated this variable in the final regression to maximise the explanatory power of the model.
- Sorting can take place at different levels: to other mail centres, to delivery offices, to the level of the individual postal delivery walk. The final sort, in delivery order, is typically done in the delivery office. Higher levels of walk sorted mail indicate a greater degree of processing than lower levels of walk sorted mail. The coefficient indicates that a 10% increase in the percentage of mail that is walk sorted at the mail centre increases total staff costs by around 9%.
- Royal Mail provided other measures for mechanisation, including percentages of inward and outward mail that is mechanised, the number of machines and the automation category for each mail centre. When included in the regression, however, the coefficients on each variable implied that mail centres with higher levels of mechanisation had higher associated levels of labour cost. This is counter-intuitive. It could mean that measures of mechanisation might be related to an additional cost driver(s), which affect costs positively, but have not been provided nor mentioned as a possible driver, by the Royal Mail. An alternative explanation is that for some reason connected with management methods greater mechanisation is associated with lower efficiency.
- The percentage of the “mail centre surface area that is urban” influences sorting costs because it has an impact on the time window available for sorting. The more urban the area is, the more congested, and the smaller

⁶⁷² In order to derive the scale elasticity for small mail centres, one has to add the two volume coefficients. The sum of these two coefficients, that is 1.25–0.29 is 0.96. The implied t-ratio is 13.8, which is significant at 1%.

the time window available for sorting. A 10% increase in the percentage of mail centre area that is urban increases total staff costs by 3.9%.

- A.27.12 We found statistical support for the hypothesis that the wage elasticity of costs is equal to one. We could not find evidence, however, that the local external wage for skilled manual workers has an impact on mail centres costs. This might be because workers at mail centres are operating under close supervision, and any deficiencies in practice can be more easily spotted and corrected than is the case, for example, with delivery office personnel.
- A.27.13 We would expect that, other things being equal, a higher quality of service would be compatible with higher costs. If the data reflected different conscious decisions to set a particular quality of service then we should expect quality of service to have a positive coefficient in the regression equation. In this case, it would be reasonable to include a quality of service variable as a cost driver in the regression model. An alternative view is that mail centre managers struggle to balance quality of service and other operational matters. The more successful ones will tend to have both a higher cost efficiency and a better quality of service. Under this assumption, quality of service is not an exogenous cost driver. As such, it should be excluded from the cost equation. We found that all three quality of service variables had negative coefficients in the regression. As such, we concluded that the alternative view was more likely to explain the impact of quality of service, and we have excluded quality of service from our model.
- A.27.14 The value of the (adjusted) coefficient of determination of our model is 0.959. This means that the cost drivers included in our model explain 95.9% of the variability of the rescaled cost variable. This increases to 96.2% if the wage variable is included in the regression, with total staff costs as dependent variable.
- A.27.15 We found that when we included the scale variable only (i.e. the two volume variables) the R^2 of the total cost regression was 0.923. This suggests that most of the explanatory power is due to this scale variable. The addition of the other variables reduces the unexplained variation from 7.7% to 3.8%. That is, nearly 50% of the variation in *unit* costs has been explained by the cost driver variables.
- A.27.16 We also tested that the distribution of the residuals conforms to a normal distribution, and statistical tests do not reject the hypothesis that it is strictly normal. The largest negative residual, which has a value of -0.2764 , is drawn

from a random distribution with mean zero and standard deviation of 0.1317. Twenty simulations of normal distributions with mean zero and standard deviation 0.1317 yielded a range of minimum values (residuals) between -0.22 and -0.43, that is a range equivalent to 21 percentage points. This implies that the position of the “best office” benchmark is different in different samples, and varies widely, and makes it a poor benchmark.

A.27.17 By comparison, the first decile shows much greater stability as an appropriate efficiency benchmark. This benchmark uses worst mail centre in the top 10% that is the seventh largest negative residual, which has a value of -0.1755. Simulations of the position of the benchmark residual for the top decile gave a range of seven percentage points, a much more secure basis for setting targets.

A.27.18 This reason, together with the fact that the “best” mail centre has higher efficiency (100% by construction) than the second “best” (93%), provides a good reason for using the decile as the benchmark when using a deterministic frontier. We have therefore calculated efficiency scores using the top decile as the efficiency benchmark (i.e. the worst mail centre in the top 10%). Doing this and setting the inefficiencies of the top 10% all to zero, the average inefficiency for all offices falls to 16% of aggregate costs.

A.27.19 The potential cost savings presented in Table 222 on page 367 are calculated directly from the residuals of the DFA regression, and therefore are based on separate scale elasticities for large (1.25) and small (0.96) mail centres. We have estimated the potential for further cost savings, under the assumption that Royal Mail could achieve the same scale elasticity for large offices as for small ones. These are cost savings that should be achievable in the medium term. The table below shows potential cost savings by decile under the assumption that large and small mail centres had the same elasticity of scale of 0.96.

Table 346: DFA medium term mail centres potential savings assuming that mail centres have the same elasticity of scale of 0.96

Decile	Average Efficiency	Average mail centre saving £'000	Total mail centre savings £'000
1	100%	-	-
2	97%	218	1,523
3	93%	417	2,921
4	88%	844	5,910
5	85%	1,192	8,346
6	81%	1,234	8,639
7	76%	2,201	15,407
8	71%	3,540	24,780
9	67%	5,692	39,844
10	58%	12,265	73,589
Total	82%	2,623	180,959

Source: LECG analysis

A.27.20 Potential cost savings increase from a short-term value of £124.8m to a medium-term value of £181m. The increase in cost savings that could be achieved eliminating the diseconomies of scale in large offices is therefore of the order of £55m. This calculation is subject to caveats we have already mentioned about countervailing benefits elsewhere in the system and the possibility that large centres undertake additional work not accounted for here.

Stochastic frontier analysis

A.27.21 In order to assess the robustness of the DFA estimates and efficiency scores, we have estimated a stochastic frontier model, assuming different functional forms for the inefficiency term.

A.27.22 SFA can be run with four different distributional assumptions for the efficiency term: half normal, truncated normal, exponential and gamma. We ran SFA with the half normal distribution for the efficiency term. The results are reported in table below, with insignificant coefficients reported in bold.

Table 347: Estimation of SFA cost equation

Variable	Coefficient	T-ratio
Constant	-9.30	- 5.17
Dummy for small MCs	5.25	2.56
Volume	1.27	12.60
Volume * Dummy for small MCs	-0.29	-2.60
Percent of intra-MC inward mail	0.85	1.29
Percent of mail that is walk sorted at MC	0.91	3.98
Percent of MC area that is urban	0.37	3.83
N	69	
Log-L	43.11	
Proportion of error that is inefficiency	0.89	

Source: LECG analysis

- A.27.23 There are two points of relevance regarding these results. First, the coefficients between the SFA and DFA models are very similar. The t-ratios differ because the SFA model is estimated with maximum likelihood. Second, the proportion of the total error that is attributable to inefficiency, which (by construction) is 100% under DFA, is 89% under the half-normal SFA model.

Data Envelopment Analysis

- A.27.24 The technique used to perform DEA is one of cost minimisation with either constant or variable returns to scale. Since DEA is a non-parametric technique with no agreed model selection process, the choice of variables to include is based upon our econometric analysis, as reported above.
- A.27.25 Our findings show that, as expected, the number of mail centres classified as efficient increases as we go from constant to variable returns to scale. The table below provides a summary of the efficiency savings under the assumption of constant and variable returns to scale. Under constant returns to scale, 22% of mail centres are classified as efficient. This proportion increases to 41% under variable returns to scale.

Table 348: Summary of efficiency savings by mail centre, £000s

Type of returns to scale	Number of efficient mail centres	Efficiency Savings	Efficiency savings as % of total MC labour cost
Constant	15	£122,570	17.4%
Variable	28	£58,925	8.4%

Source: LECG analysis based on 69 observations.

- A.27.26 The set of efficient mail centres identified under constant returns to scale remain as the efficient centres under variable returns to scale. Due to the nature of the constant returns to scale specification, we expect the decrease in projected efficiency savings associated with variable returns to scale to be driven by the reclassification of the smallest and the largest mail centres as being more efficient. The smallest six and largest five are classified as 100% efficient under CRS.
- A.27.27 London Central is classified as an efficient mail centre under both constant and variable returns to scale. Its elimination from the sample has no impact on either the efficiency rankings or the potential cost savings, which remain constant. The potential cost savings implied by DEA are not therefore driven by savings at London Central.
- A.27.28 In order to understand why London Central appears efficient on the DEA we need to examine what DEA actually does. The program analyses each mail centre in turn. It searches (in a systematic way) to find a set of other mail centres that between them (i.e. when combined) are clearly better performers. That is, they must produce at least the same output, using no more of the input, in an "environment" which is no more favourable.
- A.27.29 In our case, the input is simply cost (deflated by the local RM wage) and the output is simply weighted volume. The environmental - or strictly, non-controllable - variables are:
- the percent of the area which is urban
 - the percentage of inward mail that is from intra mail centres; and
 - percentage of automated mail to walk sorted level.

- A.27.30 All these variables are specified in such a way that an increase in their value raises costs.
- A.27.31 The inclusion of more variables increases the number of mail centres classified as efficient, and one of the reasons is that outliers on specific features tend to get classified as efficient simply on account of being outliers. One of the clues is that, although they have a score of 1.00, they are rarely cited in the reference groups of other mail centres. Thus, the top four mail centres in the urban rankings are London Central, West, South, and East. The top two and the fourth receive an efficiency score of 1.00, but only London East (the fourth) is cited in the reference groups of many other mail centres. London South is the only mail centre to cite London West.
- A.27.32 In the case of intra MC inward mail, the first rank is Edinburgh, with a score of 1.00, but only one citation, which is Newcastle, the number two ranked centre on this variable. The third ranked on this variable is Aberdeen, which is in fact cited 12 times in other centres' analyses.
- A.27.33 The final non-controllable variable is the percentage of MC mail that is walk sorted. The top three on this variable are Bolton (cited twice), Bradford (cited once), and Oldham (cited 11 times).
- A.27.34 In summary, out of the 70 mail centres analysed, London Central, London West, Edinburgh, Bolton, and Bradford, would be suspected of being falsely classified as efficient by the DEA. Of these, the regression analysis classifies London Central, London West, and Bolton as below average, Edinburgh as around the median, and Bradford as being of above average efficiency. Aberdeen and London East, which receive several citations, appear as above average in the regression analysis.
- A.27.35 The few "false efficient" branches, such as London Central, which occur because they tend to be larger than average, may make a significant impact on the level of attainable cost savings attainable as calculated by the DEA. These considerations also explain why the correlation between the regression scores and the DEA scores, although high and positive, is not very close to 1.00, and the reason why we carry out alternative approaches, each with their strengths and weaknesses.

Appendix 28: Mail centre benchmarking rankings

A.28.1 The table below summarises mail centre rankings using DFA.

Table 349: DFA mail centre rankings

Mail Centre	Rank	Mail Centre	Rank
Greenford	1	Hull	36
Coventry	2	Hemel Hempsted	37
Jubilee	3	Canterbury	38
Stevenage	4	Preston	39
Nottingham	5	Tonbridge	40
Chester	6	Worcester	41
Derby	7	London South	42
Cambridge	8	Stockport	43
Inverness	9	Plymouth	44
Bradford	10	Ipswich	45
Darlington	11	Maidstone	46
Gloucester	12	Wolverhampton	47
Leicester	13	Crewe	48
Oldham	14	York	49
Teesside	15	Newcastle	50
Portsmouth	16	London West	51
London East	17	Bolton	52
Aberdeen	18	Glasgow	53
Reading	19	Swansea	54
Gatwick	20	Shrewsbury	55
Oxford	21	Carlisle	56
Doncaster	22	Romford	57
Slough	23	Sheffield	58
Southampton	24	Liverpool	59
Birmingham	25	Bournemouth	60
Leeds	26	Watford	61
Manchester	27	London Central	62
Dartford	28	Milton Keynes	63
Croydon	29	Northampton	64
Guildford & Farnborough	30	Truro	65
Cardiff	31	Southend	66
Norwich	32	Bristol	67
Peterborough	33	Chelmsford	68
Exeter	34	Swindon	69
Edinburgh	35		

Source: LECG analysis

Appendix 29: Comparability of Regulatory Accounts

Introduction

- A.29.1 Historical trend analysis of Royal Mail's regulated business is complicated by changes in the format and structure of the Regulatory Accounts. The way in which we have dealt with each is summarised below.
- A.29.2 The 2003/04 Regulatory Accounts are the fourth set of statements prepared for submission to Postcomm. Royal Mail is required, under Condition 14 of the licence granted by Postcomm on 23 March 2001, to provide regulatory financial statements. At a high level, we understand that the scope, the broad basis of preparation and the format of the accounts have been agreed by Postcomm⁶⁷³.
- A.29.3 During 2003/04, Royal Mail changed the format and required disclosures of the Regulatory Accounts. These changes were agreed by Postcomm. In the 2003/04 regulatory financial statements, revenues and costs are split by: "Total USO", "Total Price Control Products", "Other Letter Products" and "Total Mails". Previously revenues and costs were split by: "Licensed USO", "Non-licensed USO", "Non-licensed Non-USO" and "Non Postal Services"⁶⁷⁴.
- A.29.4 Non Postal Services included non-mail products such as the Post Office® and philately stamp services. Costs and revenues relating to such products are excluded in the 2003/04 Regulatory Accounts. Each area of business in the 2003/04 Regulatory Accounts can be defined as follows:
- **Total USO** covers all products and services which form part of the USO as stated under Condition 2 of Royal Mail's licence;
 - **Total Price Control Products** covers postal products and services which are regulated under Condition 19 of Royal Mail's licence;
 - **Other Letter Products** covers postal products and services outside of the USO and the Price Control, such as door-to-door; and

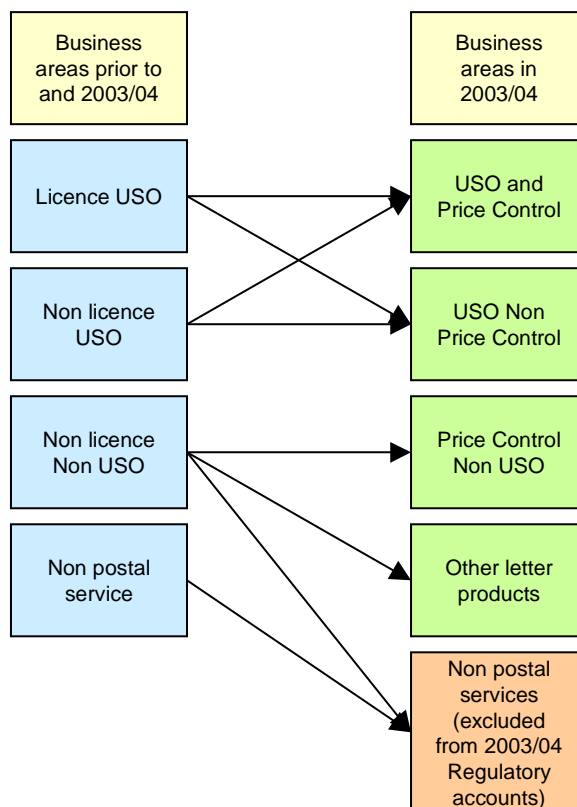
⁶⁷³ The breakdown of costs and revenues in the accounts has been agreed by Postcomm as suitable for Regulatory Accounts presentation purposes. We understand, however, that more information would be required for complex decisions on issues such as cost allocation

⁶⁷⁴ RM's 2002/03 accounts split "Non postal services" between "Other letter products", and "Other"

- **Total Mails** covers total USO, price control products and other letter products.
- A.29.5 Certain products and services are included in both Condition 2 and Condition 19 – and therefore, the Total Mails total is not derived through the simple addition of Total USO and Total Price Control. Appendix 1 provides an overview of the relationship between USO, price-controlled and other products and services, and explains which products and services fall into each category.
- A.29.6 The 2003/04 accounts restate 2002/03 onto a comparable basis. Each area of business identified in Regulatory Accounts prior to 2003/04 can be defined as follows:
- Licensed USO covered postal products, which form part of the USO, and are below or equal to the licensed weight threshold (i.e. 0 to 350 grams);
 - Non-Licensed USO⁶⁷⁵ covered postal products that form part of the USO, and are above the licensed threshold (i.e. above 350 grams);
 - Non-licensed Non-USO covered all other UK postal services that do not fall into the previous two categories, and includes non-USO price controlled products such as Presstream, Other Letter Products such as Door-to-Door and express parcels; and
 - Non-Postal Services covers the remaining UK services such as counter services and philatelic sales – which are excluded from the 2003/04 Regulatory Accounts. Between 2000/01 and 2002/03, Non-Postal Services comprised on average 21.6% of revenues and 22.9% of operating costs, as stated in the Regulatory Accounts.
- A.29.7 The figure below shows the mapping of business areas included in the Regulatory Accounts before 2003/04 to the current 2003/04 accounts.

⁶⁷⁵ The addition of Licensed and Non Licensed USO equates to Total USO as defined in the 2003/04 Regulatory Accounts

Figure 25: Mapping of Royal Mail's Regulatory Accounts business areas



Source: LECG analysis. Note: Elements of Licence USO and Non-licence USO products are "USO non Price Control" in 2003/04. Parcel costs formed an element of "Non licence Non USO" products prior to 2003/04, these costs are excluded from the 2003/04 Regulatory Accounts and are included as "Non postal services" in 2003/04. Non-Postal costs are excluded from the 2003/04 Regulatory Accounts.

A.29.8 The table below summarise the reported costs contained within the 2001/02 and 2001/02 Regulatory Accounts.

Figure 26: Mapping of Royal Mail's Regulatory Accounts business areas

£m	Licence USO	Non licence USO	Non licence Non USO	Non postal service	Total Mails
2000/01	4,540	712	1,161	1,809	8,222
2001/02	4,910	845	1,102	1,875	8,494

Source: Royal Mail's Regulatory Financial Statements 2000/01 to 2001/02

A.29.9 The table below summarise the reported costs contained within the 2003/004 Regulatory Accounts.

Table 350: Regulated operating costs, before exceptional items in nominal terms 2002/03 to 2003/04

£m	Total USO	Total Price Control	Other Letter Products	Total USO Non Price Control	Total Mails
2003/04	5,480	5,502	414	179	6,095
2002/03	5,510	5,433	363	245	6,041

Source: Royal Mail's Regulatory Financial Statements 2003/04, 2002/03 has been restated in 2003/04 accounts. Notes: Total USO includes £245m (2002/03) and £179m (2003/04) of USO Non Price Control products and services. Total Price Control includes £168m (2002/03) and £201m (2003/04) of non-USO Price Control products and services.

A.29.10 Total Mails for 2003/04 is the aggregation of Total Price Control, Other letter products and USO non-price control products (i.e. £179m). Total includes £179m of USO Non Price Control products and services.

A.29.11 Royal Mail's 2003/04 Regulatory Accounts are stated excluding non-postal services, such as the Post Office® and Parcelforce. To derive a comparable dataset, all non-letter services must be excluded from historical Regulatory Accounts. Unfortunately, the 2000/01 and 2001/02 statements include parcel related costs within Non Licensed Non USO products and services. At this stage, Royal Mail has been unable to provide us with the historical level of parcel costs. Consequently, we have been unable to use the Regulatory Accounts as the basis for historical trend analysis. In fact, in note G to the 2003/04 accounts, Royal Mail states: *"Royal Mail continues to develop its information systems and data sources. The accuracy of information has continued to improve during the year and further improvements will be made in future years. Prior year information has not been restated to reflect these improvements. As a consequence of these improvements in costing methodologies and data accuracy, results may not be directly comparable."*

A.29.12 Due to this limitation, we have used figures produced by Postcomm as the basis of our historical cost trend analysis. The operating costs presented below cover Royal Mails' regulated activity costs as prescribed in Condition 2 and 19 of Royal Mail's license (i.e. excluding Non-USO Non-Price Control products).

Appendix 30: Calculation of TFP trends

Introduction

A.30.1 This appendix sets out the methodology we have used to calculate total factor productivity (TFP) growth. We have calculated TFP growth using two complementary approaches: a compound annual growth rate (CAGR) and an econometric growth trend. Using both a CAGR and an econometric trend is consistent with the approach taken by Europe Economics in their efficiency review of water and sewerage companies for Ofwat⁶⁷⁶.

Calculation of Compound Annual Growth Rate

A.30.2 One of the simplest ways of estimating a trend is to calculate a CAGR. The CAGR formula calculates the average year-on-year growth rate for data series over a specified period of time. We have used the standard CAGR formula, as set out below:

$$\left(\frac{Y_t}{Y_1} \right)^{\left(\frac{1}{t-1} \right)}$$

where Y_t is the value at year t ;

Y_1 is the value at year 1 (i.e. the initial value);

t is the number of years for which there are observations.

A.30.3 The CAGR formula is simple, and the only inputs to the calculation are the values of the data series in the first and last periods. However, this simplicity of the formula may mask the true underlying trend in the data series. This is particularly a concern in situations where the data series is very volatile and the first and last observations may not be representative of the underlying growth.

Calculation of an Econometric Trend

A.30.4 The calculation of an econometric trend avoids this problem of the CAGR formula. An econometric trend calculates the rate of change in a data series

⁶⁷⁶ "Scope for efficiency improvement in the water and sewerage industries- report for Ofwat by Europe Economics", Ofwat, March 2003

using data on each period rather than only the first and last observations. This is achieved through regression analysis.

- A.30.5 To calculate the econometric trend for TFP growth we have used two variants of linear regression – one assuming an independent normally-distributed error term, and one assuming a correlated error term. The first variant, in which we assume that the error term is independent and normally-distributed, takes the form:

$$\ln(Y_t) = a + bt + u_t$$

where a is the constant term;

b is the coefficient for the linear time trend t expressed in logarithms;

u_t is the independently distributed error term in year t .

- A.30.6 Under the second variant, we assume the current error term to be serially correlated with errors in previous years. We use the Newey West estimation process to take into account the correlation in the error terms. This method in essence corrects the standard errors in the first model and is the most appropriate method where the correlation between time periods is not well defined, as in this case.

To estimate these two econometric trends, we used the Limdep econometric software package. We calculated an annual TFP growth rate from the Limdep output using the formula $(e^b - 1) * 100\%$ where 'b' is the coefficient of time. Since the second variant only corrects for standard errors, the coefficient of time remains unaffected and therefore the econometric trend is identical for both variants when applied to any data set. However, in certain situations the second variant is required in order to correctly determine whether the estimation of 'b' is statistically significantly different from zero.

Calculation of weighted average TFP growth rates

As shown in Section 24, in addition to calculating TFP growth rates for the two periods 1974-1999 and 1990-1999, we also calculated a weighted average TFP growth rate. For our weighted average calculation, we used the TFP growth rates for the two periods above and weighted them according to the number of years in the period. Therefore, the first series, which contains all observations from 1974-

1999, has 26 observations, while the second series, which contains observations from 1990-99 only, has 10 observations. Accordingly, the formula we have used to calculate the weighted average TFP growth rate is:

$$WATPF_{74-99} = \frac{26 \times TFP_{74-99} + 10 \times TFP_{90-99}}{36}$$

Thus, each observation in the two samples has equal weighting and we have placed greater weight on more recent TFP growth rates in the period 1990-1999.

Appendix 31: Country statistical and postal operator data

Introduction

A.31.1 In this appendix, we provide summary data and metrics for a number of international postal companies.

Key statistical data

A.31.2 The table below summarises key statistical data – at a country level.

Table 351: Country statistical data

	Population (million)	Surface Area (‘000 km ²)	Density (pop’n per km ²)	Urban (% of pop’n)	GDP (\$ bn)	GNI (\$ per capita)
Australia	20	7,741	3	92	518	21,650
Belgium	10	33	314	97	302	25,820
Canada	32	9,971	3	80	834	23,930
Finland	5	338	15	61	162	27,020
Germany	83	357	231	88	2,401	25,250
Holland	16	41	395	66	512	26,310
Italy	58	301	192	67	1,466	21,560
New Zealand	4	271	15	86	76	15,870
Norway	5	324	14	79	222	43,350
Portugal	10	92	111	55	149	12,130
Sweden	9	450	20	83	301	28,840
Switzerland	7	41	179	68	309	39,880
UK	59	245	242	89	1,795	28,350
United States	291	9,364	31	80	10,882	37,610

Source: All these figures are taken from World Bank statistics www.worldbank.org and relate to figures for 2003.

A.31.3 The final figure is the GNI per head according to the Atlas formula (more information on this can be found on the World Bank site). These figures give an indication of the level of economic activity and average individual income levels.

A.31.4 The following table summarises key country postal operator data.

Table 352: Country postal operator data

	Volume of letters per year (bn)	Number of delivery points (m)	Number of Post Offices	Number of employee (FTE)	Number of delivery offices	Number of mail centres
Australia	5.0	9.7	3,853	26,394	316	35
Belgium	3.7	4.5	1,352	30,824	545	5
Canada	10.7	13	7,000	46,772	500	19
Finland	0.8	2.5	1,346	15,440	550	8
Germany	20.8	40	13,514	207,400	3,300	82
Holland	5.4	7	2,577	20,557	525	6
Italy	6.3	13.3	13,728	150,746	5,520	106
New Zealand	1.0	1.7	1,012	17,500	164	23
Norway	2.6	2.3	1,478	24,544	320	12
Portugal	1.0	N/A	3,537	14,704	409	9
Sweden	5.3	4.3	3,000	36,068	650	13
Switzerland	2.9	3	2,722	31,916	90	18
UK	20.7	27	15,868	155,226	1,403*	72
United States	189.4	142	37,579	729,035	37,579	347

Source: UPU Statistics www.upu.org; company web sites; company annual reports; recent benchmarking presentations or research (in a small number of cases only). Most figures refer to 2003. *Excludes SPDOs.

- A.31.5 Volumes relate to all letter mail, however definitions are inconsistent. Where possible, newspapers and unaddressed items are excluded.
- A.31.6 The number of delivery points includes residential and business delivery points but excludes PO Boxes in most cases.
- A.31.7 The number of post offices includes all permanent retail outlets. Once again definitions are inconsistent, but where possible this figure includes both owned branches and branches run on an agency basis.
- A.31.8 The number of employees is usually expressed as an average figure for the year. Where possible this figure relates to the number of full time equivalents, but where we have had to take figures from annual reports the figure usually relates to an absolute headcount number, unadjusted to the number full time equivalent.

In some cases, these figures include employees who are engaged in other kinds of business activity (e.g. parcels, logistics, express etc), but we have excluded these totals where possible.

A.31.9 The number of delivery offices figure in most cases captures the number of main operational units or depots from which delivery occurs. In some cases, however, this figure includes many retail sites from which the delivery takes place, but is just a small part of their function.

A.31.10 The number of mail centres figure is calculated on a more consistent basis between countries, but again there are some inconsistencies in what should be included in the number.

Comparison of key ratios

A.31.11 The table below calculates some key ratios relating to the country postal data above.

Table 353: International comparison of key postal operational ratios

	Delivery points per delivery office ('000)	Delivery points per square km	Volume per employee ('000 /year)	Delivery points per mail sorting centre ('000)	Delivery offices per mail sorting centre	Population served per mail sorting centre ('000)
Australia	31	1	188	277	9	568
Belgium	8	136	120	900	109	2,070
Canada	26	1	229	684	26	1,665
Finland	5	7	53	313	69	651
Germany	12	112	100	488	40	1,007
Holland	13	171	262	1,167	88	2,703
Italy	2	44	42	125	52	544
New Zealand	10	6	57	74	7	174
Norway	7	7	107	192	27	380
Portugal	N/A	N/A	67	N/A	45	1,132
Sweden	7	10	147	331	50	689
Switzerland	33	73	91	167	5	408
UK	19	110	134	375	19	823
United States	4	15	260	409	108	839

Source: LECG