
Private fire service performance

Lessons to learn for the Dutch fire service?



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Samenvatting

De samenleving verandert, de brandweer in Nederland is daarom druk doende haar organisatie te verbeteren. Ook beraadt zij zich met het oog op de toekomst op haar positionering. Het op korte termijn verbeteren van de brandweerorganisatie vindt plaats binnen de context van de vorming van de veiligheidsregio's. Hiermee wordt onder meer een meer doelmatige brandweer beoogd. De zoektocht naar de toekomstige positionering van de brandweer vindt plaats door middel van het project 'de strategische reis'.

Deze scriptie beschrijft wat de brandweer in Nederland, gegeven de uitdagingen waarvoor zij zich gesteld ziet, mogelijk kan leren van private bedrijven die brandweerdiensten leveren. Hiertoe zijn twee literatuur case studies uitgevoerd naar de prestaties van Rural Metro (V.S) en Falck (Denemarken). De resultaten laten, binnen de reikwijdte van het onderzoek (basis brandweezorg), zien dat private bedrijven prima in staat zijn kwalitatief dezelfde basis brandweezorg te leveren als de overheid tegen minder kosten. De meerwaarde van deze studie zit echter niet primair in de toespitsing op juist deze ene variabele, maar in het totaalbeeld dat tot stand komt op basis van de zes gehanteerde variabelen, te weten governance, werkgeverschap, organisatie, coherentie, output en efficiency. Hiermee wordt getracht recht te doen aan de waarden pluriformiteit van overheidsdiensten en wordt aansluiting gevonden bij de gebruikte variabelen in de vaak beperkt beschikbare literatuur over het functioneren van private organisaties die brandweerdiensten leveren.

Juist omdat het vergelijk tussen private en publieke dienstverlening vaak gevoelig ligt vormt de aanbeveling om betekenisvol te leren van de onderzoeksresultaten misschien wel de belangrijkste aanbeveling voor de brandweer in Nederland. Hiermee wordt bedoeld op het belang van het niet zonder meer afwijzen van de bevindingen, evenmin is het één op één kopiëren zinvol. Betekenisvol leren vraagt een gezamenlijke discussie en duiding van de resultaten binnen de context van de brandweer in Nederland.

Tot slot, hoewel economische afwegingen niet doorslaggevend zijn in relatie tot het leveren van basis brandweezorg, zal de samenleving en daarmee ook de brandweer zichzelf de vraag moeten blijven stellen hoe het huidige niveau van brandveiligheid te handhaven bij alsmaar stijgende kosten in een veranderende samenleving. Dit vraagt om een brandweer die verander bereid is en durft te leren van de genoemde bevindingen. Leiderschap, duidelijke positionering van de brandweer en een versnelde professionaliseringslag dragen bij aan een betaalbare en toekomstbestendige brandweer. En, dat is hetgeen we uiteindelijk allemaal zouden moeten willen.

Reading guide

Chapter 1

The Dutch Fire service faces several challenges. On the short term they face a change in legislation and is there an urge to professionalize, on the more long term they face a changing society, which urges the fire service to strategically rethink it's position. In order to answer the question: 'What lessons can the Dutch fire service learn from private fire service?' case studies were performed of the performance of world's largest private companies providing fire service: Falck and Rural Metro.

Chapter 2

In the recent past the Netherlands were confronted with several serious incidents (e.g. 'De Vuurwerk Ramp' and 'De café brand in Volendam'). Investigations after these incidents resulted in hundreds of performance improvement recommendations for the government and the rescue organizations. This chapter describes the current developments within the fire service.

Chapter 3

The fire service is generally perceived as a public service, but what is a public service and in which way can there be private company involvement? Chapter 3 describes the public private typology of goods and services, explains what privatization is and describes which way of privatization is most likely for services like the fire service.

Chapter 4

Investigating the potential contribution of private companies raises issues about how to compare public and private service delivery. Generally speaking, public performance is not only about cost efficiency, but is also 'value' driven in a political environment. Thereby, presuming that public service delivery guarantees quality of service delivery. Chapter 4 reflects upon these theoretical notions.

Chapter 5

Chapter 5 takes a closer look at the way service delivery of privatized fire protection by showing the findings of privatized fire protection by means of a contract arrangement. Therefore two literature case studies are performed of world's largest private fire service providers: Falck in Denmark and Rural Metro in the United States.

Chapters 6 and 7

Chapter 6 elaborates and reflects upon the findings presented in the previous chapters by discussing them and relating them to the findings presented in the previous chapters. Chapter 7 comprises the conclusions and recommendations of this thesis.

1. Introduction

The Dutch Fire service faces several challenges. For the short term future, the Dutch fire brigades are in a process of reorganization into safety regions ('veiligheidsregio's'). These safety regions are meant to reduce costs and enhance the quality of service provision (professionalizing). A debate is going on about the allocation and monitoring of fire brigades' performance indicators (e.g. turnout times of fire brigades). At the same time there is a discussion going on within the Dutch Association for the Fire Service (NVBR) about the more long term future prospect of the fire service in the Netherlands. The central issue in both discussions is how to position the fire service and to customize service delivery to changing society's demands. To investigate the potential contribution of private fire service two case studies are executed to see how world's largest private fire service providers perform: Rural Metro in the U.S and Falck in Denmark.

Private providers performance is relevant from the following point of view. The introduction of the safety regions is expected to contribute to efficiency. At the same time the fire service will be confronted with increasing performance expectations and accompanying performance indicators. Private fire brigades are said to (and have to) work efficiently, so may be public fire brigades can learn lessons from the way private fire brigades are organized. On the other hand, there's not much known about the performance of private fire brigades. The emotional discussions within public fire brigades about the performance of private fire brigades frequently state that the more efficient way of working private fire service is expected to have, will result in a decrease in quality. Furthermore, there can be discussion which costs to involve when calculating efficiency. As will be shown later on, privatization of public safety gives people an eerie feeling because the notion of serving public safety and profit purpose does not seem an obvious combination.

In order to reveal how private fire service works out in practice and to judge private fire service performance from a more integral perspective and not only an economical perspective, this thesis will look at private companies' performance from a more integral approach by performing two case studies about private fire service providers' performance. The findings will be related to the current challenges for the Dutch fire service.

1.1 Research question

The main research question of this thesis is: 'What lessons can the Dutch fire service learn from private fire service?'

Underlying questions are:

1. How does privatization of the fire service take place?
2. How to compare public fire service and private fire service organizations' performance?
3. How do privatized fire services actually perform?

1.2 Methodology

The research question is investigated by literature research. Literature research is directed to: the current and future challenges of the fire service in the Netherlands, privatization of public services, methodological issues comparing public and private organisations and studies about the performance of Rural Metro and Falck. Furthermore, two mayors and a Regional Chief Fire Commander will be interviewed to reveal their opinion about the privatization of the fire service and the potential contribution to the Dutch fire service.

The performance of private fire services will be investigated by two case studies of world's largest private fire protection providers, Rural Metro's performance in the United States and Falck's performance in Denmark. These case studies provide detailed information about the way these fire services are organized and perform.

The research is directed to the contribution of privatized companies in the provision of *basic fire service*. In this study basic fire service comprises the fire suppression and it's immediate preparation linked to the act of fire suppression.

The focus is on the potential contribution of private companies to the basic fire service because the basic fire service comprises a lot of personnel and material costs, therefore private companies are expected to have the largest impact on e.g. efficiency.

A direct comparison of public and private fire service performance is methodologically slightly complicated. Therefore in this study a more comprehensive comparison framework is used, not only including the variable efficiency, but also including the variables: governance, employability, output, organization and coherence. These variables are extracted from the relatively scarce literature about the comparison of public – private fire service performance and make a more comprehensive performance overview possible.

The variables used to compare public – private performance can be interpreted as follows:

- Governance comprises accountability and the possibility for government guidance and the management of contracts;
- Employability comprises loss of jobs, labour conflicts, employee benefits and training of personnel;
- Output comprises coverage and service to the community, and the damage due to fire;
- Organization comprises the use of economies of scale and flexibility;
- Coherence comprises the cooperation with other parties and within the safety chain ('veiligheidsketen');
- Efficiency comprises financial costs, the use of specialized skills and innovation.

The presented findings for each variable may differ in their level of detail and quantity due to literature availability limitations.

1.3 Reading guide

This master thesis essentially consists of four parts:

- Chapter two comprises information about the 'Professionalizing' of the Dutch fire service;
- Chapter three comprises information about privatization and contracting out elements of the fire service;
- Chapter four describes how to compare public and private performance;
- Chapter five describes the actual performance of Rural Metro and Falck.;

Finally, the findings will be discussed (chapter 6) related to the research question and conclusions (chapter 7) will be formulated.

2. Professionalizing the Dutch fire service

In the recent past the Netherlands were confronted with several serious incidents (e.g. 'De Vuurwerk Ramp' and 'De café brand in Volendam'). Investigations after these incidents resulted in a dozen performance improvement recommendations for the government and the rescue organizations. These recommendations can not be seen on their own, they are embedded in a changing society, which results in different kinds of threatsⁱ and changing demands to public service delivery. For example, society requires more and more transparency resulting in an increase of the use of performance indicators. At the same time there is a reduced availability of volunteers and is there an urge to innovate and work efficiently. Furthermore, society's risks are changing. Technological developments and multiple function use of buildings and open space pose different physical threats. There's a differentiation in society's risks which requires an adaptive response. To cope with all these changes the fire service questions itself how to prepare for the future. One of the first changes is central government practicing administrative reform by introducing the safety regions.

To face challenges for the nearby and more long term future two resulting developments have to be acknowledged: for the nearby future there is a change in legislation which results in the enactment of the safety regions bill. To prepare for the more long term future the Assemble of Regional Chief Fire Officers (RRC) recently started a strategic journey to discuss the future of the fire service.

Below the current developments within the fire service will be described along three lines:

1. The professionalizing of the fire service;
2. The professionalizing of the basic fire service;
3. The strategic positioning of the fire service for the more long term future.

2.1 Professionalizing the fire serviceⁱⁱ

The fire service is in a process of reorganization which should result in performance improvement. Performance improvement results (or is expected to result) in increasing the quality of the service delivery or through maintaining current service levels at reduced costs. The process of reorganization is directed by the safety regions bill, but originates also from within the fire service itself.

The safety regions bill aims at achieving an efficient and qualitatively well performing: fire service, medical assistance ('GHOR'), disaster management and crisis

management. The safety regions bill integrates previous legislation (the 'Brandweerwet 1985' and 'Wet Geneeskundige Hulpverlening bij Ongevallen en Rampen', and 'de Wet Rampen en Zware Ongevallen'). Each safety region should have a professional and well prepared organisation for disaster and crisis management.

The safety regions decree (which is based upon the safety regions bill) sets the performance standards more in detail for the organizations embedded into the safety regions. Standards are formulated for the fundamental crisis management processes 'alarm', 'scaling', 'leadership and coordination' and 'information management'.

The fire service is an important contributor to disaster and crisis management. To fulfill this role the fire service should be well organized. Starting point is the provision of adequate basic fire service, therefore the fire service should be well organized. In previous years the Dutch fire service has continuously improved its performance (e.g. 'Project Versterking Brandweer'). This resulted in several guidance reports (e.g. 'Concept Leidraad Repressieve Brandweezorg'). Nevertheless, in daily practice communities differ in how they deal with these guidelines. As a result, differences in performance between communities exist. It may be obvious that these performance differences, partly due to differences in interpretation, are not contributing in achieving the expected level of quality. The safety regions decree therefore directs the performance of the fire service in a way that prerequisites are fulfilled for adequate fire service performance as part of crisis management and disaster management.

2.2 Professionalizing the basic fire service

The fire service is an important contributor to disaster and crisis management. Speaking about day-to-day service delivery, the fire service uses three kinds of units to cover their basic fire service dutiesⁱⁱⁱ. Every fire brigade within her territory should have these units. The fire brigade can have these units by themselves or can cooperate with other fire brigades. Later on in this thesis it is about these units possible involvement of private companies will be discussed. The basic units for a fire brigade are:

- a basic fire unit;
- a support unit for technical assistance;
- a support unit for high rise rescue and fire suppression.

The standard occupation of these units is defined. Local authorities should give a proper argumentation based upon the risk profile of the territory when they deviate from this standard occupation. A city area has a different risk profile than a rural area. In contrast to the situation which is common practice nowadays, local authorities should explicitly decide upon deviation, thereby using proper argumentation and

communicate the decision. Consequences of this decision should be made visible in the regional coverage plan. The regional coverage plan ('regional dekkingsplan') provides information about the amount of capacity (units) available. For assistance purposes it is crucial that the same kind of material is in use. When assistance has to be delivered equipment should fulfill minimal requirements.

Operational performance is guided by the fire coverage times ('opkomsttijden') which set the standards for the brigades arriving (on time) at the incident scene. The fire coverage times urge an efficient and optimal organization of the basic fire service, which not necessarily takes place only within a single fire brigade itself. The required operational performance can be met by cooperating with surrounding fire brigades, taking prevention measures and innovation of working procedures.

Starting-point for the operational performance is the line of reasoning that the fire brigade can act successfully within 30 minutes after the beginning of a fire by performing rescue operations and suppressing the fire. Thereby, the assumption is made that it can take up to 15 minutes before a fire is detected. As a result, there are 15 minutes left after detecting the fire for the fire brigade to suppress the fire and perform rescue operations. On average it takes 8 minutes to arrive at the incident scene, so 7 minutes remain to prepare for the fire bet^{iv}.

Different fire coverage times can be set for different objects due to their risk profile. For objects housing less autonomic people (e.g. hospitals and retirement homes) the standard for arriving at the incident will be set at 5 minutes. On the other hand, fire coverage times may rise up to 15 minutes for less complex and less life threatening incidents. The maximum time to arrive at the incident scene is set at 18 minutes.

Fire coverage times comprise processing time for alarming, turning out to fight time, and time to drive to the scene. To make an efficient organisation possible in general the fire brigades have to meet 80% of the fire coverage times. Thereby, preventing large scale investments to achieve fire coverage times for spare buildings in for example rural areas.

Strategic positioning of the fire service

At the same moment central government in the Netherlands introduce new legislation the Dutch Assemble of Regional Chief Fire Officers (RRC) started to make a strategic journey to achieve clarity on the future perspective of the Dutch fire service^v. New legislation is seen as an enabler to performance improvement, the strategic journey is directed to innovation thereby aiming to define a future proof concept for the Dutch fire service. The past shows the fire service using an iterative approach in fire suppression.

Although doing this more effectively by means of engines, the fire service is basically doing the same for more than hundred years. The urge to innovate comes from society becoming more complex and the costs for the Dutch fire service are increasing significantly (costs in 2009 are four times more than in 1990)^{vi}.

The strategic journey results in four future organization types^{vii}: two kinds of response organisations (the 'nachtwaker' fire service' and the 'mantel' fire service) and two kinds of prevention organizations (the 'regie' service and the 'continuïteits' fire service). Response organization refers to the fire service putting effort in providing an adequate response when an incident has occurred. Prevention organization refers to the fire service putting effort in preventing incidents to occur.

Response organization

The future fire service as a response organization can result in two types of response organizations. The 'nachtwaker' fire service organization and the 'mantel' fire service organization. The 'nachtwaker' position of the fire service results in a society wherein citizens and company's themselves are responsible for their relief. Only in exceptional circumstances government provides assistance. The mantel organization on the other hand, is an organization that has a much broader scope than the current fire service. The fire service in the future becomes an emergency organization for all types of support (healthcare, assistance, and so on).

Prevention organization

The future fire service as a prevention organisation may result in a 'regie' organization or a 'continuity' organization. The regie organization delivers expertise on safety issues and is able to lead the debate. Thereby the fire service is able to steer processes and succeeds in preventing risks to mitigate a catastrophe. The fire service as a continuity organization results from today's 24 hour society, which is receptive for disruptions in it's 'infrastructure'. A disruption may have a devastating impact. The future fire service directs it's efforts towards managing continuity even when serious incidents occur.

The Dutch fire service is not unique in preparing for the future. In recent times an independent review^{viii} of the UK fire service found significant room for improvement. The UK government has asked each fire service in the country to spent more time focusing on prevention, and other emergencies, rather than working mainly on fire suppression. The London Fire Brigade views this request from the government as the 'beginning of the biggest overhaul of the fire service in London since the Second World War'^{ix}.

The potential contribution of private companies in professionalizing the fire service

This thesis focuses on the potential contribution of private companies in professionalizing the basic fire service. The above description of the developments within the fire service show that the functioning of the fire service is not only about efficiency, but it also about for example the way the fire service is organized and the introduction of performance indicators. The parameters are of relevance too for an adequate performance judgement in the case studies. Therefore, the following parameters will be used to investigate private fire service performance and to relate the results to public fire brigade's performance:

- the way the fire service is organized;
- the service delivery (output) by the fire service (e.g. coverage);
- the costs of the fire service (efficiency);
- transparency and accountability in fire service performance (governance);
- the coherence in fire service prevention and suppression efforts (coherence);
- employability of the fire service.

In the current discussion about professionalizing^x the fire service and thereby forecasting future perspectives of the fire service, the potential discussion of private companies is out of scope. This is slightly remarkable because:

- 1) Discussing the possible involvement of private companies is a strategic discussion. Do we want government to steer or to row with regard to the fire service? Especially the current debate about the future of the fire service and the administrative reform could stimulate to think about, and discuss, alternatives in the provision of fire service;
- 2) Legislation already requires private company involvement. Government requires high risk industry to fulfill their specific fire service needs themselves. So, interestingly, government relies on private company involvement in fulfilling fire service needs those objects potentially generating devastating effects, high risk industry;
- 3) At this moment several countries already have private companies fulfilling fire service duties. So, it is not only common in high risk industry it is also daily practice in public service delivery in several countries;
- 4) The introduction of the safety regions bill expects to result in a more efficient and effective fire service.
 - a. The efficiency battle is expected to take place in the basic fire service, because:
 - i. The safety regions are expected to have an increase in staffing personnel. The implementation of the safety regions

bill will cost a lot of effort. Therefore, it is to be expected that more employees are necessary at the regional level to realize the ambitions of the safety regions.

- ii. At the same time, the safety regions are expected to increase 'quality', but not at the expense of an increase in costs. So, the strive for efficiency is expected to take place in the basic fire service. The basic fire service is costly because of the significant amount of personnel and material needed for it.;
- b. The safety regions receive their contributions mainly by the local communities. The safety regions set the fire service more at distance from these local communities. It's is to be expected that when time passes by these local communities become less emotionally involved with the fire service and make more rationally based decisions about their financial contribution to the safety regions. Again it is expected that this will result in a strive for efficiency in the basic fire service.

In sum, this chapter described the current developments within the Dutch fire service and used this information to identify the parameters for defining private fire service performance. Before more thoroughly discussing how to compare public and private performance, the next chapter will describe how to position the fire service in the public private spectrum and how privatization of public goods can take place.

3 Contracting out the fire service

The fire service is generally perceived as a public service. In general people don't like the privatizing of public services related to safety. This brings about questions like: 'what is a public service and in which way can there be private company involvement?'. In order to reveal an answer to these questions, the current chapter describes the public-private typology of goods and services. Thereby, explaining what privatization is and describing which way of privatization is likely for basic fire service like services.

3.1 Pinpointing the fire service in the public-private spectrum

The fire service is generally perceived as a public service, but what is a public service? Public services are services that are under public ownership and control which is thought to ensure the availability of services that otherwise simply would not be available or only available for the happy few^{xi}. Therefore, public services are often regarded as services of a special kind. Safety is regarded as one of mankind's primary needs, therefore these services are given special attention.

Public-private spectrum: typology of goods and services

Ensuring the availability of goods and services that otherwise would not be available or only available for the happy few requires that everyone can consume the good or service and that no one can be excluded from it. Keeping this in mind, goods and services can be characterized according to their nature in accordance with their respective degrees of *exclusion* and joint *consumption*. The degrees of exclusion and consumption determine the nature of the good and thereby the conditions needed to supply it including the roles of government and private institutions in supplying the goods and services^{xii}. This characterisation results in four idealized types of goods and services:

1) Individual goods;
2) Toll goods;
3) Common-pool goods;
4) Collective goods.

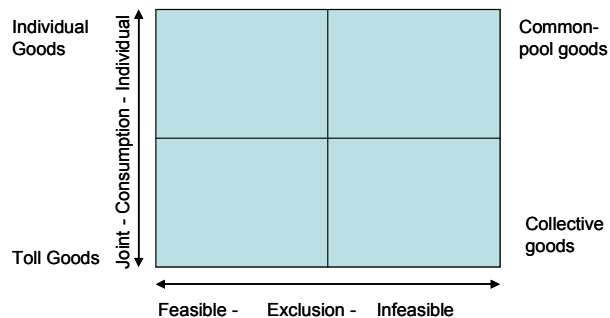


Figure 1: Types of goods and services

Exclusion and consumption are continuous variables. Exclusion refers to the possibility of excluding someone from using a good or service. Consumption refers to the possibility to use or consume a good or service simultaneously by many consumers without diminishing that good or service in quality or quantity. The idealized types of goods and services are situated at the extremes of these dimensions.

The kind of government involvement and private company involvement (market place) differs with regard to the four kinds of goods and services identified (possibilities for joint consumption – exclusion). *Individual goods* are the goods that one buys in the marketplace (individual consumption and the possibility to exclude, e.g. cars and smoke detectors). *Toll goods* can be supplied by the marketplace, suppliers supply goods and users have to pay (the possibility for collective consumption and the possibility to exclude, e.g. toll roads, a public swimming pool). Toll goods can also be supplied by the government. *Common-pool goods* are goods with no need to pay for and no means to prevent consumption. Common-pool goods pose a supply problem (e.g. walking in a forest). They're not supplied by the market. *Collective goods* are goods that everyone can consume and nobody is excluded from (e.g. a nation's military protection, public roads). So, they are used simultaneously by many people and nobody can be excluded from enjoying them^{xiii}. Collective goods can also be supplied by voluntary action (e.g. voluntary fire protection) or by legally sanctioned coercion (and therefore government is needed).

The theory of public goods suggests that for efficiency reasons the supply of collective goods requires government involvement. A *free rider problem* arises as it is impossible to exclude any individual from the benefit of the good or service: therefore no individual has any incentive to provide it and private provision produces a less than optimal supply^{xiv}. According to these characteristics nowadays fire service is generally considered as a collective good, the theory of public goods predicts market failure. Three remarks can be made about this:

- 1) All the above mentioned goods (toll goods, individual goods and common pool goods and collective goods) need a collective action. For toll goods, individual goods and common pool goods this collective action is a collective good, namely regulation in order to 'assure satisfactory supplies of these goods'. Collective goods need collective action to make sure that they are produced. This does not necessary imply government action, this can also be voluntary action¹.

¹ Voluntary action works reasonably well when the collective organization is relatively small. For example, a voluntary fire department. Members share values and interests and group pressure assures contribution and prevents free riding.

- 2) The typology of goods and services identifies different goods and services, but does not exclude possible private company involvement in the provision of e.g. collective goods. For example, government can contract out fire service and at the same moment steer (regulate) contract performance e.g. with regard to free-rider issues and the guaranteed fulfillment of public service delivery;
- 3) In (some) rural areas there's no municipal fire department. In these areas private company's frequently start their business by providing citizens the opportunity to subscribe to fire protection (like toll goods). In these areas fire protection is left to the market. Non-subscribers (free riders) simply don't receive service or pay an additional fee in case they do.

Characteristics of collective goods: the fire service

As described above there is a typology of goods and services, these goods and services are said to differ in their properties conform their typology. The table below lists the differences between individual and collective goods.

Characteristic	Individual good	Collective good
Consumption	Entirely by the individual	Joint and simultaneous by many
Payment for goods	Related to consumption; paid for by consumer	Unrelated to consumption; paid for by collective assessment
Exclusion of those who will not pay	Easy	Difficult
Measurement of quantity and quality of goods	Easy	Difficult
Measurement of performance of goods producer	Easy	Difficult
Individual choice to consume or not	Yes	No
Individual choice as to quantity and quality of goods consumed	Yes	No
Allocation decision	Made by market process	Made by political process

Figure 2: Properties of individual and collective goods (Savas 2000, p.55)

The differences as listed in the table show collective goods' characteristics to be *hard to measure* and offer *little choice to the consumer*^{xv}. As a consequence, it should be difficult to define and measure organizational performance of those organizations providing a collective good. 'And this difficulty means that it is difficult to specify the amount of the good to be provided and to estimate what it should cost. The very nature of a collective good means that an individual has little choice with respect to consuming the good, and he must generally accept it in the quantity and quality available. A further consequence of these characteristics is that payment for them is unrelated to demand or consumption, because it is impossible to charge directly for the use of collective goods. Therefore, instead of relying on a market mechanism, one

must rely on a political process to decide how much of the goods to produce and how much each user must pay in taxes. To the extent that most collective goods are impure and permit individual consumption to some degree is also regulated to the political process^{xvi}.

In general the characteristics of the fire service are said to be in line with the above description of the properties of collective goods. This is not to say that there still is room for 'improvement'. First of all, with regard to performance measurement: 'Collective goods' should not always be that hard to measure and estimates can be made about the amount of a good to be provided. The fire service (represented by means of a safety chain) can be broken down in different elements/ goods. These goods (e.g. fire suppression versus policies) differ in the degree they can be defined and measured. The number of fire fighters that are needed for adequate fire protection can be determined and their performance can be measured when clearly defined at forehand. Although the number of fires cannot be defined at forehand, the majority of the costs of fire protection can be determined quite well. Additionally, benchmarking and review of historical data can support in making a good forecast about the costs. Secondly, the ability to measure performance is also closely related to how business is arranged. Clearly defining performance indicators at forehand makes it more easily to monitor performance.

In general, there is a growth of collective goods. This is partly due to the transformation of the nature of goods. Fire service itself has also 'transformed'. 'In the nineteenth century when private fire companies protected paying subscribers. Fire protection used to be a toll good^{xvii}. Nowadays, 'people besides the homeowner benefit by having the blaze extinguished before it spreads. Furthermore it is no longer technically feasible to exclude service in densely packed, high-rise, multiple dwellings. So, changing conditions have caused fire protection in urban areas to migrate into the class of collective goods^{xviii}. Growth is also caused by society's decisions to regard certain individual and toll goods as that worthy that consumption should be for 'free'. To mitigate extraordinary fire protection risks government and private companies sometimes combine their forces in public private partnerships (e.g. 'AYMA' and the 'Gezamenlijke Brandweer').

As described above, although the fire service in general may have collective good characteristics, nowadays it becomes more and more in use to professionalize business in such a way that output becomes measurable. To a certain extent output related measurements will be possible of 'collective goods' like the basic fire service. Measurement of these characteristics is in line with New Public Management reasoning.

3.2 Changing from a government producer to a private producer

Privatization is defined as the reallocation of ownership and control of assets from the public to the private domain^{xxix}. 'Privatization is a term that includes competitive contracting as well as deregulation, divestiture, franchises, grants and subsidies, leases, public/private partnerships, service shedding (where a private firm assumes the ownership, control and delivery of a service), sale of assets and vouchers'^{xx}. More generally speaking: privatization means changing from government as a producer to a private producer (e.g. from a municipal fire brigade to a private company). Changing from a private producer to a government producer is called deprivatizing.

A clear cut distinction between private and public remains difficult to make, public can refer to government ownership, widespread ownership and open access. Privatization implies relying more on private institutions of society and less on government to satisfy people's needs^{xxi} and can take different forms e.g. contracting with private firms but also selling government properties like a railroad. If and how privatization takes place is strongly dependent on the kind of goods and services involved.

Privatization of public safety services makes a lot of people hesitating, assuming that safety doesn't benefit from privatization. 'The thought that safety is the responsibility of an organization that tries to make as much profit as possible usually contrasts with notions of ensuring the highest possible levels of safety'^{xxii}. In other words:

'Commercial success in a competitive environment implies exploitation of the benefit from operating at the fringes of the usual, accepted practice. Closing in on, and exploring the boundaries of, the normal and functionally acceptable boundaries of established practice during critical situations necessarily implies the risk of crossing the limits of safe practices. In short, privatization programs provide most of us with an eerie feeling about issues of safety. Accidents or near accidents that do occur in recently privatised industries are the subject of intense media attention'^{xxiii}.

Attempts to privatize the fire service generally result in public outcry and political fallout^{xxiv}. The impact on a community is immense and fire fighter's unions are really reluctant. This resistance finds its origin in the fear of loss of public employee jobs and the fear that cost reduction will result in a reduction of service quality. Still, nowadays fire protection is partly privatized. By tendering fire protection, 80% of the Danish communities have their citizens fire protection provided by a private company (Falck). In the United States Rural Metro is the largest company providing fire protection. Furthermore, history shows private companies having a significant role in the beginning of organized fire protection. Based upon the Dutch fire-protection act companies (according to their risk potential) sometimes are already obliged to have

their own fire brigade (e.g. the Chemelot Site, located in the Southern part of the Netherlands).

The fact that privatization of public safety services discomforts people is in contrast with the underlying assumption for privatization that private ownership leads to higher efficiency, better quality of service provision and a reduction of government expenditure^{xxv}. The above brief introduction shows the ambiguity in the discussion about the privatization of public safety services. Privatization is said to reduce costs *and* to enhance the quality of service provision.

Major potential advantages and problems with delivery of public services by for profit companies	
Potential advantages	Potential problems
Less red tape and bureaucracy	Higher potential for corruption because of lack of oversight
More competition leading to increased efficiency and cost savings for both private and public service providers	Incentives to reduce service quality
Improved service quality and expertise	Increased change of service interruptions due to contract cancellations, negotiations, strikes or business failure.
Lower unit costs because of ability to buy in quantity if operating in multiple jurisdictions	Labor conflicts because of the loss of public sector jobs
Savings can be used to fund other important local services	Savings benefit private companies not taxpayers.

Figure 3: Advantages and problems services by for profit companies.

In the last decade, privatization has continued to expand. Even in areas which are traditionally considered the realm of government such as prisons, energy supply and public safety. Recessions tend to increase the interest in improving efficiency and citizens continue to demand high quality services. Generally speaking economic recession and increases in taxes stimulate government in privatizing some of their public services. Especially those services that are not highly valued by citizens can be privatized relatively easily. On the other hand, highly valued goods and services are not privatized that easily, because privatization failure than would have a major impact. The fire service is one of those highly valued services.

Proponents of privatization argue that privatization enhances quality and lowers costs (competition). Assuming that there is competition and alternative service providers are available, accountability is ensured by the government's ability to select services (and cancel them when the deliverables are insufficient). Opponents of privatization are afraid of quality reduction and private companies reducing competition or establishing a monopoly (for an overview see figure 4, on the next page).

Both the public and the private sector have their strengths and weaknesses. Privatization can be about maximizing the strengths of both sectors (see e.g. Osborne and Gaebler). Some authors state that privatization brings government to her true role; according to Osborne and Gaebler^{xxvi} the role of government in delivering public services is as follows: 'the word govern comes from a greek root, 'Kybern', which means 'to steer'. The job of government is to steer, not to row. Delivering services is rowing, and government is not very good at rowing. Privatization is a pragmatic policy

Proponents	Opponents
1. Contracting is more efficient	1 Contracting is ultimately more expensive
2. Government can take advantage of specialized skills	2 Contracting debilitates government capability
3. Contracting responds quicker to new needs	3 Loss of autonomy for the contractor
4. Contracting allows flexibility	4 Contracting limits the flexibility of government in responding to emergencies
5. Contracting permits economies of scale	5 Contracting limits the opportunity to realize economies of scale
6. Contracting makes comparison of costs possible	
7. Contracting makes the cost of service visible	6 Loss of accountability and control of government when contracts are not adequately written
8. Contracting can reduce dependence of one supplier	7 Contracting results in undesirable dependence on contractors
9. Contracting spreads costs	
10. Contracting offers opportunities for entrepreneurs	
11. Contracting limits the size of government	8 Increasing political power of private organizations 9 Job losses among members of minority communities
12. Contracting stimulates innovation	

Figure 4: Proponents and opponents. Johnston, 2001. p.5

for restoring government to its fundamental role, steering, while relying on the private sector to do the rowing'. Thereby, the cost of service is not the only consideration (social cost argument). Government takes into account the balance between political/social ideals and economic ideals. Thereby, making it possible to provide services to citizens who would otherwise not be able to purchase them. And, service costs should not be the only consideration when deciding on contracting out. Some costs are passed later on to the government, for example lower retirement benefits.

3.3 Privatization of public services by contract arrangement

Service delivery comprises the service *consumer*, the service *producer* and the service *arranger*. The producer delivers the service, the arranger arranges the assignment of producer to consumer. The consumer receives the service. With regard to the privatization of fire service, government often fulfils the role of arranger.

The concept of privatization relates strongly to the distinction between the concepts of *arranging* and *producing* and the role of government. Although government often takes

the role of arranger this does not necessarily imply that they also should fulfill the role of producer. The choice of combining the functions a producer and arranger *can* be 'determined' by the relative magnitude of bureaucratic and transaction costs. 'When the arranger and the producer are one and the same, a bureaucratic cost is incurred, the cost of maintaining and operating a hierarchical system. When the arranger is different from the producer, there is a transaction cost, the cost of hiring and dealing with an independent producer. The relative magnitude of these two costs determines whether it is worth separating the arranging and producing functions'. 'Therefore, different arrangements arise because government can serve as arranger or producer, and so can the private sector'^{xxvii}. It's important to address that government's involvement is not only about costs, but also about assuring service provision to citizens who otherwise would not have admittance and the role assigned to the government.

Privatization often involves an arrangement with the private sector as a producer. This can be realized by means of grants, franchises or contracts. The *contract arrangement* is most commonly referred to when talking about privatizing public services^{xxviii}. In a contract arrangement the government

Producer	Arranger	
	Public	Private
Public	<ul style="list-style-type: none"> • Government service; • Intergovernmental agreement 	<ul style="list-style-type: none"> • Government vending
Private	<ul style="list-style-type: none"> • Contracts; • Franchises; • Grants. 	<ul style="list-style-type: none"> • Free market; • Voluntary service; • Self – service; • Vouchers.

Figure 5: Types of arrangements

is the arranger and the private organization is the producer. The arranger in the contract arrangement is^{xxix}:

- 1) An articulator of democratically expressed demands for public goods and services;
- 2) A skilful purchasing agent;
- 3) A sophisticated inspector of the goods and services that it purchases from the private sector;
- 4) An efficient collector of fair taxes;
- 5) A parsimonious disburser of proper and timely payments to the contractor.

Privatization does not necessarily mean that there remains no government involvement at all. The privatization of government services can be broken down into levels based on which and how much responsibility government turns over to private firms:

- 1) Government maintains overall responsibility (but contracts out auxiliary services);
- 2) Contracting out of day to day management while maintaining overall responsibility (e.g. garbage and recycling);

- 3) A private firm both owns and manages the service provision of 'government services'.

The term *public partnership* is a more general term which is often used to refer to any arrangement in which the public and private sector cooperate in producing and delivering goods and services.

Fire service: provision by voluntary and contract arrangement

The kind of arrangement to choose depends highly upon the specificity of the services, the availability of producers, efficiency and effectiveness, scale of service, susceptibility to fraud, economic equity, equity for minorities, responsiveness to government direction and size of government. *Individual goods* can be delivered by any of the above mentioned arrangements. In general, individual goods are not provided by government. *Toll goods* can as individual goods, also be provided by any arrangement, except self service. *Common pool goods* are provided by nature, but government action can be used to supply them by government service, intergovernmental agreements, contracts, grants or vouchers. *Collective goods* can be delivered by government service, by intergovernmental contract, by contract or by a voluntary arrangement^{xxx}. In general contract and voluntary arrangements are best suited for collective goods. Fire service is most likely to be delivered by one of the arrangements suited for providing collective goods.

Government contract can take place for material goods, output services (e.g. street-paving and ambulance services), and input services (e.g. support services). 'In Denmark most cities contract with a private firm, the Falck company, for fire and ambulance service; the majority of the population receives protection by this arrangement. In Sweden about two-thirds of the people receive fire protection from private contractors^{xxxii}. Sometimes government contracts a private firm to operate a facility or asset while government retains ownership. The private company manages the asset in behalf of the government, but does not use the asset in its own business.

Contracting is feasible and works well under the following set of conditions^{xxxii}:

- 1) The work to be done is specified unambiguously;
- 2) Several potential producers are available, and a competitive climate either exists or can be created or sustained;
- 3) The government is able to monitor the contractor's performance;
- 4) Appropriate terms are included in the contract document and enforced.

These conditions are quite easily to meet for certain elements of fire service, and more difficult for others. So can actual execution (service delivery) be more easily defined

(output) than input oriented activities. This would predict these well defined output activities to be more likely to be contracted out.

But still there is a lot of debate between proponents and opponents of contracting^{xxxiii}. Contracting out may for example cause a government knowledge drain, requires a government which is able to monitor contractor's performance, and for efficiency reasons competition should be retained. And, sometimes government just does not want to be dependent on a contractor (politics). On the other hand, nowadays, government is already dependent from private companies for their energy supply. These services are at least a critical for citizens well being as fire service.

Besides contracting there are also different institutional arrangements used for providing services, some of them are already in use for providing fire service, for example:

- Voluntary service: fire protection by volunteer fire departments;
- Self service: e.g. fire protection by installing smoke alarms;
- (intergovernmental agreements): 'safety regions' / regional institutional agreements;
- (government service): 'traditional' fire department;

Other (less likely) arrangements could be:

- Franchising: a private firm supplies a particular service in a specific area;
- Grants: subsidizing producers;
- Vouchers: subsidizing consumers;
- Free market.

Competition is an important determinant in achieving efficiency and effectiveness. The availability of producers/ competitors is a premise to make competition possible.

In sum, it can be concluded that de fire service in general is best characterized as a collective service. This is not surprisingly. On the other hand, a closer look reveals that the characteristic of collective goods and the current interest in more output related governance match quite well with the prerequisites for privatization by contract arrangements. With regard to the privatization of basic fire service, contracting out is expected to be the most likely arrangement. Government still being accountable for public safety (and having the possibility to 'steer'), but private companies being responsible for the actual execution (the 'rowing'). An important difference between individual goods and collective goods is that for the latter the allocation decision is made by a political process. (Local) government is often hesitating in privatizing.

4 Comparing public – private performance

Investigating the performance of private companies basic fire service provision raises questions about how to compare public and private service delivery. Generally speaking, public performance is not only about cost efficiency, but is also 'value' driven in a political environment. Thereby, presuming that public service delivery guarantees quality of service delivery.

4.1 Comparing public versus private performance

How to compare public and private organizations performance? Comparing performance of public and private organizations requires awareness of several 'methodological' issues^{xxxiv}. These methodological issues will be explained more elaborately below.

- 1) Government performance is often monitored by doing evaluation research. Results of evaluation research should be judged in accordance with the specific concerns using this methodology;
- 2) Government's performance is not always one-dimensional or dichotomous. This makes judging government's performance in terms of success or failure challenging;
- 3) The actual comparison of public versus private organizations' performance is frequently complicated by circumstantial factors that can not be controlled directly.

Evaluation methodology

Evaluation studies are most commonly used to evaluate government performance. To judge the results of the studies correctly it is important to take a closer look at the methodology in use^{xxxv}. First of all, as mentioned before government activities possess the characteristics of collective goods. So, sometimes output is hard to measure. Especially when these activities are related to policy design or agenda setting. It is to be expected that the more activities are related to policy implementation, measurements can take place more easily. The fire service's operational performance therefore, is relatively more easily to measure compared to a fire brigade's policy design or agenda setting efforts. Secondly, policy measures interact with each other, therefore it is difficult to determine the effect of one measure. For example; a drop down of violence will be the result of a combination of measures taken. It's difficult to re-address the results to one single measure.

Thirdly, it takes time before a measure reaches its full potential. Therefore, the moment of evaluation is of significant importance. Sometimes it requires political leadership and patience to have a measure reach its full potential. Fourth, government does not operate in singularity. Government is surrounded by, and cooperates with, other partners. Therefore it is almost impossible to extract the precise performance of one single actor (government). This can only be done in an experimental setting, which is hard to realize for societal issues. Fifth, not only will there be more actors involved, there will also be fluctuating circumstances, e.g. politics, economics, etc. which influence actual performance. The sixth remark to be made about evaluation studies; these studies often stress what is not realized, thereby overtaking what is realized. And finally, even if goals are well defined at forehand, evaluation standards itself can be sliding simply because societal and political points of view change in time.

In sum, when comparing public-private performance by evaluation studies it is important that the results should be interpreted in the correct manner. Judging public and private fire service performance should take into account these evaluation methodology issues. On the other hand, the basic fire service is relatively strong output oriented and less influenced by the issues addressed above. This activity is relatively output driven (although it occurs that output performance definitions and performance standards differ).

Judging government performance

If government performance results are available, how to judge them? Government performance is said to be multidimensional^{xxxvi}. This makes judging government's performance in terms of success or failure challenging. Efficiency, effectiveness and coherence are the three criteria that are frequently used for judging governments' performance. They find their origins in society's economic dominance yardstick and the split between politics and governance. It is not easy to use these criteria to measure government's performance.

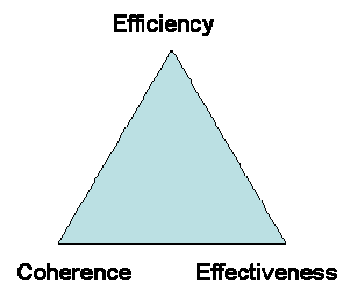


Figure 6: Judging government performance

Effectiveness

Effectiveness is difficult to measure, especially, because policy objectives frequently serve several functions. They are not always meant to be measured in a way more well defined output (e.g. waste collection) is measured. Sometimes they are simply meant to give direction, in that case performance judgement should not only address the intended effects, but also other effects that are realized (as a consequence of the policy objectives).

Efficiency

Efficiency is another criteria frequently used to judge organizational performance. It is often said that public organizations perform less efficient than private organizations do. Several comments can be made about this. First of all, the concept of efficiency is not unique. Efficiency can indicate managerial efficiency, but it can also mean economic efficiency. Thereby, economic efficiency taking into account the total amount of societal costs. So one can run a fire brigade efficiently, but if elderly people don't get any job opportunities society will have to bring up the costs for these people. Secondly, it is simply not possible to express all different values in terms of money, this may lead to neglect of other values. So, a cost-benefit analysis may not be the only instrument to judge public organizations/ policy performance. In complex societal issues there are always more values involved which should be taken into account to perform an adequate judgement.

Coherence

The criteria of coherence is about integral government performance. Does government not perform well when it is not functioning as one coherent unit? Using this criteria too stringent should neglect the existence of different political viewpoints and their function as part of the checks and balances in society and within government. So, although government performance is not always coherent it is part of the way politics and government function.

Taken together the three criteria efficiency, effectiveness and coherence are representatives of an instrumental approach assuming government performing as a rational actor. As discussed above, these criteria can only partly explain government performance.

Demarcation public-private

In judging public and private performance it is frequently said that private companies perform better than government especially by those who favour efficiency. Besides the above mentioned methodological and performance judgement issues it can be questioned what exactly belongs to the public and what to the private domain. The following quotes demonstrate the borders are not always clear cut: '...fading line between public and private: a large segment of the organizational world is now 'gray'', 'The distinction between 'private' and 'public' has (...) become hopelessly blurred'^{xxxvii}.

The private and the public sector are compared in several different ways:

- Comparing government with a company;
- Comparing government sector with the market sector;
- Comparing public and private organizations.

Comparing government with a company represents government in a holistic manner. There's one government as there is for example one multinational. A parallel is assumed in the way government functions and a multinational does. Therefore government would function in line with a 'rational central rule approach', and the accompanying standards. Comparing government and company functioning this way neglects politics and coordination issues. Comparing government sector with the market sector makes a systems comparison and addresses internal functioning differences. Public and private sector differ in their decision making structures. Comparing public and private organizations, than the main distinction is made by their legal status. Although the sector borders are more clearly in this latter example, public organizations can still differ in their orientation and their contribution to the public interest. Comparing performance between public and private organizations is sometimes complicated, at least because it is not that easy to define public and private organizational borders.

In sum, comparing public and private performance requires awareness of the 'methodological concerns' expressed above. Especially, when judging a highly valued service like the fire service. Discussing the findings of the present study will have to take into account the specific methodological concerns with regard to evaluation research. Furthermore, several parameters will be used for comparing public and private performance in order to make a multidimensional performance judgement possible. The performance comparison will not be restricted to the parameter efficiency. In addition, some of the methodological concerns are mitigated by evaluating *basic fire service* performance which is relatively output focused.

5. Private fire service performance in practice

The previous chapters discussed the pro's and con's of privatization and showed differences in suitability of goods and services for privatization. Different privatization arrangements of goods and services were discussed. The findings show fire service is most likely provided by means of a contract arrangement or a subscription base arrangement. This chapter takes a closer look at the way service delivery of privatized fire protection by showing the findings of privatized fire protection by means of a contract arrangement. Therefore two literature case studies are performed of world's largest private fire service providers: Falck in Denmark and Rural Metro in the United States.

The findings of the case studies will be presented using the parameters employability, organization, coherence, output/quality/service

delivery, efficiency and governance. These parameters are in line with those mentioned when referring to the professionalization of the Dutch fire service in the beginning of this thesis. Figure 7 lists these parameters and their meaning.

Comparing public and private fire suppression	
Employability - Loss of jobs - Labour conflicts - Employee benefits - Training	Output/ quality/ service delivery - Coverage/ service to community - Damage/ victims - Collateral damage
Organization - Use of economies of scale - Reduction of government - Flexibility	Efficiency - Costs - Use of specialized skills - Innovation
Coherence - Cooperation with other parties - Safety chain	Governance - Accountability - Government guidance/ managing contracts

Figure 7: Comparing public and private fire suppression

5.1 Private fire service provision by Falck^{xxxviii}

In Denmark the first private salvage corps (Falck) was founded in 1906 (even before the fire protection act) in Copenhagen^{xxxix}. In order to survive Falck had to innovate and thereby expanded its services. Falck started to organize fire service in rural areas and subsequently expanded and started to deliver their services in cities and towns. Subsequently, the fire protection act of 1926 gave local authorities the freedom to decide whether they will have a traditional public fire department or whether they decide to contract a private company. Falck continued to expand it's fire fighting services, and nowadays Falck delivers fire fighting service for 78 of the 98 (80%) Danish municipalities.

Governance

Provision of fire fighting services to the municipalities is based upon an agreement between Falck and the Association of Local Authorities. Within the framework of this agreement the single municipality and Falck can draw up a contract comprising fire fighting and related services. This contract must be approved by both the state and municipal authorities (from 01-01-09 there is new legislation, which no longer requires approval by state authorities). The Danish fire legislation was the most detailed in Europe, with a very specific regulation of the size of fire brigades, equipment, training, response times and so on. Nowadays, the Danish fire service act is not that detailed. The departmental order for the first call out states: 'The first call out must as a minimum be staffed with 1 leading FF (crew chief) and the necessary crew to handle the equipment. The first call out shall leave the fire station as soon as possible, not later than 5 minutes after the alarm has been given by the callout centre'. There is a very comprehensive public control by public authorities which is more rigorous for Falck brigades, because they have a specified contract which must be both approved by the municipal and the state authorities. Furthermore, if a community chooses to contract a private company, they still have a publicly employed fire chief. This fire chief supervises the contract with the private company and enforces regulation concerning preventive fire protection measures. The contract agreement and the publicly employed fire chief enable very comprehensive control by public authorities.

Employability

In general, findings show labour conflicts when there is an existing municipal fire brigade and a private company tries to contract its services. Private companies mostly focus on areas where there is no municipal fire brigade, although municipal fire brigades are also taken over (e.g. Falck recently took over the 100 year old Gentofte municipal fire brigade with fulltime fire fighters). As will be explained later on, cost efficiency is reached by combining services, but as a result of this combination of services personnel receives theoretical training and practical experience in different services. Falck personnel rotates jobs on a shift basis, thereby personnel experiences greater job satisfaction^{xi}. Recently, in 2008, Falck is named workplace of the year 2008 by the trade union 3F and trade journal Fagbladet: "Falck receives the main award because they look after their employees, care for them and have confidence in them; because management listens to the employees and because of the company's unique corporate spirit. You showed public spirit long before the concept was invented"^{xii}

Privatization savings generally do not come at the expense of employee salaries, which on average are slightly higher in the private sector. However, when public sector employees move to the private sector, there is usually a reduction in benefits and the

increase in pay may accompany longer work hours. Employee benefits more often make use of employee stock ownership plans which raise productivity and cut back on pension costs.^{xliii}

General findings on employability

Layoffs of employees due to privatization are uncommon. 'Most affected workers take jobs with the private contractor or move to other public agencies, again as part of the privatization package. Only about seven percent of workers lose their jobs'^{xliii}. The promise of a private sector job might not be as effective in persuading public fire fighters to accept privatization as it is with other public employees. Many of today's fire fighters, with a schedule that has them working only two to three days a week with the remainder of the week off, are able to hold a second job, run a business, or pursue other interests. Private fire companies have less flexible schedules, making public fire fighting jobs unique and highly desirable^{xliiv}.

Output

Contract performance

Falck's output is specified in a contract approved by the authorities. The service levels are spelled out in these detailed contracts, which are periodically reviewed. Contracts are based on call out time and activity. A higher service level is possible, but payment will increase and a refund has to be made by Falck if they are unable to reach the agreed level. Falck is ISO 9001 certified as the only fire brigade in Denmark. Given the agreed standards and Falck not being a government entity, the company consistently has to provide quality services at low cost to survive.

By cross training personnel Falck provides a number of services in an efficient way. Within the boundaries set in the contract this is expected to improve service delivery and increases customer awareness by it's personnel. Finally, authorities set the standard and they are urged to express their expectations towards the level of service delivery clearly. The company has to make sure to fulfill them. Up till now, Falck maintains and even expands its market position thereby showing to fulfill the customers' expectations. Falck provides fire fighting services for 78 of the 98 Danish municipalities.

Direct and indirect costs as a consequence of fire

Output can also be measured by direct and indirect costs as a consequence of fire. The World Fire Statistic provides information about these costs for different countries^{xliv}. Although not comparing private and municipal fire protection directly it provides an estimate of the cost differences between countries related to direct fire losses (direct

damage/ losses due to fires) and indirect fire losses. Costs of direct fire losses in Denmark are 0.22 of GDP, in the Netherlands these costs are 0.18 of GDP and in the US they are 0.22 of GDP (including losses of 9/11). With serious reservations, because of widely varying bases for the results, the results for indirect fire losses are: Denmark 0.029 of GDP, the Netherlands 0.027 GDP and the US 0.022 (including losses of 9/11). The population comparisons for fire deaths per 100.000 persons shows the following results: Denmark 1.46 deaths (2000-2002), the Netherlands 0.68 deaths (1994-1996) and the US 1.74 deaths (including deaths of 9/11). The tables below (from the World Fire Statistic) provide a more elaborate overview.

II. Cost of Direct Fire Losses

Table 1

Adjusted direct losses (in millions, except for Japan - billions)

Country	Currency	2000 Direct Losses	2001 Direct Losses	2002 Direct Losses	Percentage of GDP 2000-02
Singapore	\$S	105	95	115	0.07
Poland	Zl	805	535	620	0.09
Japan	Yen	480	535	485	0.10
Slovenia	SIT	6,550	4,100	5,400	0.11
Czech Republic	CzKr	1,600	2,300	4,200	0.12
Hungary	Ft				0.12 (1986-88)
Spain	Pta				0.12 (1984)
Finland	€	185	190	175	0.14
United Kingdom	£	1,200	1,500	1,500	0.14
Australia	\$A				0.16 (1992-93)
Canada	\$Can	1,650	1,950		0.17 (1999-2001)
France	€	2,450	2,600	2,500	0.17
New Zealand	\$NZ				0.17 (1993-94)
Germany	€	3,850	3,700	3,750	0.18
Italy	€	2,500	1,900	2,550	0.18
Netherlands	F				0.18 (1995-96)
Sweden	SKr	4,200	4,600	4,750	0.20
Denmark	DKr	2,700	2,550	3,300	0.22
United States	\$US	10,500	44,500	11,000	0.22
Switzerland	SwF				0.23 (1989)
Belgium	€	665			0.24 (1998-2000)
Austria	Sch	5,700			0.26 (1998-2000)
Norway	NKr	3,700	4,650	4,200	0.28

* Including 9/11 losses estimated at \$33.4 billion.

Note: Fire losses include explosion losses following fires, but exclude explosion loss where no fire occurs, for example, some acts of terrorism

Table 1: Cost of direct fire losses (the World Fire Statistic).

III. Cost of Indirect Fire Losses

Table 2

Average percentage of GDP (2000-02)

Country	%
Norway	0.002
Czech Republic	0.005
Sweden	0.006
Finland	0.007
UK	0.011
France	0.014
Italy	0.014 [1993-94]
Austria	0.016 [1998-2000]
Japan	0.016 [1985-86]
Germany	0.020
Canada	0.022 [1991]
USA	0.022*
Netherlands	0.027 [1995-96]
Denmark	0.029 [1993-95]
Hungary	0.029 [1992-93]
Slovenia	0.033
Switzerland	0.095 [1989]

- Calculated after allowing for \$8.4 billion losses arising from 9/11 in 2001.

Note: This table must be regarded with serious reservations - the figures are produced on widely varying bases and some of the differences look too large for credibility.

Table 2: Cost of indirect fire losses (the World Fire Statistic).

Organization

A private company operates in a competitive environment and therefore has to organize itself in a way that ensures an efficient operation and meeting the customers' expectations. Falck operates nationwide (Denmark) and internationally. From this experience, costs fall as their output levels increase (learning curve). Falck gains experience and is quite good in utilizing this. So, they take advantage of economies of scale (this will be discussed more elaborately in the paragraph 'efficiency').

Further, Falck has a highly integrated organization which makes, as has been said before, joint production of services possible. This ensures productivity over the available resources. The mix of services offered to public customers, private households and firms are central to the business philosophy of Falck: the joint operation concept. Personnel are trained in (and perform) a different range of tasks during the day and night. Falck's different service groups have an overlapping structure; this facilitates rapid exchange of ideas and experiences. Competition is the force driving Falck to be a flexible and dynamic organization.

Coherence

Although local authorities contract out fire protection (spelled out in contracts) they still employ a fire chief. This fire chief is responsible for enforcing regulations concerning preventive fire protection and supervising the private contractor's fulfillment of his contractual obligations^{xlvi}. Therefore, the fire chief is a functional linking 'safety' pin between government and the private company. Further, as showed by the example of

Rural Metro later on in this thesis, private companies have an intrinsic motivation to provide an optimal package of safety measures. They do so by providing safety information to citizens and enforcing prevention regulations. Finally, cross training personnel increases safety awareness and facilitates coherence.

Efficiency

General findings

Private companies are said to work cost efficient, thereby providing value for money, simply because urged to by competition. Results show Denmark having one of the lowest expenses on fire fighting services in the world. The costs of fire fighting in Denmark are lower than other countries (in the comparison). Fire fighting costs in Denmark are 0.09 of GDP (gross domestic product) and for example in the Netherlands they are 0.16 GDP and in the US 0.29 GDP in 1996.

Costs of fire fighting in Denmark and other countries ^a

Fire fighting costs in per cent of GDP	
Denmark	0.09
Norway	0.12
Holland	0.16
Finland	0.18
Sweden	0.21
UK	0.27
USA	0.29

GDP, gross domestic product.

^a Source: Wilmot (1996).

Table 3: Costs of fire fighting in Denmark and other countries

Country	%
Singapore	0.04
Slovenia	0.05
Denmark	0.07
Norway	0.10
Austria	0.11 (1994)
Finland	0.13 (2002)
Belgium	0.14 (1998-2000)
Netherlands	0.15 (1994-96)
Sweden	0.15
New Zealand	0.16
Poland	0.19
UK	0.20
USA	0.25
Japan	0.34
Canada	0.35 (1991)

Note: The low Danish cost is largely due to the private company, Falck, which runs many fire brigades, together with ambulance, rescue and motor breakdown services

Table 4: percentage of costs of GDP (World Fire Statistic)

The results for the period 2000-2002 show the same sequence; Denmark 0.07 of GDP, the Netherlands 0.15 of GDP and in the US 0.25 of GDP.

Detailed findings

Looking more in detail how Falck operates in Denmark a detailed study^{xlvii} has been performed comparing costs of private and public provision. In this study the dependent variable is the expenditure per capita for fire service and civil defence. The volume of fire protection equipment and personnel is determined by the size of the population. Independent variables used to control for economies of scale are the kind of personnel used (fulltime professional fire fighters or part-time fire fighters) and urbanization. In general the results show Falck's costs being about one third of the costs of municipal fire protection. More in detail the results of analyzing 241 municipalities (before the Danish municipal reorganization) are:

- There are economies of scale associated with population size;
- Private fire protection service is cheaper than public fire protection service;
- Use of professional firemen increases costs substantially;
- The increase of costs using professional firemen decreases substantially when the service is provided by a private company (another way of organizing/ provision of multiple services);
- Integration of fire protection and civil defence increases costs substantially (due to type of fire chief who wants to expand the budget);
- Urbanization increases costs somewhat. The cost savings of private provision are not the result of being private provision more frequent in less urbanized regions;
- The largest difference in costs between private and public provision is found in urbanized regions (in the advantage of private provision).

These findings are supported by findings of Wilmot (1996)^{xlviii} and the World Fire Statistics, showing that Denmark has one of the lowest expenses on fire-fighting services of the world. The results below show that the costs per inhabitant of the Danish fire brigades are lower than those of other countries in the comparison and the Falck municipalities have lower costs per inhabitant than other municipalities.

Comparison of the costs of firefighting in municipalities in different countries ^a

Municipalities	Costs per inhabitant (SEK-1992)
Randers (DK) Falck	93
Hinnerup (DK) Falck	137
Aarhus (DK) Municipal and Falck	156
Fredericia (DK) Municipal	220
Bergen (N)	413
Drammen (N)	356
Odda (N)	347
Lund (S)	446
Svalöv (S)	395
Kronoby (FIN)	342
Deventer (NL)	307
Highland and Islands (UK)	362

DK, Denmark; N, Norway; S, Sweden; FIN, Finland; NL, Netherlands.

^a Source: FOU (1994).

Table 5: Comparing of the costs of firefighting in municipalities in different countries. For information inhabitant numbers: Aarhus (250.000), Randers (59.842), Hinnerup (7.180) and Deventer (96.617).

Why is private provision in Denmark more cost efficient than public provision?

The first explanation could be the **economies of scale**. Public provision of fire service is determined by the size of it's administrative unit. Optimal scale of production constitutes to the cost efficiency of the private supplier. There are two ways in which optimal scale of production is likely to contribute to cost efficiency of Falck fire protection:

1. Falck uses joint production of different activities. Thereby, using personnel more efficiently. The joint supply of many services makes the personnel having less idle time waiting for something to happen. Thereby changing the ratio between idle time and working time, while having the same (or even more) people available for fire protection. The results of the study described above support this interpretation by finding this advantage especially in fire departments based on full time professional fire men. Falck personnel rotates jobs on a shift basis, thereby personnel experiences greater job satisfaction.
2. Falck operates world wide. In the study above the findings for Falck in Denmark are explained by Falck operating across whole Denmark, and thereby becoming a big purchaser of fire protection equipment. The company itself also makes parts of fire protection itself. Their products are even sold to public fire departments.

'Economies of scale make it possible to take advantage of quantity discounts'^{xlix}. This is one of the focal points in the formation of the safety regions in the Netherlands. 'Economies of scale are the result from specialization of labour and management, or from lower cost methods of production. In the presence of scale inefficiency average costs rise with population. Lack of managerial expertise attributes to local government scale inefficiency. Volunteer fire departments are at lower costs alternative to professional fire departments where less fire protection is demanded and where the

firefighting environment is less difficult. As incomes rise residents demand quicker response times and more emergency services, which may be beyond the capacity of volunteer departments to provide at reasonable cost. Growth in population density new industry increases the task of fighting fires, perhaps beyond the abilities of part-time volunteers. These trends may cause communities to switch from volunteer to professional departments' ¹.

The second explanation of private provision of fire protection being more efficient is expected to be the **competition** of alternative sources of supply. When government provides a service there are no forces of competition to keep down the costs. For Falck the economic argument is important because there's always the possibility of public provision of fire protection. Municipalities might want to provide the service themselves if the fire protection provided by Falck does not save them money. The pressure of competition is only felt when it is likely that a change to a private supplier or visa versa is likely. Cities with fully professional fire departments are not very likely to privatize fire protection, because this would imply several practical and political difficulties. These departments show also largest differences in costs compared to private fire protection. The pressure on the private supplier also seems to be an incentive to innovate. Fire fighting techniques of Falck have been implemented in public fire brigades.

A third explanation for the difference between public and private provision of fire protection in terms of costs is the **separation of demand and production function**. If these functions are mixed, control of costs is difficult and the forces to increase expenditure are stronger.

A fourth explanation for the more efficient way of providing fire protection is the freedom to **expand outside political boundaries** (within the contract agreement).

The findings of Falck on the parameters can be summarized as follows:

- **Governance**: Falck's performance requirements are spelled out in contracts, which are periodically monitored. The fire chief is publicly employed;
- **Employability**: Falck is a private company, employee benefits differ from government employees, benefits are not worse, but different. Falck does not acquire savings by reduction of employee benefits. Layoffs of employees due to privatization are uncommon;
- **Output**: Falck's output is in accordance with the contract agreement. Output can also be defined in term of direct and indirect costs. Findings on direct costs and indirect costs are in accordance with findings for the Netherlands and the U.S. The fire death statistics show Denmark having a lower death rate than the U.S., but a higher death rate than the Netherlands;

- Organization: Falck has a highly integrated organization which makes joint production of services possible. The joint operation concept is central to the business philosophy of Falck. Competition is the force driving Falck to be a flexible and dynamic organization;
- Coherence: local authorities employ a fire chief. The fire chief is responsible for enforcing regulations concerning preventive fire protection and supervising the private contractor's fulfillment of his contractual obligations;
- Efficiency: fire fighting costs in Denmark (0.09 GDP) are significantly less than in the Netherlands (0,16 GDP) and in the US (0.29 GDP). Explanations for cost efficiency are:
 - The optimal scale of production;
 - The competition of alternative sources of supply;
 - The separation of demand and production function;
 - The freedom to expand outside political boundaries.

5.2 Private fire service provision by Rural Metro

Lou Witzeman founded Rural Metro in 1948 because there was a lack of fire protection in his neighbourhood. He started Rural Metro with a fire truck which he bought from the money he had collected from subscribing neighbours. 'In 1969, Rural Metro began operating ambulance services independently of its fire operations. Today, Rural/Metro has become one of the largest ambulance companies in North America, providing "911" emergency and non-emergency medical transportation services, as well as a variety of private fire protection services.'ⁱⁱ

'As the nation's leading private sector fire protection provider'ⁱⁱ, Rural/Metro has demonstrated how the public and private sectors can come together to provide services for less costs through correctly administered emergency services. Rural/Metro currently provides private fire protection services to more than 25 communities, and responds to more than 60,000 calls annually. In addition to community fire protection, Rural/Metro provides industrial aircraft rescue and firefighting (ARFF), and wildland fire protection services.'ⁱⁱⁱ

This case study is about Rural Metro's performance in Scottsdale. Scottsdale is selected because there are most reported findings of Rural Metro's performance in this city. Since 1951 Rural Metro provides fire protection to the city of Scottsdale. In this period the city of Scottsdale has grown from an area with 2000 people to 126000 people.

To provide (tax based) fire protection to the city of Scottsdale, Rural Metro uses a mix of part-time fire fighters and fulltime professionals. Rural Metro uses a lot of part-time fire fighters to accomplish their fire protection service levels. In Scottsdale almost 50% are part-time fire fighters. Nevertheless, Rural Metro also provides fire protection to rural areas and/ or areas without a tax base for fire departments. In these areas Rural Metro provides subscription services^{liv}. Subscription is voluntary and the level of service is dependent of geography and population density. Subscribers pay a annual fee for fire protection and emergency medical service. Rural Metro responds to all fires (and medical emergencies) in the subscription area to provide adequate response to protect the subscribers properties. A non-subscriber pays high hourly rate if it is necessary to respond to a fire involving a non-subscribers property.

In 2002 Maximus (a consultancy firm) releases a report about Rural Metro's provision of fire services in Scottsdale^{lv}. The report is part of a periodic review of Rural Metro and titled: 'Analysis of fire safety: City of Scottsdale, Arizona'. The audit report is overall very positive about Rural Metro's performance, but critics of Rural Metro use the report to strive for a city fire department. Critics use two findings in the report to argue that Rural Metro does not provide adequate fire protection: 1) A computer simulation shows that Rural Metro reaches 52% of the city in four minutes or less, 2) Rural Metro's fire trucks arrive with only three fire fighters on board. Those critics, favouring a public fire department, argue that a public fire department will achieve:

- Devotion to a service mission rather than a profit mission;
- Faster fire response times;
- Increased fire incident staffing;
- Participation in the automatic aid system;
- Establishment of defined-benefit firefighter pensions and death/ disability benefits;
- Lower costs.

The findings of the Maximus report and the arguments of the critics favouring a public fire department will be discussed^{lvi} with regard to the parameters of this thesis.

Governance

Devotion to a service mission rather than a profit mission

Proponents of a public fire department state that a service mission focuses on service delivery instead of focusing on profit and shareholders. Therefore, a public fire department is expected to have lower costs. In reality there is not that much evidence for this statement.

1. Public fire departments do have costs private company's don't have. They do for example have more middle management and more extended hiring procedures.
2. Further, it is to be expected that the service mission is incorporated in the contract. The city determines the levels of service. For Rural Metro this results in a very stringent contract that spells out in detail the required service levels. Therefore, the contract agreement between Scottsdale and Rural Metro is very comprehensive and demanding. 'It includes, for example, provisions specifying response time requirements, response time definition, response time liabilities, response time penalties, and—because sometimes, rules must be broken—exception report logs. Consider, for instance, the latter provision: Rural Metro shall keep exception report logs, recording each and every call that exceeds the response time set forth in Appendix `J', detailing the specifics of the call, recording all dispatch and other pertinent dispatch related times, and giving detailed explanations as to why the response time failed to meet the criteria set forth in Appendix `J'. These exception reports shall be forwarded to the Contract Administrator as part of the `monthly reports'.^{lvii} Rural Metro's performance is periodically audited as is also shown by the Maximus report. Further, Rural Metro has to report within 15 days of each month about a number of topics as mentioned above.
3. A profit mission would also endanger the lives of citizens and fire fighters when company's management is not successful and has to cut expenses. Daily practice in industry (e.g. oil offshore industry) shows that safety is first priority and that training and equipment will be kept up to date with the required safety standards.
4. Finally, Rural Metro's profit is regulated by the Arizona State Corporate Commission, thereby preventing Rural Metro from reducing cost which lead to the detriment of quality of service^{lviii}.

Employability

Fire fighter pensions and death/ disability benefits

Fire fighters of Rural Metro do not qualify for the same pensions and death/ disability benefits as public fire fighters do. Public employees participate in the Arizona Public Safety Retirement system. Public fire fighters have a defined benefit plan, Rural Metro has a defined contribution plan. The individual's investment choices and the performance of those investments determines the final benefits. Rural Metro fire fighters cannot participate in the Federal Public Safety Officers' Benefit program. So they do not receive the one time benefit public fire fighters receive when they die or become permanently disabled as a result of work related injuries.

Output

Fire staffing issues

The NFPA 1710 requires a standard initial response of four fire fighters to an incident. Rural Metro fire units respond with three firefighters, but complete the fire company dispatched to the scene by means of a separate ambulance unit whose personnel consists of two fully trained fire fighters. Thereby, Rural Metro is compliant with the NFPA 1710 guideline. Rural Metro is not compliant when the ambulance and the fire rig do not arrive at the same time on the scene. However, the current performance is in line with the contract between Rural Metro and the city. Further, Rural Metro practices this way of fire staffing since 1992, the NFPA guideline has been in effect since 2001. Together the city and Rural Metro should decide on if (and how) to implement this guideline. Rural Metro uses NFPA standards as minimum for all Scottsdale personnel including reserves.

All fire fighters are trained conform the NFPA. 'All are trained at levels consistent with the standards set by both the Arizona State Fire Marshall's Office and the National Fire Protection Association. The company agrees to provide a "minimum of 240 hours of training each year of service to all full-time firefighters ... and a minimum of 72 hours of training per year [or eight hours per month] for all reserves and Fire Support fire fighters." Moreover, all full-time firefighters must hold the "Firefighter II level of certification, State Emergency Medical Technician certification, and EMT-D certification when working in the primary service area."^{lix}.

Faster fire response times

The NFPA 1710 provides a frame of reference for fire response times. The NFPA (a guideline) states: in at least 90% of the incidents the fire unit should arrive within four minutes at the scene, in at least 90% percent of the incident the full response (additional equipment and fire fighters) should arrive on the scene. The Maximus report used different response time measures:

- The report used average response times, but did not report the percentage of incidents Rural Metro was compliant. Rural Metro's average response time was 4.09 minutes;
- The percentage of the city Rural Metro could reach from existing fire stations, using a computer simulation model. The simulation showed that Rural Metro could reach 52% of the city within four minutes and 48% within 8 minutes.

Although opponents argue that Rural Metro is not performing well, it can be questioned whether Rural Metro is not actually performing quite well. Firstly, the measures do not reflect average response times and not the percentage related to the incidents.

Secondly, if existing fire stations are used it does not make any difference in response time for a public or a private fire department. Thirdly, the city itself sets the response time standards in the contract. The times in the contract varied for different parts of the city (from four to seven minutes). The NFPA 1710 is a guideline, every city can develop its own equivalent standard. Lastly, Scottsdale has a very stringent sprinkler ordinance which mitigates the risk of fire damage.

Direct and indirect costs of fire

Rural Metro has tailored its service to the needs of the community, for example repairing water pipes and removing reptiles. A citizen's survey showed that 98% of the sample of residents rate Rural Metro's service as good or very good. In Scottsdale the structure fires are 39% below average, dollar loss from fire is 41% below average and the average for deaths as a result from fire is 15% below average^x. In Scottsdale local authorities are quite satisfied about Rural Metro's performance as regularly expressed in the media by Scottsdale's mayor. Inhabitants of Scottsdale praise Rural Metro's service delivering. Voters prefer six to one Rural Metro instead of a public fire department.

Organization

The most important reason for Rural Metro's success is its capability to innovate. Rural Metro pioneered with the use of sprinkler systems and Scottsdale amended its sprinkler ordinance for all new buildings.

Rural Metro focuses on rural and growing suburban communities that do not have already municipal fire protection. Rural Metro trains its employees for various services (like Falck's joint production concept). The NFPA 1710 is the standard for the number of fire fighters who respond to an incident and sets the first response at a minimum number of four fire fighters. The NFPA 1710 does not state that there have to be four fire fighters on a fire unit. Rural Metro meets the four-person standard with a fire unit with at least three fire fighters on board and an ambulance with two crew members fully trained as fire fighters.

Rural Metro also 'makes use of a mix of full-time firefighters and on-call paid reservists (most of whom are city employees who receive regular monthly training and have permission to leave their city jobs when their pagers alert them to a structure-fire call). Using its innovative combination of full-time and part-time firefighters, Rural/Metro averages 23 firefighters on every Scottsdale fire call. A half-dozen outside studies over the years have verified the cost-effectiveness of Rural/Metro's approach.

Eighty-eight firefighters are employed full-time in Scottsdale; 70 others are employed part-time.^{lxi}

Coherence

Rural Metro improves the prevention practices in Scottsdale. Scottsdale is well known for its sprinkler ordinance which considerably mitigates the risk of fire damage.^{lxii} Rural Metro has a strong prevention ethic: 'the best way to fight fires is to prevent them'. Rural Metro has a much higher number of fire inspectors than the required norm and the fire inspectors are also asked to serve as fire-fighters. The fire protection knowledge (e.g. hazards in the coverage area) can be useful in the actual fire suppression. Rural Metro is also a national leader in the development of fire prevention programs, 'Rural/Metro abundantly communicates prevention to its customers through many training and education programs. These include home fire-safety inspections, CPR classes, emergency first aid, water and mountain rescue courses, and hazardous materials services, as well as fire safety education classes in the schools^{lxiii}'. Rural Metro enforces the city fire code. Ensuring that every new building is in compliance with city fire ordinances. All new fire protection systems are inspected and tested by Rural Metro. Only when this has taken place the owner of a new building can receive a certificate of occupancy by the City.

Participation in the automatic aid system

The automatic aid system determines which fire units are closest to an incident. Scottsdale is the only community of the 19 communities in the region that does not participate in this system. The advantage of participating in this system would be: faster response times and resource sharing. The system requires the use of the same technology and a staffing of four fire fighters per engine. To meet the requirements a lot of costs are to be made. It's up to the mayor and the city counsel to decide upon making these investments to meet the requirements.

Efficiency

The costs of Rural Metro versus a city department

Although there have been made various estimates about the costs of a city department, compared to the costs of Rural Metro (17 million dollar a year), the results do not provide a serious indication Rural Metro being more expensive than a city department. In contrast, a city department is expected to cost about half a million dollar more a year, transition cost (3 – 7 million dollar) excluded. Compared with similar services nationally, the costs for Rural Metro are 20 to 25% lower^{lxiv}. Other studies^{lxv} about the Rural/ Metro in Scottsdale showed that fire service costs are 46% below the average of

that service in other cities (the study did not make adjustments for levels of service between communities). The studies of Scottsdale fire protection show an increasing rise in fire protection costs over time, and thereby approaching the costs in neighbouring cities. There seems to be a relationship between population density and per capita fire costs.

The two figures below show the results of a 2001 study performed to compare costs of private and public fire protection. Figure one shows that Scottsdale has the lowest spending per capita on fire protection, 39 dollar. Figure two shows that Scottsdale also has the lowest costs related to fire, 13 dollar.

Figure 2: Costs Relating to Fire

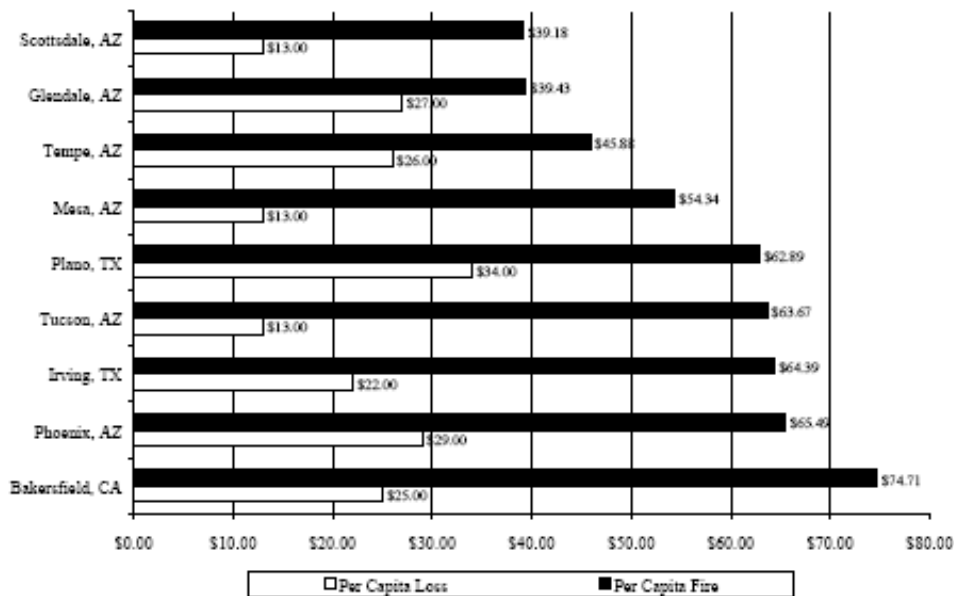


Figure 1: Per Capita Spending on Fire Protection

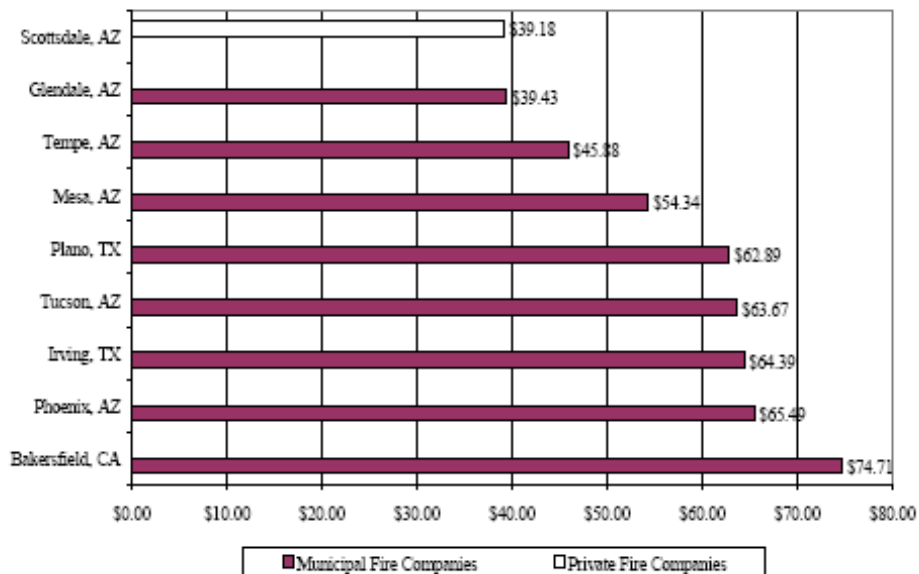


Table 6: figures 1 and 2: costs relating to fire and per capita spending on fire protection, Johnston 2001, p.11

It can at least be concluded that Rural Metro is not performing bad at all. In managing expectations and guaranteeing adequate performance it would be wise to establish the level and the quality of service a city wants and subsequently open the process for a competitive bid. This will result in the city receiving best value for money and offers Rural Metro, other private companies and also those who favour a public fire brigade to compete on an equal foot.

The findings of Rural Metro on the parameters can be summarized as follows:

- Governance: Rural Metro's performance requirements are spelled out in a very stringent contract. Rural Metro's performance is periodically audited. Furthermore Rural Metro has to report about its performance within 15 days of each month;
- Employability: Fire fighters of Rural Metro do not qualify for the same pensions and death/ disability benefits as public fire fighters do. Public employees participate in the Arizona Public Safety Retirement system.;
- Output: Rural Metro's performance is compliant with the NFPA 1710 guideline. Rural Metro is not compliant when the ambulance and the fire rig do not arrive at the same time on the scene. However, current performance is in line with the contract between Rural Metro and the city. There's some discussion about response times, but these are concordance with the city's response time contract. In Scottsdale dollar loss from fire is 15% below average and the average for deaths as a result from fire is 15% below average. Inhabitants of Scottsdale praise Rural Metro's service delivery;
- Organization: Rural Metro trains its employees for varies services. Furthermore, Rural Metro pioneered with the use of sprinkler systems and makes use of a mix of full-time firefighters and on-call paid reservists.
- Coherence: Rural Metro has a strong prevention ethic. The best way to fight fires is to prevent them. Rural Metro improves the prevention practices in Scottsdale. Scottsdale is well known for its sprinkler ordinance which considerably mitigates the risk of fire damage. Rural Metro is also a national leader in the development of fire prevention programs.
- Efficiency: The results indicate Rural Metro being less expensive than a city department. Findings vary from costs being 20% - 46% lower than similar services nationally.

Rural Metro's contract expired in 2005. An election was organized to decide whether or not to continue with Rural Metro. There was a fierce competition between opponents and supporters. There was a lot of support in favour of Rural Metro. Rural Metro won the elections, after they pulled out six months later. Rural Metro added up the costs of

their campaign promises and discovered that they could not meet all their commitments as cheaply as they had claimed. So, they made the business decision to pull out^{lxvi}.

6. Discussion

Previous chapters presented several data with regard to the potential contribution of private fire service in facing future challenges for the Dutch fire service. The first chapter presented the current developments within the Dutch fire service stressing administrative reform and the strategic discussion related to the future Dutch fire service. Six parameters were identified comparing public private fire service performance. The second chapter addressed the characteristics of the fire service (as a collective good or service) and ways of private company involvement in delivering these goods. The third chapter presented a framework for judging public performance and revealed methodological issues when comparing public and private performance. The fourth chapter provided



Figure 8: Parameters comparing public private performance

detailed information about the actual performance of private fire service companies in practice. Additionally, the following people (all involved with Dutch the fire service) were interviewed to reveal their opinion about privatization of the fire service:

- The major of the city of Haarlem, Bernt Schneiders;
- The major of the city of Nieuwegein, Cor de Vos;
- The Regional Chief Fire Commander of the safety region South-Holland South, Peter Bos.

The interviews focused on the challenges for the Dutch fire service and the potential contribution of private fire service in the Netherlands. See the appendix for the interview questions. This chapter discusses the findings of the case studies (chapter 5) in the context of the issues addressed in the chapters 4, 3 and 2. Subsequently, the results will be related to the developments within the Dutch fire service chapter 1 and the expert opinions as revealed by the interviews.

Delivering adequate fire service by contracting out

How do private companies perform in providing basic fire service? Below findings on private companies' performance and how to compare them with public brigades'

performance will be discussed in line with the (the findings about the) performance parameters identified previously.

Government remains responsible for goal setting even when contracting out

The findings show private fire service being mostly realized by contracting out, sometimes subscription services are delivered. Most private fire service arrangements involve government as an arranger and a private company as a producer. Thereby, having private companies perform in accordance with a contract arrangement. Contrary to the ideas often expressed by opponents of private fire service, private fire service provision is rarely completely left to the market (with the possibility of free riders). In these occasions fire service is left to the market, provision is subscription based. Non-subscribers are not excluded from fire service, but they will have to pay a higher hourly rate. The findings show fire service performance contracts spelled out in detail and private fire service performing in accordance with these contract requirements, but it is government who sets the contract requirements. So, government remains accountable for fire service performance and the private company is responsible for the actual execution.

Private fire service shows adequate contract performance

As mentioned above, government sets the contract requirements and private companies fulfill their duties in line with the contract agreement. The findings show that this results in adequate contract performance. The detailed contracts make governance of private fire service quite well possible. Furthermore, the results show private companies demonstrating prevention efforts and provide examples of how to engage in community safety programs (e.g. educational programs on schools) thereby showing awareness of the relationship between prevention and fire suppression efforts. This is contrary to the assumption that there should be no awareness by private companies about the interrelatedness of prevention and suppression measures. The Scottsdale sprinkler ordinance provides a good example of private fire service showing (sometimes unique) prevention efforts, thereby clearly linking prevention and suppression efforts. This fosters coherence, but also clearly shows private fire service's awareness of the effectiveness of their efforts. Contracting out the fire service forces government to formulate performance requirements. In general, the results (of the case studies) show at least equal performance for private fire departments compared to public fire departments while reducing financial costs for the fire service.

Methodological issues regarding cost efficiency unnecessarily disturb comparing public and private fire service's performance

As addressed in chapter 4, comparing public and private services' performance several methodological issues can be identified. Such issues are for example the parameters involved in judging performance and the (un)possibility to measure the output of the fire service. Opponents of privatization frequently argue that case studies only involve the efficiency variable instead of judging coherence and effectiveness too and that it is difficult to measure output. The findings in this thesis show that using several variables in describing private fire service performance makes a more comprehensive performance judgement possible. Thereby enabling the comparison between public and private performance at the policy execution level (basic fire service). In chapter 4 methodological issues comparing public and private performance were addressed. The underlying line of reasoning are the unique attributes of government activities which complicate judging government performance itself and the comparison with private company performance. The case studies and the presented findings mitigate most of the methodological issues addressed. Both studies represent performance over a relatively long period of time and stress policy execution activities, which are relatively output oriented and therefore can be monitored quite well. The intended output is well defined and also outcome results are monitored (e.g. indirect costs related to fire). There always may be unintended effects (outcome) too, but this is not unique for private company performance. Furthermore, if there should be significant unintended effects it is to be expected that these would be revealed in the studies. It is to be expected that unintended effects (as a consequence of the intended output) also would reflect directly on the business results of private companies, e.g. Falck would not be providing fire service anymore to so many Danish communities. Critics who argue that studies comparing public private performance do not control for all cost variables may be asked whether there may be a more accurate judgement for the costs of government activities itself. Secondly, a detailed cost comparison may not be the only relevant item for performance comparison. So, although there may always be opportunity for methodological discussion and improvement, this does not hinder reflecting upon the meaningfulness of the findings for the Dutch fire service. A more principal discussion could take place about whether government's role should be rowing or steering with regard to fire service. As will be described further on, even when attributing government a steering role, the fire service still can learn meaningfully from private companies' provision of private fire service.

Although strongly embedded in society, fire service is not necessarily a collective good

The (basic) fire service is generally perceived as a collective good, but history shows the fire service originating from the private market. Even nowadays, there are areas where there is no fire service at all, or only provided by the private market.

Furthermore, as the case studies in this thesis show, basic fire service only partially meets the characteristics used for describing collective goods. Basic fire service's output can be defined quite well and private companies are (relatively) easily able to take over these execution activities. Even when agreeing that the fire service is not necessarily a collective good, it still can be questioned why private company involvement is so scarce. History shows fire service being strongly embedded in society, this reveals an answer about why it is so difficult to have private company involvement, especially in those situations when there's already a public fire brigade. Furthermore, 'safety' is a highly valued good for people. So the idea of privatizing the fire service gives people an 'eerie feeling'. As a result, issues involving the start up or the continuation (extending the contract) of private company involvement in the fire service result in political debate (see e.g. the debate about Rural Metro's involvement in Scottsdale). Furthermore, the findings show that it is possible to define and monitor performance, which contrast with the notions about the expected attributes of collective goods.

Private companies' way of working

Adequate performance of private companies providing fire service is achieved at lower costs. This may be explained by the competitive environment surrounding them and the different way of organizing their work than public fire brigades do.

Efficiency is not inherent to private companies, it is competition that fosters efficiency

The case studies in this thesis describe private companies way of working, showing them to work efficiently. But efficiency is not a 'private company attribute' itself, it is competition that is the driving force to work as efficient as possible. Private companies work as efficient as possible due to the competitive environment surrounding them. Competition results in private companies trying to take as much advantage as possible through making optimal use of the economies of scale and to expand outside political boundaries (innovation, organizing work, etc). Furthermore, in terms of costs private fire provision uses a separation of demand and production function, therefore control of costs is more easily. Innovation takes place in function of the strive for efficiency.

'The findings show private fire protection being less costly than municipal fire protection. The more detailed study about the cost of fire protection in Denmark, show Falck's costs being about one third of the costs of municipal fire protection. Further the findings show an increase in costs using professional firemen, but the increase in costs using professional firemen is decreasing substantially when the service is provided by a private company. The largest difference in costs between private and public provision (in the advantage of private provision) of fire protection is found in urbanized regions.'

Instead of doing more of the same, private companies provide fire service by doing things differently

Governance by contract performance results in private fire service performance being less (or less directly) influenced by day-to-day politics thereby providing private fire service the freedom to expand outside political boundaries (within the contract requirements). In order to work as efficiently as possible private companies have a different way of organizing their work and make optimal use of economies of scale. Private companies providing fire service differ from public brigades at least in the following:

- 1) Private companies have different way of organizing their fire service. Performance defined in a contract arrangement and a competitive environment fosters a (different) way of organizing to achieve efficiency. Private companies succeed in a competitive environment by using economies of scale and organizing work in an efficient and innovative manner. Private companies tend to use the 'joint production concept'. The joint production concept combines different activities together, for example a combination of ambulance and fire services. As a result, employees are cross trained and they deliver multiple services. This largely contributes to the efficiency of the company. In order to achieve efficiency an optimal mix of full time fire fighters and volunteers is used and material purchasing is taking place making optimal use of economies of scale. Furthermore private companies are forced to share information and foster learning in order to remain in a competitive position. Being a learning organization is crucial for organizational development. Contrary to what is sometimes thought, the findings do not support private fire companies being a worse employer than government is. Private companies are a different employer. Although private fire companies have less flexible schedules, making public fire fighting jobs unique and highly desirable, private companies can be an interesting employer for a lot of employees. Private company employees are well (cross) trained and have less idle time waiting. The fear of firing employees when a private company starts providing the fire service seems not to be realistic. Employability by a private company is not worse, but it is simply different from government employability and therefore depends from personal preferences.
- 2) Private companies are focused on fulfilling their contract requirements. This makes them focused on monitoring and reporting critical performance indicators. This results in both internal and external transparency. In order to see if they fulfill their contract arrangements they continuously have to monitor their processes and report about them. This keeps private companies' management and employees really focused on what to do. This is different from government which sometimes is more input driven and is less monitoring output performance even for really critical

output driven activities such as for example fulfillment of coverage times. It should be expected that government management teams would be discussing this critical performance indicator at least monthly and investigate why this indicator sometimes isn't fulfilled. So, clarity on performance requirements and continue awareness of organizational performance is thought to contribute to the performance of private companies.

- 3) Prevention and community safety efforts are related to fire suppression efforts. Although it is not to say that private companies achieve a better coherence between prevention and suppression activities than public brigades, it is at least surprisingly to see that private companies show significant effort in trying to diminish the likelihood of the occurrence of fires and their damage. Private companies are expected to focus on providing the basic fire service, thereby fulfilling contract requirements, but in practice these companies do put effort in prevention measures (being part of their strive for efficiency). Private fire protection companies are frequently involved in prevention (risk management) programs for example by increasing citizens' fire prevention awareness by giving public instructions. Rural Metro provides good examples of this by the educational programs provided by Rural Metro and the sprinkler ordinance of Scottsdale. So, it seems that private companies put to practice some of the 'community safety' activities public fire brigades recently set on their agenda (see e.g. the independent review of the UK fire brigades performance).
- 4) Budgets and responsibilities are linked differently in private companies. Although private companies in general have a different reward system than public fire brigades it is not expected that the difference in reward in terms of salary makes the difference for efficient working. What is expected to make the difference in performance is the organizational reward system in a way budgets and responsibilities are organized. Private companies employees are rewarded when they do their job with less money than available by budget. Public employees on the other hand, have to explain why their expenditures are less than budgeted. So, interestingly, the way government directs budgets does not seem to be an incentive for efficient working. Government salary scales show the tendency to increase when the amount of budget and employees one is responsible for increase. The more budget one is responsible for, the higher one's status. The involvement of private companies results in a clear cut separation of the demand and production function. This results in different performance incentives and guidance on an efficient way of working.

So, private companies seem to have a way of working which is more different than sometimes is expected. Private companies are frequently expected to achieve efficiency by being a worse employer or not performing that well. If they would do this,

they wouldn't survive in a competitive environment. The findings show private companies providing fire service doing things in a different way than public fire brigades do, this contributes to an efficient way of working.

Do not reject or copy private service, but learn meaningfully from it

In chapter 1 the current and future developments within the Dutch fire service are described, showing the Dutch fire service being in a process of reorganization by the formation of the safety regions and discussing the more long-term future of the fire service by making a 'strategic journey'. As will be discussed below, the findings of private fire service performance can be meaningful for the Dutch fire service both for the short term and for the more long-term. Thereby not stressing whether or not the fire service should be contracted out, but by notifying directions for meaningful learning.

Meaningful learning within the Dutch fire service

Private fire service show various interesting features which are useful for the Dutch fire service too, even if government keeps on fulfilling the role of producer (remember: rowing or steering?). The Dutch fire service should meaningfully learn from the findings presented, meaningful referring to active, constructive, collaborative, conversational, contextual, complex, reflective and goal oriented learning. In other words, in order to learn it is not about rejecting or simply copying private fire service, but is about reflecting and discussing the findings within the context of current and future challenges for the Dutch fire service. Although this thesis will give some directions for meaningful learning, the actual learning has to take place within the Dutch fire service and it's stakeholders.

The formation of the safety regions should amongst other things (such as disaster management) also result in an efficient and effective (basic) fire service. Efficiency in the safety regions should be achieved by using economies of scale and effectiveness is to be expected of a more efficient and better way of organizing from (at least) the basic fire service. Therefore, the safety regions bill comprises some output indicators. There are some directions for meaningful learning from private fire service:

1. Introduce contract performance and formulate and implement clear cut performance indicators for the basic fire service. This development requires a spelled out contract with safety region government and forces attention to the primary process. Even the idea of contracting out fosters professionalization² by stimulating government to spell out the required performance (performance indicators) and to report frequently and detailed about it's actual performance^{lxvii}. The findings show this way of working creating transparency

² Professionalizing is defined as organizational performance improvement.

in expectations and the actual fire service performance. Not all required performance can be predicted at forehand, but adequate and up-to-date information provides sufficient steering opportunity's. The findings show for both proponents and opponents of privatization, that is possible for government to specify detailed performance requirements (even for – so to say – 'collective goods') and make government more aware of the required performance (political process). Contracting out and contract governance takes capacity, but it can be questioned whether or not this capacity should be invested anyway if an organization wants to acquire a certain degree of professionalization.

2. Foster competition. The examples of Falck and Rural Metro show competition being an important determinant for efficient performance. Introducing the concept of competition, which can also be managed competition, is therefore expected to foster efficiency. Managed competition, can be as easy as a costs comparison in the acquisition of fire engines between the safety regions. Nowadays, fire engines should contain a standard pack, this should make a comparison of costs quite good possible. Furthermore, it is still quite surprising that every community or safety region acquires it's own materials (fire engines), while this could be organized in a more central and efficient manner. It is to be expected that competition would foster a development like this. A first step ahead could be to make more and better use of benchmarking tools. Although some people will find this threatening it would be a good instrument to learn and stimulate a more efficient way of working and monitor service delivery.
3. Start community safety and educational programs. Thereby, interconnecting more thoroughly prevention and suppression efforts. Nowadays, fire brigades in general in the Netherlands can improve visibility towards citizens and can increase input in educational programs at schools. To create more openness towards society it is expected to be helpful if fire brigades create service desks where people can get information and fire services related services. Firemen can be more involved in 'community safety' programs outside the fire station.
4. Try different ways of working and dare to experiment with different organizational concepts, e.g. the joint production concept. Although labour organizations may not always favour different ways of working, the cost increase of the fire service urges for a change in the way of working. This may be done by stimulating innovation, for example pilots like occupying a fire engine with four instead of six people. Another way of organizing could also be the introduction of the joint production concept or a rapid intervention vehicle. It is worthwhile to stimulate these new ways of working.

5. Achieve transparency in the business of a fire service and attribute responsibilities at the right level. Thereby, interconnecting responsibility by setting up a 'performance indicator tree'. Performance indicators should not only be costs and qualitative variables, but also cost indicators.

Private companies providing basic fire service in the Netherlands?

The findings described in this thesis show private companies being able to provide adequate levels of fire service and thereby being less costly than public brigades. This brings about the question why should or shouldn't private fire service be introduced in the public domain in the Netherlands? In order to reveal the opinion of some of those who are accountable and responsible for the fire service two majors and one regional Chief Commander were interviewed (see the appendix for the interview questions (in Dutch)). The interview question's underlying line of reasoning was: given the results as described in this thesis, showing private fire service delivering adequate performance more efficiently, and assuming that the formation of the safety regions will increase expenditures even in the forthcoming years, shouldn't this result in a trend to privatize the basic fire service, and why or why not?

There will be private fire service in the Netherlands, but not in the coming 5 to 10 years

The interview results show the introduction of private fire service is not for seen in the coming 5 to 10 years, but as time passes by, society becomes more demanding and costs keep on increasing it is to be expected that there will be a moment when a community will start with a kind of private company involvement in providing basic fire service. Respondents do not see contracting out on the short term, for two reasons: firstly, the fire service is under responsibility of the mayor who is accountable for public policy and safety. As a consequence, questioning the public provision of the fire service is in essence political. Secondly, in order to contract out performance requirements should be specified well together with the availability of uniform procedures. It is expected that it will take some before the prerequisites, that are expected to be needed for contracting out will be fulfilled. If the decision is made for contracting out, this should take place under strict conditions, see also the contracting out in the ambulance sector. Public authorities remain accountable for public safety issues and are therefore hesitating to restrict control only to monitoring contract performance.

Private companies contribution in coping with challenges for the public fire service

The following challenges are foreseen for the fire service in the Netherlands:

- The reduction in the availability of volunteers;
- The introduction of a new system of fire service.

It is expected that the reduction in the availability of volunteers will persist in the forthcoming years. In combination with the cost increase, the fire service will have to undergo a fundamental reorientation in its provision of fire service. There will be an increase in prevention efforts (like 'community safety programs') that have to take place. Furthermore, the current system of providing fire service will have to professionalize and undergo a fundamental reorientation. This will require a change in culture within the fire brigades which takes time. Projects like the 'strategic journey', incidents that will occur and by just starting up pilots will facilitate the process of reorientation. If new initiatives will be successful they will spread throughout the fire brigades. A crucial determinant in the process of reorientation are the government representatives, they should support renewal.

If private company involvement in providing basic fire is introduced it is expected to have the following influence conform the parameters discussed in this thesis:

	Respondent 1	Respondent 2	Respondent 3
Output	+	+/-	+/-
Coherence	+/-	+/-	-
Efficiency	+	?	+
Organisation	+	+/-	+/-
Employability	+	+/-	+/-
Governance	+	+	-

Table 7: Parameters comparing public private performance. '+' indicating positive influence, '-' indicating negative influence, '+/-' indicating no influence (neutral) and '?' don't know as indicated by the respondents.

Output is not expected to differ from current performance, only in terms of efficiency (value for money). Coherence between prevention and suppression is not necessarily negative when there's private company involvement, but the way coherence should be achieved needs to be well defined in the contract. Privatization can have a positive effect on the way the fire service is organized (multiple services and the use of economies of scale), but one should be aware that this does not result in a lack of coherence. Private fire service is seen as a different employer, but is not perceived as a worse employer. The overall opinion is that it may have a slightly positive effect on the employability of employees and their working career. Governance for the activities that are contracted out, is expected to increase. The overall governance is not expected to increase, or may even deteriorate. In sum, respondents do not see technical issues with regard to contracting out the fire service. Instead, contracting out is a political decision which is not yet on the political agenda. The social embeddings of the fire service and the accompanying culture make privatization of the basic fire service complex.

The formation of the safety region will not speed up the introduction of private fire service

Respondents do not expect the introduction of the safety regions resulting in a budget transition from the basic fire service to the safety regions policy makers, but an increase in costs is expected due to society's increasing safety standards and the professionalising of crisis management, crisis control. There's no transition expected, because there are norms for the basic fire service. Within these the fulfillment of these norms an increase in efficiency is expected. At this moment, respondents do not expect the developments within the safety regions to be related with a tendency to introduce private fire brigades in the Netherlands.

No prevailing future scenario determined, but a multiservice organization seems likely

Respondents show the following points of view with regard to the future of the fire service:

- The fire service should stress on professionalizing of it's key processes and core businesses first;
- 'Proaction' can result in a decrease in necessity of basic fire service efforts, but proaction is not only an issue of the fire brigades, it is also strongly dependent upon society's risk perception and willingness to invest in safety measures;
- With regard to the future scenario's there's no scenario prevailing, but the respondents information indicates that the fire services' core business is the fire service as a response organization.

Given the dilemma's to professionalize and work efficiently, in combination with the expected reduction in the availability of volunteers, it does not take to much imagination when asking a private company to fulfill fire duties in an efficient way they will try to combine services. So, directing towards a multiservice organization, thereby facilitating firemen in there second career too.

7. Conclusions

In order to answer the question: 'What lessons can the Dutch fire service learn from private fire service?' case studies were performed of the performance of world's largest private companies providing fire service: Falck and Rural Metro. The findings were discussed taking into account theoretical notions about the comparison of public and private organizations performance, resulting in the use a more comprehensive and elaborate framework consisting of 6 parameters for comparing and interpreting performance results. Changing society and as a consequence also the developments (e.g. safety regions) surrounding the fire service make it useful to perform case studies like this. As mentioned in the discussion part of this thesis the Dutch fire service should learn meaningfully from the findings. Rejecting the findings before discussing them wouldn't be wise to do, simply copying private fire service's way of working wouldn't be wise either. The following can be concluded:

1. The findings show private fire service being mostly organized by contract agreement and fire service not being a pure collective good. Contrary to the sentiments frequently accompanying privatization discussions, contracting out the fire service does not mean that fire service provision is completely left to the market.
2. Private companies providing basic fire service show adequate performance:
 - a) Private companies providing fire service guarantee service delivery spelled out in contracts. Performance is in line with these contracts and does not negatively deviate from public fire brigades' performance;
 - b) Private companies providing fire service are frequently involved in prevention (risk management) programs for example by increasing citizens' fire prevention awareness by giving public instructions;
 - c) Private companies providing fire service make optimal use of economies of scale;
 - d) Private companies providing fire service are in general less costly than a public fire brigade;
 - e) Private companies providing fire service are quite well governed;
 - f) Private companies providing fire service can be an interesting employer for a lot of employees, people are well, cross, trained, but have less idle time waiting.
3. Introducing private company involvement in the provision of basic service is more a political than an economical decision. Fire service's embeddedness in society makes privatization discussions so hard. The significant cost increase in the past decade for the provision of fire service increases the urge to involve economics in decision making. The findings in this thesis show that by

contracting out the provision of basic fire service safety values still can be respected while costs can be reduced.

4. There is a necessity for the Dutch fire service to professionalize and anticipate upon future developments like the reduction in the availability of volunteers and to keep the costs of the fire service affordable.
5. Private companies can support the Dutch fire service in the challenges they face. It is unlikely that this will take place by contracting out on the short term, but private companies can in the nearby future be supportive in supporting pilot projects organizing the fire service differently and using innovative techniques.

The findings in this thesis result to the following recommendations for the Dutch fire service:

1. Speed up the professionalizing of the Dutch fire service by for example:
 - a. Describing the key and supportive processes;
 - b. Defining and structuring performance indicators (including operational performance!). Do not only include qualitative performance indicators and budget indicators, but do also introduce cost indicators!;
 - c. Setting performance goals, aligned with the defined performance indicators, monitor, report and discuss the results and act accordingly.
2. Introduce (managed) competition. Immediately start benchmarking crucial organizational and operational performance indicators. This will foster efficiency and improves learning.
3. Start using economies of scale. It is quite curious that nowadays most safety regions or communities still purchase goods on their own;
4. Start pilots and speed up existing pilots with regard to the use of innovative techniques and new ways of organizing the fire service (including community safety programs).
5. Writing a thesis provides new insights, but at the same time new questions arise. Some suggestions for future research are:
 - a. Investigate possibilities for public-private partnerships in the provision of basic fire service for example in industrial surroundings and those areas where industry already realizes fire service on their own;
 - b. Investigate the possibilities for multi service arrangements for the Dutch fire service.

7. Epilogue

Both case studies show private fire companies performing well over a long period of time. The author is well aware of the complexities involved when comparing public and private performance. As described, privatizing the basic fire service is not a purely economical discussion. With regard to a highly valued good as public safety the rule of economics should not prevail. On the other hand, society still will have to question itself how it can keep on affording itself the current level of fire service if costs keep on increasing.

Hopefully the findings in this thesis will be a wake up call for those who keep on thinking that the fire service is a unique collective good. The fire service isn't unique and can be privatized, technically speaking, very easily. The message of this thesis is not about privatizing as goal on itself, but about the Dutch fire service learning meaningfully from the findings. Subsequently, the Dutch fire service should get out of her comfort zone, speed up professionalizing, show firm leadership and adapt to societies nowadays and future demands at affordable costs.

Overview matrix case studies

Comparing public and private basic fire service	Rural metro/ Scottsdale	Falck Denmark
Context/ environment	Rural Metro started in a small rural community that had no fire protection at all. Scottsdale evolved from a small rural community to a city.	The Danish fire act of 1926 made it possible for municipalities to engage private firms to provide fire fighting services ^{lxviii} . The fire act was created to offer small municipalities the opportunity to improve their fire fighting services.
Governance -Accountability -Government guidance/ managing contracts	<ul style="list-style-type: none"> - Local authorities are satisfied about the performance. - Stringent contract spell out in detail service levels; - Periodic audits on performance. -Within 15 days of each month the monthly report must be completed and submitted, some elements to be reported: <ul style="list-style-type: none"> -the number of incidents responded to in the city; -fire cause analysis report of structure fires; -report of the monthly prevention activities. Etc. 	<p>-Legislation: The Danish fire legislation is the most detailed in Europe, with a very specific regulation of the size of fire brigades, equipment, training, response times etc.</p> <p>-Detailed contracts: Provision of fire fighting services to the municipalities is based upon an agreement between Falck and the Association of Local Authorities. Within the framework of this agreement the single municipality and Falck can draw up a contract comprising fire fighting and related services.</p> <p>There is a very comprehensive public control by public authorities which is more rigorous for Falck brigades, because they have a specified contract which must be both approved by the municipal and the state authorities.</p> <p>-Public fire chief: the fire chief is an employee of the municipality.</p>
Employability -Loss of jobs -Labour conflicts -Employee benefits -Training	<ul style="list-style-type: none"> - Uses NFPA standards as minimum for all Scottsdale personnel including reserves; - Employees do not participate in the Arizona Public Safety Retirement system. -Training for all fulltime fire fighters conform the NFPA. 	<p>-Labour conflicts: labour conflicts arise when a private company tries to overtake a municipal fire brigade. Falck does not enter the market of existing municipal fire brigades.</p> <p>-Personnel's job experience: The combination of services makes that personnel get theoretical training and practical experience in different services. This increases job satisfaction.</p> <p>-Employee benefits: benefits differ, more use of stock ownership plans, no participation in the public pension system.</p>
Output/ quality/ service delivery -Coverage/ service to	<ul style="list-style-type: none"> - Good coverage, but in line with the contract agreement. - They deliver additional services; - Locating fire stations when possible to the boundaries, 	<ul style="list-style-type: none"> -Output is spelled out in contracts. -There is a greater variety in service delivery, personnel is more flexible. -Direct costs, indirect costs and the number of death per 100.000 people are slightly

Comparing public and private basic fire service	Rural metro/ Scottsdale	Falck Denmark
community -Damage/ victims -Collateral damage;	- 98% of the sample of residents rate the service very good or good. - 39% below average structure fires, 41% below the average for dollar loss from fire, 15% below the average for deaths as a result from fire - Scottsdale: fire loss per capiita: 13 dollar, the city next door 26 dollar per capita ^{lxix}	higher than the countries compared in the World Fire Statistics.
Organization -Use of economies of scale -Reduction of government -Flexibility	-Rural metro focuses on rural and growing suburban communities that do no have already municipal fire protection; - Rural Metro uses a mix of full-time fire fighters and on-call paid reservists. ^{lxx} - Rural Metro trains ambulance personnel also as fire fighters, with less personnel they can guarantee coverage.	-The joint operation concept: The mix of services offered to public customers, private households and firms are central to the business philosophy of Falck. -Operational control centres are an integral part of the fire and ambulance services and are operated by Falck. -Economies of scale: Falck makes use of economies of scale in several ways (e.g. rapid exchange of ideas and experiences).
Coherence -Cooperation with other parties; -Safety chain	- Participation in the automatic aid system - Improving a communities prevention practices (link with efficiency) -Rural Metro enforces the city fire code, and ensures that new construction is in compliance with city fire ordinances.	-Close cooperation with municipalities and a publicly employed fire chief responsible for enforcing regulations concerning preventive fire protection measures and supervising the private contractor's fulfillment of his contractual obligations. -Cross training of personnel.
Efficiency -Costs -Use of specialized skills; -Innovation	- 46% less than neighbouring cities. Costs increasing during the years, 1989 study showed still a difference in fire and emergency service costs between Scottsdale and it cheapest neighbouring community of 7 dollars, 39 versus47 dollars per capita. The 2003 audit of Rural Metro expected a municipal fire brigade to be more expensive. - Focus on providing the agreed services as efficient as possible.	Falck has one the lowest expenses on fire fighting services in the world. Several reasons: - economies of scale, competition of alternative resources of supply, separation of demand and production function and freedom to expand outside political boundaries.

Questionnaire

Interview vragen

Inleiding

Veranderingen in de samenleving dwingen de brandweer na te denken over haar positie en bijbehorende dienstverlening. Zo worden burgers steeds mondiger en staat de kwaliteit van de publieke dienstverlening stevig op de politieke agenda. Dit vraagt onder meer om transparantie in de bedrijfsvoering en een goede dienstverlening. De brandweer heeft daarbij ook nog te maken een veranderende aard en omvang van risico's in onze samenleving. Technologische risico's nemen toe, onze infrastructuur verdicht en discussie over risico gebaseerde maatwerk inzetten van de brandweer (bijv. TS 4) neemt toe. Tegelijkertijd lijkt de beschikbaarheid van vrijwilligers af te nemen.

De brandweer weet zich dus gesteld voor een aantal uitdagingen en zit niet stil. Zo is de vorming van de veiligheidsregio's druk gaande, hiervan maakt de brandweer een belangrijk onderdeel uit. Daarnaast beraadt de brandweer zich ook over haar toekomstige positie en maakt zij hiertoe een strategische reis. De volgende scenario's zijn hierbij benoemd:

- 2 typen preventie organisatie:
 - o Regie organisatie
 - o Business Continuity organisatie
- 2 typen response organisatie
 - o Nachtwaker staat
 - o Multiservice organisatie

Opvallend hierbij is dat in de discussie over de toekomst van de brandweer de privatiseringsgedachte niet, of nauwelijks wordt gehoord. Terwijl resultaten uit andere landen (Denemarken en de VS) laten zien dat privatisering van de (basis) brandweezorg en ook de bijbehorende competitie kunnen leiden tot innovatie en efficiëntie die wellicht ook voor de brandweer in Nederland een (deel) van de oplossingsrichting voor de toekomst zou kunnen zijn en daarmee een bijdrage zou kunnen leveren aan het realiseren van de toekomstscenario's zoals reeds benoemd dan wel een apart op zichzelf staand toekomst scenario zou kunnen zijn.

Vragen aan bestuurders en regionaal commandant

1. Algemeen:

- Bent u van mening dat de brandweer een publieke dienst moet zijn en blijven? En, waarom?

2. Uitdagingen:

- Wat zijn volgens u de grootste uitdagingen waarvoor de brandweer zich gesteld ziet nu en in de toekomst?

3. Private bedrijven:

- Waar ligt volgens u de kracht en de zwakte van private bedrijven?
- Welke rol ziet u weggelegd voor private bedrijven in het veiligheidsdomein?

4. Privatisering en de brandweer:

- Kunt u zich voorstellen dat privatisering van de brandweer een bijdrage levert aan de uitdagingen waarvoor de brandweer zich gesteld ziet?
- Waar voorziet u de grootste bijdrage en waarom? Algemeen en ten aanzien van de hieronder genoemde variabelen.

Variabele	Privatisering zeer negatieve invloed	Privatisering negatieve invloed	Neutraal	Privatisering positieve invloed	Privatisering zeer positieve invloed
Output					
Coherentie					
Efficiëntie					
Organisatie					
Werkgever-schap					
Governan-ce					

Per variabele de reden benoemen.

- Welke bezwaren/ belemmeringen voorziet u bij privatisering? Van welke aard zijn deze: vakbonden, praktisch organisatorisch, politiek, etc?
- Zijn deze bezwaren/ belemmeringen weg te nemen, en zo ja hoe en op welke termijn?

5. Privatisering en de veiligheidsregio's

- Verwacht u met de vorming van de veiligheidsregio's:
 - o Een verschuiving in de beschikbare middelen van de basis brandweezorg naar de 'top' van de veiligheidsregio (beleids/ plannenmakers);
 - o Een reductie in de beschikbare middelen?
- Ziet u een relatie tussen de vorming van de veiligheidsregio's (en de antwoorden op de vorige vraag) en een mogelijke (gedeeltelijke) privatisering van de brandweer en zo ja of nee, waarom?

6. Strategische reis

- De brandweer maakt op dit moment een strategische reis. Welke van de 4 scenario's (zie inleiding) lijken u het meest waarschijnlijk en waarom?
- Bij welk scenario zou privatisering een (deel) bijdrage kunnen leveren?
- In welke vorm/ op welke manier?

7. Op welke termijn (en onder welke omstandigheden) verwacht u het ontstaan van een private brandweer in Nederland?

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