

# SAPS Depot Analysis

By

TAAHIRAH GHOOR  
27275095

Submitted in partial fulfillment of the requirements for the  
degree of

BACHELORS OF INDUSTRIAL ENGINEERING

In the

FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND  
INFORMATION TECHNOLOGY



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

In conjunction with



October 2011

## Executive Summary

The South African Police Service (SAPS) is responsible for combating crime in South Africa, there are 137 stations in Gauteng, and all these stations have vehicles that need to be maintained at one of the SAPS depots. These vehicles are used to serve the South African public; Gauteng's estimated ten million citizens in particular.

The vehicles are serviced and repaired at 17 different depots throughout the province. The depots cater for mechanical repairs, panel beating and general services. Unfortunately though, many of these vehicles are not fighting crime as they are supposed to, but are waiting to be processed at the depots. The delay in processing which results in an unexpectedly long turnaround time is caused by various issues. This project focuses on the Gauteng depots, and is aimed at adding value to the SAPS's Fleet Maintenance operations.

This project identifies the various problem areas facing the depot, with the use of ISO 9000's 8 Quality Management Principles, and then develops various improvements that can be implemented in order to resolve these problem areas. These improvements were then prioritised according to strategic importance, cost and time to determine the amount of value they could add. The intended outcome of this project is to develop an improvement plan that will demonstrate to the depots where and how they should improve.

## Table of Contents

Executive Summary.....	ii
List of Figures .....	v
List of Tables .....	v
List of Abbreviations .....	vi
1. Introduction and Background .....	1
2. Project Aim.....	4
3. Project Scope .....	5
4. Literature Review: ISO 9000 .....	5
Executive Summary.....	5
Introduction .....	5
Reasons for choosing ISO 9000.....	6
Benefits of ISO 9000.....	6
Implementation of ISO 9000.....	8
Differences between ISO 9000 and TQM .....	10
Conclusion.....	10
ISO 9000 implementation at the Depot.....	11
5. Supplementary Tools and Techniques.....	11
6. Data Analysis of Current Situation (AS-IS) .....	12
Customer Focus .....	12
Leadership.....	13
Involvement of People.....	14
Process Approach.....	15
System Approach to Management .....	16
Continual Improvement (Corrective Action) .....	16
Factual Approach to Decision Making .....	17
Mutually Beneficial Supplier Relationships.....	18
7. Development of Conceptual Design Solution (TO-BE).....	20
Principle 1: Customer focus .....	20
Principle 2: Leadership.....	20
Principle 3: Involvement of people .....	20
Principle 4: Process approach .....	20
Principle 5: System approach to management.....	20
Principle 6: Continual improvement .....	20

Principle 7: Factual approach to decision making .....	20
Principle 8: Mutually beneficial supplier relationships.....	21
8. Problem Solving and Results (Gap Analysis).....	21
Customer Focus .....	21
Leadership.....	22
Involvement of People.....	24
Process Approach and System Approach to Management .....	24
Continual Improvement.....	25
Factual Approach to Decision Making .....	25
Mutually Beneficial Supplier Relationships.....	26
9. Recommendations .....	27
Customer Focus.....	27
Leadership.....	27
Involvement of People .....	27
Process approach and System Approach to management .....	27
Continual Improvement.....	28
Factual Approach to Decision Making .....	28
Mutually Beneficial Supplier Relationships.....	28
Preliminary Impact Assessment.....	28
Improvement Plan .....	32
Implementations and Derivations .....	34
Capacity Plan.....	34
Customer Satisfaction Form.....	45
Conclusions .....	45
10. References .....	46
11. Appendices.....	48
Appendix A: SAPS Rank Structure .....	48
Appendix B: Customer Satisfaction Form .....	49

## List of Figures

Figure 1: Graph depicting the average Murder rate in South Africa (SAPS website) .....	1
Figure 2: Graph depicting the average Burglary rate in South Africa (SAPS website) .....	2
Figure 3: Representation of the process followed in determining the solution.....	3
Figure 4: Representation of the depots' high level processes.....	4
Figure 5: Representation of the Maturity Model used by Fourier .....	17
Figure 6: Fishbone Diagram summarising the problems identified at the depot.....	19
Figure 7: Representation of link between the Industry Standard management structure and the depots' structure.....	23
Figure 8: Graph depicting the analysis of Pretoria's capacity.....	41
Figure 9: Graph depicting the analysis of Benoni's capacity .....	42
Figure 10: Graph depicting the analysis of Johannesburg's capacity .....	43
Figure 11: Ranking Structure at the SAPS (South African Police Service).....	48
Figure 12: Customer Satisfaction Form Side 1 .....	49
Figure 13: Customer Satisfaction Form Side 2 .....	50

## List of Tables

Table 1: Prioritisation of Improvements according to the Weighted Average method .....	31
Table 2: Amount of times a vehicle will need to be processed in a year.....	35
Table 3: Calculation of the total amount of processing jobs that need to be completed in a year at the Pretoria depot.....	36
Table 4: Calculation of the total amount of processing jobs that need to be completed in a year at the Benoni depot .....	37
Table 5: Calculation of the total amount of processing jobs that need to be completed in a year at the Johannesburg depot .....	38
Table 6: Average job completion time per process .....	39
Table 7: Calculation of the total jobs that can be completed in a year with the current personnel in Pretoria .....	40
Table 8: Calculation of the total jobs that can be completed in a year with the current personnel in Benoni .....	40
Table 9: Calculation of the total jobs that can be completed in a year with the current personnel in Johannesburg.....	40
Table 10: Analysis of Pretoria's current capacity, theoretical demand and historical data .....	41
Table 11: Analysis of Benoni's current capacity, theoretical demand and historical data .....	42
Table 12: Analysis of Johannesburg's current capacity, theoretical demand and historical data.....	43

## List of Abbreviations

SAPS – South African Police Service

TOC – Theory of Constraints

AVL – Automated Vehicle Location system

WAS – Workshop Accounting System

TQM – Total Quality Management

CRM – Customer Relationship Management

SMS – Short Message Service

SOP – Standard Operating Procedures

SPC – Statistical Process Control

BEE – Black Economic Empowerment

## 1. Introduction and Background

The world today is a dangerous place, and our country in particular is renowned for its high crime rate.

Statistics of the crime rates in South Africa for the period April 2010 to March 2011, released by the Minister of Police Mr Nathi Mthethwa, enforces this statement, with an example of 3 of the 32 categories described below:

- Murder rate – 16 060 (44 murders per day)
- Sexual crimes – 66 196 (8 sexual crimes per hour)
- Burglary with aggravating circumstances – 133 590 (366 burglaries per day)

However, these are only the reported cases. Many sources believe that these figures are less than the actual occurred incidents. Both the murder and burglary rate are depicted in the graphs below (Figures 1 and 2). The South African Police Service (SAPS) are attempting to apprehend these criminals; however they require vehicles to facilitate this process. Unfortunately the vehicles are often unavailable, as they are at the depots waiting to be serviced or repaired.



Figure 1: Graph depicting the average Murder rate in South Africa (SAPS website)

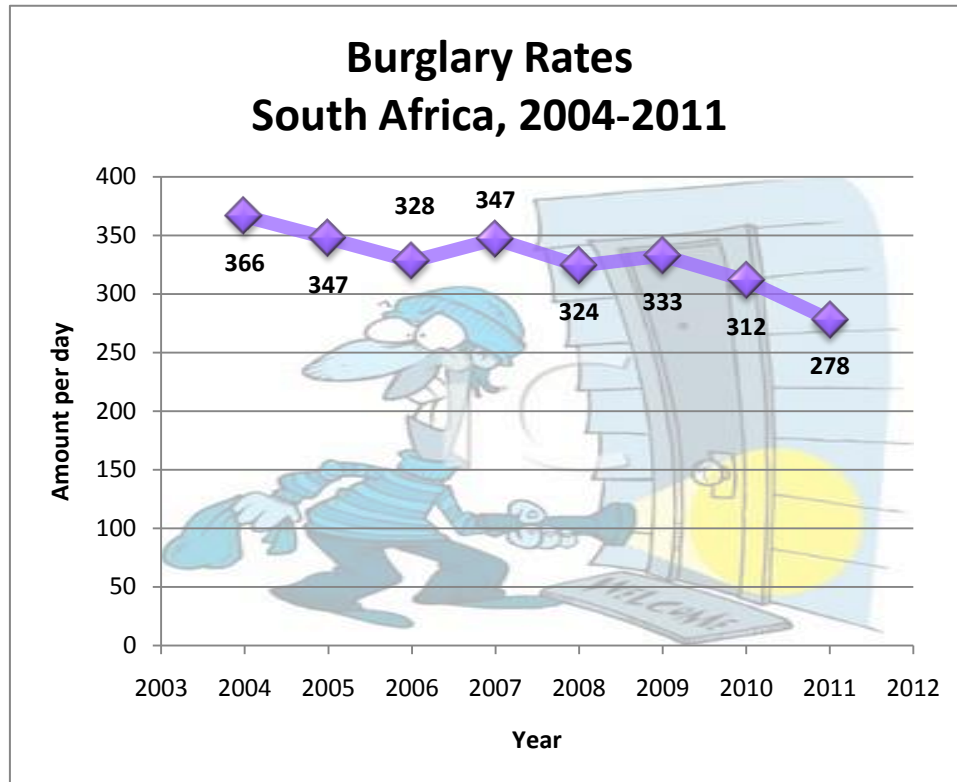


Figure 2: Graph depicting the average Burglary rate in South Africa (SAPS website)

The SAPS is currently experiencing a number of operational challenges with the running of the Gauteng depots. These challenges have been identified by the SAPS and documented in the Fleet Maintenance Improvement document. Several of these challenges are;

- A lack of a proper daily operational planning system to plan for the garages short term activities,
- No long term strategic capacity planning and forecasting,
- The performance measures and quality standards are not correctly implemented and applied.

Due to the lack of an operational planning system, the depots are currently functioning on a day to day basis, without any serious long term strategic goals or planning being applied as would be required in industry.

The management of the depots recognized these challenges and realised that significant changes needed to be implemented to improve the management of the depots. After much deliberation, several approaches were identified as a solution to some of the problems experienced by the depot. The approaches considered were Total Quality Management, Six Sigma and ISO 9000. However the depots management preferred the implementation of ISO 9000 for the purpose of this project, as it had a more structured approach that would better suit the depot environment.



The South African Police Service (SAPS) has 137 stations in Gauteng (as on December 2010), and all these stations have vehicles that need to be maintained at one of the SAPS depots. The vehicles are serviced and repaired at 17 different depots (as on December 2010) throughout the province. The delay in processing which results in an unexpectedly long turnaround time is mainly due to the inefficient use of the depots resources and extensive paperwork bottlenecks. The project focused on the Gauteng depots, and was aimed at adding value to the SAPS's Fleet Maintenance operations.

Due to the nature of this project, and the time limitation, becoming ISO 9000 compliant would not be possible. Therefore only ISO 9000's eight quality principles were applied during the duration of this project. The 8 Quality Management Principles are;

- Customer Focus
- Leadership
- Involvement of People
- Process Approach
- System Approach to Management
- Continual Improvement
- Factual Approach to Decision Making
- Mutually Beneficial Supplier Relationships.

These principles were first used to analyse the current 'AS-IS' system, a gap analysis was then completed to determine the ideal 'TO-BE' system. Finally an Improvement Plan was drawn up, highlighting the improvement areas of the depots. The project was completed under the auspices of Fourier, an industrial engineering consulting company.

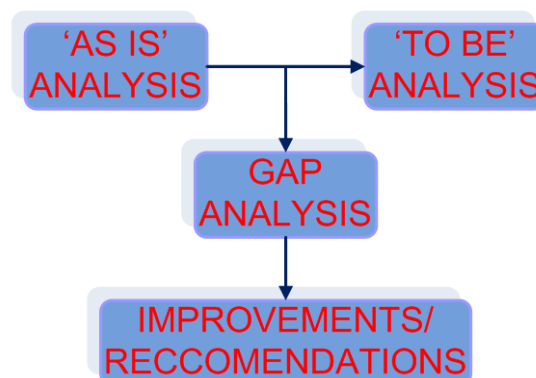


Figure 3: Representation of the process followed in determining the solution

## 2. Project Aim

The overall aim of this project was to assist the SAPS with their Fleet Maintenance Improvement Project. The Fleet Maintenance Improvement Project consists of the SAPS depot management identifying key challenges in the organisation and documenting them in the Fleet Maintenance Improvement document. Several of these challenges that were identified were;

- A lack of a proper daily operational planning system to plan for the garages short term activities,
- No long term strategic capacity planning and forecasting,
- The performance measures and quality standards are not correctly implemented and applied.

This was achieved by using ISO 9000's eight quality management principles to properly determine the 'AS-IS' state of the Gauteng depots, using this information the benchmarked 'TO-BE' state of the depot was then determined through the process of a complete gap analysis.

The project will focus on and be restricted to the high level processes of the depot, as shown in the figure 4 below.

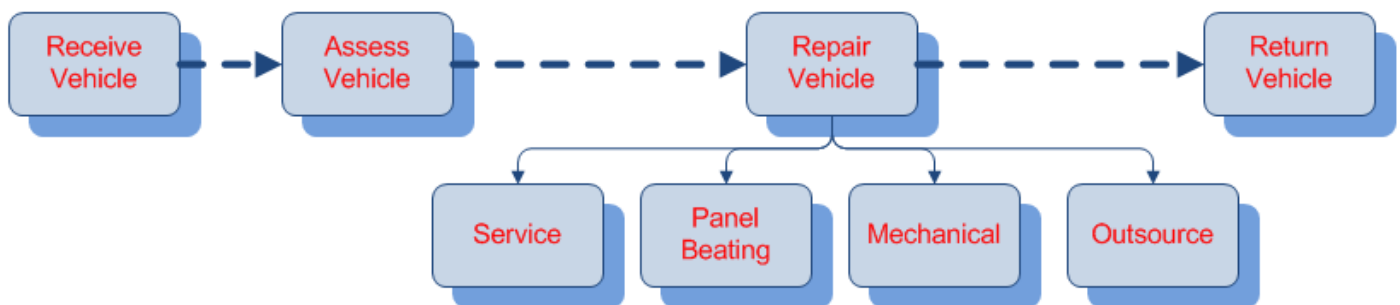


Figure 4: Representation of the depots' high level processes

### 3. Project Scope

To better comprehend the project outline and to ensure a mutual understanding of possible expectations, the current processes of the Gauteng depots was analysed using ISO 9000's eight quality management principles to identify the problem areas. By comparing the current state of the depots to the ideal state depicted by the 8 quality principles a gap analysis was completed, which helped to identify the shortcomings of all the depots and to then develop an improvement plan. This plan is to be taken forward by Business Against Crime (BAC), an organisation that assists government with reducing the levels of crime in South Africa, and used as a baseline to develop a project. The project focused on the Benoni depot which is one of the 3 main depots in Gauteng, the other two being the Johannesburg and Pretoria Central depots. However, similar problems are experienced at all the depots across Gauteng and can be applied as such.

### 4. Literature Review: ISO 9000

#### Executive Summary

ISO 9000 was introduced to ensure a company offers products or services that meet a well-defined need, use, or purpose, as well as satisfying customer's expectations. This literature study aims to establish the benefits which may be achieved from the adoption of the ISO 9000 standards and to identify potential problems associated with the development and maintenance of these standards. The overall objective is to consider various companies experiences with ISO 9000 and its implementation, to better understand its value. The paper presents a review of the literature which establishes the major reasons for choosing ISO 9000, the benefits achieved, and problems encountered during implementation. The paper will also briefly consider the difference between ISO 9000 and Total Quality Management (TQM).

#### Introduction

The ISO 9000 series of standards is a documented management system tool which aims at achieving third-party certification from respective certification bodies. These standards are internationally recognized and designed to promote customer satisfaction by improving and creating a culture of quality assurance through the formalization and documentation of a quality management system.

Many companies throughout the world have chosen to become ISO 9000 certified, for various reasons. However the benefits of such a decision cannot be completely quantified or measured. This document will critically analyse the benefits of ISO 9000 certification as cited from several sources.

## Reasons for choosing ISO 9000

According to Beattie and Sohal (1999), during a study on ISO 9000 among Australian organisations, the introduction of the ISO 9000 system into an organisation is primarily due to market reasons. The main market reasons that were identified were: actual customer pressure; anticipated customer pressure; gain market advantage; access new markets; or to improve quality.

Since the introduction of pro-quality government policies in Australia, and with the government's massive purchasing power over Australian companies, companies have been forced to start the process of ISO 9000 certification. Therefore actual customer pressure has been a significant driving force for ISO 9000 certification.

Phil Parry, the National President of the Australian Organisation for Quality has identified two external factors that are driving Australian firms to embrace ISO: "The rapid internationalisation of world markets has created a situation where companies wanting to export are increasingly asked to prove the quality of their operations, goods and services... On the domestic front, the federal and most state governments have instituted purchasing policy initiatives which stipulate those wishing to do business with government to provide evidence of quality competence". Parry also confirms in the same article that the quickest, easiest and cheapest way of achieving these ends is by third-party certification to ISO 9000 standards (Beattie and Sohal (1999)).

Parry highlights some important points with regard to ISO 9000 certification, wherever a company is in the world, in order for the company to successfully interact in the international business scheme, the companies require quality assurance. ISO 9000 certification is one of the best methods out there to provide proof of quality as it is internationally recognized and applied.

## Benefits of ISO 9000

According to Haley and Consterdine (1998), the benefits derived from implementing ISO 9000 into the London Underground's District Line Fleet did not arise just because the organisation became registered, but because it put itself through the registration process. Some of the benefits the organisation experienced are that the number of repeat failures has decreased due to more visibility in the processes and the staff better understand the importance of recording work done. The culture of getting it "right-first-time" has been implemented, and the results are increasingly apparent. Many of the benefits achieved by ISO may be intangible; such as the change in attitudes towards customers and the workplace, which is derived from ISO's approach of incorporating everyone in the organisation (from the top down) during the process of certification.

The only disadvantage experienced by the District Line Fleet was the amount of time they had to spend catching up with past paperwork and documents before they could be certified. However, upon reflection the organisation realised that none of this time was really wasted as all the data captured can be used to plan for the future.

In Catherine McNeil's presentation on the Pros and Cons of ISO 9000 in 1998, she discusses several case studies of companies where ISO 9000 was implemented and the resulting benefits. The first four cases look at companies in the manufacturing sector; the second two cases consider companies in the service sector.

Company 1, which designs and manufactures electronic switchgear, managed to obtain a marketing edge due to the implementation of ISO 9000 Quality System. However in Company 2, an electronics sub contractor that populates printed circuit boards, ISO only resulted in creating an enormous additional amount of paperwork, and resulted in just being a further burden.

Company 3, a small printing company in Fife, after the implementation of ISO due to pressure from their major customer, they managed to reduce overtime, increase turnover by 100%, and managed to maintain their staff members whilst increasing profit by 120%. The company no longer relies on the one customer who demanded their registration.

Company 4, a large printing company in Edinburgh, used ISO 9000 to assist them with determining where it was in the company that they were losing money; and by sub-contracting that aspect and downsizing slightly managed to save the whole company. In addition their accreditation occurred at a point where the whole industry was in a slump; however due to ISO implementation the company managed to survive better than some of their competitors.

Company 5, an economic regeneration company employing 20 people in West of Scotland, have successfully completed ISO 9000, and are one of the few profitable companies in their sector.

The last company provides travel and travel related services to the corporate sector. They have found that ISO 9000 has imposed a discipline on their travel consultants that was missing before. The consultants can now be moved from one branch to another without the fear of affecting their service levels negatively. They also have noticed an increase in the service quality that they provide.

In Beattie and Sohal (1999) they quote the case of Dupont Company, who after the implementation of ISO managed to increase on-time delivery at one plant from 70 to 90%; at another, cycle time went from 15 days to 1.5 days; a product line went from 72% to a 92% first pass yield; a business sector developed specifications for 316 finished products that previously did not have any; and one site reduced the number of test procedures from more than 3000 methods to 2000 methods.

The most important benefit of ISO 9000 certification is “streamlined and improved procedures”. (Beattie and Sohal (1999)). This improvement is brought about by the development and implementation of the organisations standards manual. Once the companies procedures are improved, this improvement tends to have a spiralling effect, and results in improvements been achieved in all aspects of the company.

According to Poksinska (2007) ISO 9000 offers a shift in quality thinking from final inspection to more modern quality approaches such as process management, system approach, customer focus, and continual improvement. The major benefits experienced by organisations include increased productivity and efficiency, quality improvement, greater customer satisfaction, increased awareness and commitment of employees, and a competitive edge that can lead to a greater market share. It is therefore clear that no matter what industry an organisation happens to occupy, if ISO is implemented correctly, there are many rewards that can be reaped.

## Implementation of ISO 9000

The implementation of an ISO 9000 system will differ considerably from organisation to organisation, as it is influenced by different organisational and external conditions. Poksinska (2007) considers the most important organisational conditions to be: maturity level of quality management system, internal motivation, implementation strategy and involvement of people. External conditions include certification audits and relationship with customers.

Organisations have different maturity levels of quality management. For some organisations, ISO 9000 may require a radical change; for others, it is just the usual way of running the business. When Toyota attempted to implement ISO 9000 they did not succeed, for it added no value to their organisation. Toyota is a company with a high maturity level with regard to quality management; it therefore already complied with ISO 9000, and did not need a certificate to strengthen its quality image.

Organisations that only certify because they are forced to by customers without reflecting on whether ISO 9000 is appropriate for their business, may not properly succeed with ISO 9000. An improvement can only be accomplished through change, and without proper motivation, change will not happen. Therefore the internal motivation of an organisation is therefore most important to achieve positive results from ISO 9000. In addition the focus of the organisation should not be on fulfilling minimum requirements but on areas that need to be improved.

Organisations can take either one of two approaches when choosing to implement ISO 9000, they can either standardise the current practice, or practice the standard. The first approach consists of documenting the current practices without changing them. Since the requirements are general,

organisations may claim that their existing processes already comply with the standards' requirements. The second approach requires that an organisation reflect on a requirement and determines the best possible way of fulfilling it within the context of the organisation. The necessary changes in practice are then implemented. The approach chosen should also take into consideration the maturity level with quality management and the improvement needs of the organisation.

The last organisational condition is involvement of people. Top management needs to show commitment and be involved in the quality of work to demonstrate the importance of quality of work to other employees. Without continuous support and commitment from top management, the true importance of the initiative will be in doubt and the energy behind it will be weakened. In addition all employees need to understand the customer requirements and be aware how they contribute to the fulfilment of those requirements.

The external condition of certification audits may be used as a tool for enhancing the effectiveness and continual improvement of the ISO 9000 system. Many organisations do not recognize the opportunities for improvement that external auditing may provide them. Audits are generally perceived as only check points to be crossed to become certified, and not as an opportunity to receive advice, new ideas, and help from the outside. An auditor may provide valuable input in the form of ideas and suggestions for improvement and the transfer of experience from other organisations. (Poksinska (2007)).

According to Beattie and Sohal (1999) the implementation of ISO 9000 system is not to be taken lightly. There are major procedural documents to be completed and the inevitable reluctance to change to overcome. However if this quality standard is properly installed with adequate resources by a firm with committed top management, the thought and the work involved in developing the quality manuals and procedures enables quality and efficiency to improve. (Davies (1998)).

Beattie and Sohal discuss the statement: "ISO 9000 is inappropriate for small business", made by John Sprouster, the chief executive of The Australian Quality Council. The reason for this statement is due to the fact that the cost of establishing and maintaining the documentation and the investment in time required may exceed any benefit that may be derived from the initiative for small businesses. Beattie and Sohal provide further evidence that it costs a 10-person company as much as five times more per employee to implement and certify an ISO 9000 quality system than it does a 100-person company.

In addition to cost, other obstacles associated with gaining ISO 9000 certification are: gaining management and employee commitment; interpretation of standards; problems with assessors and consultants; and problems with documentation. (Beattie and Sohal (1999)).

Another problem prevalent in industry that may make the implementation of ISO 9000 a bit difficult is the false assumption that quality is principally a manufacturing concern. ISO 9000 identifies the need for marketing and marketing research and it recognizes that sales and distribution are part of the quality loop. (Beattie and Sohal (1999)).

In addition, it should be noted that ISO 9000 ensures that the organisation has a quality control system in place, which provides quality assurance to the organisations customers. However it does not guarantee a quality product. The product quality is determined by the processes the organisation has in place, and ISO 9000 ensures that the organisation has the right processes.

## Differences between ISO 9000 and TQM

Total Quality Management is a management approach to long-term success through customer satisfaction. TQM requires all members of an organisation to participate in improving processes, products, services and the work culture. The methods used to implement TQM are derived from the teachings of quality leaders such as Philip B. Crosby, W. Edwards Deming, Armand V. Feigenbaum, Kaoru Ishikawa, and Joseph M. Juran. Deming's 14 points serves as the core basis of the TQM philosophy for improving quality and productivity. (ASQ "The Global Voice of Quality").

The main difference between ISO 9000 and TQM is that ISO 9000 is a clearly defined system, whilst TQM is a philosophy. In addition ISO 9000 requires documentation and record keeping as well regular auditing. The ISO 9000 Quality Standard and TQM are both necessary for any organisation to become world class. (Bishop B)

## Conclusion

It has been proven that if a business wants to remain competitive, it must have a robust quality management program. ISO 9000 is the only globally accepted, all-purpose model for quality management in the world. (Bishop B).

The value for ISO 9000 may differ among organisations and depends on several organisational and external conditions (Poksinska (2007)); however the chief reason for seeking ISO 9000 certification is still mainly due to marketing, either as a defensive action or to seek new markets. Despite the reason for certification, ISO 9000 has provided organisations with both strategic and operational business benefits.



However before an organisation chooses to implement ISO the organisation needs to ensure that it correctly understands the costs that are involved and the obstacles it will need to address to achieve successful implementation.

ISO 9000 is aimed at promoting the concept of quality in all aspects of business and thereby promoting customer confidence in certified suppliers.

ISO 9000 is good basis to start the process of quality improvement; however quality control is a continuous and on-going process and does not just end once the organisation is certified. (Beattie and Sohal (1999)).

## ISO 9000 implementation at the Depot

The reason for implementing ISO 9000 at the depots is because the depots' management recognized that their processes were not functioning effectively and that their customers were dissatisfied with their service. Without satisfied customers an organisation is in peril (ISO International Organisation for Standardization), therefore the depot realised that they needed to make an effort to meet their customers' requirements. One of the depots suppliers (RDG – Rex's Diffs and Gearboxes) had recently implemented ISO 9000 into their organisation, and high level management of the depot were quite impressed with the results, they therefore decided to look into ISO 9000 as a solution, despite possible other techniques such as TQM and Six Sigma which could have been applied as well. In addition, the depot also has a very low quality management maturity level, and stands to benefit greatly from the implementation of ISO 9000 into such an environment. Many of the benefits derived from ISO 9000 arise from implementing the process into the organisation. The approach of encouraging participation, discipline and standardization ensures that ISO 9000 constantly remains the most popular quality standard. This approach will help the depots to improve their entire system, and not only the quality aspects.

## 5. Supplementary Tools and Techniques

Additional tools and techniques other than ISO 9000 that were utilized throughout the duration of the project were the cause and effect (Fishbone) diagram and the maturity model to better quantify the depots problem areas. Goldratt's Theory of Constraints (TOC) analytical approach assisted with the identification of these problem areas. The weighted average method was also used to prioritize the improvements for the preliminary impact assessment.

## 6. Data Analysis of Current Situation (AS-IS)

Currently the depot is experiencing many operational challenges. The basic process currently followed at the depot is as follows; vehicles are booked in, assessed and then sent to the respective workshops; either services, mechanical repairs or panel beating to be processed (See Figure 4). If the vehicle cannot be processed at the depot due to lack of skill, training or if the vehicle is still on its warranty plan, the vehicle is outsourced. The problems that the depots are experiencing can mainly be attributed to a lack of resources. There is a significant shortage of personnel at the depot, and the personnel that are there, lack the necessary skills. Basic equipment needs cannot sufficiently be met either. This has resulted in a crisis situation. In addition to the resource crisis, the management of the depots does not have sufficient training. Due to the crisis situation currently experienced by the depots, the depots are functioning in “survival mode”. The focus is on the day to day operations and trying to get as many vehicles out of the system as possible. Whether an organisation is government based or not, it cannot function in such a state. To better classify these challenges in more detail, the depot was analysed with ISO 9000’s 8 Quality Management Principles as a guideline. The principles are listed below and are discussed in detail in section 7.

1. Customer Focus
2. Leadership
3. Involvement of People
4. Process Approach
5. System Approach to Management
6. Continual Improvement
7. Factual Approach to Decision Making
8. Mutually Beneficial Supplier Relationships

### Customer Focus

The organisation or depot is not currently aligned towards satisfying the end customer, and in the case of the depots the customers are the fleet managers of the stations. The fleet managers receive no information about the progress of their vehicles at the depots and are under pressure from their individual station heads to retrieve the vehicles as soon as possible. They therefore constantly inundate the depot with calls regarding their vehicles’ status, attempting to track their vehicles through the system. Since there is no central system or administration official responsible for such calls, the calls are forwarded to the workshop managers. The workshop managers are supposed to be working on the vehicles and managing their respective teams of technical advisors and technicians, and not answering the phone. This results in a delay in their work.

At present the depots and the stations (their customers) do not have a positive relationship with one another. The depots believe that the stations abuse their vehicles, and the stations believe that the depots do not fix their vehicles properly. This results in an unhealthy relationship with one's customer. The depot processing time is extremely slow (significantly slower than the current industry standards). According to a senior manager at one of the depots this slow processing time results in, "the stations delaying the handing in of their vehicles for as long as possible." Consequently when the vehicle is finally submitted, the vehicles are in a sorry state. The senior manager describes the state of the vehicles, "The vehicles oil is like tar, it has hit 160 000km and has not yet been for a service, the tyres are completely smooth, the breaks are steel on steel, and the clutch is in pieces".

Another reason for the appalling state of the vehicles can be attributed to the fact that the drivers do not demonstrate enough respect for the vehicles as they do not own them and are not responsible for them. The drivers also lack additional training with regard to basic technical knowledge relating to the vehicle.

In addition, there is also no method of measuring or estimating the demand of the stations. Therefore the depot cannot strive to meet the demand if they do not know what is required of them. If the depots do not know their demand, they cannot complete any capacity planning. This results in the vehicles being delayed in the system, as the system is over capacitated and completely bottlenecked.

## Leadership

With the current challenges faced by the depot's management it is very difficult for management to see the "bigger picture", especially when functioning in survival mode. It is also very hard to create a positive internal environment in such a situation. Therefore any direction provided by management is focused on keeping the organisation afloat. A government organisation is like a big ship, which makes changing direction very difficult, especially when the budget is not controlled by management.

An organisation's various management levels is generally categorised by skill and experience, however this does not prevail at the depot.

The depot's management levels consists of top management (the generals); high management, the depot managers (brigadiers and colonels); and department managers (majors and captains). The SAPS ranking structure can be seen in Appendix A, Figure 12. Due to the unreliability of the accuracy of the depots data, top management has difficulty developing an understanding of the business of the depot. They tend to make decisions that cause serious problems for high level management at the depots.

The high level management seem to have sufficient experience; however they lack necessary leadership training. Lower levels of management lack both experience and training. This is mainly due to the high turnover of technicians at the depot, which results in constant new labour, which lack high level skills and training. The organisational structure requires that the depot has workshop managers who manage technical advisors, who in turn manage technicians, who in turn manage apprentices. Due to the lack of experience and training the resulting system has a workshop manager who barely has more knowledge than his technicians.

In addition, when an employee starts out at the depot, the employee will start of as a constable. As the employee's training increases he will gradually progress to sergeant and warrant officer. However working for a constables' salary at the depot is not easy, since the work is very labour intensive, compared to a regular constable working at a station. Therefore to maintain employee satisfaction, the depots promote the employees, without them having the necessary skill. This results in poorly skilled employees being in management positions. In some cases the opposite is also true at the depots, at the moment there are several employees who have been working at the depots for many years, however due to reasons such as Black Economic Empowerment (BEE) and negligent system management, these employees have been overlooked. This has resulted in dampened employee spirit and dissatisfaction with work. Both of the above has a bad effect on an organisations level of leadership.

## **Involvement of People**

The depots serve as a division of the SAPS. The SAPS is managed using an autocratic management style. Decisions are made by top management (the generals) with limited information on the day to day management of the depots; these decisions are then issued to high level management (the brigadiers, colonels and captains) who are in charge of managing the depots. This top down approach requires a system with accurate information flow, accessibility and visibility, which is not the case with the depots. In addition, autocratic management does not encourage questioning of

decisions. High level management is required to follow orders without question. Consequently issues have developed between the different levels of management, restricting information flow even further. Resulting in depot management with limited autonomy and crushed initiative.

As previously mentioned under leadership, due to the strenuous labour required by the depot, the employees are promoted to a higher position and income bracket without the necessary skills. This results in confusion in the organisation structure. In addition, due to the employees' swift promotion, the employee now has to remain at that level for a long time. At least until he/she acquires the necessary skills required for that position and additional skills to justify a further promotion. The employee thus becomes dissatisfied with the time it takes to promote further, and applies for a higher position at a different depot in another province.

A large percentage of the employees at the depots are contract workers. The contract workers are mostly foreigners, and tend to have a high turnover. It is therefore very difficult to establish shared vision of service excellence and group commitment with employees who may not even be there the following month.

The shortage of operational and support personnel at the depot has grave repercussions with regard to work satisfaction at the depot. The high turnover of employees, with slow replacement time, results in employees who are overworked, and constantly urged to do more, with no end in sight. The operational employees are overwhelmed with administrative work and paperwork, and are unable to complete their jobs. The personnel capacity of the depots is determined by head office; however the calculation has not been updated to include the many changes that have been incorporated into the depots. There is also no managerial and support training, so personnel are not encouraged to improve. With so much dissatisfaction, commitment from one's employees is impossible.

## Process Approach

The SAPS depots processes have been defined and documented, however these processes are not being followed as they should. This is partially because the processes have not been updated since they were developed, and partially due to a lack of resources (following the process will take too much time). Another reason for the non-compliance with the documented processes is that all the depots do not operate in the same manner. In addition the outsourcing process has not been documented properly.

The roles and responsibilities of each member along the process also need to be properly defined. This has also been partially documented but not updated.

In addition, a good process requires a good process layout, to ensure that the processes flow throughout the system. Currently the depot layouts are inefficient.

A serious kink in the process of the depot seems to be procurement, the process of completing procurement is beset with paperwork and procedures, and this slows down the entire system.

Another reason for the delay in processing is due to the large variety of vehicles processed at the depot. The different vehicle brands vary with regard to repairing processes, tools, spare parts and service intervals.

## **System Approach to Management**

Managing an organisation can be broken down into a set of steps similar to that of a process, and can be managed as such. Currently the depots are functioning in crisis mode, constantly fighting fires. Therefore management does not have the time to consider looking at the bigger picture. However, the bigger picture assists management with breaking down the management process into individual activities.

The lack of control over depot resources, specifically the budget, also makes it quite difficult to successfully manage the depots. As the depots are unsure how much money they will have, and have to submit a proposal for every change they would like to make, this makes management quite difficult and tedious.

## **Continual Improvement (Corrective Action)**

This serves as an essential part of any organisation, without which an organisation will be unable to keep up with its competitors and may lose all its customers. However, since the depots are functioning in crisis mode, their main focus is on basic day to day operations of processing as many vehicles as possible. The depots have not reached the level of measuring their performance or considering corrective action measures.

If one considers a business's maturity as depicted by the maturity model below, Figure 5. (Fourier Approach). The depots are still between phases 1 and 2, and are functioning reactively and not proactively to changes in the system. In addition their processes are not standardized or stabilized.

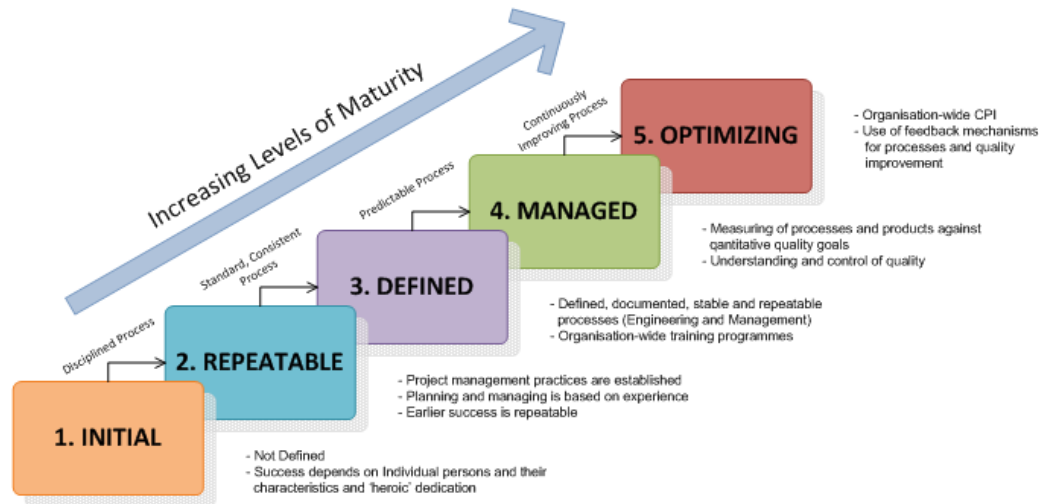


Figure 5: Representation of the Maturity Model used by Fourier

## Factual Approach to Decision Making

To make a well-informed decision, the depots require information to guide them in making those decisions. This information should be relevant, clear and accessible.

The current management system employed at the depot is the Workshop Accounting System (WAS). This accounting system was adapted to be used as a management system for the depot workshops. Accessing any data on this system requires skilled computer literate personnel (a limited resource at the depot) and results in many pages of unclear data. In addition this data may vary each time it is accessed, and is therefore not entirely reliable. The WAS does not integrate with Microsoft EXCEL or WORD and cannot generate graphs. The reports generated by the WAS are archaic and difficult to interpret. The WAS uses complicated codes to depict processes which make it difficult to use. To make any decisions using data accessed from the WAS, involves endless hours of analysing endless pages. The WAS was not designed to and cannot transform data into information. The training required to understand this system is tedious and time-consuming, and there are very few employees who have received the specialized skills. In most cases the end-users are not highly computer literate, making data accessibility even more complicated.

Apart from the WAS being difficult to use, it also does not provide all the required information for the depot, as it was designed in the early 90's to only take into consideration data that was related to the accounting system. The depots have resorted to using additional software such as Microsoft EXCEL and manually inputting data to manage information not included on the WAS and to generate reports.

A new system known as the Automated Vehicle Location (AVL) system was recently implemented by the SAPS; this system is quite advanced and was introduced to assist with fleet management. However, despite being quite advanced the users or fleet managers do not have sufficient training on how to use and understand the system, they therefore do not trust the system.

At the moment the depots have no clear idea of their capacity, with regard to what they should be able to handle or what they can handle. Therefore informed decisions cannot be made.

## **Mutually Beneficial Supplier Relationships**

Enhancing the depots relationship with its suppliers ensures dedicated and timely service. At the moment the depot has formed a contract with Autozone, a spare parts supplier. According to the contract Autozone provides a parts 'store' onsite at all the depots, and ensures the availability of parts for the depots as needed, and if the parts are unavailable, Autozone will order them for the depots. However Autozone is not fulfilling their Service Level Agreement (SLA), as they do not provide the spare parts in the requisite time as determined in the contract.

In addition the depots are required to use either the three quote (for panel beating) or the rotation system (for mechanical repairs) before outsourcing a vehicle, which is a very time-consuming process. An example of the three quote system is when one has six suppliers A, B, C, D, E and F; to complete a panel beating job at any one of these suppliers one has to first obtain a quote from A, B and C, and then choose the cheapest quote. The rotation system simply follows the three quote system, but for the next job one can only look at suppliers D, E and F. The rotation system is not always used on conjunction with the three quote system. However, both systems do not allow the same supplier to be chosen for consecutive jobs. Resulting in a situation where even though supplier A is cheaper than supplier B, because supplier A was used previously, one is forced to choose supplier B. In addition the quality of the suppliers work is not considered. This is not a sound business practice, and would never be applied in industry. It also creates an opportunity for fraud and corruption instead of eradicating it.



The problems identified above are summarised below in Figure 7 with the use of a Fishbone Diagram.

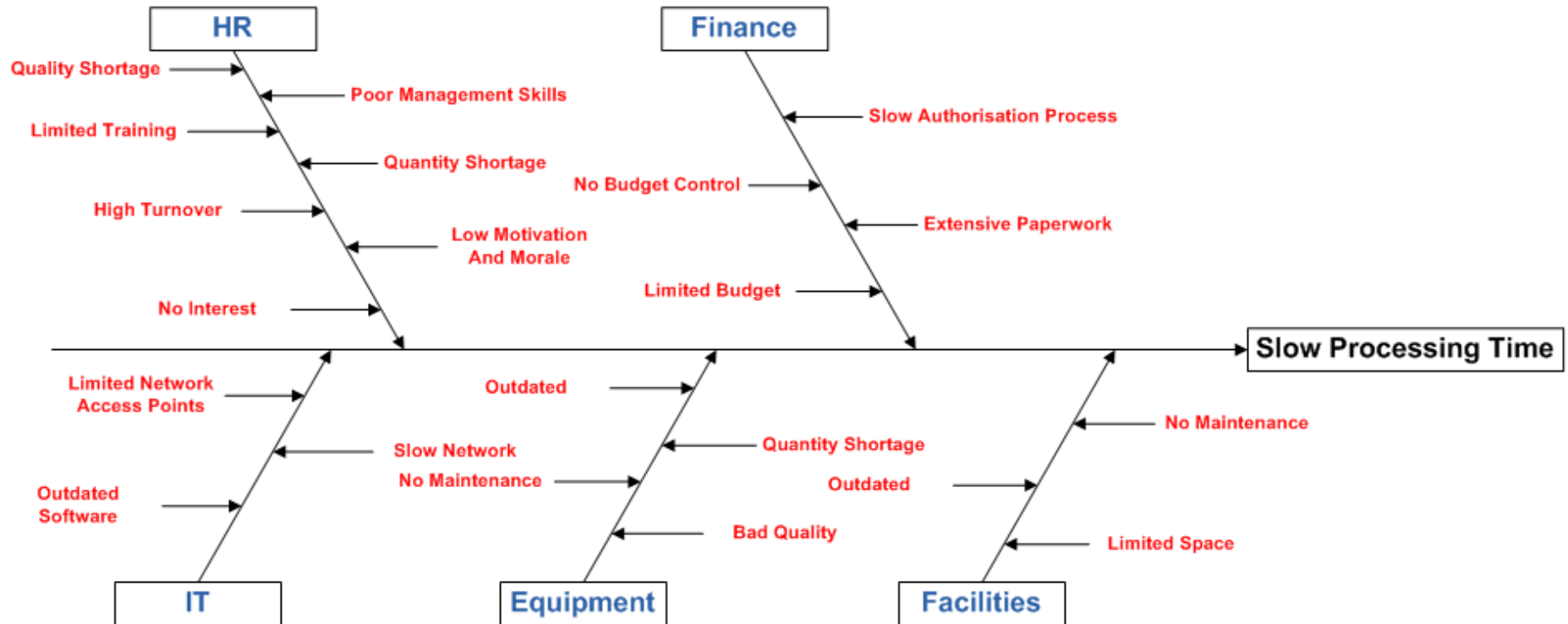


Figure 6: Fishbone Diagram summarising the problems identified at the depot

## **7. Development of Conceptual Design Solution (TO-BE)**

The eight quality management principles form the basis of the ISO 9000 standard. These principles can be used as a framework to guide organisations towards improved performance. The 8 principles as stated in ISO 9000:2005 are as follows;

### **Principle 1: Customer focus**

Depots depend on their customers and therefore should understand current and future station needs, should meet station requirements and strive to exceed station expectations.

### **Principle 2: Leadership**

Leaders establish unity of purpose and direction of the organisation. They should create and maintain the internal environment in which people can become fully involved in achieving the depot's objectives.

### **Principle 3: Involvement of people**

People at all levels are the essence of the depot and their full involvement enables their abilities to be used for the depot's benefit.

### **Principle 4: Process approach**

A desired result is achieved more efficiently when activities and related resources are managed as a process.

### **Principle 5: System approach to management**

Identifying, understanding and managing interrelated processes as a system contributes to the depot's effectiveness and efficiency in achieving its' objectives.

### **Principle 6: Continual improvement**

Continual improvement of the depot's overall performance should be a permanent objective of the depot.

### **Principle 7: Factual approach to decision making**

Effective decisions are based on the analysis of data and information.

## Principle 8: Mutually beneficial supplier relationships

The depot and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

### 8. Problem Solving and Results (Gap Analysis)

With the use of a fishbone diagram, interviews, and data analysis the following problems were identified and categorised according to the 8 Quality Management Principles to complete the Gap Analysis.

#### Customer Focus

The entire organisation needs to be focused on ensuring and maintaining customer satisfaction.

To ensure customer satisfaction the depots need to inform the customers or stations about their vehicles progress at the depot at different intervals. The customers should receive an sms (short message service) or an email informing them of each step of their vehicles progress through the depot process; for example, once the vehicle is successfully booked, when the assessment is complete, when the vehicle is assigned to a workshop or outsourced, when the budget is confirmed or refused, when the parts are ordered, when the parts are received, and when the vehicle is complete. This will minimise the many phone calls received by the workshop managers.

To maintain customer satisfaction the depot needs to determine a method of measuring customer satisfaction with regard to service and quality. Client feedback is essential when determining service quality. The depot needs to develop both a Customer Relationship Management division as well as a Quality Control division to facilitate the organisations focus on service quality. The CRM (Customer Relationship Management) division will determine customer satisfaction by encouraging customers to complete service quality feedback forms when they book in their vehicles; another form will be completed when the customers retrieve their vehicles; and a third form five days after receiving their vehicles, this form will be completed via phone or email. The forms will then be assessed and the results and respective corrective actions will be discussed at the management meetings

The Quality Control division will focus on assessing the quality of the vehicles booked in and exiting the depot and issue a weekly/monthly report. The quality control division needs to ensure that all the problems of the vehicle booked in have been correctly identified, and that a vehicle exiting the system has been properly repaired. If there is a drop in quality, the issues will be addressed in the

management meetings and corrective actions will be implemented. The quality needs to be thoroughly assessed as it is directly linked to customer satisfaction.

The depots need to develop a method of calculating their demand, to facilitate strategic capacity planning. Demand information will assist with providing the customers or fleet managers with an estimate of the time the depots will require to repair their vehicles.

## Leadership

Leadership is absolutely vital in any organisation, without leadership an organisation has no direction. Leadership requires training and vision to establish unity of purpose and direction in an organisation.

Therefore it is vital for all the managers in the depots to undergo managerial training. In addition the aim and goals of the organisation need to be shared across all levels of management. To implement leadership at the depot, the depot first needs to develop its structure by determining the various roles and responsibilities required to manage the depot.

Each position and the responsibilities required to fill that position need to be well-defined.

The depot should incorporate a basic leadership management structure similar to that of a company, with shareholders, a board of directors, a CEO and a management team. This will help divide the different levels of control and power as is done in any organisation. The shareholders would be the Minister of Safety and Security, the Minister of Police, the National Commissioner, whose main interest is in a functioning police system, they are also the ones who are in charge of organising the capital for the SAPS budget. The board of directors will be the various Generals; they monitor the CEO (Brigadier) and establish the vision, mission, values and high level strategy to be adopted by the organisation. The CEO is in charge of managing the managers of all the different depots (the Colonels), advising the board as to areas of improvement, ensuring the board has sufficient and updated information, managing financial and physical resources and implementing strategic plans (with assistance from the managers) developed by the board of directors. The managers then have department managers (Majors and Captains) below them who assist overseeing the day-to-day running of the depots, and the implementation and transformation of the strategic plans into target objectives. A representation of such a structure is depicted below in Figure 8.

Once the organisation's employees understand what is expected of them, the next step is to implement management meetings. Such meetings should be attended by all the respective heads of departments and should be structured and auditable (both internally and externally). The purpose of these meetings is to provide unity of purpose, guidance and direction throughout the organisation. These meetings should address all issues that arise during processing and should also help to determine the required corrective actions.

Management meetings should occur at all levels of an organisation, just like it would in a regular business. The board of directors should have regular meetings as a group, and with the CEO, similarly so should the managers. This will ensure effective communication across the board, and provide all levels of management with the opportunity to voice their opinions.

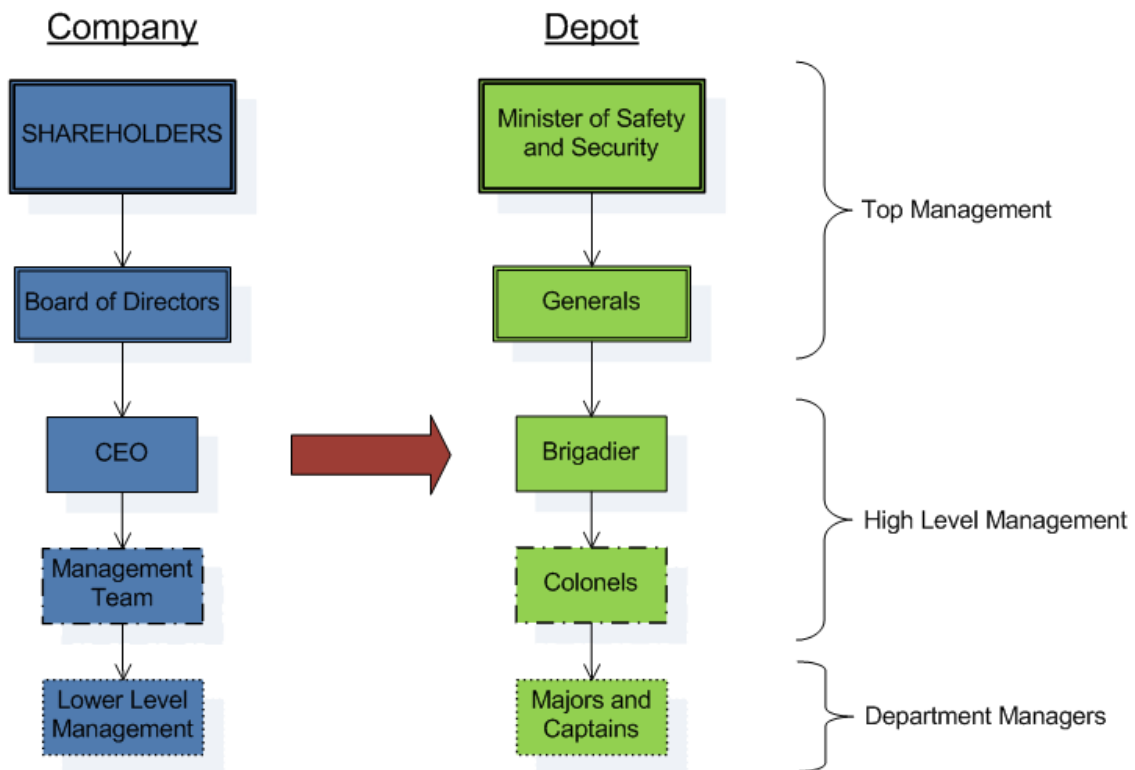


Figure 7: Representation of link between the Industry Standard management structure and the depots' structure

## Involvement of People

The key to success in any industry is motivated and involved people, as Dr W. Edwards Deming observed, "Employees are an organisations most important asset."(Gitlow et al. 2004, pp. 29-54)

To maintain committed management, management requires a certain degree of power and control to use their initiative to effect changes in the organisation. Without this power, management will become despondent since they are constantly facing the same problems day in and day out.

Once the depots have management participation, they need to develop a committed and focused labour force. This requires employing permanent people, providing the necessary wide range training, and encouraging them to work towards promotions.

Training of employees is essential to facilitate process efficiency and quality, especially at the depots. Training should include technician training, support personnel training, and managerial training.

If the depot invests in its employees, the employees will invest in the depot.

## Process Approach and System Approach to Management

The process flow needs to be well documented and easily accessible to all employees at the depot. It should be simple and easily understood.

The current process flow requires updating and reformatting. It should then be incorporated into training manuals and posted throughout the organisation, so that it is visible and easily accessible. Additional data also required for processing such as information specifications related to the vehicles (how to remove an engine of a specific vehicle) should also be readily available. Integration of all the processes into a greater system is vital for any organisation.

The procurement process needs to be analysed and streamlined, as it is currently constricted with many bottlenecks. Improving this process will result in an improvement across the whole system.

Recycling forms part of the processing bigger picture. Recycling consists of boarding of vehicles (compacting and selling), disposal of oils, papers, boxes, plastics, and glass.

The large variety of different vehicles at the depot should be downsized. A system approach to management necessitates that the purchasing of additional vehicles should be completed in conjunction with a detailed requirements analysis. The selected contract should not simply be based on price, but should include a variety of aspects such as the service schedule, spare parts availability and price and vehicle life-span. The total lifecycle cost of the vehicle should be considered.

Workshop layout standardization will enhance process flow throughout the system and ensure a more efficient method of processing. The workshop should also be standardized in terms of tools and equipment. Standardization also includes a constant search for new technology (equipment) to hasten processing. The equipment needs to be consistently maintained and calibrated. This process can be outsourced to the manufacturers. Effective management of all resources ensures an efficient process flow.

## **Continual Improvement**

Corrective action is the process of continual improvement. When a problem arises with the quality of work, the process is assessed, the problem area identified and then corrected and documented. As mentioned previously, a quality control division is required at the depot. To accurately measure quality at all levels of the organisation, and to implement corrective measures as required.

## **Factual Approach to Decision Making**

Without process data, informed management decisions cannot be made. Data needs to be collected from all ends of the process, the data then needs to be integrated and visually represented via the correct software.

Therefore a good management system that networks all the different stations and their respective data is required to ensure proper data management. This system will also assist with effective decision making. The system requirements would include reliability, accessibility, simplicity, and visibility. Examples of data required from such a system would be capacity information, supplier details, current vehicles in system, and vehicles exiting the system. This system however will not be successful without stakeholder buy in, all the stakeholders involved need to actively participate in determining the requirements and implementing the system.

The AVL system recently implemented by the SAPS can be used to collect data relating to fleet maintenance as well as fleet management. Information such as monitoring a vehicles kilometres and notifying the depot when it is due for a service can be accessed from the system with sufficient training and system understanding. This data can also be integrated and used to document vehicle history and management reports.

Document controlling forms part of data management, since all data is sourced from documents. It is the process of managing all the master copies of all the documents required to process a vehicle at the depot. It includes the filing of all the documents, ensuring the information is accessible and easily audited; standardising document formats (example email formats), ensuring standardization of all signage and billboards and regular updates, boards such as safety hazards, emergency numbers, and warehouse names. Document controlling is essential in maintaining a well structured working environment.

## **Mutually Beneficial Supplier Relationships**

The depots and their suppliers need to work together as they are interdependent and can benefit one another.

Since the depots form part of a government organisation they need to maintain impartiality to a certain degree as well. Developing contracts that outsources the processes from implementation, to maintenance, to recycling will assist the depot in focusing on its core business. This can be applied to all suppliers of parts, equipment and consumable resources (oil, paper, gas, paint). However to ensure impartiality, contract tenders for two year periods can be submitted, and the best solution chosen. This will also ensure that the depots are not bogged down with administration of continuously requesting quotes, and the limited time span of the contract will also ensure that the suppliers do not take advantage of the depots and maintain a competitive price range. The depot's current contract with Autozone (see page 18) seems to be functioning reasonably well, however the depots need to ensure that compliance with SLA's (Service Level Agreement) and competitive pricing is always maintained. A strict SLA ensures that the depots receive the best possible service available.



## 9. Recommendations

To better quantify the improvements to be made, the above solutions have been summarised according to the 8 Quality Management principles below.

### Customer Focus

To create a customer focus environment the depots need to;

- Inform the stations of the progress of their vehicles at the depot,
- Determine customer satisfaction measurements,
- Implement customer feedback forms for when the vehicle is received, returned, and 5 days after returning; with the necessary support staff and resources,
- Assess the quality of the vehicle as it is received and returned,
- Develop a method of calculating their demand for services, mechanical repairs and panel beating.

### Leadership

To ensure leadership the depots need to;

- Promote unity of purpose and direction,
- Establish leadership training for employees at all levels of the organisation,
- Determine the roles and responsibilities of each employee at the depot whilst considering the basic leadership management structure of a company,
- Implement management meetings and green area meetings (QCDSM Lean Business Experts).

### Involvement of People

To involve its people the depot needs to;

- Distribute the level of power and control along the organisation hierarchy chain,
- Update the calculation used to determine the amount of employees required,
- Implement high level in service training,

### Process approach and System Approach to management

To achieve this, the depot needs to;

- Thoroughly document the correct processes followed at the depots (SOP (Standard Operating Procedures)),
- Incorporate the process flows into the training manuals, and make it visible throughout the workshops,
- Determine what additional data is required to improve the level of processing,
- Streamline the Procurement Process,

- Incorporate the recycling process into the depots system,
- Downsize the variety of vehicles on the fleet
- Standardize workshop layouts,
- Standardize tools and equipment.

## Continual Improvement

To facilitate continual improvement;

- Qualitative and quantifiable performance metrics need to be determined for all the activities at the depot, to ensure SPC (Statistical Process Control),
- The depot needs to implement a corrective action procedure for all activities occurring at the depot.

## Factual Approach to Decision Making

To facilitate a factual approach to decision making the depot needs to;

- Research and determine an optimal IT depot management system that will satisfy all the criteria determined by the depot,
- Calculate its capacity, then plan and measure accordingly.
- Initiate more intensive training of the AVL system,
- Determine the capabilities of the AVL system with regard to the depot,
- Control and manage all documents used at the depot.

## Mutually Beneficial Supplier Relationships

To maintain mutually beneficial supplier relationships;

- The depot needs to develop contracts with their suppliers and outsource any work that is not related to their core business,
- A process needs to be developed to assess the various contracts according to specific criteria (SLA's) to ensure the best possible solution is chosen.

## Preliminary Impact Assessment

To determine the most vital improvements required for the depot an impact assessment was completed. The various improvements were listed and prioritized according to the estimated amount of time it would take to implement, the estimated cost and the perceived strategic importance.

The identified improvements for the depot are;

1. Inform the stations of the progress of their vehicles at the depot,
2. Determine customer satisfaction measurements,
3. Implement customer feedback forms ,
4. Assess the quality of the vehicle as it is received and returned,
5. Develop a method of calculating their demand,
6. Promote unity of purpose and direction,
7. Establish leadership training for employees at all levels of the organisation,
8. Determine the roles and responsibilities of each employee at the depot,
9. Implement management meetings and green area meetings (QCDSM Lean Business Experts).
10. Distribute the level of power and control along the organisation hierarchy chain,
11. Update the calculation used to determine the amount of employees required,
12. Implement high level in service training,
13. Thoroughly document the correct processes followed at the depots and incorporate into the training manuals,
14. Determine what additional data is required to improve the level of processing,
15. Streamline the Procurement Process,
16. Incorporate the recycling process into the depots system,
17. Downsize the variety of vehicles on the fleet
18. Standardize workshop layouts,
19. Standardize tools and equipment.
20. Qualitative and quantifiable performance metrics need to be determined for all the activities at the depot,
21. The depot needs to implement a corrective action procedure for all activities occurring at the depot.
22. Research and determine an optimal IT depot management system that will satisfy all the criteria determined by the depot,
23. Calculate its capacity, then plan and measure accordingly.
24. Initiate more intensive training of the AVL system,
25. Determine the capabilities of the AVL system with regard to the depot,
26. Control and manage all documents used at the depot.
27. The depot needs to determine SLA's for suppliers contracts and outsource any work that is not related to their core business

These improvements are evaluated with the weighted average method. The variables that were taken into consideration for the evaluation were strategic importance, time, and cost. The cost value is the ratio between the cost to implement and the return value in terms of savings.

All of the variables were assigned values on a scale from 1 to 10. For strategic importance, 1 represented very important or urgent and 10 represented improvements that were not so urgent. Time had a similar scale, with 1 depicting a quick time to implement and 10 depicting a really long time frame. Cost to implement had a scale where 1 represented a low investment and 10 required a high investment. The return value provides one with an idea of the value for money that will be obtained from the project, 1 represented a bad return and 10 an excellent return. The ratio of cost over return value provides one with the cost value. The objective of the weighted average method is to identify projects of great strategic importance (a low value), reasonable time, and a minimal cost value. To calculate the weighted average of the variables, a specific weight needed to be assigned to each of the variables. Strategic importance was classified as more important than time and cost for the purpose of this project, and was therefore assigned a weight of 50; cost was more important than time and was assigned a weight of 30, and time was assigned a weight of 20; with a total weight for all the variables of 100. Each of the variables was first multiplied by their respective weights and then summed; this value was then divided by the sum of all the variables weights.

A representation of the formula is provided below:

$$\text{Cost Value} = \text{Cost} / \text{Return Value}$$

$$\text{Weighted Average} = (\text{Strategic Importance} \times 50 + \text{Time} \times 20 + \text{Cost Value} \times 30) / 100$$

Once the weighted average values were calculated they were prioritized from lowest to highest to identify the top 10 improvements that the depot needs to urgently focus on as illustrated in Table 1.

	Improvement	Strategic Importance	Weight	Time	W	Cost	Return Value	Cost Value	W	Weighted Average
9	Implement management meetings	2	50	2	20	1	4	0.25	30	1.48
8	Determine the roles and responsibilities of each employee at the depot	1	50	7	20	6	10	0.60	30	2.08
23	Calculate the depots capacity, then plan and measure accordingly	1	50	9	20	8	10	0.80	30	2.54
22	Research and determine an optimal IT depot management system	1	50	9	20	10	10	1.00	30	2.60
20	Qualitative and quantifiable performance metrics need to be determined	2	50	8	20	8	10	0.80	30	2.84
5	Develop a method of calculating the depots demand	3	50	6	20	7	9	0.78	30	2.93
1	Inform the stations of the progress of their vehicles at the depot	4	50	3	20	5	4	1.25	30	2.98
3	Implement customer feedback forms	4	50	4	20	4	6	0.67	30	3.00
2	Determine customer satisfaction measurements	3	50	7	20	5	8	0.63	30	3.09
24	Initiate more intensive training of the AVL system	4	50	5	20	4	6	0.67	30	3.20
4	Assess the quality of the vehicle as it is received and returned	5	50	3	20	3	5	0.60	30	3.28
11	Update the calculation used to determine the amount of employees	5	50	5	20	5	7	0.71	30	3.71
13	Thoroughly document the correct processes, and incorporate into training manuals	4	50	7	20	8	6	1.33	30	3.80
27	Determine SLA's for suppliers contracts	5	50	7	20	5	7	0.71	30	4.11
21	Implement a corrective action procedure for all activities	5	50	7	20	5	6	0.83	30	4.15
12	Implement high level in service training	5	50	7	20	8	9	0.89	30	4.17
25	Determine the capabilities of the AVL system	6	50	6	20	5	4	1.25	30	4.58
15	Streamline the Procurement Process	4	50	8	20	7	2	3.50	30	4.65
7	Establish leadership training for employees	6	50	7	20	9	5	1.80	30	4.94
14	Determine what additional data is required to improve the level of processing	7	50	6	20	5	3	1.67	30	5.20
19	Standardize tools and equipment	8	50	5	20	5	5	1.00	30	5.30
17	Downsize the variety of vehicles on the fleet	7	50	8	20	7	9	0.78	30	5.33
18	Standardize workshop layouts	8	50	9	20	7	4	1.75	30	6.33
6	Promote unity of purpose and direction	9	50	10	20	10	5	2.00	30	7.10
10	Distribute the level of power and control along the organisation	9	50	10	20	10	5	2.00	30	7.10
26	Control and manage all documents	10	50	10	20	10	5	2.00	30	7.60
16	Incorporate the recycling process into the depots system	10	50	8	20	9	2	4.50	30	7.95

Table 1: Prioritisation of Improvements according to the Weighted Average method

## Improvement Plan

The top ten improvements identified by the Preliminary Impact Assessment are;

1. Implement Management meetings
2. Determine the roles and responsibilities of each employee
3. Calculate the depots capacity
4. Research and determine an optimal IT depot management system
5. Determine Quantitative and Quantifiable Performance metrics
6. Develop a method for calculating the depots demand
7. Inform the stations of the progress of their vehicles
8. Implement customer feedback forms
9. Determine a quality level for customer satisfaction
10. Initiate more intensive training of the AVL system

These were analysed in further detail below;

- 1) **Management Meetings** - High level management and top management need to have meetings at least once every two weeks. Management meetings at the depots with the department or workshop managers need to occur daily. The meetings need to follow a strict structure and should be well documented and auditable. Green area meetings, where employees are encouraged to see the big picture and understand the company's future should also be incorporated. Management meetings are an ideal opportunity for the depots to spread direction and encourage unity of purpose; the managers also need to use this opportunity to drive high level management's goals and to promote leadership at all levels.
- 2) **Roles And Responsibilities** - The different roles that are available and required at the depot need to be identified, and the various responsibilities then need to be assigned to the roles. The depots management needs to apply the respective roles and responsibilities utilized in industry to their organisation. In addition the respective roles and responsibilities cannot only be determined by high level management in isolation, but also needs to take into consideration top level management and the department managers recommendations. Once the roles have been determined and the responsibilities assigned, the respective functions and processes that fall within the roles should also be clearly identified. The qualification requirements required for each position or role should be quantified. Finally all of the roles, responsibilities, functions and processes should be thoroughly documented and regularly updated.

- 3) **Depot Capacity Calculation** - The depot needs to determine its capacity with regard to personnel, equipment and bay capacity. This improvement was explored in further detail under Implementations – Capacity Plan later in this document, however only the personnel capacity was taken into consideration. The depots need to determine their capacity with regard to all of their resources. To do this an analysis of all the resources currently available and in working condition needs to be completed.
- 4) **Optimal IT Depot Management System** - There are many management system software's available in industry, however before a system can be chosen, the depots first need to conduct a requirements analysis. They need to determine the various outcomes they would like to achieve from such a system, and the data required to achieve the outcomes. In addition the depots also need to develop measurement criteria that will be used by the system to assist with making management decisions.
- 5) **Quantitative and Quantifiable Performance Metrics** - Performance metrics should be determined by analysing both the depot and industry's best practices. These metrics should be detailed and quantifiable. The depots need to scrutinize their products various characteristics and evaluate those characteristics that are vital to the system. The depot's processing needs to be similarly evaluated as well. These vital characteristics can then be further developed into performance metrics.
- 6) **Depot Demand Calculation** - By considering the various clusters that are linked to the depot, and the various stations included within those clusters, and the amount of vehicles that belong to each of the stations, a total vehicle allocation per depot can be determined. The total amount of services, mechanical repairs and panel beatings that a vehicle undergoes per year can be calculated with the use of historical data. Together this information will provide the depot with an approximation of its demand. A similar calculation was completed below in the capacity plan.
- 7) **Vehicle Progress** - There are many methods for an organisation to communicate with its client. The depots could inform the stations of their vehicles progress via email, sms (short message service), or a phone call. However the email or sms can be developed as a link to the management system with an automatic message sent to the stations at each step of processing. This method will also limit the amount of additional support required for implementation of such an improvement.
- 8) **Customer Feedback Forms** - Customer satisfaction needs to be evaluated with customer feedback forms. The form should include various customer related performance metrics. Customer Satisfaction needs to be assessed at three different phases; when the vehicle is

received by the depot, when the vehicle is returned to the customer, and 5 days after the vehicle is returned to the customer. A simple mechanism for data management should be implemented to calculate the customer satisfaction level. The necessary staff and resources required to support such a system should also be implemented. An implementation attempt of such a system is discussed later under implementations.

- 9) **Quality Level for Customer Satisfaction** - The depot needs to determine and define the quality level they would like to maintain by considering best practices and industry standards. Quality is both qualitative and quantifiable and needs to be evaluated as such.
- 10) **Training of the AVL System** - In any organisation, change engenders a lot of resistance, however to overcome this resistance employee 'buy in' and understanding is required. New technology tends to provoke even more resistance since there is a lack of confidence with regard to system reliability. Additional advanced training that provides employees with an understanding of the how the AVL system functions and its capabilities; will assist employees with building confidence and gaining trust in the system.

## Implementations and Derivations

### Capacity Plan

After completing the gap analysis, certain key improvement areas were identified and further analysed. The concept of requiring information to make informed decisions was explored. Capacity information at the depot was researched and a very basic capacity calculation was developed. This calculation was based on a theoretical approximation of demand determined using data from the motor industry and was completed during December of 2010. The aim of the capacity analysis was to focus on establishing the capacity needed to serve and service numbers of vehicles in the fleet in terms of the work bays and equipment. The capacity analysis was broken down into the following aspects;

- Data analysis,
- Station theoretical demand calculation
- Current capacity calculation and
- A gap analysis.

This will hopefully assist with developing an understanding and calculation of the capacity available at each of the Gauteng Depots. Due to time constraints only the three main Gauteng depots were analysed.



## Station Theoretical Demand

To determine the theoretical station demand, data was gathered on the amount of vehicles at each station, and how many stations and clusters belong to each depot.

The different vehicles at each station were divided up into their respective components; the components were then further divided up according to their mileage covered per month. Where low mileage is depicted by anything less than 1000km per month and consists of court vehicles; medium mileage is less than 5000km per month and consists of crime intelligence, fire arm centre, field training and support service vehicles; and finally high mileage is greater than 5000km per month and consists of client service centre, detectives, crime office and crime prevention vehicles.

After calculating the total amount of vehicles in each cluster, and the total clusters linked to each depot. The probability of how often a low, medium or high mileage vehicle would require servicing, mechanical repairs, and panel beating per year was then determined, using data from fleet managers. The calculation of the total amount of services, mechanical repairs and panel beating, the three main depots should be handling, could then be determined (illustrated in Tables 3, 4, and 5).

Provision was also made for an increase in the amount of vehicles, either in numbers or percentages. Therefore if the vehicle number increased by a 100, each component will receive 10% of the 100 except for crime prevention, they receive 20% as they are much harder on their vehicles.

Mileage	Nr of Services per year	Mechanical	Panel Beating
Low	0.86	1.50	1.00
Medium	2.00	2.00	2.00
High	8.00	4.00	4.00

Table 2: Amount of times a vehicle will need to be processed in a year

		Low Mileage	Medium Mileage				High Mileage			
Total Amount of Cars in Pretoria	1190	Court	Crime Intelligence	Fire Arm Centre	Field Training	Support Service	Client Service Centre	Detectives	Crime Office	Crime Prevention
Increase in Cars of Gauteng	0	0	0	0	0	0	0	0	0	0
Percentage	0%	0	0	0	0	0	0	0	0	0
Total Cars	1190	25	14	21	13	99	182	515	5	316
Total Services per year	8459	21	28	42	26	198	1456	4120	40	2528
Total Mechanical Requirements	4404	38	28	42	26	198	728	2060	20	1264
Total Panel Beating Requirements	4391	25	28	42	26	198	728	2060	20	1264

Table 3: Calculation of the total amount of processing jobs that need to be completed in a year at the Pretoria depot

		Low Mileage	Medium Mileage				High Mileage			
Total Amount of Cars in Benoni	880	Court	Crime Intelligence	Fire Arm Centre	Field Training	Support Service	Client Service Centre	Detectives	Crime Office	Crime Prevention
Increase in Cars of Gauteng	0	0	0	0	0	0	0	0	0	0
Percentage	0%	0	0	0	0	0	0	0	0	0
Total Cars	880	18	16	9	13	97	128	301	20	278
Total Services per year	6101	15	32	18	26	194	1024	2408	160	2224
Total Mechanical Requirements	3205	27	32	18	26	194	512	1204	80	1112
Total Panel Beating Requirements	3196	18	32	18	26	194	512	1204	80	1112

Table 4: Calculation of the total amount of processing jobs that need to be completed in a year at the Benoni depot

		Low Mileage	Medium Mileage				High Mileage			
Total Amount of Cars in Johannesburg	1280	Court	Crime Intelligence	Fire Arm Centre	Field Training	Support Service	Client Service Centre	Detectives	Crime Office	Crime Prevention
Increase in Cars of Gauteng	0	0	0	0	0	0	0	0	0	0
Percentage	0%	0	0	0	0	0	0	0	0	0
Total Cars	1280	30	22	32	16	111	151	531	7	380
Total Services per year	8940	26	44	64	32	222	1208	4248	56	3040
Total Mechanical Requirements	4683	45	44	64	32	222	604	2124	28	1520
Total Panel Beating Requirements	4668	30	44	64	32	222	604	2124	28	1520

Table 5: Calculation of the total amount of processing jobs that need to be completed in a year at the Johannesburg depot

The total amount of services, mechanical requirements and panel beating was calculated and highlighted in yellow for the whole year for the three main depots, Pretoria, Benoni and Johannesburg.

## *Current Capacity Calculation*

After determining the theoretical demand, the current capacity needed to be calculated to determine the capacity gap analysis. Ford motors provided basic calculation information on how to calculate the current capacity by looking at the current personnel. The current capacity was therefore determined using this calculation and is based on the personnel and does not include bay capacity and equipment capacity in the calculation; however these factors need to be considered as well.

Several current capacity calculations were completed, by initially including the contract workers, and then excluding them. However since the contract worker's contract expired at the end of January 2011, the focus remained on the current capacity without the contract workers. However, since then the contract has been temporarily reinstated.

In the tables below the hours available is calculated by multiplying the total employees by 7 (as they work 7 hours a day). The hours available per year can be calculated by multiplying the hours available per day by 261 working days. The total hours available per year is then divided by the average job completion time to determine how many jobs can be completed with the current personnel.

	<b>Average Job Completion Time (Hours)</b>
<b>Services</b>	1.5
<b>Mechanical</b>	5
<b>Panel Beating</b>	20

**Table 6: Average job completion time per process**

	Services		Mechanical		Panel Beating		
	Qualified Mechanic	Assistant	Qualified Mechanic	Assistant	Qualified Mechanic	Apprentices	Assistant
<b>Total Employees</b>	3	3	3	2	9	2	3
<b>Hours available per day</b>	21	8.4	21	5.6	63	9.8	8.4
<b>Total hours available per year</b>	5481	2192.4	5481	1461.6	16443	2557.8	2192.4
<b>Total Jobs completed</b>	5116		1389		1060		

Table 7: Calculation of the total jobs that can be completed in a year with the current personnel in Pretoria

	Services			Mechanical			Panel Beating		
	Qualified Mechanic	Apprentices	Assistant	Qualified Mechanic	Apprentices	Assistant	Qualified Mechanic	Apprentices	Assistant
<b>Total Employees</b>	2	0	0	10	4	3	6	2	2
<b>Hours available per day</b>	14	0	0	70	19.6	8.4	42	9.8	5.6
<b>Total hours available per year</b>	3654	0	0	18270	5115.6	2192.4	10962	2557.8	1461.6
<b>Total Jobs completed</b>	2436			5116			749		

Table 8: Calculation of the total jobs that can be completed in a year with the current personnel in Benoni

	Services			Mechanical			Panel Beating		
	Qualified Mechanic	Apprentice	Assistant	Qualified Mechanic	Apprentice	Assistant	Qualified Mechanic	Apprentice	Assistant
<b>Total Employees</b>	0	3	1	10	1	3	16	2	3
<b>Hours available per day</b>	0	14.7	2.8	70	4.9	8.4	112	9.8	8.4
<b>Total hours available per year</b>	0	3836.7	730.8	18270	1278.9	2192.4	29232	2557.8	2192.4
<b>Total Jobs completed</b>	3045			4348			1699		

Table 9: Calculation of the total jobs that can be completed in a year with the current personnel in Johannesburg

## Capacity Gap Analysis

All the calculated and researched data was then gathered together, to complete a capacity gap analysis, and to identify where the depot's current position is and where they need to be (calculations illustrated in Table 10).

	Services	Mechanical	Panel Beating
<b>Current Capacity with contracts</b>	11936	12862	1389
<b>Current Capacity</b>	5116	1389	1060
<b>Theoretical demand</b>	8459	4404	4391
<b>Historical Data (2010) (booked in)</b>	3254	8745	1689
<b>Historical Data (2009) (booked in)</b>	3298	8903	2201

Table 10: Analysis of Pretoria's current capacity, theoretical demand and historical data

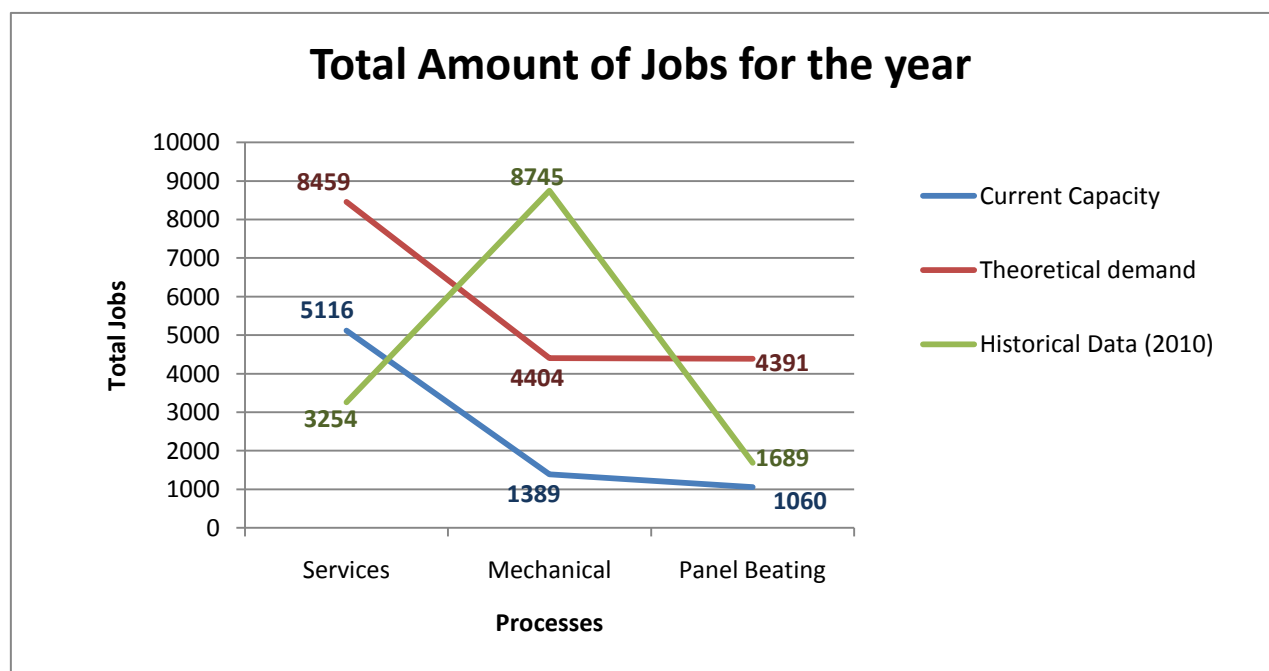


Figure 8: Graph depicting the analysis of Pretoria's capacity

In the above figures the current capacity depicts what the depots can handle, the theoretical demand is what they should handle and the historical data is what they have been handling. It should also be noted that the historical data is not the amount of jobs completed in a year but the amount of jobs booked in.

It can also be seen that the Pretoria Depot is completely under capacitated (Figure 9), and cannot meet any of the theoretical demands with their current personnel. However if one considers the historical data it seems that the mechanical requirements manages to exceed both the theoretical demand and the current capacity. This could be partly due to outsourcing, however due to insufficient data this assumption could not be verified.

	Services	Mechanical	Panel Beating
<b>Current Capacity with contracts and free labour adults and kids</b>	2436	6796	1114
<b>Current Capacity with contracts and free labour adults</b>	2436	6504	1114
<b>Current Capacity with contracts</b>	2436	6212	1114
<b>Current Capacity</b>	2436	5116	749
<b>Theoretical demand</b>	6101	3205	3196
<b>Historical Data (2010) (booked in)</b>	3170	9677	1113
<b>Historical Data (2009) (booked in)</b>	3207	9447	1109

Table 11: Analysis of Benoni's current capacity, theoretical demand and historical data

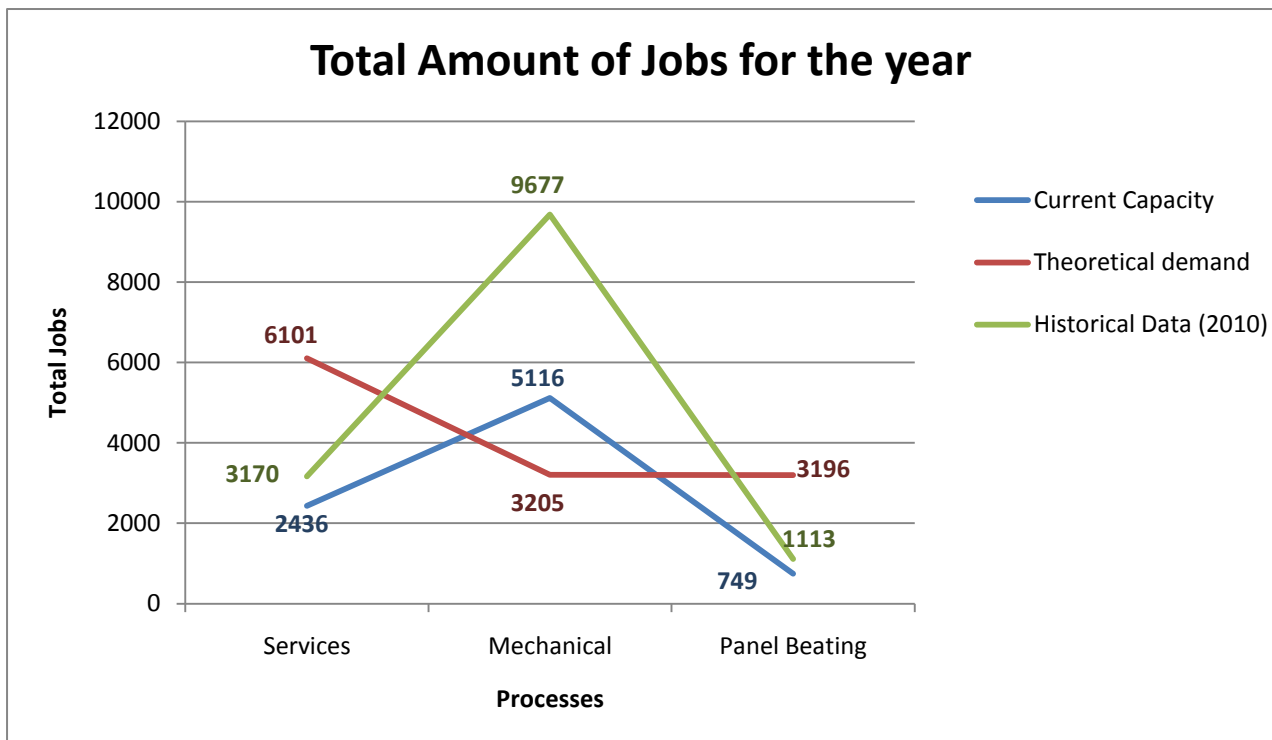


Figure 9: Graph depicting the analysis of Benoni's capacity



From Figure 10 it can be seen that the current capacity indicates that the Benoni depot should be able to handle the mechanical repairs theoretical demand. However historical data demonstrates that the mechanical repairs actually booked in is actually much higher than the theoretical demand, and it can also be seen that they are not servicing their vehicles often enough (6101 compared to 3170).

By preventative maintenance methods and servicing of the vehicles regularly the depots may be able to decrease the high amount of vehicles booked in for mechanical repairs.

Historical data also shows that the depot is exceeding their current capacity with the amount of vehicles booked in; this is possibly due to the fact that all the vehicles are not processed in-house as some are outsourced.

	Services	Mechanical	Panel Beating
<b>Current Capacity with contracts</b>	4019	10341	2704
<b>Current Capacity</b>	3045	4348	1699
<b>Theoretical demand</b>	8940	4683	4668
<b>Historical Data (2010) (booked in)</b>	2078	7599	3462
<b>Historical Data (2009) (booked in)</b>	1494	6398	1671

Table 12: Analysis of Johannesburg's current capacity, theoretical demand and historical data

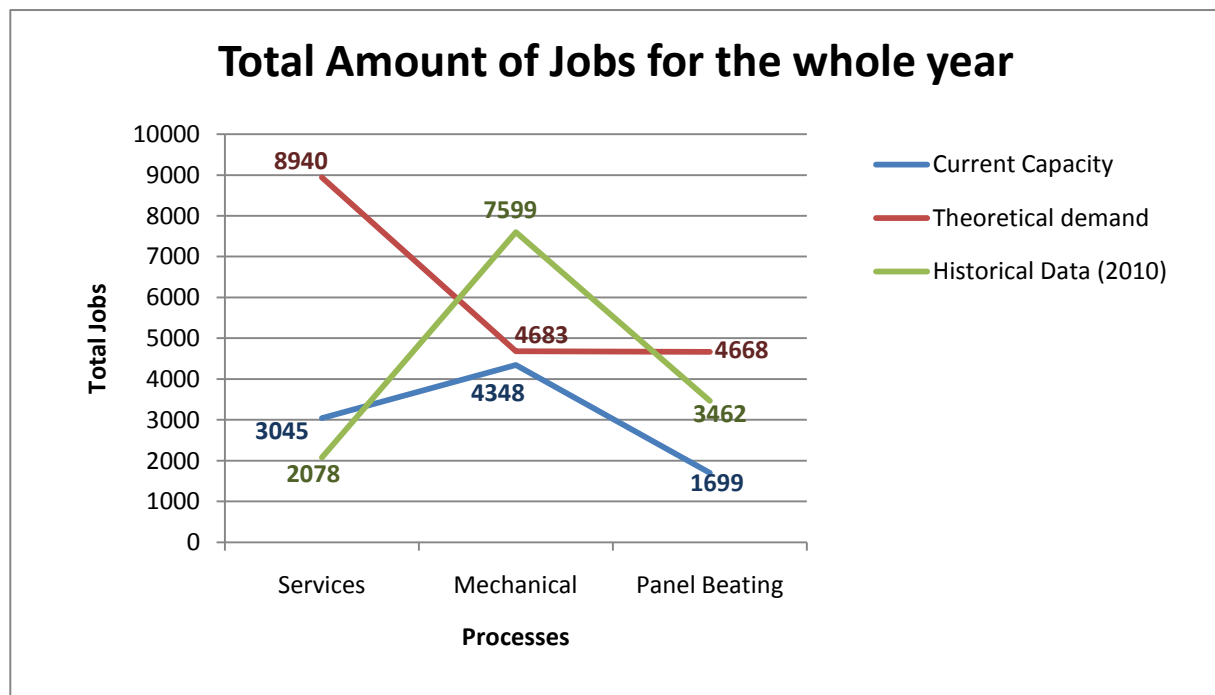


Figure 10: Graph depicting the analysis of Johannesburg's capacity

The Johannesburg depot is also currently under capacitated as they cannot reach their theoretical demand with their current personnel (Figure 11).

The biggest gap for all the three depots is that of services, they are not servicing vehicles as often as they should.

In addition all the depots seem to exceed both the current capacity and the theoretical demand with their historical data value for mechanical repairs, as previously mentioned this could be due to outsourcing.

A preventative maintenance plan to decrease this high figure could be to start servicing the vehicles more often and more regularly to decrease the amount of mechanical repairs in the long run.

A more detailed study of outsourcing data may assist in obtaining a better understanding of the gap between current capacity, theoretical demand and historical data.

## *Recommendations*

A capacity analysis study is not significantly difficult, however throughout the duration of this study it was realised that the data required is not as easily accessible or available in a format that can be clearly understood.

The depots should focus on:

- Establishing data visibility mechanisms into their management system;
- Analysing their current capacity in more detail with outsourcing data;
- Preventative rather than corrective measures on vehicles;
- Improving data management and accessibility, and
- Inspecting the capabilities of the AVL system and use it to their benefit.

The SAPS depots need to revamp the format of their management reports to facilitate decision making at the higher levels. A lack of visibility of data hampers management, and without proper management there is no control or structure.

The capacity analysis highlighted many areas for improvement, and with a few changes the depots have the potential to provide better service and fulfil their purpose.

## Customer Satisfaction Form

During a month in 2006 the Benoni depot implemented customer satisfaction surveys to determine the quality of their service. The surveys were completed when the customers arrived to retrieve their vehicles. Unfortunately, the program collapsed after the first month as there were no personnel or support to carry the program through. The program was initiated by the procurement manager, and the data calculated and analysed manually by him as well. It was determined that the customer satisfaction level was at 84%. An example of a completed form is included in Appendix B Figure 13 and 14.

The preliminary impact assessment ranks customer satisfaction forms as number 8 in terms of importance. Therefore it is one of the important things that the depots need to address. However, they need to ensure that they manage the process better than they did previously, with sufficient support systems and personnel. In addition, the depot needs to consider more efficient methods of analysing the feedback data.

## Conclusions

It is evident from the recommendations, determined by the gap analysis, that there is opportunity for great improvement at the depot. The implementation of these recommendations will create an improved depot environment. The ISO 9000 structured approach helped determine, that with the investment of sufficient time and resources the improvements can be implemented with minimal effort. Together with Business Against Crime the depot's management can take this project further to add value to their fleet maintenance operations. Individual projects developed from the identified recommendations will mend the currently wanting depot operations. Increasing the SAPS's vehicle availability will contribute to reducing crime, making South Africa safer for our family, friends and fellow citizens.

## 10. References

- BEATTIE, K.R. 1999. *Implementing ISO 9000: A study of its Benefits among Australian Organisations*, Total Quality Management & Business Excellence, 10(1), pp 95-106
- DAVIES, E.C. 1998. *ISO 9000 and its Influence on Customer Satisfaction at Automotive Main Dealers in South Wales*, Pros and Cons of ISO 9000 Accredited Certification (Digest No. 1998/421), IEEE Symposium
- MACNEIL, C. 1998. *Pros and Cons - An Industry Specific Issue*, Pros and Cons of ISO 9000 Accredited Certification (Digest No. 1998/421), IEEE Symposium
- HALEY, G.A. & CONSTERDINE, R.G. 1998. *BS EN ISO 9002 – Experiences of Implementation on the District Line*, Pros and Cons of ISO 9000 Accredited Certification (Digest No. 1998/421), IEEE Symposium
- POKSINSKA, B. 2007. *ISO 9000 is not an Economic Disease*, 10<sup>th</sup> International QMOD Conference, Quality Technology & Management, Linkopings Universitet
- GITLOW, H.S, LEVINE D.M, OPPENHEIM A.J & OPPENHEIM R. 2004. *Quality Management*, 3<sup>rd</sup> Edition, McGraw Hill, London
- BISHOP, B. *Why ISO 9000 should be a Company's Guidepost, and not TQM*, viewed 9 September 2011, <<http://www.manufacturingnews.com/news/editorials/bishop.html>>
- ASQ "The Global Voice of Quality", *Total Quality Management*, viewed 9 September 2011, <<http://asq.org/learn-about-quality/total-quality-management/overview/overview.html>>
- ISO International Organisation for Standardization, *ISO 9000 Essentials*, viewed 9 September 2011, <[http://www.iso.org/iso/iso\\_9000\\_essentials](http://www.iso.org/iso/iso_9000_essentials)>
- Fourier Approach, *Maturity Model*
- South African Police Service, *SAPS Rank Structure*, viewed on 11 September 2011, <[http://www.saps.gov.za/org\\_profiles/NEW\\_RANK\\_STRUCTURE\\_WEB.pdf](http://www.saps.gov.za/org_profiles/NEW_RANK_STRUCTURE_WEB.pdf)>
- South African Police Service, *Murder in RSA*, viewed on 2 August 2011, <<http://www.saps.gov.za/statistics/reports/crimestats/2011/categories/murder.pdf>>
- South African Police Service, *Total Sexual Offences in RSA*, viewed on 2 August 2011, <[http://www.saps.gov.za/statistics/reports/crimestats/2011/categories/total\\_sexual\\_offences.pdf](http://www.saps.gov.za/statistics/reports/crimestats/2011/categories/total_sexual_offences.pdf)>
- South African Police Service, *Robbery with aggravating circumstances in RSA*, viewed on 2 August 2011, <[http://www.saps.gov.za/statistics/reports/crimestats/2011/categories/robbery\\_aggravating.pdf](http://www.saps.gov.za/statistics/reports/crimestats/2011/categories/robbery_aggravating.pdf)>

QCDSM Lean Business Experts, *Green Area Meetings*, viewed on 19 September 2011,

<<http://www.qcdsm.com/the-qcdsm-program/the-qcdsm-process/green-area-meeting/>>

Investopedia, *Weighted Average*, viewed on 21 September 2011,

<<http://www.investopedia.com/terms/w/weightedaverage.asp#axzz1YZqG5VRu>>

## 11. Appendices

### Appendix A: SAPS Rank Structure

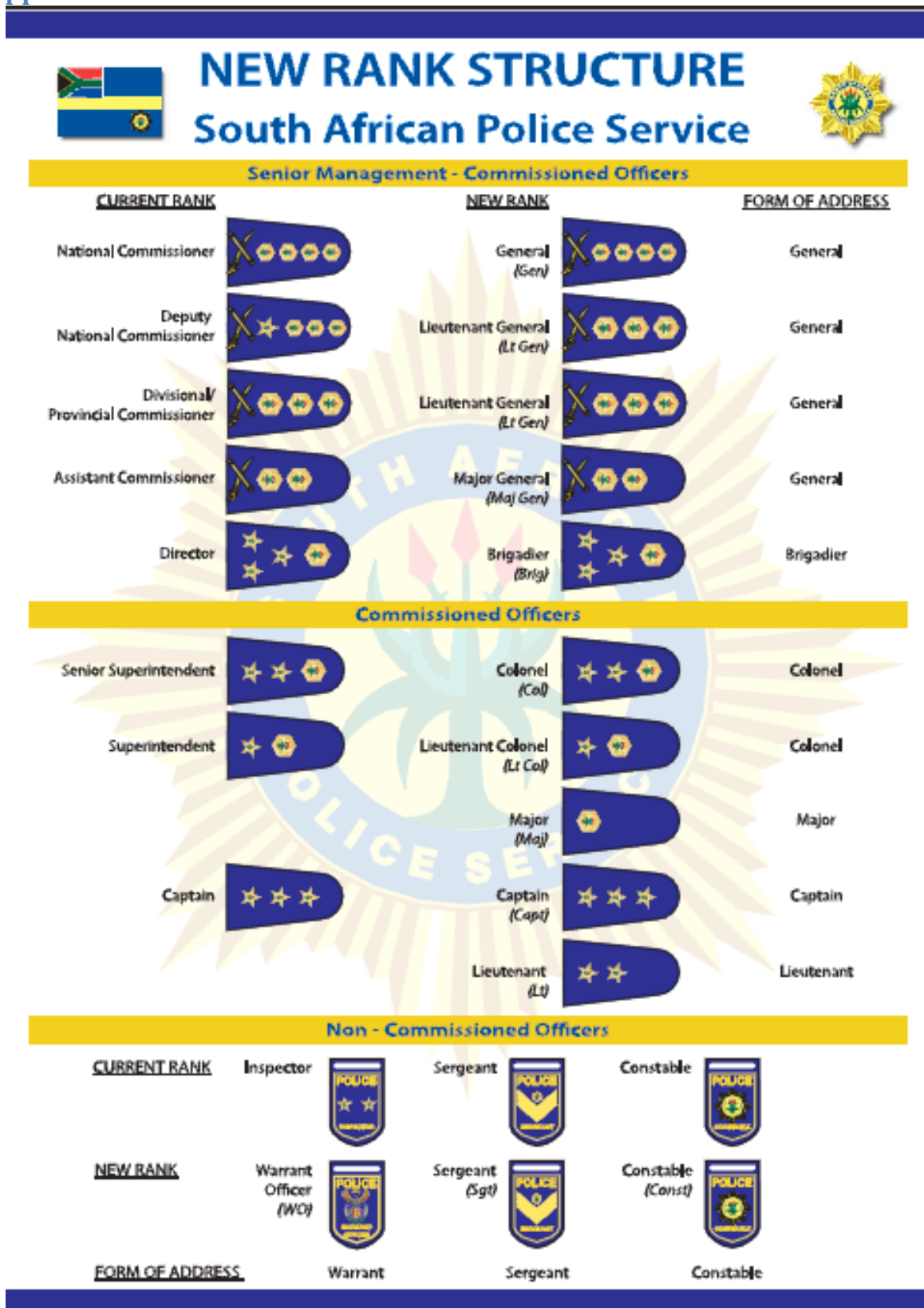


Figure 11: Ranking Structure at the SAPS (South African Police Service)

## Appendix B: Customer Satisfaction Form



### SAPS Mechanical Services Division, Gauteng Benoni

Registration Number/ SAP Number

PSX 136 GP

Station/ Unit

VIT-444 SA

Job Card Number

Flowline

Dear Customer

Thank you for allowing us to attend to your vehicle. We have carried out the service/repair requests with the exception of the items noted on the reverse side.

We trust that you have had a pleasant service experience and please feel free to contact us regarding any problems or queries. Besides the attached questionnaire, you may also receive a phone call from us.

Division

Flowline

Technician

Joseph

Date

2007-02-20

Workshop Manager

Date

Dear Customer

Help us to help you! Please complete the following questionnaire and rate the service on a scale of 1 to 5. (5 = excellent, 1 = very poor)



5 Excellent



4 Good



3 Average



2 Poor



1 Very Poor

N/A

Not Applicable

Please  the appropriate box

Definition	What is your satisfaction level?					
	5	4	3	2	1	N/A
1. Competence and courtesy of the Reception Staff						
2. Our ability to understand your needs						
3. Our interest and attitude to you as a customer						
4. Repairs/ service as explained correctly done						
5. Advance warning of additional delays						
6. Explanation of work done						
7. Vehicle ready when promised						
8. Vehicle clean upon collection						

Figure 12: Customer Satisfaction Form Side 1



**SAPS Mechanical Services Division, Gauteng  
Benoni**

Material Disposal

Client Property - in Boat Collected

Maintenance Scheme


The following repairs have NOT been carried out due to the reason indicated below:

1.	
2.	
3.	
4.	

The following items require attention. Please consult the Help desk:

1.	
2.	
3.	
4.	

Figure 13: Customer Satisfaction Form Side 2