

CHAPTER 8

APPLYING THE SYSTEMS APPROACH AND VALUE SYSTEM TO FLEET MANAGEMENT DECISIONS

8.1 Introduction

In the preceding chapters the importance of applying the systems approach to fleet management was highlighted. In Chapter 7 the value system was used as a basis for applying the systems approach to a fleet information system for the Government Garage.

The purpose of this chapter is to provide an overview of some practices in institutions similar to the Gauteng Government Garage. These will include institutions within and outside South Africa. The chapter will also apply the model of the integrated fleet information system supported by a quantified value system (developed in Chapter 7) to evaluate outsourcing decisions regarding government garage motor fleets.

8.2 Fleet management practices outside the Gauteng Provincial Government

One of the distinguishing features of the systems approach identified in Chapter 2 is that it focuses mainly *outward* on its *containing whole* to obtain a better *understanding* of the item to be explained. In order therefore to provide better understanding of the Government Garage in the context of its environment, a study was undertaken of some fleet management institutions outside the Gauteng Provincial Government. This investigation was done both by correspondence and through visits to these institutions. The aim was mainly to obtain a first-order benchmark for comparison purposes and secondly to establish to what extent other institutions apply the systems

approach. Although the above was difficult to establish, (as institutions are understandably reluctant to divulge information), broad qualitative comparisons were possible.

Fleet management information was obtained from the South African Police Service and five other institutions with vehicle fleets in Germany and Austria. The figures for the South African Police Service were obtained from Harmse (29 May 2002) and Pansegrouw (11 July 2002). The overseas institutions and sources are as follows:

- German Post Office (Deutsche Post, 6 August 2002).
- Technical Division, Police Directorate: Amberg, Bavaria, Germany (Polizeidirektion Amberg, Sachgebiet Technik, 2 August 2002 & Polizeidirektion Amberg, Sachgebiet Technik, July 2002).
- Austrian Post Office (Österreichische Post AG, July 2002).
- Götz Building Management Company – private company in Regensburg, Germany (Götz Gebäudemanagement RSL GmbH & Co KG, July 2002).
- Road Maintenance Division: Amberg, Germany (Strassenmeisterei Amberg, 2 August 2002).

The information obtained from these institutions is summarised in Figure 8.1. The figure is spread over three pages. Where detail was not supplied, it is indicated as such. The Government Garage equivalent is also supplied in the figure for ease of reference. As accurate figures were not always available, all figures should be regarded as approximations.

It must be noted that the 153 vehicles listed for the Amberg Police Service in Figure 8.1 only represent their own directorate, but that most of the information also pertains to the 38 other directorates in the Bavarian province, of which the total fleet size was not provided. If the size of the other directorates was of the same order of magnitude, the estimated fleet size for the police of the total Bavarian province would be about 6 000 vehicles, which is roughly equal to that of the Gauteng Government Garage.

No.	Description	Gauteng Government Garage (GGG)	South African Police Service (S A P S)	German Post Office (GPO)	Austrian Post Office (APO)	Amberg Police Directorate (APD)	Götz Building Management	Amberg Road Maintenance (ARM)
0	Fleet size	6 000	27 000	50 000	9 500	Directorate: 153. Province: >5000 (own estimate – see text)	500	50 delivery vehicles.
1	Purpose of fleet	Government staff uses vehicles to travel.	Execute police duties	Deliver parcels (25%) and letters (75%)	Collection and distribution of parcels and letters.	Patrolling, managing and technical support.	To satisfy requests from customers.	To maintain the roads in the district.
2	Management of fleet (structure, etc.)	Government Garage rents vehicles to user departments. Structure is shown in Figure 1.1.	Top hierarchy as follows: <ul style="list-style-type: none"> • Headquarter • Provinces • Areas • Police stations 	Headquarters in Bonn. 81 Branches. (48 for letters and 33 for freight / parcels).	Details not available	Bavarian state ministry has 6 divisions, consisting of 39 police directorates. APD has 14 police offices, each with its own fleet.	Details not available	Details not available
3	Vehicle mix	See Figure 5.8.	See Figure 8.2.	17 400 LDV; 9 500 van < 2.8t; 14 300 van <3,5t. 3 000 microbus 6 000 other	APO has 6300 light sedans 2200 50 cc motorcycles 1000 other vehicles	APD has 110 light passenger vehicles (1,3-2,5 l) 30 microbuses and 13 other vehicles.	Unknown numbers	ARM has 50 delivery vans and other special equipment.
4	Km per vehicle per year	20 000	42 000	12 000 for light; 100 000 for heavy vehicles.	Details not available	20 000 with large variation between them.	30 000	Details not available
5	Overheads	R 30 m	R 145 m	Details not available	Details not available	600 staff members	Details not available	Details not available
6	Replacement frequency	5 years.	After 160 000 km. From 2002 vehicles will be "run to death".	Light vehicles 5 years. Heavy vehicles 8 years.	Details not available	6-15 years.	If repair costs rise significantly.	Details not available
7	Theft per year	Approx. 150 vehicles	Details not available.	Almost none.	Details not available	None.	2 vehicles / 5 years.	Details not available

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No.	Description	Gauteng Government Garage (GGG)	South African Police Service (S A P S)	German Post Office (GPO)	Austrian Post Office (APO)	Amberg Police Directorate (APD)	Götz Building Management	Amberg Road Maintenance (ARM)
8	Running costs of fleet	R 85 m	R 754 m	Split: maintenance and accidents/ misuse.	Details not available	Not supplied (confidential).	Details not available	Details not available
9	Accidents per year and costs	1 400 accidents costing R 6 m.	11 337 accidents costing R 48 m.	54 300 accidents; 37 660 000 Euro	Details not available	45 accidents per year (± one every 75000 km).	128 accidents; 101 000 Euro	Details not available
10	Vehicle ownership	Self owned – centrally	Self owned – centrally	Own fleet. Vehicles bought by headquarters on predetermined contract with suppliers. Branches must motivate new vehicle by proof of utilisation.	Vehicles are bought (self-owned)	Bavaria owns its own police vehicles. They are bought from manufacturers. Other provinces have lease agreements with manufacturers. Each police station has its own budget. It buys vehicles from a catalogue. It may sell vehicles to other police offices. The Amberg Technical Division assists with advice and ensures adherence to rules.	Mixed: Leasing, hiring, etc.	30 vehicles leased 10 vehicles bought
11	Internal or external workshops and fuel supply	Fuel supplied externally by fuel card. Vehicles externally maintained. Internal workshops used for minor repairs.	Fuel supplied externally by fuel card. Vehicles maintained by their own workshops.	External workshops and fuel. Use fuel card. Have full maintenance contract with supplier. Amount increases as vehicle gets older.	No internal workshops. Sign more and more fixed maintenance contracts.	Since 3 years they are in the process of privatising their workshops subject to labour agreements, and have privatised refuelling. This was a Bavarian Government decision.	Own workshop for small repairs. Use fuel card.	Use own workshop and internal fuel bowsers for own vehicles.

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No.	Description	Gauteng Government Garage (GGG)	South African Police Service (S A P S)	German Post Office (GPO)	Austrian Post Office (APO)	Amberg Police Directorate (APD)	Götz Building Management	Amberg Road Maintenance (ARM)
12	Getting rid of old vehicles	By auction.	By auction. From 2002 vehicles at the end of their life will be destroyed.	Previously auction. Now centrally sold in bulk to traders only. They fetch vehicles at sites.	Details not available	The technical division establishes which other police station may be able to use a redundant vehicle. If none, or if not roadworthy, the vehicle is sold on the Internet.	Are sold to merchants at listed prices.	Details not available
13	Control of misuse and fraud	By fleet information system.	Details not available.	They have little fraud.	Details not available	Managed by police station manager. Had no cases to date.	Reports exist.	Reports exist.
14	Particulars of fleet information system	Integrated system is being developed.	Details not available.	Centralised system provides date, time, litres and km. Busy expanding on these functions.	Use 20-year old computer software. Project to change to SAP R3 in 2003.	They have no central database but are in the process of getting one. APD devised own database on standard Microsoft software.	Use MS Works and Access. Consider multi-site software for future.	Use Excel spreadsheet.

Notes: GGG = Gauteng Government Garage SAPS = South African Police Service
ARM = Amberg Road Maintenance GPO = German Post Office
APO = Austrian Post Office APD = Amberg Police Directorate

Figure 8.1: Comparative analysis of fleet management practices in five institutions outside South Africa and two within. All figures are approximate (Sources are listed in the text)

A comparison between the vehicle fleet of the Government Garage and that of the South African Police Service is shown in Figure 8.2 (see item 3 in Figure 8.1).

Description (some classes were combined)	Government Garage			South African Police Service		
	Number of Vehicles	% of Fleet	Cumulative % of Fleet	Number of Vehicles	% of Fleet	Cumulative % of Fleet
CAR 1251-1550 cc	2 309	41%	41%	4 075	15%	15%
CAR 1551-1750 cc	754	13%	54%	6 730	25%	40%
LDV (Combined)	908	16%	70%	8 648	32%	72%
Car 6-16 seater (Combined)	286	5%	75%	1 735	6%	78%
CAR VIP 2501-3500 cc	176	3%	78%		0%	78%
CAR 1951-2150 cc	168	3%	81%	1 493	6%	84%
CAR 1751-1950 cc	129	2%	83%	1 685	6%	90%
TRUCK 7 TON P	120	2%	86%		0%	90%
Other vehicles	819	14%	100%	2 671	10%	100%
Totals	5 669	100%		27 037	100%	

Figure 8.2 Approximate comparison of Government Garage and South African Police Service vehicle fleets (figures derived from South African Police service: Pansegrouw, 11 July 2002 and Gautrans, February 1999)

Figure 8.1 lists the most important vehicle types of the two fleets. The figure enhances informed comparison of accident, theft and other statistics between the two fleets, and is shown for demonstration purposes only.

The following general observations can be made from Figure 8.1:

- **Level of outsourcing:** Although there is a trend to outsource some fleet management functions, the extent to which these functions are outsourced varies:
 - ÿ The larger fleets keep the *ownership of their fleet assets* in-house. This is in line with current thinking at the Government Garage (Gautrans, January 2001).

- Fuel supply is outsourced, as is the case with the Government Garage.
 - Maintenance is predominantly outsourced. Fixed maintenance contracts are increasingly entered into, as is currently the case with the subsidised vehicles in all provinces (National State Tender Board, 2001: Contract RT 62/2001).
- **Getting rid of old vehicles:** There is a trend to simplify the process of getting rid of old vehicles. Administration-intensive auctions are not done any more. Vehicles are sold either in bulk to traders or over the Internet. This may be an alternative to be investigated by the Government Garage.
- **Integration of fleet information system:** Centralised fleet information systems are scarce, although the need for such systems is acknowledged. The German post office has started with the development of such a system.
- **Vehicle theft and fraud:** This problem appears to be insignificant in the overseas institutions. This is not the case in South Africa, where vehicle theft is a major problem (Electronic Vehicle Intelligence conference, June 2001: Business Against Crime).
- **Accident rate and costs:** The calculated accident costs for the German Post Office and Götz are € 789 and € 753 per vehicle per year respectively. The calculated accident rates for these two institutions and for the Amberg Police Directorate are 1.1, 0.26 and 0.29 accidents per vehicle per year respectively. The equivalent annual accident costs and rate per vehicle for the South African Police Service are R 1 778 and 0.42 respectively. In the case of the Government Garage the annual accident costs and rate per vehicle are R 1 000 and 0.24 respectively, which at first glance compares favourably with the other averages listed above. For correct comparison however, other factors

such as types and prices of vehicles, distances travelled and service conditions have to be accounted for. A detailed analysis of the above falls outside the scope of this study.

- **Vehicle utilisation (average distance travelled):** The smaller vehicles in the German Post Office (largest fleet in Figure 8.11) travel 12 000 km per year. According to Robbie (April 2002), Gauteng Provincial Government vehicles travel about 20 000 kilometres per year.

- **Examples of systems thinking in the institutions listed above:** The following examples of systems thinking were identified:

- ÿ The German Post Office centrally co-ordinates the management of its fleet. This makes synergism between the various branches possible. This synergism may be enhanced if they add more functionality to their already integrated fleet information system (which they are busy doing). It is also interesting that this institution started with an integrated system with little functionality and wants to expand on the functionality, rather than to start with one branch with much functionality and extend it to all branches. This ensures that the all-important information *links* (between the various branches) are given high priority from the outset, which is in line with systems thinking.

- ÿ The fact that each German police station budgets for its own vehicles, but that the vehicles are bought on contracts that are centrally negotiated with suppliers, provides a synergistic balance between centralisation and decentralisation. The fact that each station commander "owns" his own vehicles may motivate him to look after the vehicle better than would have been the case if the vehicle was "owned" and budgeted for centrally.

• The above synergism (with respect to the Bavarian Police) is further enhanced by the possibility of selling any redundant vehicle to another police station before it is sold on the open market. In principle this may imply that a certain police station might sell a vehicle to its sister station at a lower price than it could have obtained on the open market. This is an example where the interest of the containing whole takes precedence before the interest of the element, which is a key feature of the systems approach (see Chapter 2). In South Africa, the KwaZulu-Natal Provincial Government has sacrificed this advantage by fully decentralising its vehicles to its user departments (KwaZulu-Natal Department of Finance, 1999).

In summary, the above examples from institutions outside the Gauteng Provincial Government indicate that there is no single best way of owning and managing vehicle fleets. Although the need for integrated fleet information systems is realised in most of the above institutions, they are still in an early phase of developing such systems.

The above concludes the discussion of fleet management *practices* in some institutions outside the Gauteng Provincial Government. To complete the picture, some institutional fleet management *trends* outside the Gauteng Provincial Government will be discussed in the following section.

8.3 Fleet management trends outside the Gauteng Provincial Government

8.3.1 Introduction

This section provides an overview of fleet management trends outside the Gauteng Provincial Government. It discusses examples of institutions that *outsourced*, *decentralised* and *centralised* their fleets respectively. At the end

of the section the author will show how the above options can be displayed in two dimensions in the form of a diagram.

8.3.2 Outsourcing trends

There is currently a rapid move by government departments in South Africa to outsource vehicle ownership and maintenance (Ryan, 2002: 1/5). Not more than 5 years ago the outsourcing figure stood at about 10%. Since then, many new agreements were made to outsource statutory fleets (Anon: Finansies en Tegniek, 8 March 2002: 43).

"In the middle of 1999, Imperial Fleet Services signed a six-year contract to provide various services relating to the government's fleet." The Rental to Government (outsourcing) division was established for this purpose. "With 88 members of staff, the new division currently manages a government fleet of some 2 900 vehicles as well as around 2 000 short-term department rentals monthly." (Anon, September/October 2001: Auto Engineering: 26).

In March 2000, Telkom outsourced its vehicle fleet of 19 000 vehicles to Debis Fleet Management, a subsidiary of Daimler Chrysler Services, on a five-year full maintenance lease service. Debis took over all 526 Fast Fleet staff (previously responsible for the Telkom fleet) with no change to their salaries or benefits, and introduced a stock option plan for the staff. The deal represented a substantial inward investment for Telkom and South Africa (Ryan, 2002: 1/5).

In other public sector deals, the Northern Cape Department of Transport outsourced its fleet of about 3 000 vehicles to an external service provider (Ryan, 2002: 1/5).

In February 2001 Super Fleet, a company within Super Group, entered into a R2.4 billion contract to manage the entire fleet of the Johannesburg Metropolitan Council. "The contract, which runs over five years, initially

involved about 6 000 aged municipal vehicles, ranging from passenger and police cars to commercial vehicles, rubbish compactors and fire engines. Streamlining has reduced the number of vehicles to about 4 000 and the city's 22 workshops to four" (Lundin & Furlonger, 2002: 1). The contract covers the full spectrum of outsourcing services. This ranges from the specification and purchasing of vehicles to the running of workshops, maintenance and insurance (Steyn C, as quoted by Ryan, 2002: 1/5). Previously the city handled its own fleet maintenance. Replacing its entire fleet could cost up to R700m. The council has eight major user groups, which include police services, waste handling management and fire engines. According to a representative of Super Group, the outsourcing contract would enable the council to concentrate on the delivery side of its value chain without worrying about the cost of fleet management (Lundin & Furlonger, 2002: 1).

Regarding outsourced fleet management, Super Fleet's Managing Director is quoted as follows: "The market to a large extent has been completely untapped. As companies go through the life cycle of looking at what their core business is, a lot of them are understanding that managing vehicles and fleets is not part of that core business. And as margins are squeezed, they're going to be looking for areas to *reduce costs* and look for efficiencies ... There's no doubt that once everybody starts to appreciate the effectiveness and *savings* for Johannesburg, other departments and parastatals will start to move in the same direction." (Thompson W, as quoted by Lundin & Furlonger, 2002: 1; own emphasis). *Cost reduction* is therefore perceived as an important part of the *value system* when outsourcing. This will be confirmed later in this study.

Super Fleet also won the tender of the National Department of Transport to take over the managed maintenance of more than 3 000 subsidised vehicles countrywide (Lundin & Furlonger, 2002: 1).

Recently the Kruger National Park requested tenders for its fleet of about 400 vehicles (Anon: Finansies en Tegniek, 8 March 2002: 43).

In summary, it can be said over the past few years there was a major drive to outsource statutory fleets in South Africa, mainly to reduce costs and to improve the efficiency of their fleets. However, apart from outsourcing, fleets can also be *decentralised* to their users. Such an example will be discussed in the following subsection.

8.3.3 Decentralisation trends – KwaZulu-Natal

Prior to 1997, Government Garages and private dealers in KwaZulu-Natal provided fuel and undertook repairs to official vehicles, with the overall control being administered by the KwaZulu-Natal Department of Transport. In April 1997, this department underwent an intensive restructuring exercise, resulting in all operational activities such as loss control, accounting of costs and vehicle repairs either being devolved to the user departments or outsourced. The Provincial Motor Transport directorate's new role was that of monitoring of and providing guidance to user departments (KwaZulu-Natal Department of Finance, 1999).

In their brochure: "Best Practices - Premier's good governance awards, 1999/2000", PricewaterhouseCoopers describes the achievements of the KwaZulu-Natal Government Garage after decentralisation. (PricewaterhouseCoopers, 2000). The brochure states that monthly costs (meaning operating costs) were "curbed" and that the annual budget of the *directorate* was reduced from R 68 million to R 18 million. This reduction in "budget" from "R68 to R18 million" was applauded and suggests a major saving to the *directorate*.

In this example, the "curbing" of costs and the reduction of the budget from R 68 million to R 18 million can only be meaningful if viewed in the context of the broader picture. This includes the costs transferred to user departments after decentralisation, capital costs of vehicles and overhead costs. By only focusing on the *operating budget* borne by the *directorate itself*, the directorate might look good (or bad) to the detriment (or to the good) of the

broader picture (for example the costs to the taxpayer). With such a narrow focus, no proper evaluation is possible.

By consulting other sources in the above case (Deloitte, May 1997: 13; KZN Department of Finance 1999: 9 and Deloitte August 2000: 41), the transfer of costs to user departments could be verified. The above illustrates how important it is that a proper fleet information system should at least:

- cover all the cost components (overhead, running, capital, etc.). If this is not done, important cost components could easily be hidden, as effectively happened in the above example;
- integrate these to provide comparable statistics (such as monthly costs per vehicle, costs per km, etc.). In the above example it would be important to combine the overhead costs of the user departments and the Government Garage as well as all the other cost components, both before and after the transfer of vehicles;
- enable drill-down (e.g. to vehicle, driver or user department level) to get to the root causes of any deficiencies. This was shown in Chapter 3 to be part of the problem-solving process. In the above example it would mean that the mere drop in the annual budget could be attributed to a drop in user department activity. This is not necessarily an improvement in efficiency.

The statement that the directorate's budget had been reduced from R68 m to R18 m is therefore not wrong. It provides the correct *knowledge*, but incomplete *understanding*. This was identified in Chapter 2 as one of the most important differences between the conventional machine-age approach and the proposed systems approach. A proper fleet information system must therefore not only supply *knowledge*, but also *understanding* of the information, in order to facilitate correct management actions. This is one of

the reasons why it was so important to apply a systems approach when designing a fleet information system in Chapter 7.

8.3.4 Centralisation trends – Western Cape province

In contrast to KwaZulu-Natal, which *decentralised* its entire fleet of approximately 5 000 vehicles to user departments, the City Council of Tygerberg (a municipality in the Western Cape province) decided to *centralise* its fleet of about 2000 vehicles and rent it out on a tariff basis (City of Tygerberg, 2000: 1).

“Previously the vehicles were assigned and owned by some 280 centres who had to budget for new and replacement vehicles as well as other associated costs. From 1 July 2000 the fleet will be owned and managed by the Mechanical Services Department of the Electrical Directorate. Vehicles will be leased to user departments on a continuous allocated or ad hoc basis as required. Costs will be recovered from user departments on a monthly basis calculated using fixed and operating rental rates” (City of Tygerberg, 2000: 1,2).

It is thus clear that the Mechanical Services Department in the Western Cape province went against the thinking in KwaZulu-Natal by moving from a decentralised towards a centralised fleet (as is currently the case in Gauteng). They are not outsourcing their fleet either, but keeping the assets in-house.

This concludes the discussion of fleet management trends in a number of fleet institutions in South Africa. The integration of the trends to obtain an overall picture, as is required by the systems approach, will be discussed in the following subsection.

8.3.5 Combining the outsourcing and decentralising options for an overall picture

Careful analysis of the preceding discussion reveals that it has covered two dimensions of fleet management options, namely the level of outsourcing and the level of decentralisation (or centralisation). This subsection will demonstrate how the various examples discussed can be plotted graphically with these two dimensions as the two axes of the graph.

In Chapter 3 the decision-making process was identified as the last step in the systems process. One of the important steps in this process is to investigate alternative solutions or options. It often helps to illustrate the various options visually or diagrammatically. In the above case the various options can be plotted diagrammatically on two axes as shown in Figure 8.3.

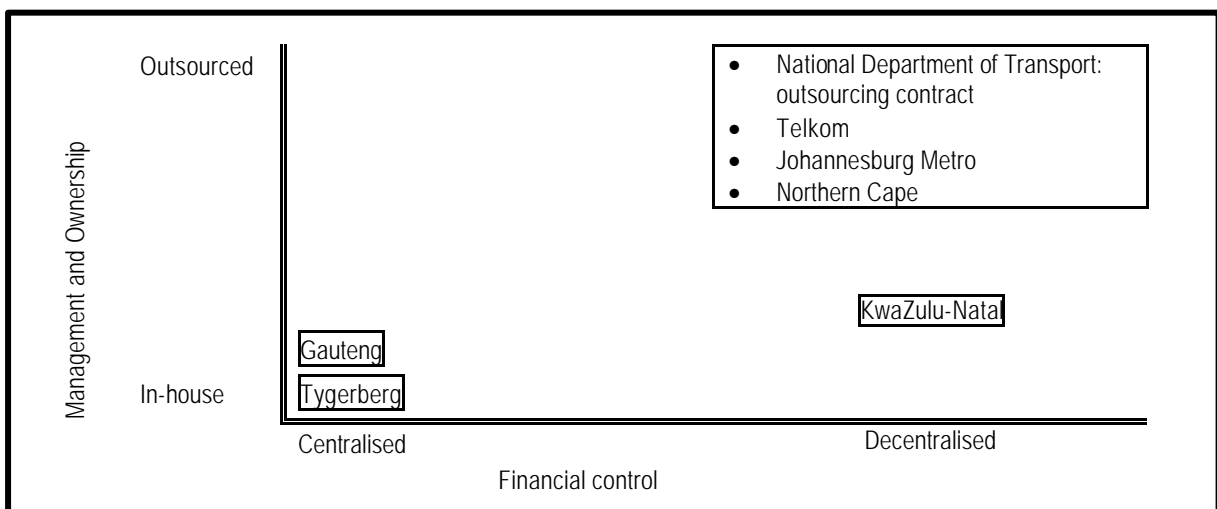


Figure 8.3 Continuum of decentralisation and outsourcing options (created by the author for the purpose of this study)

Figure 8.3 also illustrates the *big picture* with respect to the outsourcing and decentralising options, and puts these into perspective. Such a holistic picture is indicative of the systems approach, and often assists in better *understanding* and therefore more informed decisions.

The question arises why public entities such as, KwaZulu-Natal, the National Department of Transport, Telkom, Johannesburg Metro and Northern Cape on the one hand, and Tygerberg and Gauteng on the other, are moving into such opposite directions. The answer may lie in different value systems, but also in the fact that all-inclusive, integrated and focused management information might not have been available at the time of all the above decisions. The importance of such an integrated fleet information system, supported by the application of the systems approach and value system, will be demonstrated in the following section.

8.4 Applying the systems approach to evaluate an outsourcing option

8.4.1 Introduction

In Chapter 4 fleet management was defined as "a purpose-directed leadership and management process of supplying government motor transport to government employees. The process includes the utilisation of management resources to ensure optimum cost-effectiveness with respect to government motor transport to the State on a continuous basis. Such cost-effectiveness is determined by the combined value systems of all important role players" (Section 4.4). When comparing options, it is therefore important to consider how the options will affect the various important role players (i.e. stakeholders) in terms of both cost and effectiveness. This section will demonstrate that such an analysis is possible with the help of the conceptual value system developed in Chapter 7.

It was also shown in the example of KwaZulu-Natal in Section 8.3 that meaningful comparisons and decisions can only be made by applying systems thinking e.g. by considering the system as a whole and not only parts of it. This will be demonstrated by applying the following features of the systems approach and value system:

- Outward looking focus by also considering institutions and information from outside the South African Government.
- Ensuring that elements are not optimised to the detriment of the system as a whole.
- Making approximations where accurate, complete information is difficult to obtain. A balance will be struck between simplicity and accuracy. (The systems approach acknowledges that no system can be understood completely: there will always be uncertainty).
- Demonstrating the importance of deciding on the value system before making a final decision, with due consideration of effectiveness factors.

As was mentioned in Chapter 1, the fleets of four user departments were outsourced as part of a national pilot project (National Department of Transport, 1999: Contract RTG 718). The question was posed as to whether the Gauteng Provincial Government should not also outsource its fleet in a similar way. This implies not only a comprehensive fleet information system, but also a quantified value system.

8.4.2 Verifying the value system of the outsourcer

The first question to be answered is the reason for outsourcing the fleet, i.e. the *value system* of the decision maker. In line with the systems approach, it would be advisable to first look outward and be guided by the value systems of role players outside the Gauteng Government Garage. A literature search has shown that *reduced cost* and *improved efficiency* are in most cases strong motivating factors when outsourcing non-core functions. Figure 8.4 below summarises some statements with regard to the reasons for outsourcing.

No.	Source	Topic	Content
1	Anon (May/June 2001: Auto Engineering: 7).	Telkom outsource contract to Debis	"By increasing productivity, ... fleet operating costs should decline substantially".
2	PricewaterhouseCoopers: Van Huyssteen (December 2000: 4/5).	Benefits of restructuring state assets.	"Privatisation is a world-wide phenomenon, which has been proven ... to increase economic efficiency." "Each case should be judged on its own merits ... But after restructuring, customers must not suffer higher prices and diminished quality of goods and services. Furthermore, there must be something for the employees".
2	PricewaterhouseCoopers (May 2002: 8/9).	Business process outsourcing is here, now!	Lists five most important benefits of outsourcing: <ul style="list-style-type: none"> • Improved service • Access to advanced technology • Revenue enhancements • Maintain competitive edge • Increase shareholder value.
3	Ford Motor Company (South Africa) (Undated: 4).	Full Maintenance Leasing (F M L).	"In the final analysis, you need to look at your ongoing costs in terms of c/km ... Know what you want and ensure it is provided on a cost-effective basis".
4	Ford Motor Company (South Africa) (March 2002: 2).	Outsourcing fleet services.	"Outsourcing may offer cost savings ... outsourcing can be a way to take advantage of a suppliers' lower cost structure ... Their lower cost structures offer significant advantages for their customers." "Firms often use the services of a Fleet Management consultant to help them improve cost management".
5	Thompson W, as quoted by Lundin & Furlonger (2002: 1). Also see Section 8.3.2.	Outsourced fleet management, in the context of the outsourced fleet of the Johannesburg Metro.	" And as margins are squeezed, they're going to be looking for areas to <i>reduce costs</i> and look for efficiencies ... There's no doubt that once everybody starts to appreciate the effectiveness and <i>savings</i> for Johannesburg, other departments and parastatals will start to move in the same direction." (Own emphasis).
6	National Department of Transport, 1998: 14.	Pilot project for the outsourcing of state motor transport to user departments.	"The provision of motor transport services to government is in the process of being outsourced, with a pilot project for five National Departments ... which, when implemented ... will achieve efficiency and savings"

Figure 8.4 Expectations from outsourcing by some literature (created by the author for the purpose of this study)

From Figure 8.4 it is clear that people perceive cost savings and efficiency or cost-effectiveness as important expectations of outsourcing. This applies specifically to the outsourcing of institutional fleets in South Africa (also see Section 8.3.2). Efficiency means "getting the most output for the least input" (Cook, Hunsaker & Coffey 1997: 25), which can be translated to "value for money". Efficiency is therefore also a derivative of *cost*, which makes the reduction in costs even more important in the value systems of the quoted

sources. The National Department of Transport, which was identified as part of the suprasystem of the Government Garage in Section 6.2, lists "savings" as an important benefit of the outsourcing contract (point 6 in Figure 8.4).

In summary therefore, although costs might not be the only consideration when outsourcing services, cost saving is perceived to be an important outcome of outsourcing. The analysis will therefore firstly be done on a cost basis. With the help of a hypothetical case study, the effectiveness values of the selected stakeholders will then be quantified in terms of unit costs, in order to arrive at a *comparable* cost figure, which also considers effectiveness factors. This final amount can then be compared to the related cost figure of any outsourced option before a decision is made.

8.4.3 Assumptions

Figure 8.2 shows that more than 40% of the Government Garage fleet consists of passenger vehicles between 1251 cc and 1550 cc. To simplify the analysis from a process point of view, it will be assumed that all the vehicles in the fleet are in this class. Although the answer will not be exact, it will demonstrate how the cost-effectiveness model can be applied. The reason for this simplification is that repetition of calculations to include all class codes would complicate the matter without adding value to the demonstration of applying the systems approach and value system to evaluate two options.

It was noted in Section 5.4 that for comparison with the private sector, opportunity costs or hidden costs in the Government Garage have to be accounted for. In this regard, Deloitte (2000: Annexure D) adds notional rental costs to the Government Garage hire pool, based on 6 square metres per vehicle at a monthly rate of R 20 per square metre. The total hidden annual rental cost per hire pool vehicle is therefore calculated to be R 1 440. This can be regarded as the upper limit, as the amount will be substantially lower for permanently allocated vehicles (i.e. 80% of the fleet – Robbie, April 2002) – these vehicles are much less labour intensive and are not hosted within the

premises of the Government Garage. An average annual amount of R1 000 per vehicle will be assumed by the author for the purpose of the comparison with an option to outsource. It will be assumed that this amount covers the rental of all buildings and land, including office space. As will be seen later in this section, the effect of this amount on the final answer is negligible.

A summary of assumptions is given in Figure 8.5 below.

No.	Parameter	Value	Reasoning / Basis
1	Fleet size	6 000	Chapter 5
2	Interest rate at prime rate	17 %	Anon: Finansies en Tegniek, 23 October 2002: 79
3	Vehicle price	R 61 900	Price of Volkswagen CityGolf Chico 1.4 (Anon: CAR, November 2002: 240)
4	Residual value after 5 years	40%	Assumption as in Section 5.4.4
5	Annual usage per vehicle	23 000 km	Robbie, April 2002 rounded upwards
6	Payback period	4 years	Assumption as in Section 5.4.4
7	Compounded inflation factor since March 2000 *	20%	Rounded from consumer price index of 8.6% (Anon: Finansies en Tegniek, 23 October 2002: 78)
8	Overheads p.a.	R 30 m	R 25 m in Figure 5.14, inflated by inflation factor above
9	Rental of buildings and land p.a.	R 6 m	R 1000 per vehicle x 6 000 vehicles (see text and Item 2)
10	Losses & theft p.a.	R 6 m	R 5 m in Figure 5.14, inflated by inflation factor above (conservative estimate, as it applies to other vehicle classes too – see Figure 5.10)
11	Accidents	6 c / km	Robbie, April 2002 for class 111, averaged and rounded
12	Maintenance	18 c / km	Robbie, April 2002 for class 111, averaged and rounded
13	Fuel costs	35 c / km	Robbie, April 2002 for class 111, averaged and rounded
14	% fleet on daily hire	20 %	Robbie, April 2002 rounded

Note: * This factor will be used to inflate items 8 and 10 above, which were based on the March 2000 figures in Chapter 5.

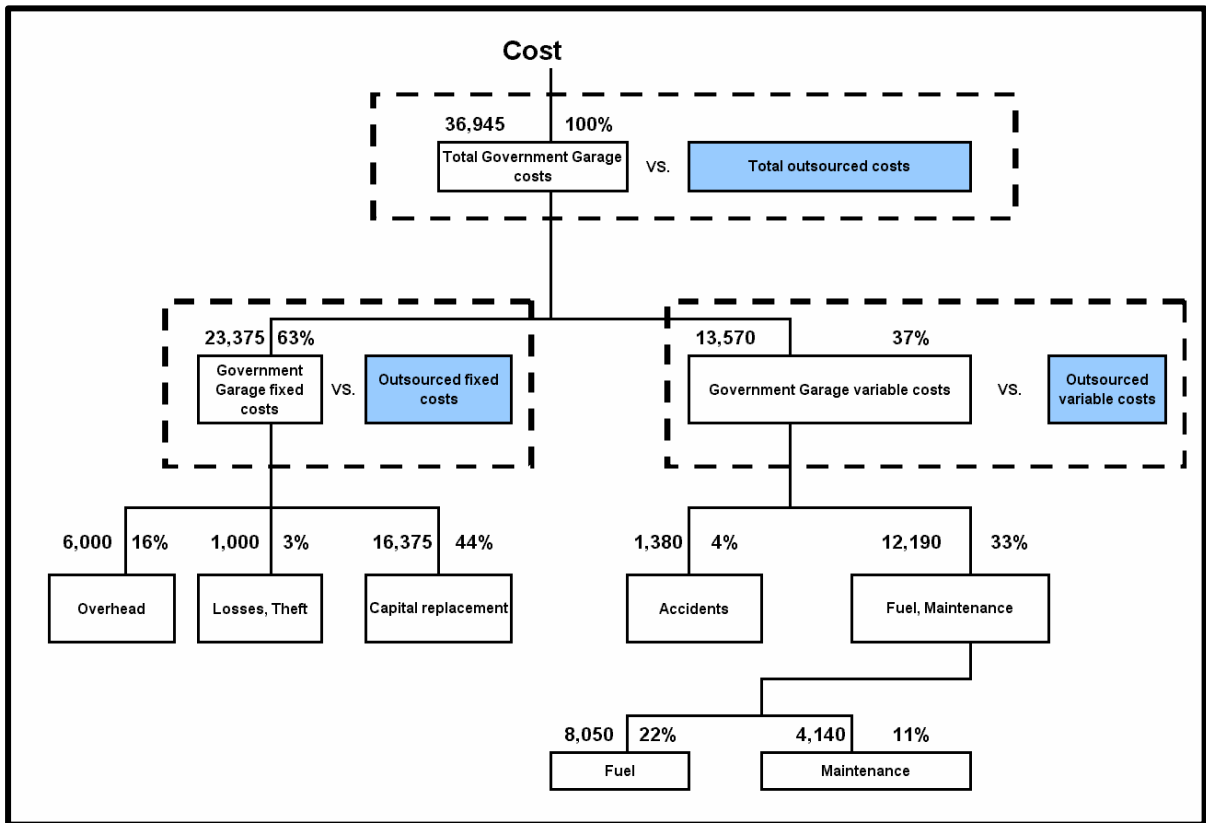
Figure 8.5 Assumptions and base values (created by the author for the purpose of this study)

The above information will now be used to compare any outsourcing option with the current status quo in the Gauteng Government Garage.

8.4.4 Comparing the Government Garage with an outsourcing option in the Cost domain of the value system

Firstly, it must be decided in what dimension the information must be normalised: time (i.e. per vehicle per year) or usage (i.e. per km). Except for fuel costs, similar outsourcing contracts are based on fixed monthly and six-hourly tariffs per vehicle (National Department of Transport, 1999: Contract RT 718 S P). This implies that the main part of such a contract will probably be based on time and not on usage.

A first order analysis based on the above assumptions is shown in Figure 8.6 below.



- Note:
- All amounts are in rand per vehicle-year
 - The equivalent outsourced figures can be filled in the blocks indicating outsourced amounts, once the tenders are known

Figure 8.6 Comparison between Government Garage option and outsourcing option taking all cost elements of 1251-1550 cc vehicles into account (created by the author for the purpose of this study)

Figure 8.6 shows the cost components of the vehicles at the Government Garage when compared to a potential outsourcing option. The two blocks in broken lines in the middle contain the fixed and variable costs respectively, with the shaded blocks reserving the amounts for the outsourced option to be filled in when available. This allows a comparison to be made. The total unit costs (with respect to the Government Garage) are shown at the apex or top, calculated at R 36 945. These too can be compared with the costs of the outsourced option in the related shaded block (when available). The Government Garage calculations in Figure 8.6 are shown in Figure 8.7.

Cost element	Calculation	Rand per vehicle-year
Overheads	$(\text{Overhead costs} + \text{Rental component}) / \text{no. of vehicles}$ = $(\text{R } 30 \text{ m} + \text{R } 6 \text{ m}) / 6 \text{ 000 vehicles}$	R 6 000
Losses and theft	Total theft / number of vehicles = $\text{R } 6 \text{ m} / 6 \text{ 000 vehicles}$	R 1 000
Capital replacement	$(\text{Annual payment for R } 61 \text{ 900 at } 17\% \text{ over } 4 \text{ years}) - (40\% \text{ of vehicle price} / 4)$ = $\text{R } 23 \text{ 695} - \text{R } 6190$	R 17 505
Accidents	Accidents per km x km p.a. = $\text{R } .06 / \text{km} \times 23 \text{ 000 km p.a.}$	R 1 380
Maintenance	Maintenance per km x km p.a. = $\text{R } 0.18 / \text{km} \times 23 \text{ 000 km p.a.}$	R 4 140
Fuel costs	Fuel costs per km x km p.a. = $\text{R } 0.35 \text{ per km} \times 23 \text{ 000 km}$	R 8 050

Figure 8.7: Calculations of the comparable cost components of the Government Garage for 1251-1550 cc vehicles (compiled by the author for the purpose of this study)

Figures 8.6 and 8.7 above show the amounts and values in the cost domain of the value system (refer to Chapter 7). The effectiveness domain has not yet been included in the analysis. This includes the perceived priorities of the various stakeholders, as discussed in Chapter 7, and will be demonstrated by considering the *Effectiveness* side of the value system in the following subsection.

8.4.5 Adding effectiveness factors to the comparison of the Government Garage with an outsourcing option

The definition of fleet management in this study states that its “cost-effectiveness is determined by the combined value systems of all important role players” (Section 4.4). It is therefore important to quantify these value systems in order to arrive at a comparative figure of the cost-effectiveness of two options. The way this can be achieved is by expressing the effectiveness differences in terms of equivalent costs, and then to arrive at a *comparative cost figure*, which also accounts for effectiveness factors. To achieve this, the following steps will be followed:

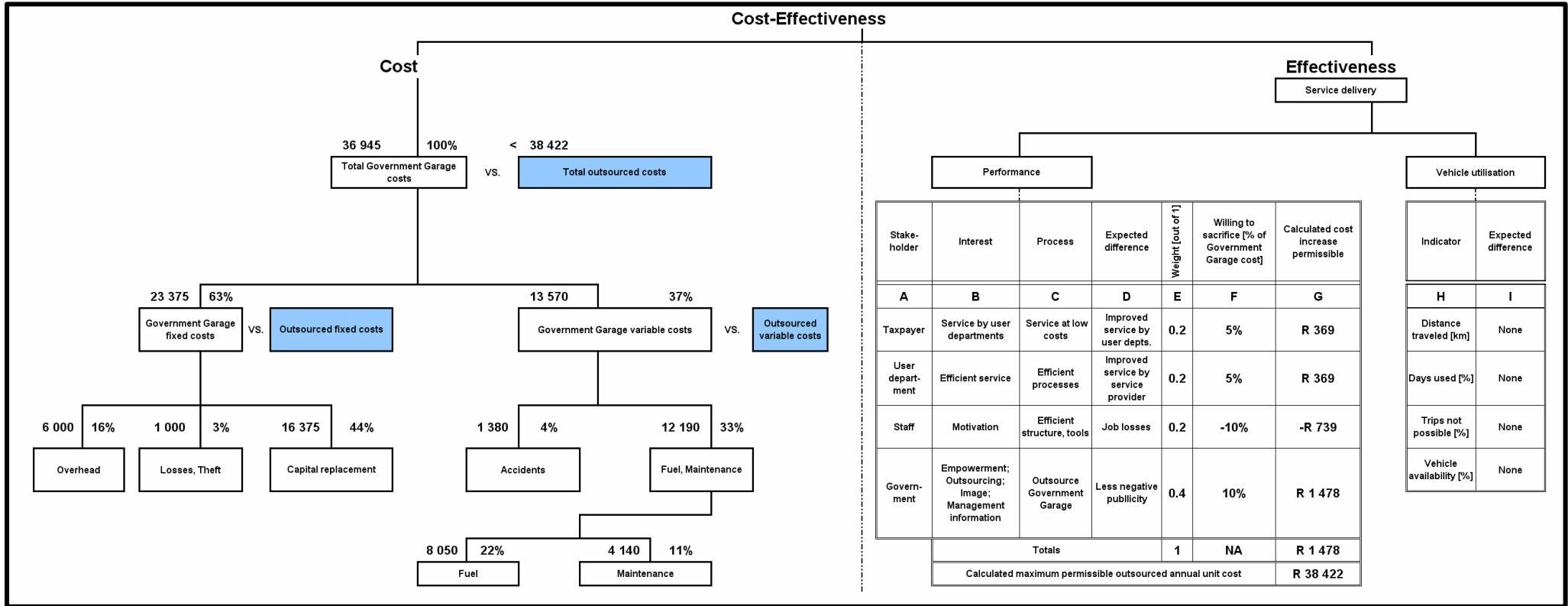
- Identify the stakeholders
- Determine what is important to each of these

- Quantify the “important factors” listed above in terms of percentage of unit costs of the current (Government Garage) option (this will be demonstrated next)
- Give each stakeholder a relative weighting in terms of the relative importance of his opinion (the opinion of the Government may weigh more than that of the staff)
- Determine a weighted average of the stakeholders' values and calculate the comparable cost of the Government Garage, or the threshold value for any outsourcing option, from the above information.

The author suggests that the above values be obtained (and agreed upon) in a facilitated workshop with representatives of the various stakeholders. The facilitator must understand the pressures on the various stakeholders (some of which were discussed in Chapter 4). He must also be fully aware of all the non-negotiable values, such as the stipulations in the Public Finance Management Act (Act no. 1 of 1999). For example, the act compels officials to use their funds effectively and efficiently (Afrec, September 2002: 1.9). "The focus is ... on obtaining value for money ... for every rand spent" (Afrec, September 2002: 1.24). This has to be clearly projected to the participants, in order to ensure compliance regarding the outcome.

In the case of an outsourcing contract it must be noted that the "Government" (Figure 7.11) is an important stakeholder. The costs of bad publicity and other non-measurable effectiveness elements may be considerably greater than an increase in unit costs when comparing the outsourced option to own fleet costs. The *value system* of the Government may therefore outweigh the value systems of the user departments.

For *demonstration of the process*, the author assumed certain values. The above process will be demonstrated next. The results are shown in Figure 8.8 below and are discussed thereafter.



Note: Effectiveness domain is explained in text

Figure 8.8 Quantified value system for comparing the Government Garage option with an outsourcing option, illustrating both cost- and effectiveness factors – for demonstration purposes only (created by the author for the purpose of this study)

Figure 8.8 shows the total value system for this application, as conceptually discussed in Chapter 7. On the left-hand side the cost-drivers are listed, as developed in Figure 8.6. On the right-hand side, the effectiveness parameters remained essentially the same as in Chapter 7, with the added functionality that they are quantified in terms of the annual unit Government Garage costs. Furthermore, the values of Government as an important stakeholder are expanded in this domain (from those listed in Chapter 7). This can be explained as follows (refer to the column numbers in Figure 8.8 – the ratios and percentages listed are for demonstration purposes only):

- **Utilisation (Columns H & I):** The figure shows that little improvement (regarding any outsourcing contract) is expected with respect to the *utilisation* of vehicles, as most of the vehicles are currently permanently allocated to user departments, and therefore not dependant on an external service provider for improved utilisation.
- **Stakeholders (Columns A to G):** Each of the stakeholders has a perception of how any outsourcing contract will advantage or disadvantage him relative to the current Government Garage option. Furthermore, each stakeholder may be willing to sacrifice this advantage at a given cost premium (i.e. cost threshold in the Cost domain). Lastly, the importance of the various stakeholders may be *weighted* differently.

As was already mentioned, Government is one of the most important stakeholders. Its values are evident from its business plan (National Department of Transport, 2002: Business Plan 2002 / 2003). Some of these values are the following:

- Black economic empowerment
- Outsourcing of non-core business
- Good corporate image (i.e. no bad publicity)
- Effective management information systems

The above process (illustrated in Figure 8.8) is now discussed in more detail. Only selected examples in each column are discussed. The remaining elements are listed in the figure and are self-explanatory:

- **Perceived outsourced difference and allowable sacrifice (Column D & F):** The taxpayer may perceive an improved service by user departments as a result of the change to any outsourcing contract (Column D) and may be willing to pay an additional 5% premium for this improvement (Column F). Similarly, the Government Garage staff may perceive the new contract as a threat to their work security, but may be willing to concur if the new contract is 10% cheaper.
- **Importance or weighting of each stakeholder's opinion (Column E):** The opinions of the various stakeholders are not equally important. The team has to agree on these values during the facilitated workshop referred to above. In Figure 8.8 the Government was highly rated at 0.4, and the other stakeholders each at 0.2.
- **Calculated permissible cost increase (Column G):** This column multiplies the total Government Garage unit cost (at the apex of the Cost domain) with Column E and Column F. If these figures are added together, the total permissible cost increase for the given improvement in effectiveness is obtained. Totalling the above amount with the total unit cost of the Government Garage results in the "threshold" unit cost of any outsourced contract (i.e. R 38 422 in the above example).

The amount calculated above depicts the theoretical ceiling for the unit price of an outsourcing option. If the price is lower, the combined value system of the various stakeholders developed above dictates that it is better to outsource, and vice versa. The last amount can therefore be regarded as the *comparable unit cost* of the Government Garage for vehicles in the 1251-1550 cc range (when compared to the unit costs of an outsourced option).

The calculations above can be repeated for all other class codes. The calculated figures can then either be combined by obtaining a weighted average, or evaluated separately (if partial outsourcing is considered). For reasons listed earlier in Section 8.4, this calculation falls outside the scope of this study.

8.4.6 Conclusion

From the above it can be concluded that when a government institution such as the Government Garage embarks on the potential outsourcing of its services, it needs a solid information base to assist in arriving at a reasoned and well-informed decision. Furthermore, the value system makes it possible to combine both cost- and effectiveness values of divergent stakeholders into an integrated whole. It also makes it possible to quantify various perceptions and to eventually arrive at comparable cost figures, which also take account of effectiveness factors. Four stakeholders were listed in the example illustrated in Figure 8.8. Their priorities are as follows:

- The *taxpayer* wants improved service by user departments at acceptable costs.
- The *user departments* want better service by the service provider at acceptable costs.
- The *employees* want job security.
- The *government* inter alia wants to promote the following:
 - Black economic empowerment

- Outsourcing of non-core business
- Good corporate image (i.e. no bad publicity)
- Effective management information systems

The model can be applied by the Subdivision: Government Motor Transport within the Division: Corporate Services in the National Department of Transport when embarking on outsourcing ventures (National Department of Transport, 2002: Business Plan 2002 / 2003). It can equally be applied by the industry when responding to such outsourcing requests.

In summary, this section demonstrated that the *systems approach* supported by an *integrated fleet information system* which is based on a quantified *value system*, makes it possible to make informed decisions on options such as outsourcing.

8.5 Summary

This chapter demonstrated how the systems approach, the value system and an integrated fleet information system could be applied to fleet management in practice. The following characteristics of the systems approach were demonstrated:

- An outward looking focus by also taking account of industry norms and practices in similar industries.
- Ensuring that elements are not optimised to the detriment of the system as a whole, e.g. by drawing the systems border around both the user departments and the Government (as indicated in Figure 8.8) in the case of an outsourcing contract.
- Approximating information where information is incomplete or cumbersome to calculate exactly. A balance was struck between simplicity and accuracy.
- Demonstrating the importance of deciding on the value system before making a final decision, with due consideration of effectiveness factors.

In line with the outward looking focus, the chapter discussed some fleet management institutions outside the Gauteng Provincial Government. These included the South African Police Service as well as five overseas fleet owners. It was found that the Government Garage generally compares favourably with these. It was also found that they do practice system thinking in some instances. As regards integrated fleet information systems, it seems as if the institutions investigated were not as far advanced as the Gauteng Government Garage.

The chapter also discussed some fleet management trends within South Africa. From the literature, it appears as if there is a strong move towards outsourcing institutional fleets during the past few years.

The study applied the systems approach to compare alternatives, such as the Government Garage with an outsourcing option. The systems approach together with the comprehensive Government Garage fleet statistics again made meaningful comparisons possible. It was found that any outsourcing decision should not be taken on grounds of costs per vehicle-unit alone. A more holistic (or systems) approach was proposed, which also includes the value system of the various stakeholders, specifically in the *effectiveness* domain.

It was concluded that the government, as one of the most important stakeholders, could apply the model when embarking on outsourcing ventures. It can equally be applied by the industry when responding to outsourcing requests.