

Revolutionising Digital Public Service Delivery: A UK Government Perspective

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Abstract

For public sector organizations across the world, the pressures for improved efficiency during the past decades are now accompanied by an equally strong need to revolutionise service delivery to create solutions that better meet citizens' needs; to develop channels that offer efficiency and increase inclusion to all citizens being served; and to re-invent supply chains to deliver services faster, cheaper, and more effectively. But how do government organisations ensure investment in digital transformation delivers the intended outcomes after earlier "online government" and "e-government" initiatives produced little in terms of significant, sustainable benefits? Here we focus on how digitisation, built on open standards, is transforming the public sector's relationship with its citizens. This paper provides a perspective of digital change efforts across the UK government as an illustration of the improvements taking place more broadly in the public sector. It provides a vision for the future of our digital world, revealing the symbiotic relationship between organisational change and digitisation, and offering insights into public service delivery in the digital economy.

1. Introduction

Public sector agencies across the world are attempting a transition from closed, top-down, bureaucratic, and paper-based transactional models towards online, integrated digital offerings that encourage a new kind of interaction between citizens and the state. This journey towards "digital public service delivery" appears to be reaching a critical point where the confluence of citizen demand for greater speed and more transparency in service delivery is being met with increased appetite within the public sector to deliver services in more innovative ways through the use of open technologies, an increased involvement of smaller companies, and more agile delivery practices [1].

The context within which this digital public services revolution is occurring is the much broader transformation taking place in our personal lives and how we conduct business – driven by a constant stream of digital technology changes, optimised production practices, and flexible global delivery models. There has been a sea change in the way consumers expect to use technology [2]: it has become cheap, easy to use, consumable like a utility, always on, mobile, and open (working seamlessly with everything else). At home, we have become sophisticated consumers and users of such technologies, and of the flexibility and freedoms these enable. Consequently, there is an increasing demand to see these same benefits realised in public services as everywhere else.

One driver of this digital transformation has been the use of technology platforms, whether these are proprietary (like Apple's iOS) or more open (like Google's Android). Such platforms provide standardised environments that stimulate whole ecosystems of businesses to build products and services, attracted by the volume of demand that these platforms generate. Platforms can drive astonishing rates of innovation, investment, choice and competition. However, until recently very little of this platform-based thinking – and its associated benefits – have been taken up within our public services. The contrast between these emerging business models based on digital platforms

and our public services is stark: the latter are underpinned by idiosyncratic processes, point solutions, top-down assumptions about users' needs, and out-dated systems.

The challenge is to build an understanding amongst public officials of the radical impact that common service platforms might have on their operations and organisational models. There continues to be a general lack of understanding of how digital models of public service design can deliver agile, easy-to-use, consumerised services at lower cost and in a way that emulates our daily experiences in the private sector. This lack of understanding – and the missed opportunity for public services – crystallises the need to build a common view of what the transition to digital public service delivery actually involves. Most importantly, digital technology needs to impact and influence the design and operation of public services as they are being developed and evolved, rather than being applied merely as a means of automating an existing process.

In response, this paper first summarises the history of previous attempts to date to implement technology-based service transformation within UK government, since part of understanding “digital” lies in building a clear view of how it is different from these (the “why”). Second, the paper develops these insights into a discussion of the objectives of digital services, and of digital business models that enable achievement of these objectives (the “what”). Third, there is a discussion of the balance that needs to be achieved between the architectural rigour of open standards, and the flexibility of agile working practices (the “how”). We ground our analysis and observations on experiences with the UK government’s transformation efforts where the authors have had deep involvement over the past decades.

2. Toward Digital Government – What’s new?

Since the early 1990s, there have been multiple initiatives by several UK governments to use Information Technology (IT) to modernise public services. For example, in 1996 the UK government was focused on the

“... new possibilities offered by information technology, and it will learn from the way that these are starting to be harnessed by other governments and the private sector. It will change fundamentally and for the better the way that government provides services to citizens and businesses. Services will be more accessible, more convenient, easier to use, quicker in response and less costly to the taxpayer. And they will be delivered electronically.”¹

Throughout the 1990s and early 2000s, various administrations viewed “e-Government” as an important way of improving public services, increasing the speed of carrying out transactions, and improving convenience, accessibility, flexibility, and hours of service.

These efforts to reform the use of technology in government, and to apply the lessons of the value of open standards as a means of breaking open the proprietary silos of technology (via initiatives such as the e-Government Interoperability Framework, or e-GIF), achieved very limited success.

¹ Government Direct (1996). “A Prospectus for the Electronic Delivery of Government Services”. See: <http://ctpr.org/wp-content/uploads/2011/03/Government-Direct.pdf>.

Some promising early progress – such as, for example, putting the income tax self-assessment process online, and the process around payment of the vehicle excise duty – remained as front-end, cosmetic one-off initiatives that failed to progress into any meaningful modernisation of the overall processes involved: they were **on** the web, but not **of** the web.

The UK has historically suffered a recurrent mismatch between political aspiration and any meaningful and sustained technical delivery approach on the ground, despite being a pioneer in many policy areas – notably the adoption of open standards and the promotion of open source. Here we examine these two dimensions in relation to the UK’s digital public services delivery ambitions: political and socio-technical.

2.1 Political Context

Throughout the 1990s and early 2000s, the design and delivery of public services remained in the hands of a small number of dominant external suppliers who used technology mainly to automate previously manual ways of operating public services rather than using it as a means to re-engineer and improve them around the needs of citizens. In part, this reflects an approach that used technology as a “sticking plaster” to make public services *appear* joined-up when in reality they remained fragmented across multiple administrative hierarchies and operational departments and agencies. In short, there was a focus on technology at the front end, rather than the reform of the often poorly performing organisational structures and processes underlying this “shop window”.

Equally problematic was the progressive deskilling of the public sector and its outsourcing of in-house technological expertise to a handful of large external suppliers. These long-term, exclusive contracts meant that even where departments or local authorities had the desire and ability to drive a re-engineering of their services, they were often unable to do so due to a lack of in-house capabilities as well as restrictive contracts that impeded attempts at innovation and reform. Instead of becoming the means to deliver reform and improvement, technology became the biggest blocker: even where the same external supplier provided the solutions, every system was separately built and maintained, often using proprietary and closely-coupled technologies. This siloed architecture cut across the desire to redesign and optimise services around the needs of service users.

In 2011, the cross-party House of Commons Public Administration Select Committee published the results of their investigation into the state of the use of information technology in government. Their report was highly critical and found that [3]:

“... despite a number of successful initiatives, government's overall record in developing and implementing new IT systems is appalling. The lack of IT skills in government and over-reliance on contracting out is a fundamental problem which has been described as a "recipe for rip-offs" ... government is currently over-reliant on a small "oligopoly" of large suppliers, which some witnesses referred to as a "cartel". Whether or not this constitutes a cartel in legal terms, current arrangements have led to a perverse situation ... benchmarking studies have demonstrated that government pays substantially more for IT when compared to commercial rates. The Government needs to break out of this relationship.”

Partly in response to this report, the current UK government has renewed its focus on digitally-enabled public services – but has been pursuing a very different architectural and commercial route for its achievement. The result is that although technology-based initiatives have been around for some time in public services, the current use of the term “digital” carries a more specific meaning than earlier “online” and “e-Government” programmes. We address this specific meaning in sections 3 and 4.

2.2 Socio-technical context

Our understanding and interpretation of the term “digital public service delivery” has evolved significantly in the past decade. Effectively, ‘digital’ is now considered an umbrella for organisational values and practices: whilst technology is typically the enabler for these opportunities, digital is *not* principally seen as limited to technology. Successful digital organisations have customer-centric operating models clustered around speed and adaptability, exemplified by maxims such as “show don’t tell” and “done is better than perfect”.

Digital organisations also seek to address the use of mobile devices as the new norm for staying connected across every aspect of our lives. Through the likes of smartphones and tablets, a growing number of people interact with friends, review various news feeds, check availability of local business services, collaborate with colleagues, communicate with vendors and suppliers, and much more. Successful organisations embrace this mobile-first world, and the expectations of an increasingly digitally literate population.

The UK government has tapped into this mind-set with its new strategy for bringing services online, characterised by the phrase “digital-by-default”. It aims to make public services more accessible, while also encouraging users to view the government’s online environment as a platform for wider public debate and collaboration, aiming to develop Government-as-a-Platform (GaaP) [4]. This move toward digital public services delivery was re-invigorated in the UK with the publication in 2012 of the Government Digital Strategy (GDS)², which set out the principles and pathway toward realisation of the UK government’s vision of “digital-by-default” service delivery. It aims to develop government’s ability to respond swiftly to changing policy imperatives and user needs, achieve lower costs for the taxpayer, deliver major programmes more quickly, and stay ‘ahead of the curve’ by exploiting new technology.

To support this strategy, one of the most significant changes under the current government has been the creation of the Government Digital Service, bringing highly skilled technology and digital skills back inside government. This service team has implemented guidance and a vision for how programmes must be developed in future, with a relentless focus on the user. Aligned with the Government Digital Strategy, the service team ensures all new or redesigned public services meet the digital design standard – mandatory from April 2014. Departments and agencies must demonstrate that they have met the criteria set out for the full life of their service or the service will be rejected.

This move to place the user at the centre of new service designs requires a fundamental shift in the relationships, processes and data control mechanisms that exist between organisations and users,

² See <http://publications.cabinetoffice.gov.uk/digital/>

not just the technology. Delivery approaches in the commercial world have moved towards a networked approach to solution assembly from a variety of pre-existing components and services. Businesses are at the centre of a network of suppliers, consumers, employees, partners, analysts, competitors and various other stakeholders. The most envied and discussed organisations in the world are increasingly founded on open platforms, encouraging others to interact and innovate around them and form collaborative communities: their ability to build and grow these eco-systems is fundamental to their success.

A new generation of consumers view technology as one link in a network that spans producers, other users, and partners in an ecosystem of service providers. In other words, *delivering digitally-enabled user-centred services requires government to move to a new business model*. So how will UK government departments and agencies reinvent themselves as inter-connected communities based on a common platform of open services?

3. Exploring New Business Models for Digital Public Service Delivery

Many public sector organisations appear overwhelmed by the breadth and depth of the changes in public service delivery that they face. Their challenge is to develop a high-level framework against which they can focus their activities and investments across the organisation. We have found it helpful to consider digital public service delivery across four layers (Figure 1).

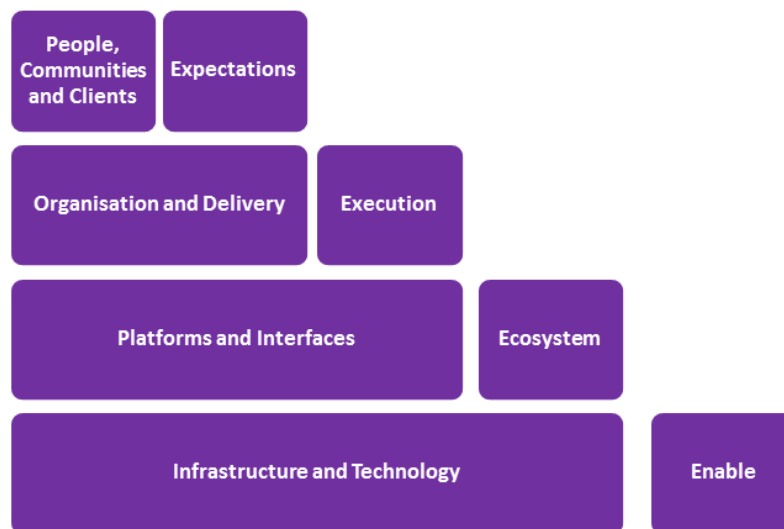


Figure 1: Four layers of Digital

The top layer of Figure 1 concerns end customers: **people, communities, and clients** – those setting the *expectations* for digitally-enabled services. The transformation required for digital service delivery at the **People** level is a transition from managing people to managing the things that help or hinder them in delivering results. The most important output of people management ceases to be the direction and micro-measurement of subordinates and becomes instead the fostering of an environment and culture of healthy self-directed achievement: one where experts are empowered to put their knowledge into practice, as demonstrated by many of today’s successful digital companies – 37Signals, Atlassian, Github, Valve and Google to name just a few. The negative

correlation between industrial management thinking and the productivity of knowledge workers is one of the most robust findings in current social science, demonstrated in recent interest in more radical management techniques [5].

The '**communities**' part of the top layer in Figure 1 refers to the opening of public data for public use, whilst simultaneously becoming much smarter about the unique custodianship that government has of highly personal data (such as medical records) that needs high standards of protection. Government needs to develop a data management model that recognises this distinction and applies appropriate (and different) risk and information management processes to public and private data, rather than confusing the two – or trying rigidly to retain control of what is clearly public data best released into the public domain. The more valuable data is to users and developers, the more likely it is that a community will form and more active engagement will follow as more value is derived from the data: one notable example in the UK has been the release and multiple re-use of real-time public travel information, from trains to buses. Public datasets are becoming more widely available in machine-readable formats, often in real-time, directly sourced from live systems, or, if not, exported and refreshed frequently when new data become available.³ Metadata, such as the information presented, collection method, timeliness, quality and other contextual information is crucial to allowing data consumers to not only understand available data, but to put them to appropriate use.

The '**Client**' elements refer to the need for digital organisations to be driven by the needs and feedback of their customers and users (not their own internal needs). It is therefore imperative to redesign the organisation around these needs and to be prepared to challenge the status quo. Customer needs and expectations will continue to evolve throughout the life of a service, driving enduring change in the services, capabilities and architecture needed to serve users and customers.

Simply implementing digital technology over traditional legacy processes and structures will not work: this is largely why earlier "e-Government" programmes stalled and failed. At the **organisation and delivery** layer of Figure 1, new, lighter-touch governance and assurance arrangements, a change to budgeting practices and flatter structures must be designed and implemented. These are a pre-requisite for organisations moving quickly in their *execution*, responding flexibly to changed circumstances and pushing decision making and solutions further down the organisation.

The third layer in Figure 1 – **Platforms and Interfaces** – is about creating an *ecosystem* comprising reusable technology components as well as a marketplace of open integration and innovative suppliers expert within that platform environment. Whilst digital organisations will still deploy some custom components and applications, the significant majority of basic functionality can adapt and reuse capabilities which are already available – either within the digital organisation or elsewhere. This encourages the organisation to think in terms of capabilities, business rules and components so that appropriate pre-built solutions can be used to accelerate delivery, allowing development effort to be prioritised and focused on business-specific needs. Part of the role of a digital architecture is to ensure that services are clearly mapped to capabilities and so ensure that each capability is implemented once, rather than being duplicated in multiple silos.

³ See, for example, <http://data.gov.uk>.

Finally, the fourth layer in Figure 1 – **Infrastructure and Technology** – *enables* the others by providing the computing power and networking capability to support appropriately flexible, scalable and elastic solutions to fulfil organisational needs. Creation of an ecosystem through customer, partner and application developer engagement is significantly more difficult with on-premise technology. As demand scales up and down, it is advantageous to be able to scale up and down resource allocation, with cost determined by usage rather than fixed specifications under long-term inflexible contracts. Traditional, in-house hardware configurations are sized to handle peak loads which mean that capacity is likely to be underutilised during the majority of a system lifetime. The UK government has recognised this with its G-Cloud programme (realised through the Cloudstore)⁴, providing a range of competitive hosting options from multiple potential suppliers and which has already been used for some of the core platform services being developed (notably gov.uk).

4. Balancing Agility and Efficiency: Open Architecture and Platforms

The drive for public sector organisations to become more citizen-centred with increased flexibility in delivery models must be balanced with the architectural discipline to re-use, share, and consume common components wherever possible [6]. We refer to this as an “open architecture” approach. The application of open, platform-based thinking to the public sector provides a powerful means of underpinning the technological aspects of a modern, digital public service. Service providers’ adoption of open architectures – standardised ways of doing things – enables them to take greater advantage of consumption models of downstream service delivery. Such models are usually both cheaper and more flexible, and involve the assembly of user services from increasingly standard components across a common platform based on commonly shared open standards:

A platform is a set of common components, assembly methods or technologies that serve as building blocks for a portfolio of products or services. Platform innovation involves exploiting the “power of commonality” – using modularity to create a diverse set of derivative offerings more quickly and cheaply than if they were stand-alone items [7].

In [8], Gawer and Cussamano point out that platforms exist in a variety of industries and that the notion of a ‘platform’ has been used in a range of contexts. In response, they propose a typology of platforms. First, ‘Internal platforms’, conceived as a set of subsystems and interfaces internal to the organisation that have been intentionally planned and developed to form a common structure from which a stream of derivative products can be efficiently developed and produced (e.g. Sony’s Walkman, Hewlett-Packard’s modular printer components, Rolls-Royce’s family of engines), saving fixed costs, benefiting from component re-use, and enabling flexibility. Second, ‘supply chain platforms’ that seek to replicate these benefits across interfaces amongst different organisations within a supply chain – most notably, the automotive industry: for example, the Renault-Nissan alliance that developed a common platform for the Renault Clio and the Nissan Micra. Third, ‘industry platforms’, products, services or technologies that are developed by one or several firms, and which serve as foundations upon which other firms can build complementary products, services

⁴ See <http://gcloud.civilservice.gov.uk/>.

or technologies, such as Apple’s iPod and iPhone, the internet, payment cards, fuel cell automotive technology, and some genomic technologies.

Encouraging new thinking and overcoming entrenched cultural barriers to the emergence and adoption of open platforms within the UK public sector remains a significant challenge. As an illustration of how difficult this can be, consider the differences between the two depictions (figures 2 and 3) of the ‘open stack’, developed by one of the authors in 2011 to explain the architectural *and cultural* change needed to bring about the open platform dynamic. It shows that there are various interrelated aspects that the public sector needs to address simultaneously:

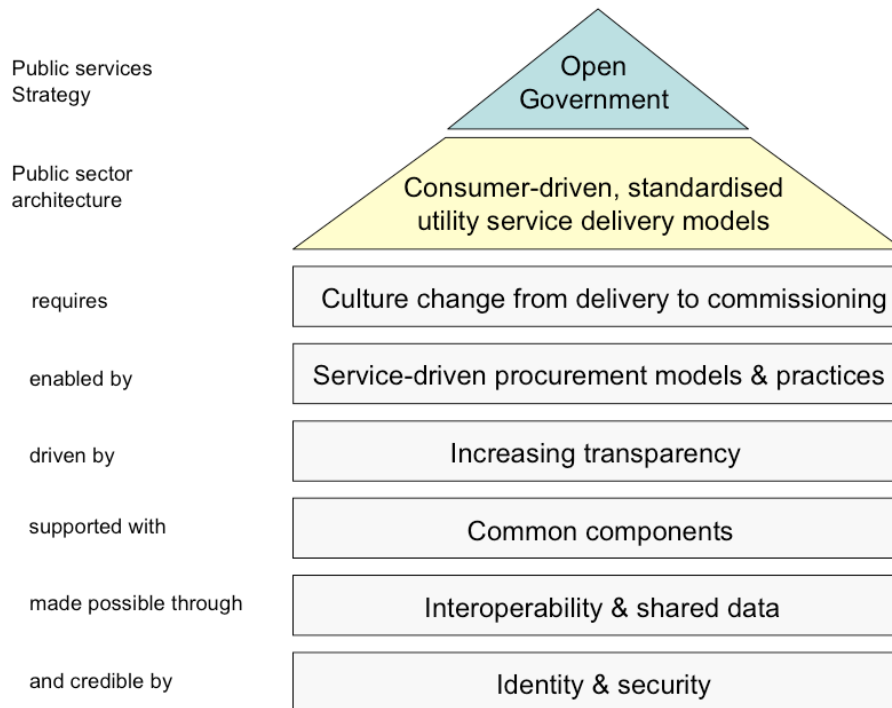


Figure 2: Open Stack: a mix of behaviours underpinned by technology

Figure 2 encapsulates the way in which open platforms are a dynamic comprising both technology and market behaviour. Moving down the stack from the apex, in order to achieve the aims of ‘open government’, the public sector needs to change the way in which it organises itself. This form of organisation needs to be established upon a set of firm architectural principles across the public sector that enshrine consumer-driven, standardised utility service delivery models. In turn, to achieve this, the public sector needs to stop developing and delivering everything internally, and focus more on the commissioning and consumption of service outcomes (‘culture change from delivery to commissioning’). To do this, it needs to think much more about these end services, and worry less about the inputs (‘service-driven procurement models and practices’). However, it won’t be able to do this unless it is able to compare and contrast competing alternatives (‘increasing transparency’) – otherwise it will be comparing apples with pears. Moving downwards towards the ‘technology’ base of the stack, increased transparency requires, in turn, commonly specified components; but these only work together if they are supported with standards of interoperability and shared data. Finally, in order for such interoperability to have credibility, it must be secure.

As a simple example of how this works, imagine you have two icons on your desktop: Open Office (open source software that is free to use, but relatively basic) and a premium-priced office applications suite. If you click on Open Office, you will be able to consume these applications for free – *providing you are (culturally) happy to use the relatively limited menu of services that you use 90% of the time*. If you opt to click on the premium-priced icon however, the meter starts running for every minute you consume this premium service (where you pay for all sorts of functions you never actually use). Assuming you are accustomed to using the premium service, which will you choose? The likelihood is that you will click the premium icon, because it's easy and there are no consequences to you for doing so. Imagine however, that your choices *do* have consequences in the form of an automatically-generated consumption report, and associated invoice, that is sent directly to your boss.

This simple scenario demonstrates two important principles. The first is that changing from buying more expensive (typically bespoke) resources to consuming standard resources is as much about tackling entrenched culture as it is about providing transparent comparability between different offerings. The second is that it would be naïve to believe that this culture will change simply because the boss expresses a preference for the standard components: it will only change when transparent comparability exposes peoples' behavioural choices to outside scrutiny. *This* is how the technology and the culture form two halves of the same coin.

The way the Open Stack appears in UK Cabinet Office's *Strategic Implementation Plan* of 2011, shown in Figure 3, illustrates how difficult it can be to achieve culture change even within organisations that have embraced open principles. In Figure 3, 'Culture change from delivery to commissioning' has been muted to 'innovative ways of working and strengthened governance', and 'service-driven procurement models and practices' have become 'commercial models and practices' – not at all the same thing. The hard fact is that achievement of open architecture and platforms within the UK's public services will require proper culture change, not an adjustment to business-as-usual.

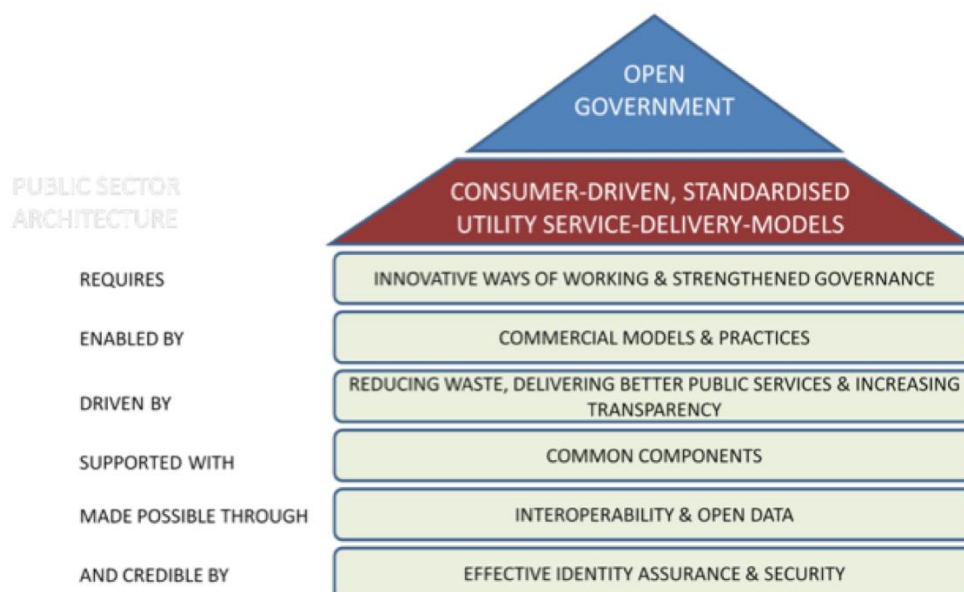


Figure 3: Open Stack: how things get watered down

Current UK government experiences provide an interesting insight into the political challenges likely to be encountered as governments attempt to move into the digital services era.

5. A Practical Framework for Digital Public Service Delivery

In effect, the earlier discussion highlighted the tension between governments' need to become more flexible and agile around the needs of the citizen, and the need to exercise the discipline required to consume interoperable 'building blocks' of outcomes, from standard platforms, within an open architecture. In the UK Government Digital Service there is a focus on developing bespoke in-house open source software within agile teams, in which the broader architectural emphasis on standardising and consuming technology appears to have become marginalised. A short-term preoccupation with the large-scale bespokeing of open source point solutions appears to have supplanted a longer-term focus on progressive consumption of open standards. Such a strategic slippage risks replacing the previously distorted market involving private sector bespokeing of proprietary technology, with a new, potentially equally distorted market involving public sector bespokeing of open source technology. Both outcomes decouple government from the evolving open standards of a global marketplace, consigning it to ownership of a legacy bespoke infrastructure with escalating maintenance costs and upgrades: to use an analogy from the videotape 'standards war' of the 1980s, both options offer 'Betamax government', rather than 'VHS government'.

In response, we propose the 'Innovate-Transition-Commoditise' (ITC) curve shown in Figure 4. Unlike current outsourcing and procurement models, which conflate both niche and commodity requirements, an open architecture approach allows a continual distinction between innovative activities that fulfil bespoke needs on the one hand, and the use of utility, commercial specifications wherever possible for standardised, plurally delivered activities on the other.

Figure 4 shows that as more organisations adopt common standards, business logic and resulting platforms, they can expect to see costs decrease. Services become commoditised and procured via 'utility' commercial models – moving from bottom left to top right of the innovation curve, as government stops paying over and over again for multiple, customised versions of the same thing. The dotted lines in Figure 4 also remind us that such platforms are not needed merely to reduce cost, they are also required to incentivise and enable innovation.

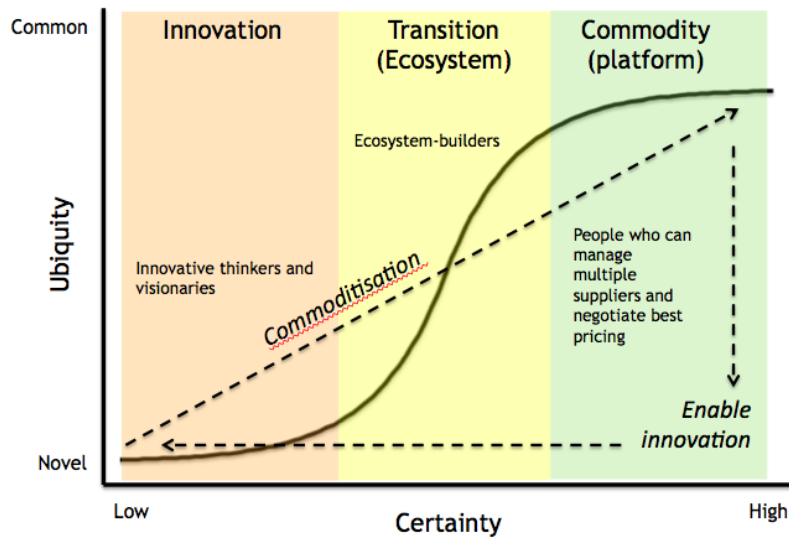


Figure 4: Innovate-Transition-Commoditise (ITC): A framework achieving Open Architecture⁵

The middle column of Figure 4 recognises that the most successful organisations to develop ecosystems around core platforms and standards (e.g. Google, Facebook, Salesforce.com) continually monitor new innovations and user take-up, incorporating those that are successful into their core offerings. In this process, new applications (innovation) are developed into the platform and made available to other users (transitioned) – which in turn can often lead to wholesale integration and development of the underlying platform (commoditised).

In this open business model, organisations need to build capability in the skills and approaches required to leverage successful innovations, and standardise these so that they can be delivered cheaply and efficiently at volume. Finally, the right hand column of Figure 4 shows a focus on the commercial management of central, core platforms and services as commodities – a very different set of skills from those in the previous two columns.

A recent application of this ITC thinking within government is the ‘Wardley map’ (after its originator, Simon Wardley), in which organisations map out their existing and planned technology infrastructure and services to reveal the different ways in which they should be treating their different components. Illustrated in Figure 5 is a recent example by James Findlay, Chief Information Officer for the UK Department of Transport’s High-Speed 2 (HS2) project.

⁵ Contributed by the authors, with Simon Wardley, to “Better for less: How to make government IT deliver savings. Network for the Post-Bureaucratic Age”, September 2010. See: <http://www.scribd.com/doc/37020044/Better-for-Less>.

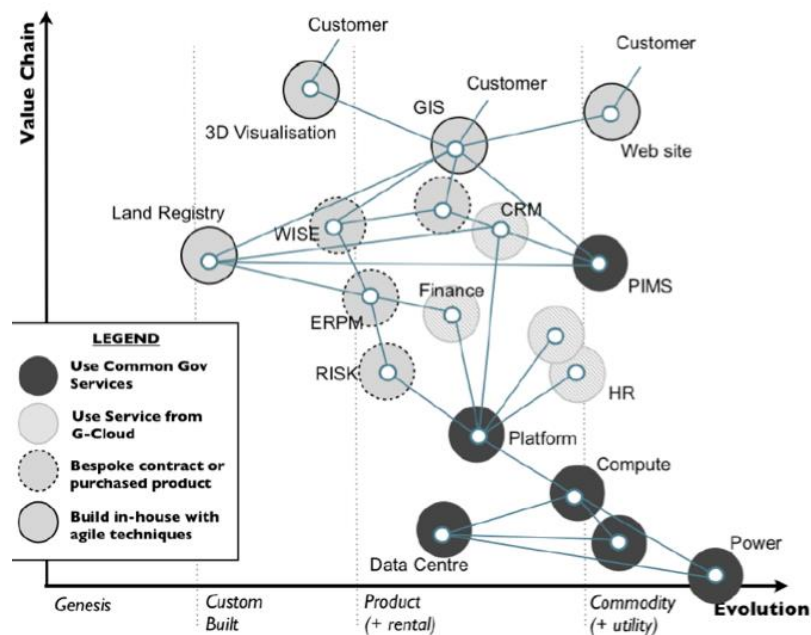


Figure 5: Practical application of ITC framework: mapping HS2's infrastructure

In this example, some of the obvious components (power, computer processing, standard HR, website, etc.) are treated as commodity/utilities to be either consumed on demand like electricity or purchased in standard units (like pencils). Some of the 'ERP' type functions (finance, customer relationship management, risk management) are not yet widespread enough in the market to be consumable as utilities – but these are things that should nonetheless be consumed in a standard way wherever possible (and the government has recently established shared service centres to support this aim). Next, the 'custom built' column contains those elements that remain reasonably unique to our organisation or one or two others. Finally, the 'genesis' column shows 'known unknowns' where it will be necessary to work iteratively in an agile manner to discover and evolve what is required, and to build this capability within the organisation.

Having separated out the technology, which would previously have been treated as a vertical 'stack', into its discrete components and distinguished carefully between them to generate a digital profile using the ITC principle, it becomes possible to develop a procurement strategy that underpins these principles, to allow the sourcing of every component in the optimum way possible. Thus HS2 is using the UK government's electronic property and information mapping service (PIMS), which it is consuming as a commodity; a single ERP platform, consumed from one of the government's shared service organisations, to cover finance, HR, and customer relationship management – but within individual functions supported via the new standard service catalogue 'G-Cloud'. Note that Figure 5 shows which of these functions, like HR, lie at the 'commodity' end of this spectrum, giving clarity about where this consumed service really needs to demonstrate value.

Several functions (risk management, ERPM, WISE) are purchased through specific suppliers, either consumed via a bespoke contract or purchased on an individual basis. This is the model that most closely represents the traditional 'systems integrator' way of doing things, with little or no commonality across government. Finally, HS2 is building several functions in-house – interactions

with Land Registry, 3D visualisation for customers, geographic information interfaces for customers, and the customer website. Note that, as the stakeholder at the top of the value chain, the ‘customer’ is receiving the bespoke attention (recalling Figure 1) – whilst the infrastructure (ERP platform, data centre, power, compute) is consumed as a common service wherever possible. In the middle, we have some specific line-of-business technology (Land Registry interface), as well as more shareable technology (PIMS, standardiseable ERP applications such as finance, HR, etc) – which HS2 can do in the same way as other government organisations simply by applying this methodology, and exercising a little self-control.

The HS2 example demonstrates the power of the ITC approach in enabling government organisations to dis-integrate previously vertically integrated silos of tightly coupled technology and business processes, and start to profile them in ways that allow accurate distinction between their various components, with appropriate sourcing strategies for each. In turn, this avoids paying bespoke prices for off-the-peg suits – as well as allowing individual components to be updated or replaced easily, and combined with those of other organisations. It is only when the advantages of working with other peoples’ systems and data become clear that the real benefits of digital organising start to become apparent.

6. Issues and Implications

We have shown that digital public service initiatives need to work on a much broader front than technology alone if they are to avoid repeating the failures of the past. Achieving digital success requires a major change in the culture and leadership capabilities of the public sector. This involves bringing back in-house technical expertise; adopting procurement models that separate bespoke from commodity needs; and ensuring genuinely open competition and a marketplace of suppliers over the exclusive monopoly contracts of the past. It also requires the use of open standards and platform-based models, and knowing when agile is best applied and when six sigma – avoiding the “one size fits all” mantra of the past. Open standards and mapping provide an essential means of breaking down large programmes into smaller chunks of standardised, interoperable components, or transactions, which can be reused across government. As the number of re-useable components grows, digital programmes and their technology requirements will become smaller, iterative, lower-budget, and more user-centric – standard building blocks that can be reassembled in locally appropriate ways.

The UK government’s GDS and G-Cloud represent only the first step on a radical journey – a complete re-imagining of how government interacts with its citizens, and enables citizens to interact with each other. A vision needs to be painted that helps all stakeholders – government procurement agencies, technology providers, academics, and citizens and private businesses alike – realise the scale of the change involved, to gain an understanding of the possibilities and challenges this brings.

In practical terms, what does this vision for government service delivery really mean? Three themes highlight the dramatic change in economic models for government:

- **Open public data:** Open access to public data is seen as the fuel for innovation, allowing businesses and individuals to make use of national public datasets, such as live travel

information and crime locations/frequencies. The UK is making good progress in this area through the pioneering work of organisations such as the Open Data Institute.

- **New government-focused technology infrastructure:** A new set of suppliers providing innovative services for government will emerge, creating the infrastructure needed to offer new digital services based on open standards. It is likely that some of these service providers will be new government-focused enterprise companies with significantly different business models. The UK G-Cloud initiative has already been notable for opening up the government market to many new players.
- **Easier interaction with government agencies:** Bringing existing services online is an easy place to start, but it is only a first step. Existing services may need to be radically altered, and completely new services become possible to meet changing citizen expectations. Many new pressures will emerge as government begins to better understand the services citizens need and want in the digital age. This represents the largest challenge, requiring new skills and capabilities in how public services are designed, operated and maintained.

These themes reflect a significant change in how government delivers services, and a revolution in the opportunities that will emerge as a result. Their potential impact on both society and the economy cannot be overstated. The digital technology revolution has pushed us to the edge of a fundamental reform of public service delivery.

7. Summary

The UK has a renewed focus on making digital part of the culture of the public sector at both central and local government. This will entail a revolution in the design and operation of public services that can capitalise upon developments in technology and the emergence of digital organisations to create services that better meet citizens' needs, develop channels that offer efficiency and increase inclusion to all citizens, and re-invent service supply chains to deliver faster, cheaper, and more effectively.

A variety of "online" approaches have been tried before and yet have largely failed. This time, delivery and execution must be on a much broader front than technology alone. There are proven models that the public sector needs to adopt – most fundamentally, the move to a digital, twenty-first century organisation. This will require cultural, capability and leadership improvements across people, communities, and clients; organisation and delivery; platforms and interfaces; infrastructure and technology.

This digitisation of public services needs to be built on the application of open technical standards and platform-based architectural principles. Sustainable and meaningful reform and improvement will only be achieved when there is an equal relationship between internal organisational and digital services transformation – significantly improving our public services in the digital economy.

8. References

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