

The Road Traffic Management Corporation: A case study

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ABSTRACT

The focus of this dissertation is on the evaluation of management in traffic safety, and how it is applied, using the Road Traffic Management Corporation (RTMC) as a case study.

Road Traffic Management in South Africa is in a state of crisis. The constitution provides for concurrency with respect to road traffic management, however, no mechanism has been implemented for co-operation and co-ordination. It has been found that the current institutional arrangements are not conducive to co-ordination and rapid interventions. Due to the scarcity of resources and the desire to streamline the institutional arrangements, an innovative model has been developed which will perform road traffic management collectively, the Road Traffic Management Corporation, RTMC.

The implementation of the RTMC will require full co-operation and acceptance by all the various departments concerned, from National Government level, through to Provincial levels, and the Local Authorities. Before the Corporation can be implemented, the funding needs to be secured, and the source of the funding must be stable and committed. The implementing of such a corporation will be delicate, and organizational structure needs to be clear to all parties.

At this early stage of the RTMC, the methods of management already used by the RTMC need to be compared to proper management principles, to ensure that the RTMC will have the best structure to ensure its success. Any uncertainties or concerns that may exist among those involved at lower levels can be communicated to top-level management implementing the corporation. By conducting an independent, external investigation, any short falls can be identified which may have been over looked previously.

This dissertation aims to ensure that the RTMC adheres to the relevant management principles, focussing on the objective of improving road safety.

A questionnaire is devised for the National Department of Transport, so that an independent view of the vision of the RTMC can be acquired.

The organizational structure proposed by the RTMC is examined and evaluated to determine the relationship, communication channels, functions and responsibilities, which are intended between the various levels of management and stakeholders.

The funding of a corporation such as the RTMC is considered, as the source of such funds needs to be secured before the RTMC can be implemented. A preliminary budget prepared for the RTMC is compared to what funding has been made available.

The main objective of the RTMC is to improve road safety. Therefore, the process it intends to use is evaluated to determine whether the goals it intends to achieve through this process are realistic. The engineering function required to improve road safety will also be evaluated in terms of what can be done by engineers to improve the safety on South African roads.

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1. Introduction and Problem Statement

1.1 Introduction and Background.

Road Traffic Management in South Africa is in a state of crisis, with an exceptionally high death toll on the roads. The South African Constitution¹, Chapter 10, section 195, provides for concurrency with respect to public administration, which includes road traffic management. Efficient, economic and effective use of resources must be promoted, however, no mechanism is available for co-operation and coordination.

A legacy of a lack of investment in equipment, training and resources has created an environment in which there is a high level of lawlessness on the roads, which is reflected by a high number of fatalities on the road every year². No mechanism is currently available for co-ordination, concurrency and cooperation as required by the Constitution, and every province and local authority follows their own strategies. Road traffic service delivery areas are also fragmented, and there is significant duplication of tasks between functional divisions. ²



1.2 Problem Statement

In order to address the problems, it is necessary to deal simultaneously with all functional areas, which contribute to road safety. Current institutional arrangements are not conducive to co-ordination and rapid interventions to provide the public with a high quality service. Certain elements of the government's current activities in public service provision and operations could be undertaken more efficiently and cost-effectively in specialised environments, giving higher levels of service to consumers, which would be paid for by direct user charges². Due to the scarcity of resources and the desire to streamline institutional arrangements, an innovative model has been developed which would operate road traffic management collectively, in an

“arms length company”, called the Road Traffic Management Corporation, RTMC.

1.3 Research Objectives

In this dissertation, the existing status on South African roads is discussed to highlight the need for an integrated approach to road safety management. The best practices in the world are investigated, so that the management approach to road safety in South Africa will be the same as that of some of the best practices used in the world today, and also so that South Africa does not make the same mistakes that other countries in the world have previously made.

The Road Traffic Management Corporation already exists on paper, with the Road Traffic Management Corporation Act, 1999 (Act number 20 of 1999)³. In this Act, the organizational structure, the goals, and tasks of the Road Traffic Management Corporation have been laid out. These areas are discussed and analysed in this dissertation, to ensure that the principles used, follow sound management practices.

The implementation process of the Road Traffic Management Corporation, with each of the various stages of implementation and the expected phases the Road Traffic Management Corporation are expected to go through in achieving its goals and mission are discussed.

The financial viability of the Road Traffic Management Corporation is an important factor and a key issue if the Road Traffic Management Corporation is to be a continuing success. The budget issues are considered, as well as the effect the Road Traffic Management Corporation will have on the Provincial and Local Government Authorities who are controlling road traffic management at present, and experience road traffic management as a drain on resources.

Finally, Engineering improvements to road safety will be considered in order to improve the safety of our road system. This is the main focus of road traffic management, and needs to be addressed urgently.

To gain a deeper, and up-to-date knowledge of the RTMC, a “survey instrument”⁴ in the form of a questionnaire and interview with Mr H. Van Tonder of the South African National Department of Transport was conducted on 3 October 2001. The questions and answers from this interview can be found in Appendix A of this document.

1.4 Conclusion and Summary

The RTMC is the South African government's solution to the current problems experienced in road traffic management. The RTMC is an integrated body, which aims at dealing with all the aspects of road traffic management.

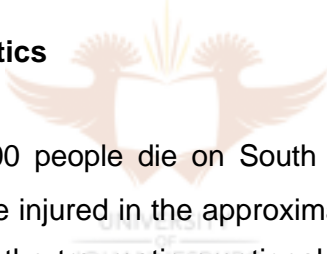
For the RTMC to be more effective than the existing road traffic management strategy, the existing status of road traffic management needs to be analysed so that positive aspects can be retained and enhanced, and the negative issues can be addressed and rectified. The issue of the existing status on South African roads is discussed in more detail in chapter 2.

2. Existing Status on South African Roads and the International Best Practices

2.1 Introduction

The existing status on the roads in South Africa needs to be stated, so that the need to improve the conditions on South African roads and road traffic management can be realized. The existing status will also serve as a benchmark to compare the future status on South African roads, once the RTMC has been fully implemented, so that the effectiveness of the RTMC can be accurately measured. The purpose of this chapter is to reflect on recent studies on to the current situation in South Africa, and this will be compared to international practices in chapter 3.

2.2 Road Accident Statistics



Between 9,600 and 10,000 people die on South African roads every year. Almost 150,000 people are injured in the approximately 500,000 crashes that occur each year. Besides the traumatic emotional cost this has on the social fabric of our society, the CSIR published in May 2001, that this costs R13 billion to the country's economy each year⁵.

South Africa experiences 31,8 deaths per 100 000 persons every year, compared to 6,7 for Britain, 11,3 for Australia and 15,4 deaths per 100 000 persons for the United States⁶. If South Africa could halve the number of fatalities, the number of fatalities would still be considered high when comparing it to the rest of the developed world. Even though the number of fatalities has been decreasing in recent years, the South African road traffic management situation is not effective, and has a lot of catching up to do with regard to traffic safety in the rest of the developed world. From these statistics, it should be clear that methods of improving traffic safety need to be implemented with a high priority in South Africa.

2.3 Provincial and Local Authorities

In determining the status quo of Road Traffic Management in South Africa, a study team was requested by MINCOM (Ministerial Conference of Ministers of Transport) to compile a detailed questionnaire to be filled in by the relevant authority in each of the provinces and selected local authorities. The study teams visited all the provinces and select local authorities to explain the conceptual model of the Road Traffic Management Corporation and the role and importance of the data required.²

Unfortunately, not all local authorities were afforded the opportunity of being explained the concept of the RTMC by the study team appointed by MINCOM. This could lead to the local authorities, which were not visited by the study team, gaining only half knowledge about the RTMC concept, and can lead them to doubt, and be reluctant to accept the implementation of the RTMC before it has even begun.

Despite continual reminders and follow-up by the study team, the response to the questionnaires was not satisfactory. With respect to driver and vehicle licensing, approximately 51% of authorities responded, while less than 15% of law enforcement authorities responded². The lack of support from authorities and an apparent disregard for co-operative governance was visible throughout this process, in particular with the law enforcement authorities. From this data alone, the RTMC can expect to receive resistance from law enforcement authorities to the implementation of the RTMC.

In many cases, officials purposefully hindered the investigation process despite backing from MINCOM and COLTO (Committee of Land Transport Officials)². A clear area of concern is the lack of cohesion and the officials' lack of detailed knowledge and data on the operations within their jurisdictions. Provincial bodies also expressed a concern over a perceived loss of revenue and authority. A possible cause for the seemingly poor response may be that authorities have a lack of knowledge about the intentions of the RTMC and the ways in which the RTMC may benefit

authorities. If there is uncertainty about the future, it may be expected that authorities will not be supportive of this new idea⁷. All these symptoms are typical of resistance to change, which is discussed in greater detail in section 3.10.2, Managing Change.

Many inputs were however obtained from the officials who responded with respect to the proposed model and the current situation. Literature from recent studies was used to supplement field data, and responses were verified with information from NaTIS (National Traffic Information System)⁸.

From the responses received from the questionnaire, the following critical issues were highlighted²:

- There is no uniformity with respect to appointment of agents, legislation, tariff structures, fines or collection levels.
- Most authorities are operating driver licensing and vehicle testing functions at a loss.
- Revenue is decreasing.
- Pockets of excellence are apparent, dependent on personalities and commitment.
- Fraud and corruption seem evident.
- In certain provinces the administrative function is at a standstill.
- 53 % of public vehicle testing stations and 59 % of driver testing centres do not pass standards set by the National Department of Transport in terms of infrastructure and operational procedures of issuing drivers and vehicle licenses.
- Training, equipment, manpower levels and infrastructure are inadequate to perform the required functions.
- Utilization of control measures, monitoring and management information systems is inadequate.
- There does not seem to be a culture of customer service.
- Communication and co-operation between provinces, national and local government is very poor.

- Insufficient training and grading of management staff.
- There is a lack of co-operation and co-ordination in the management strategy.
- There is no strong resource base.
- A lack of unified authority and responsibility with an institutional framework conducive to co-ordinate road traffic management, which is responsive to functional needs.

The overall situation can be seen to be serious, and in certain circumstances there is evidence of collapse. The deteriorating financial position of certain local authorities is resulting in registering authorities not being in the position to pay the collected licence fees to the province, as prescribed by law.⁹ There is no integrated approach to road traffic management, and no unification among various authorities and provinces. This situation is only getting worse, which can only lead to the deterioration of road traffic management in South Africa.

Gauteng has however, through well co-coordinated efforts between provincial and local government, made good progress to address this huge problem, by, *inter alia*, spending large amounts of money on projects such as Arrive Alive, where there is a lot of emphasis on law enforcement. Sustainable long-term solutions will however not be found if the matters or problems mentioned before are not adressed.¹⁰

2.4 The Integrated Approach

Traditionally, road traffic management schemes are developed due to isolated problems and this results in the implementation of single measures. The decisions are made each time within one sector of activity and involve only the elected representatives and the relevant specialists. The analysis is therefore mono-disciplinary. Outside persons and citizens may be expected to play very little part, except triggering off the action at the very beginning¹¹. This is typical

of the current situation in South Africa, where each role player in road traffic management acts without consultation with another affected role player.²

For an integrated approach to be successful, a structure is required which enables both traffic safety schemes to be developed in an integrated way, taking into account other policies, and also ensures that proposals put forward by other non-safety groups, are examined to see whether they are compatible with safety objectives.

This integrated approach is necessary for success in road traffic safety because of its many advantages, which include¹¹:

- Integrated safety programmes help local authorities to get a fuller picture of the existing problems before defining priorities for action.
- Accidents are distributed over a wide area, and it would be misleading to design countermeasures for individual accident sites only.
- Local policy-makers or citizens do not always see traffic safety as a high priority, and there is a need to embed safety measures in other policies and direct safety initiatives.
- Safety measures are more effective if they are part of a comprehensive safety policy, to ensure maximum impact.
- There are many aspects of road safety problems, and safety can be improved from many aspects.

2.5 Ethics in Road Traffic Management

Ethics is the branch of philosophy concerned with human values and conduct, moral duty, and obligation. Such concerns have held a central place in the world of ideas from early times, and they continue in modern society. Among the suggested sources for ethical standards have been religion, the state, and the good of an individual or group⁷. Ethics is concerned with what constitutes right and wrong human conduct, including actions and values, in light of a specific set of circumstances. Business ethics address these issues in the

context of commerce and organizational conduct, and are an “assessment of an organization’s social responsibility covering its relationship with the external world”.¹²

Fraud and corruption seem evident in road traffic management at present². This was the finding of the study team, and is an issue that needs to be rectified.

The RTMC should become more focussed on ethics, and prevent fraud and corruption within road traffic management. The RTMC needs to consider ethics in its approach toward the society that it serves. The RTMC should also take an ethical approach towards its employees, customers, and shareholders.

2.6 International Best Practices of Road Traffic Management

It is important that the best international practices are investigated, as this will give authorities an idea of what can be achieved, and what has already been achieved around the world. It also sets a goal for authorities to work towards. Since a road traffic management programme that fails results in the loss of human lives, authorities cannot afford to experiment with a variety of ideas. By researching the best practices used in the world today, South Africa does not need to experiment, but can make the next step a successful step in reducing road accidents, with a proven methodology.

Many road agencies in the world are struggling with similar problems to South Africa; only the scale appears to change. Where excellence is experienced, many incremental steps have achieved this over a considerable period of time. Clear strategies and continual focus on the desired end state is essential.

Literature has indicated that the greatest advances in the world with respect to Road Traffic Management have been made in Victoria, Australia; the United States; and the Netherlands. These countries have an annual fatality rate of

1.9 persons per 10 000 vehicles, compared to an annual world average of 23 fatalities per 10 000 vehicles⁶. MINCOM thus appointed a study team to visit these regions in June 1998, in order to determine first hand, how road traffic management can be so successful. Many different departments were visited, from both federal and state (provincial) levels. The authorities were given an indication of the functional areas under investigation and meetings were arranged with them. International experts were impressed with the vision of the RTMC model and are enthusiastic about possible success. A full account of operational and legislative aspects per functional area was compiled as a result.

All the places visited have achieved marked reductions in road deaths despite increased vehicular traffic. These have been as a result of dedicated activities over considerable periods of time, linked to a clear coordinated and integrated strategy.

In the places visited road safety and road traffic management is considered a regional function and performed by the provincial government. The federal or national role is limited to overall policy in the Dutch model, funding and specific projects in the United States, and no role was observed in Australia. In both Australia and the United States, there is considerable emphasis on the collaboration between provinces and the national departments to the extent that independent companies have been formed and funded by the provinces, to achieve co-operation, co-ordination and undertake common projects.²

The provincial departments in Australia and the United States perform all core functions, while non-core, peripheral and support services have been outsourced. In the Netherlands certain functions have been transferred to government owned agencies.²

Many technological advances can be seen internationally, in particular in the enforcement field and information systems. Customer focus is given a clear priority with targets being set on service delivery aspects and performance is benchmarked.²

Through out the study tour, the quality and dedication of the people who made presentations and interacted with the team impressed the delegation. It was apparent that many of these individuals had invested a considerable portion of their career to the issues of road safety. Institutions ensured sufficient management, training, and development. Remuneration levels are set to attract and retain high quality staff.²

2.7 Conclusion

The existing state of road traffic management in South Africa does not meet international standards measured in both monetary terms, as well as in actual lives of human beings. Law enforcement authorities seem to pose resistance to the implementation of the RTMC, which became evident in the response to the questionnaires of the study team commissioned by MINCOM to investigate the existing status of road traffic management. Road traffic management has no unification, and this is not conducive to coordinate road traffic management with an integrated approach. The level of ethics also seems low, and the customer should be given a more defined focus, which seems to be a key element lacking in South Africa.

Developing a road traffic management strategy takes a considerable period of time to form and implement it. Road traffic management must be considered a regional function where provincial authorities play the most important role in road traffic management, and the national department plays virtually no role. The organizational structure should be designed in such a way as to follow these above-mentioned trends, and will be further analysed in chapter 3, to ensure that it follows the issues already established in this chapter.

3. Organizational Aspects of the Road Traffic Management Corporation

3.1 Introduction

It is important to understand the various role players and stakeholders of the RTMC and the organizational structure that will link each of these role players. Role players in the RTMC are all those involved in performing the various functions of the RTMC, so that the RTMC can accomplish its goals and tasks, and fulfil the mission.

The goals and mission of the RTMC have been stipulated in the Road Traffic Management Corporation Act. The mission and the goals need to cover all the necessary aspects required of the RTMC. If they aren't stipulated in the RTMC Act, the RTMC has a good chance of failing in these aspects. This chapter states and discusses the goals and mission of the RTMC.

3.2 Legislation

The study team commissioned by MINCOM produced draft legislation to provide for the creation of the Road Traffic Management Corporation, RTMC. Due to the impact on all spheres of Government this legislation followed the route of "76 legislation", which refers to section 76 of the South African constitution¹, which states the process of forming a Bill, which affects all provinces.¹³

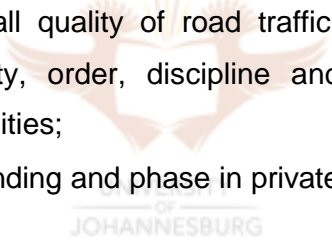
As a result, the draft Road Traffic Management Corporation Act (Act number 20 of 1999)³ is in the process of being implemented¹⁴. The mission of this Act is to "provide, in the public interest, for co-operative and co-ordinated planning and provision of advice, regulation, facilitation and law enforcement in respect of road traffic matters by the National, Provincial and local spheres of Government and the private sector; and to that end, to provide for the establishment of the RTMC; and to provide for matters connected therewith."³

Unfortunately, the mission of the RTMC does not mention that it will directly improve road safety, which is the critical issue with respect to the purpose of road traffic management.

The legislation identifies changes required to existing legislation to make provision for the operation of the Corporation. The legislation also explains, in detail, the operation of the proposed model and practical steps that will be taken to implement such a body.

3.3 Goals and Objectives of the RTMC

The main goals and objectives of the RTMC fulfil the general requirements stated in Road Traffic Management Corporation Act and are⁸:

- 
- To enhance the overall quality of road traffic service provision and to ensure safety, security, order, discipline and mobility on the roads, therefore reducing fatalities;
 - To phase out public funding and phase in private sector investment in road traffic;
 - To introduce commercial management principles to guide road traffic governance in the interest of better service provision;
 - To optimise the use of public funds by limiting investment of public funds in road traffic and securing full cost recovery on the basis of the user-pays principle;
 - To strengthen inter-governmental co-operation in road traffic matters;
 - To stimulate research and improve the exchange and dissemination of information on road traffic matters;
 - To establish the Road Traffic Management Corporation as a partnership between national, provincial and local spheres of government; and
 - To provide better protection of existing assets and infrastructure.

3.3.1 Road Traffic Service

Congestion on the roads has a significant impact on the country as a whole, with high societal costs which not only results in higher running costs of vehicles, but also a loss in productivity to the employed.

The first goal of the RTMC is to “enhance the overall quality of road traffic service”³. If the overall quality is to be improved, surely this should include improving congestion on the roads, not only during morning and afternoon peak periods, but also the holiday traffic experienced, especially on the N3, the national highway between Johannesburg and Durban.

The view of the National Department of Transport however, is that this will not be the task of the RTMC¹⁴. If road traffic congestion is not one of the goals and tasks of the RTMC, then there is no integrated organization to address this issue. Traffic congestion will increase until the matter is addressed, and this should be incorporated into the RTMC.

3.4 Customer Satisfaction

The study team requested by MINCOM established that international best practice shows that there is a need to increase customer focus². In order to satisfy the customer, the customer needs to view the services provided as being of good value and not over priced.

The RTMC however, plans on introducing a “user-pays” philosophy, which will result in a significant increase in the fees a customer pays for road traffic services. Increasing the fees, by implementing a “user-pays” philosophy, may distract from the customer focus viewpoint because customers may feel that they are now paying too much for a service, which has always been provided at a much cheaper rate. Road users should therefore be educated that a “user-pays” philosophy is in their interest, and that it is not distracting from a customer focus. The National Department of Transport has indicated (see

Appendix A – an interview with H. Van Tonder) that the public may expect a saving in other forms of tax.

3.5 Stakeholders in the RTMC

Stakeholders are the groups that are directly or indirectly affected by the ways in which the RTMC is conducted and the managers conduct themselves. Stakeholders include government authorities, road users, private sector, the general public, and the countries economy⁷. The function of each of the various stakeholders must be clearly defined so that there is no duplication of task, and each stakeholder is certain of the function required of him/her.

3.6 The Shareholders Committee

The Shareholders Committee's main objective is to direct and guide the proper functioning of the RTMC using a democratic decision making process.

The Shareholders Committee consists of the National Minister of Transport, Provincial MEC's (Members of the Executive Committee of a province) and two representatives nominated by SALGA (South African Local Government Association).¹⁴

The National Minister of Transport is the chairperson of the Shareholders Committee and must convene the Shareholders Committee at least four times a year. The Shareholders Committee must appoint a member as deputy chairperson, who, in the absence of the Minister, if he or she is present, preside at every meeting of the Shareholders Committee.³

The functions of the Shareholders Committee outlined in the Road Traffic Management Corporation Bill are³:

- Ensure proper monitoring of the Corporation's performance and the attainment of its objectives, including—

- The level and scope of performance of the Corporation with reference to the business and financial plan;
- The performance of public service obligations by the Corporation;
- The impact of investment contracts contemplated and performance contracts, by scrutinizing reports submitted by the Chief Executive Officer, including reports, concerning the implementation of directives issued to the Chief Executive Officer.
- After appropriate consultation, decide—
 - Which functions are to be carried out by each of the organs of the Corporation;
 - On proposed legislation, including amendments to the RTMC Act or any other legislation, concerning road traffic matters;
 - On a change in a policy or the adoption of a new policy by the Corporation;
 - On the suitability of proposals for the achievement of objectives; and
 - To recommend the conclusion of an international agreement.
- Approve the final draft of—
 - The business and financial plan and any amendment thereto;
 - The annual report;
 - The national road traffic law enforcement code; and
 - The governance agreement;
- After appropriate consultation where consultation is required, approve—
 - The awarding of tenders or the granting of concessions above the thresholds as set out in the business and financial plan; and
 - Transactions entered into to give effect to transfer actions;
- Consult on, and facilitate, the implementation of the RTMC Act or any other law relating to road traffic regulation;
- Consider the need for research and technical investigation relating to road traffic regulation, and take steps for it to be conducted;
- Require statements and reports from managers of functional units that may be reasonably required in the interest of informed decision-making;
- Respond to complaints received from the public and investigate complaints against the Chief Executive Officer;

- Publish full particulars of policies decided on in the Gazette and every Provincial Gazette;
- Exercise and perform on behalf of the Corporation the powers and duties which have been conferred to the Corporation by contractual agreement between the MEC and the Chief Executive Officer; and
- Exercise and perform all the powers and duties conferred or imposed on it by the RTMC Act or by any other law.

The Shareholders Committee is an inter-provincial and governmental link to provide communication between the provinces and government. It is however disturbing that this body only meets four times a year, which may imply that valuable information may only be passed on four times a year when the Shareholders Committee meets.

The Shareholders Committee comprises of mainly political office bearers, which are chosen by the president of the country, or the provincial government. This has a negative impact, in that these people who form top-level management, probably have little knowledge about road traffic management, as their career focus is on politics. These members of the Shareholders Committee are also not necessarily long term or permanent in their positions. The Minister of Transport and provincial MEC's only hold this position until there are national elections, when new political office bearers may be chosen.

There is no structure in place to monitor the performance of the RTMC, besides that of the Shareholders Committee. As mentioned above, if the Shareholders Committee only meets four times a year, this will not be sufficient to monitor the RTMC satisfactorily and on a regular basis.

The RTMC Act has not as yet been put in place since the Act was passed in 1999. This is the task of the Shareholders Committee, and they are failing in regard to implementing the RTMC Act as a matter of urgency.

3.7 Secretariat

The Minister of Transport may appoint as many persons or officials employed by the National Department of Transport as necessary for administrative support and performance of the secretarial functions of the Shareholders Committee.³

The meaning of the word “necessary” must be made clear, and that the Minister may not appoint more officials and persons than are essential for administrative support. If the Minister has the powers to delegate more officials than necessary, the administrative support could become a drain on resources to the RTMC, and persons may be employed which are not necessary to the functioning of the RTMC.

3.8 The public/private board

The public/private board is an independent board, which is to be established at the discretion of the Shareholders Committee, to promote commercial management of certain specified functions.

The Shareholders Committee will establish the board for the Corporation consisting of the Chief Executive Officer and a maximum of eight persons appointed by the Committee, who will hold office for a period of five years. The appointed members of the board must be persons from the public and private sectors with proven expertise and competency in the field of corporate management, commerce and commercial banking, financing and road traffic affairs. One of the members of the board will be chosen as the chairperson of the board.

The Board is optional, and the Shareholders Committee has opted not to establish the Board in the near future.¹⁴

It is of concern that the board will not be implemented at the early stages of the RTMC, when the RTMC is being established and trends are being set,

and modern management principles are being applied. Management concerns the five basic functions of planning, organizing, staffing, directing, and controlling⁷. It is vital that the proper management principles are set right from the beginning to facilitate the above five functions of management. Once these trends have been set, it will be much harder to change and correct them.

3.9 Chief Executive Officer

The Shareholders Committee must appoint a Chief Executive Officer (CEO) of the Corporation within one month after the date of Commencement of the RTMC Act, who is responsible for day-to-day operations. The Shareholders Committee must invite applications for the post of CEO by publishing an advertisement in the media.³

The duties expected of the CEO of the Corporation are to:³

- Manage and control the day-to-day affairs of the Corporation in accordance with the business and financial plan;
- Undertake, in accordance with the RTMC Act and any other legislation concerning road traffic matters, the provision and rendering of road traffic services;
- Execute any directive of the Shareholders Committee and report to the Shareholders Committee on the implementation of the directive;
- Undertake research into road traffic matters;
- After consultation with the Minister of Finance and every MEC responsible for finance, draw up a governance agreement to be concluded between the Shareholders Committee and the board;
- Facilitate private sector investment by:
 - Undertaking feasibility and investment studies to ascertain technical, commercial and economical viability of projects;
 - Assisting the private sector to prepare business plans to provide equity and loan finance;

- Assisting potential private investors to ensure compliance with any legal requirements; and
- Providing the private sector with advice;
- Promote private sector investment in road traffic by:
 - The establishment of investment help lines to assist potential investors;
 - The publication of investment related publications;
 - Holding national or localized conferences;
 - Organizing investment contact visits;
 - Initiating contacts with other Ministers, Departments, state-owned enterprises, investment promotion centres and related parties;
 - Collecting, updating and disseminating appropriate promotional and facilitatory information; and
 - Any other appropriate method;
- Report to the Shareholders Committee:
 - On the level and scope of performance of the Corporation in terms of the business and financial plan;
 - On the impact of investment contracts and performance contracts; and
 - On whether a private sector entity is better suited to perform the function envisaged in public contract;
- Perform the functions assigned to him or her by the Shareholders Committee and the board on its appointment;
- Assign functions to the managers of functional units if authorised to do so by the Shareholders Committee;
- Exercise and perform all the powers and duties conferred or imposed by the RTMC Act or by any other law; and
- Exercise and perform all the powers and duties incidental to the above-mentioned powers and duties.

The responsibility of the CEO is spread into three primary areas: responsibility to the Shareholders Committee, responsibility to the RTMC and its functional units, and also to the public who is the client of the RTMC.

The CEO must report to the Shareholders Committee on the performance of the Corporation, but if the Shareholders Committee meets only four times a year, certain shortfalls of the Corporation may have gone too far before it can be reported and remedial measures can be taken.

The CEO has the task of preparing the business and financial plan. The CEO must also manage and control the RTMC according to the business and financial plan, and report to the Shareholders Committee on the performance of the RTMC in terms of the business and financial plan.³

3.9.1 Delegation of tasks

The tasks required of the CEO will place a heavy workload onto one person. The CEO is also required to get authorization from the Shareholders Committee before tasks can be delegated to other managers within the RTMC. If the Shareholders Committee meets only four times a year, certain tasks may be neglected, which the CEO is unable to perform, and is also unable to delegate.

The CEO must be allowed to delegate tasks to other managers involved with the RTMC, such as functional managers, at his/her own discretion. Delegation may be defined as the “assignment to another person of formal authority and accountability for carrying out specific activities”.¹²

The delegation of authority by superiors to subordinates is obviously necessary for the efficient functioning of any organization, since no superior, such as the CEO, can personally accomplish or completely supervise all the organizations tasks.

After identifying the activities necessary to achieve objectives, and classifying them functionally, the CEO should assign the activities to individuals and give them the appropriate authority to accomplish the task.⁷

Responsibility however, cannot be delegated because managers can never shed their responsibilities of their jobs by passing them on to subordinates. Managers can however make their subordinates responsible to them for their actions.¹²

The first and most important advantage of delegation is that the more tasks managers are able to delegate, the more opportunity they have to seek and accept increased responsibilities from higher-level managers. Thus, managers must try to delegate not only routine matters, but also tasks requiring thought and initiative, so that they will be free to function with maximum effectiveness in their organizations.¹²

Another advantage of delegation is that it frequently leads to better decisions, since subordinates closest to the “firing line” are likely to have a clearer view of the facts.¹²

Effective delegation speeds up decision-making. Valuable time is lost when subordinates must first check with their superiors before making a decision. This delay may be eliminated when subordinates are authorized to make the necessary decision on the spot.

3.9.2 Selecting a CEO

The task of selecting the CEO is difficult because of the complexity of the CEO’s job. Since managers must have a wide variety of skills and abilities, the selection depends on an accurate assessment of candidates proven or potential skills.¹²

The Shareholders Committee will seek to hire an experienced manager as the RTMC CEO for a variety of reasons. This newly created post will require experience, which may not be available in the National Department of Transport, and therefore the Shareholders Committee needs to look further and advertise the post in the public media.

3.9.3 Business and financial plan

The CEO is responsible for the preparation of the business and financial plan, and must initiate the preparation of a draft plan.³

The CEO should, after consideration of any comments received from the managers of functional units, finalise the draft business and financial plan, and at least two months before the commencement of each financial year, submit the plan, to the Shareholders Committee for consideration and approval.³

The draft business and financial plan should specify:³

- The objectives of the Corporation for each of the ensuing three financial years;
- The Corporation's scope of business, efficiency, financial performance and pricing of services;
- The key performance indicators, targets and criteria for assessing the performance of the Corporation;
- The principles, strategies, policies and budgets for achieving the objectives of the Corporation, which must include the commitment to contract out road traffic service provision to appropriate business groups and, where appropriate, phase in private investment in road traffic;
- The measures that are necessary to protect the financial soundness of the Corporation, including:
 - The ring-fencing of functional units to make each functional unit financially independent; and
 - Make provision for business opportunities to the private sector; and
- The thresholds at which the Chief Executive Officer must obtain the approval of the Shareholders Committee in the awarding of tenders and granting of concessions.

3.9.4 Annual Report

According to section 4 of the Companies Act of 1973¹⁵, every company, private or public, has to prepare financial statements according to the Generally Accepted Accounting Practice, which includes a balance sheet, income statement, cash-flow statement, notes, director's report, and auditors report. These financial statements must be submitted to the shareholders, and also be available to legitimate parties requesting these statements.

Similar to a company, the Chief Executive Officer must, at the end of each financial year, submit to the Shareholders Committee for its approval, an annual report pertaining to the financial state of affairs and business of the Corporation and its functional units, consisting of:³

- A balance sheet, an income statement and a cash-flow statement which is a true and correct reflection of the state of affairs of the Corporation as at the end of that financial year;
- A report by the auditor of the Corporation; and
- Any other statement or report that the Shareholders Committee may reasonably require.
- The report must indicate the amount of money, if any, received from the State and any other commitment furnished by the State.

3.10 Functional units.

The Shareholders Committee should, as part of the Corporation, establish as many functional units as are required in accordance with the business and financial plan, to ensure effective management of at least the following areas:³

- Road traffic enforcement.
- Training of traffic personnel.
- Vehicle registration and licensing.
- Vehicle and roadworthiness testing,

- Testing and licensing of drivers.
- Road traffic information.
- Accident investigations and recording thereof.
- Communication and education.
- Infrastructure safety audits.
- Administrative adjudication of road traffic offences.

The Shareholders Committee should add another functional unit to this list, that being of a functional unit to improve traffic congestion on South African roads.

From the outset, the RTMC will contract the local authorities currently providing these services, which will become the RTMC's agents. At the moment they don't have any contracts to do so. With service level agreements in the contracts and punitive measures, authorities will continue to provide the service. If they do not comply with the service level requirements, the end result will be that the RTMC can cancel the contract with them. ¹⁴

Training programs are required to direct toward maintaining and improving the current job performance in each functional unit. One of the functional units is responsible for training traffic personnel, which will help to enhance the standard of traffic personnel. However, training for other functional units such as testing and licensing of drivers is non-existent.

The "ring-fencing" of each functional unit will not encourage communication between functional units. This can have negative impacts as new ideas and techniques will be slow in spreading to other functional units and provinces, especially if information needs to first go up to the Shareholders Committee, which only meets four times a year, and then back down the line of command.

3.10.1 Managers of Functional Units

Managers of Functional units are to be appointed by the CEO, and are to manage the RTMC functional units established for a particular road traffic function or a group of functions.

A manager of a functional unit is responsible for the day-to-day functioning of a functional unit, and must manage the unit on a commercial basis in accordance with the business and financial plan, and independently from any other functional unit as a financially ring-fenced unit.

According to the RTMC Act³, a manager is appointed for a period of five years, after which position of manager is re-elected, who is responsible to perform the following duties:³

- Assist the Chief Executive Officer in the preparation of the business and financial plan;
- Perform or initiate research in respect of business groups;
- Manage contracts concluded by the Chief Executive Officer with business groups for the provision of services;
- Assist the Chief Executive Officer in monitoring business groups;
- Advise the Chief Executive Officer at his or her request; and
- Furnish statements and reports to the Shareholders Committee when required to do so.

Research is a duty of the functional managers, as well as a function of the CEO. This duplication of tasks can lead to a misunderstanding and confusion of who is responsible, and what is expected from each manager. The CEO may neglect the task of undertaking research, as the CEO will not necessarily have the time to undertake research. The functional managers may also not conduct research, unless instructed to do so by the CEO, who is their superior and has the same task.³

3.10.2 Managing Change

Change is the alteration in the work environment. Change can result from the way things are perceived or in how they are organized, processed, created, or maintained.⁷

Change originates in either the external or the internal environments of an organization⁷. Change is occurring to road traffic management in South Africa due to the external environment of pressure from government to reduce the number of fatalities on the roads.⁸

One of the greatest difficulties faced by managers trying to institute change, is overcoming the resistance of those who must adapt. But they must overcome it, or change cannot take place.⁷

When the RTMC contracts current local authorities who are currently providing services to become agents, sudden drastic changes will need to take place². The managers of these functional units will need to take special care in managing this change.

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The RTMC can deal with change by trying to anticipate the need for it and plan for it⁷. The RTMC and the Shareholders Committee can adopt a philosophy of planned change, which involves trying to anticipate what changes will occur in both the external and internal environments and then developing a response that will maximise success.¹²

The Shareholders Committee can help create a climate that promotes change by developing a philosophy toward change that includes three elements: mutual trust, organizational learning, and adaptability.⁷

The study team appointed by MINCOM experienced a resistance to the RTMC, which would result in change. People resist change for many reasons. Some reasons for resisting change are:⁷

- Loss of security.
- Fear of economic loss. People may believe there will be an economic loss, especially those involved in corruption.
- Loss of power and control.
- Reluctance to change old habits.
- Selective perception. To someone with selective perception, reality is what that person thinks it is.
- Awareness of weaknesses in the proposed change.

The Shareholders Committee can use five techniques to overcome resistance to change:⁷

- Participation. A person who is involved in the process of change is more strongly committed to the change than someone who did not participate.
- Open communication. Uncertainty breeds fear, which creates rumors, and causes more uncertainty. Managers can reduce the likelihood of this cycle by providing timely, complete, and accurate information. The holding back information destroys trust.
- Advance warning. People adapt better to change if they are prepared for it. As a manager senses a need for change or knows that change is imminent, he/she is well advised to make it known to the employees who will be affected. Another tool to help people prepare for change is continuous education and training. Continuous learning seems to enhance adaptability.
- Sensitivity. Managers must be sensitive to the effects that change has on each person as sensitivity minimizes resistance to change.
- Security. People are much more willing to accept change if the fear of the consequences can be removed. In many cases, managers can reassure workers simply by explaining that the change will not affect income and job

security. Of course such a commitment is meaningful only if it is true. When managers break promises, they are taking the first step toward employee discontent.

3.11 Staff of the Corporation

People are any organization's most valuable resource, and without dedicated, knowledgeable, and motivated employees, the best plans will never be successful.⁷

Ben Tregoe, chairman and corporate strategy expert of Kepner-Tregoe explains that, "one of the most serious reasons for America's lack of competitiveness is that top management does not understand that human resources and human issues are critical to the organization. More and more companies, as they move into global competitiveness, see that the one thing that can make a difference in the world market is people. Raw materials, technology and systems are available to everybody. The right people can be a unique commodity."¹⁶

The Chief Executive Officer may, on conditions stipulated by the Shareholders Committee, appoint the staff that are necessary to enable the Corporation to properly carry out its functions.

The Corporation pays its employees out of its funds such remuneration, allowances, subsidies and other benefits as determined by the Shareholders Committee on the advice of the CEO, and after the consultation with the Minister of Finance.⁷

3.12 Private Sector

The role of the private sector is to inject new investment into road traffic where public funds are lacking, and provide services where it can do so better and more cheaply than the state, and in return, the private sector may have the opportunity to operate the service at a profit.¹⁴

The RTMC makes provision for private sector involvement, and the RTMC can contract to the private sector to provide these services according to proper business principles. The RTMC is not equal to privatisation, but the RTMC allows for public and private partnerships. Road users will then pay the full cost of the service through transaction fees. By privatising these services, the private sector will run the service as a private business, and there will be profit incentives to enhance the service.¹⁴

The business and financial plan must however, allow for the services which the private sector provides, to be profitable as the private sector will not just inject new investment into road traffic management if they can get a better return on their investment in another business venture.

The RTMC will need to exercise strict control over private partnerships to ensure that they operate according to the business and financial plan. The main focus of any private organization is to make a profit, and private organizations may tend to neglect standards to increase profits.

3.13 Conclusion

The RTMC will bring together role players from all fields; from political leaders from national and provincial government who will form executive management, local government agencies, and the private sector. The role players in road traffic management should work together to form one integrated body, the RTMC. The RTMC Act states all the role players and staff of the RTMC up to the managers of the functional units. From the managers of the functional units, it is up to each functional unit to determine their own structure.

The goals and mission of the RTMC will improve road traffic management and the condition on South African roads. The mission though, does not include improving road safety, but it is one of the goals of the RTMC. There are however, two other concerns. Traffic congestion is not addressed by the proposed RTMC, but yet the list of goals of the RTMC seem to imply that it

will. The second concern is that of customer satisfaction accompanied by a significant increase in service fees. These issues need to be addressed to improve the success of road traffic management and the RTMC.

The role players of the RTMC will not be able to perform their respective functions on their own, and the way in which each of the role players interact with one another should be clearly defined to all involved, so that adequate communication can be established between them. The organizational structure of the RTMC should clearly define the way each role player interacts with one another, and this topic is discussed in chapter 4 that follows.



4. Organizational Structure of the Road Traffic Management Corporation and its partners

4.1 Introduction

The various role players in the RTMC have been discussed in chapter 3 above. The organizational structure deals with how each of the role players associates with one another, and the lines of authority that will be enforced. Once the organizational structure has been determined, it can be assessed and compared to modern management principles. This analysis will also establish whether the management style proposed will be best suited to fulfil the needs of the RTMC. The partners of the RTMC form the functional units, which are required to carry out specific tasks on behalf of the RTMC. The most important functional units are discussed in this chapter.



4.2 The Network Organizational Structure

Organizational structure refers to the way in which an organization's activities are divided, organized, and coordinated¹². No single organizational structure suits all circumstances. The RTMC has however, chosen the Network Structure⁷ to be the most suited to its needs and the best structure to achieve its goals.

The RTMC will rely on other organizations to perform critical functions on a contract basis. Rather than performing the functions internally, the RTMC will contract public and private functional units as external units.

The Network Structure provides flexibility as only the specific services needed are purchased. Administrative overhead remains low because large teams of staff specialists and other administrative personnel are not needed by the RTMC.

The major shortcoming of this type of structure however, is the lack of control, as the management core must rely on contractors, which in many cases will be private functional units⁷. This limitation can be minimized if management is willing and able to work closely with the functional units. The reliability of services is also less predictable than it would be if the RTMC owned the means of the supply. If a functional unit fails to deliver, goes out of business, or suffers equipment breakdown, the central hub of the network is endangered.¹⁷

4.3 The Divisional Organizational Structure

To overcome the disadvantages of the Network Structure, the RTMC could adopt an organizational structure where departments are grouped according to organizational outputs, such as a Divisional Structure⁷, and each functional unit is self-contained strategic business unit part of the RTMC. Each of the business units within the organization is responsible for the management of each given service. Within each division, diverse departments accomplish the division's objectives.⁷

The Divisional Structure focuses the attention of the employees and managers on results for the product, customer, or geographical area. A Divisional Structure also offers an excellent means for developing senior executives. Division managers gain a broad range of experience in running their independent units. An organization with several divisions is developing a number of generalists for the company's top position, which is the CEO of the RTMC.⁷

The major disadvantage of Divisional Structure is the duplication of activities and resources. Instead of a single marketing or research department, each division maintains its own. The structure loses efficiency and economy of scale, and lack of technical specialization, expertise, and training can result. Interdivisional coordination may suffer, and employees in different divisions may feel they are in competition with one another.⁷

Comparing the advantages and disadvantages of both these types of organizational structures, the Network Structure does appear to be the better option. The RTMC has stipulated strict control measures over the functional units by requiring each functional unit to adhere to the business and financial plan, and each functional unit is required to enter into performance contracts with the RTMC to ensure that they deliver the services for which they are responsible.

4.4 Organizational Form

A wide span of management such as the RTMC creates a flat organization, with few management levels between top and bottom. One of the most noticeable trends in recent years in modern management is toward flat organizational structures¹². Organizations are moving toward these flat structures to cut the costs associated with levels of middle management, and to speed up decision making. The associated risk is that the remaining managers have greater responsibility and may be overtaxed.

The organizational layout of the RTMC can be summarized in figure 4.1:

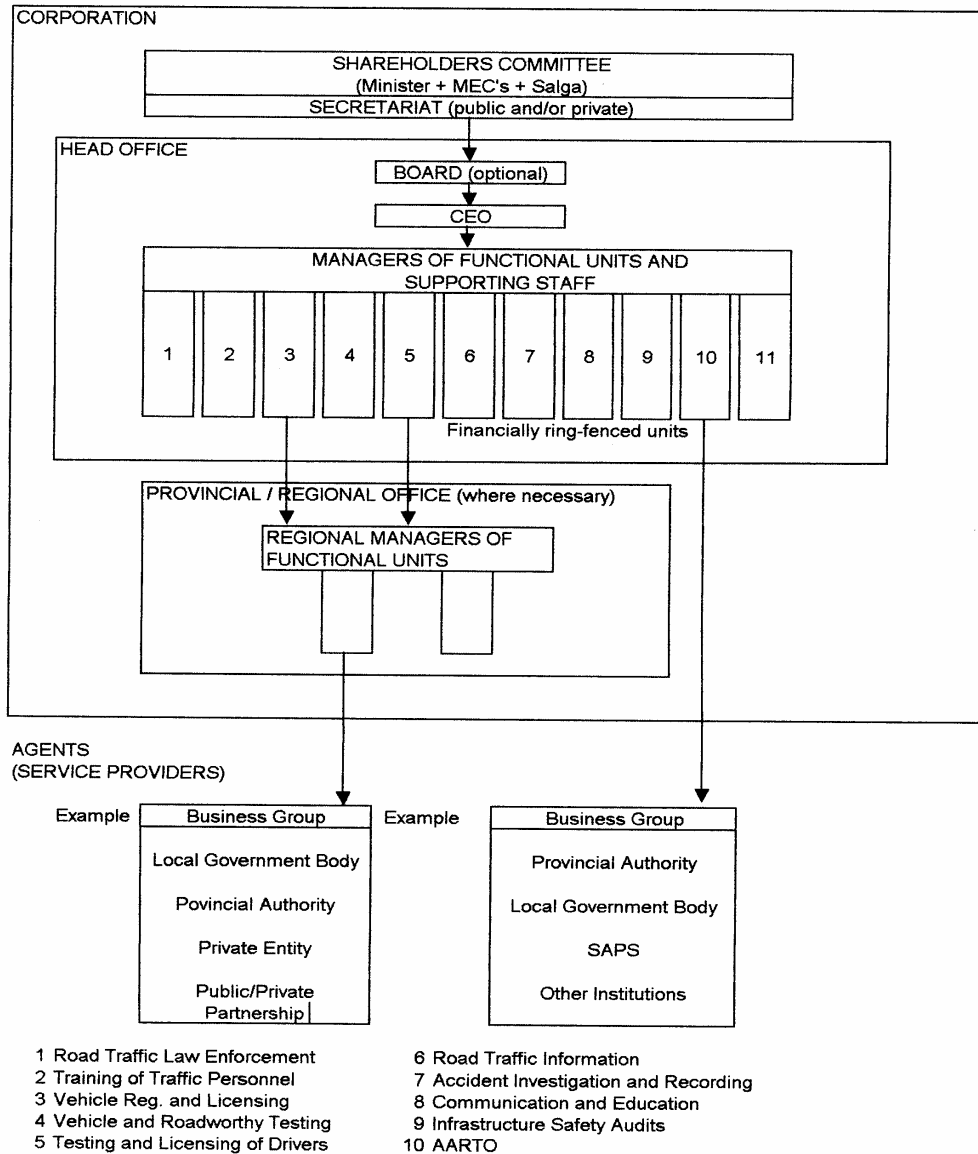


Figure 4.1. Summary of the Organizational Layout of the RTMC

4.5 Career Path in the RTMC

Even though the structure of the RTMC is fairly flat, there is an opportunity for an employee to follow a career path. An employee in a functional unit of the RTMC can progress in that particular functional unit to eventually become the manager of that functional unit. From the manager of a functional unit, the employee may be elected the position of CEO of the RTMC if they meet the qualification requirements.¹⁴ The Premier of a province elects Executive

members from citizens who have made themselves available as political office bearers.¹

The Shareholders Committee, which consists of the provincial MEC's, is beyond the reach of an employee of the RTMC, as this position is elected from a political point of view, depending on the political party ruling the province.

4.6 Communication

Due to the structure of the RTMC, the RTMC uses vertical communication¹² in its organizational structure. Vertical communication consists of communication up and down the organization's chain of command. Downward communication starts with top management and flows down through management levels to line workers and non-supervisory personnel. The major purposes of downward communication are to advise, inform, direct, instruct, and evaluate subordinates and provide organization members with information about organizational goals and policies.¹²

The main function of upward communication is to supply information to upper levels on what is happening at lower levels. This type of communication includes progress reports, suggestions, explanations, and requests for aid and decisions.¹²

The problem with vertical communication is that it is likely to be filtered, modified, or halted at each level as managers decide what should be passed on. Middle managers may also not pass information up to their superiors if they feel that the information would reflect badly on them.¹²

Horizontal communication connects people within the organization who are of similar rank. This form of communication however, works best in a matrix organizational structure and does not fit in with the Network Structure of the RTMC.⁷

The RTMC can overcome many of the communication problems it is expected to have with vertical communication by having more open communication across all levels of management, so that communication between functional managers and the Shareholders Committee can be encouraged.⁷

4.7 Requirements of Functional Units

Functional units of the RTMC are the divisions of the RTMC, which will carry out specific tasks required of the RTMC to achieve its goals and objectives. These functional units will appoint agencies, and these agencies will enter performance contracts with the RTMC to ensure that they meet the requirements that will be stipulated in the business and financial plan. Some of the most critical functional units in improving road safety are discussed in subsequent sections

The RTMC has the power to contract agents which may consist of provincial authorities, local government bodies, and joint public / private partnerships. Private entities may only be contracted as agents for provision of road traffic services and not for law enforcement. Provincial authorities, local government bodies, SAPS (South African Police Services) and other statutory transport institutions will be able to execute road traffic law enforcement.⁸

The Corporation and its agents are required to operate within a functional area as a business group and are to act jointly and individually:⁸

- In the public interest; and
- Within the confines of:
 - The approved business and financial plan;
 - The governance agreement concluded on the appointment of a board by a decision of the Shareholders Committee;
 - The performance contract concluded between the Shareholders Committee and the Chief Executive Officer; and

- Performance contracts concluded between the Chief Executive Officer and the respective managers of the functional units, to enhance the overall quality of road traffic management and service provision.

Financially ring-fenced functional units, which are financially independent functional units, will perform the following tasks required of the RTMC:

4.8 Road Safety Audits

A Road Safety Audit is “a formal examination of a future or existing road/ traffic project/ any project where interaction with road users takes place, in which an independent, qualified examination team reports on the accident potential and safety performance of the project”.¹⁸

Road Safety Audits will be conducted by the private sector on behalf of the RTMC. Road authorities will be obligated to consider road safety in new road construction and to effect the improvements identified in the Road Safety Audits. Road Safety Audits are discussed in detail in Appendix B, “Engineering Improvements to Road Safety”, where the process of improving the safety of a road from an engineering perspective is discussed.

4.9 Driver and Vehicle Testing and Licensing

Driver and vehicle licensing and testing are to be undertaken on an agency basis by local government, provinces or the private sector. Performance contracts must be entered into and monitored on an ongoing basis. Services will be offered on a financially independent, “user pays” basis, so that no cross subsidization occurs. Annual vehicle taxes will accrue to the provincial revenue fund, with agents earning a transaction fee. A levy on turnover will be used to fund inspections of standards on a regular basis.

No provision has been made for the controlling process in this field to correct errors discovered during the monitoring process. The monitoring process is worthless without a controlling process¹⁹. This controlling process may be

provided for in performance contracts, which these agencies are obliged to enter.

4.10 Enforcement Activities

Local and Provincial authorities that comply with National Road Traffic Enforcement Code and meet agreed performance criteria will undertake safety critical law enforcement activities. Offences such as parking offences are not considered safety critical offences, which will not be dealt with by the RTMC. Safety critical law enforcement will be paid for by the RTMC and revenue from fines and penalties will be managed by the RTMC and redistributed to all parties to fund priority projects.¹⁴ (Appendix A, Mr H. Van Tonder of the National Department of Transport, question 7)

The RTMC will direct additional resources to law enforcement, and cover the existing costs, thus provincial departments and local authorities will not be adversely impacted with the financial burden of law enforcement. Further, the RTMC will carry the risk of non-collection of revenue.

The RTMC will only pay for contracted law enforcement, which could include the patrol services, and the rendering of assistance to motorists, but it will not be the focus of the RTMC.¹⁴

If the RTMC is responsible for the non-collection of revenue, law enforcement is at risk of becoming a cross-subsidised function, as the funds for paying for law enforcement will need to come from some other source. This will be opposing the idea of financially ring-fencing functional units, which the top-level managers should not be allowed to override.

Non-safety critical offences will not be undertaken by the RTMC. If authorities can conduct safety critical law enforcement at a profit, by being paid to do so by the RTMC, and non-safety critical law enforcement continues to operate at a loss, authorities can be expected to neglect non-safety critical law enforcement, causing other forms of disregard for road traffic law.

Enforcement activities will be coordinated to an annual plan, which targets priority offences, such as speeding, alcohol, and commercial vehicle roadworthiness. Surveys to determine the offence rate of safety critical issues will be conducted, and the RTMC will contract law enforcement authorities on those particular stretches of road during certain peak times of the day, and certain peak days of the month. When authorities conduct law enforcement correctly, then there should be a relationship between the number of tickets issued and the duration that they do law enforcement on that particular section of road. If that does not tally up, the RTMC may suspect that law enforcement is not effective, and possibly there is bribery¹⁴. The RTMC will monitor them on an output basis. ¹⁴

If authorities do not comply with contracts, their contracts will be cancelled. Once these contracts have been cancelled, there will be the possibility that there are no authorities available to conduct law enforcement, and this could lead to there being no law enforcement in that particular area.

Private law enforcement has been ruled out by the South African government¹⁴, but private law enforcement can only improve the presence of law enforcement officers on the road. If officers are trained properly, and they abide by the regulations and business and financial plan, there should not be a problem with private law enforcement. The above criteria can be used to guide private law enforcement, and if the RTMC is satisfied that they adhere to these criteria, private law enforcement should be allowed, especially where local authorities have failed in this regard. This will improve the safety by causing more motorists to abide by the law.

4.11 Education and Communication

The RTMC will co-ordinate road safety education with respect to research and the development of programmes and materials for distribution. The RTMC will also co-ordinate an annual communication strategy linked to enforcement activities and manage the national television, electronic and print campaign.⁷

A national training academy for road traffic management skills will also be managed as a business unit of the RTMC.⁷

The only concern about this functional unit is its source of income, which must be financially ring-fenced and not be subsidised by other functional units. Advertising in the media costs money, and this expense will not result in a direct income into this functional unit.

4.12 The National Traffic Information System

The National Department of Transport with connection to Ficher Consulting Engineers manage the National Traffic Information System (NaTIS) at the moment. The National Department of Transport is in the process of awarding another five-year contract, but there will be a provision in the contract, that the RTMC will take over the NaTIS, who will operate and maintain the NaTIS as a public / private partnership as a functional unit on its own.¹⁴

4.13 Accident Investigation and Reporting

A major accident reconstruction unit will be established, while normal accident investigation and reporting will continue to be undertaken by the SAPS and traffic authorities. The scope of accident reporting, investigations, and methods of financing will to be re-examined so that there is a distinction between investigation and reporting to ascertain liability, and for safety assessment.¹⁰

The SAPS will continue to do accident reporting and investigation, while the RTMC will perform accident reconstruction¹⁴. It would be better if the task of accident reconstruction formed part of the SAPS as well, as they are already responsible for accident investigation, and these two tasks are closely related, and there would be better organization and less duplication of tasks.

4.14 Conclusion

The RTMC has chosen the Network Organizational Structure for achieving its goals and organizing the Corporation. This type of structure seems to be an appropriate choice for the RTMC. The RTMC has also taken measures of overcoming the disadvantages of this organizational structure by entering contracts with functional units, and in this way the RTMC should have better control of the functional units.

The shape of the structure is also fairly flat, which is a modern trend in management styles. The flat structure is more efficient as it reduces middle management.¹²

Communication in the structure will be an issue, as communication channels used are vertical communication lines, which may tend to be slow. The RTMC can open communications between management levels to improve communication among managers of the RTMC and the Shareholders Committee.

All functional units of the RTMC will be financially independent, and will be self-supporting financially. Private sector involvement has been allowed in each of the functional units of the RTMC except for law enforcement, which may only be conducted by a government authority.

Contracts will be formed to ensure that all agents of the RTMC comply with sound business principles, and by these contracts; the RTMC will be able to ensure that all agencies perform their required functions satisfactorily.

The organizational structure of the RTMC has been laid out, but these principles need to be properly implemented, and the operational requirements must be adequately considered in order for the RTMC to be successful. These aspects are therefore discussed in chapter 5 that follows.

5. Operational and Implementation issues in the Road Traffic Management Corporation

5.1 Introduction

Road traffic management is currently operating at a loss in most departments. Departments that are profitable are cross-subsidising those departments that are running at a loss. The RTMC is required to correct this practice, and make each of the functional units profitable. The budget of the RTMC is therefore a critical issue, which needs to be well planned and analysed before it can be implemented.

5.2 Government Funding

Two basic philosophies exist in government that greatly influence the collection of funds and their expenditure. These are the collection of taxes on the premise of *ability to pay* and the expenditure of funds on the basis of *equalizing opportunity* of citizens. Application of the ability-to-pay viewpoint is clearly illustrated by our income tax calculation. The equalization-of-opportunity philosophy is apparent where government subsidises subdivisions to help them provide improved services, such as education, health services, and Road Traffic Management.¹⁷

Because of these two basic ideas of taxation, there is often little relationship between the benefits an individual receives and the amount they pay for public activities.¹⁷

There are two major obstacles to efficiency in government activities. First, the person who pays taxes and receives services has little or no knowledge about the value of the transactions occurring between them and the government. Therefore, they have no practical way of evaluating what they receive in return for their tax payment.¹⁷

The RTMC plans to introduce a “user-pays” philosophy whereby the person receiving the service pays fully for that service, and no cross subsidising will occur, neither will that service be subsidised by the tax payer. Thus, the user will now know the value of the service provided.

The second deterrent to efficiency in governmental activities, is the lack of competitive forces required to instil sufficient concern about the efficient use of resources.¹⁷

Another problem that exists with government activities is that costs resulting from poor decisions are not recovered from the pocket of those responsible. Few direct economic pressures are felt, and seldom are promotions and salary increases related to efficiency.¹⁷

To overcome the problem of a lack of competitiveness, the RTMC has opted to use private functional units to perform certain functions that will induce competitiveness. This should also solve the problem of poor decision-making, and authorities will be forced to become more efficient and accountable if they want to remain in business.



Funds to finance public activities such as the RTMC may be obtained through one of three sources: (a) the assessment of various taxes, (b) borrowing, and (c) charges for services¹⁷. Borrowing money for the RTMC however, is not an option, as it has not been permitted by parliament¹⁴. The user will fund services, and therefore monies from the taxpayer will only be used for non-service providing activities, such as the setting up of the RTMC administrative offices.

5.3 Existing Financial Position of Road Traffic Management

In determining a budget for the RTMC, the study team, appointed by MINCOM, assessed the existing financial position of Road Traffic Management, and established the following broad conclusions:²

- Vehicle testing runs at a loss in public testing stations and at a profit in private testing stations. This function within the public sector is being cross-subsidised by driver testing revenue and revenue derived from performing the vehicle licensing and registration functions,
- Driver testing is marginally profitable,
- Registration and licensing of vehicles is profitable at the average levels of agents fees currently being paid, and
- Law enforcement is funded to the extent of R1, 4 billion by provincial and local authorities.
- The tax revenue that accrues to provincial treasuries from vehicle licensing amounts to approximately R1 billion.

The total cost of the above functions amounts to R1, 4 billion, with a corresponding revenue of R1, 1 billion, of which R1 billion is collected outside of these functions². Therefore, road traffic functions are currently operating as a net drain on resources. This is a typical example of the lack of efficiency that occurs in a governmental department.

5.4 Future Budget of the RTMC

From these observations the RTMC study team aimed to improve the financial situation when considering the budget for the RTMC. The future budget of the RTMC addresses specifically the viability of the proposed RTMC, based on the following principles:²

- It is assumed that any agent, public or private, given the standards and guidelines to be set by the proposed RTMC, can operate vehicle testing, driver testing and vehicle registration profitably.
- The user pays philosophy will result in some tariffs being increased. It is essential that all monies received be spent in the delivery of the service.
- These functions will pay to the RTMC a fee of between R20.00 and R30.00 per transaction for driver testing and vehicle registration, and R50.00 for vehicle testing. These amounts were however estimated in

1998, and are no longer considered valid by the National Department of Transport.¹⁴

- Law enforcement could be carried out by the RTMC purchasing specific activities, or coordinating the current law enforcement complement, and collecting the fines from these activities.
- The fees paid to and fines collected by the RTMC will be used to effectively structure, plan, co-ordinate or if necessary execute any of the road traffic management functions that it has responsibility for.

The revenues expected by the RTMC are from a flexible; broad based funding base comprising of:²

- Transaction fees earned by selling of services.
- Fines and penalties.
- Interest on invested cash balances.
- Monies appropriated by Parliament (pooling of resources).

Transaction fees are an important source of income for the RTMC, which is a percentage of fees paid for on services rendered and is not regarded as tax. The advantage of transaction fees is that the government can overcome the problem of the taxpayer subsidising a service that they do not necessarily use.

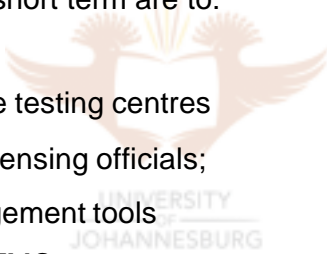
Examples of transaction fees are:

- Application / processing vehicle registration and licensing,
- Application for registration as an inspector of licenses, examiner of vehicles, examiner of driving licenses or traffic officer,
- Application for a learners licence,
- Issue of a learners licence;
- Application for a driving licence;
- Issue of a driving licence;
- Application for registration of a driving licence testing centre;
- Application and examination for an instructors certificate;

- Issue of an instructors certificate;
- Application for a professional driving permit;
- Application for registration of a vehicle testing station;
- Application of a roadworthy and clearance certificate;
- Issue of a roadworthy and clearance certificate.
- Identification of a operator;
- Application for a duplicate permanent operator card;
- Application for a new operator card; and
- NaTIS type fees to be identified.

Each of these transaction fees requires assessment and preparation of regulations and publications before implementation.

Priority areas for which the income generated from transaction fees will be spent in the immediate to short term are to:²

- 
- Upgrade driving licence testing centres
 - Enhance training for licensing officials;
 - Development of management tools
 - Institutionalisation of RTMC
 - Implementation of AARTO
 - Start-up of pilot projects
 - Self-sufficient NaTIS

The Shareholders Committee may direct that payments be made from the surplus funds to a province, but these payments must be proportional to the relative contribution to the profits generated through the provision of road traffic services in the province or received by an agent acting on behalf of the Corporation within the geographical area of the province.³

It cannot be expected that authorities currently providing services at a loss can over night become profitable, and this will have to be a continual change process. During this change process from non-profitable to a profitable

functional unit, the RTMC will need to use monies appropriated from parliament.

The immediate source of income is only from parliament, which will be necessary to start the RTMC, and pay expenses and salaries from the outset.

A proper budget was developed in 1998, estimating all the relevant costs and expenses required by the RTMC². Estimated costs and revenues accruing directly to the operation of the proposed RTMC are shown in the table 5.1 below. Revenue streams and actual expenditure will be decided on an annual basis by the board, based on financial and strategic plans.²

| COSTS | Rands (millions) |
|--|-------------------------|
| Driver licensing inspection and administration | 27 |
| Vehicle registration inspection and administration | 60 |
| Vehicle testing inspection and administration | 31 |
| Law enforcement | 3070 |
| Head office costs | 30 |
| Training and human resource development | 50 |
| Communication and education | 65 |
| Technology | 100 |
| Road Safety Audits | 50 |
| | |
| TOTAL COSTS | 3483 |
| REVENUES | Rands (millions) |
| Levy on transactions (Vehicle testing, driver testing, registration & licensing) | 274 |
| Fines and Penalties | 3307 |
| AARTO | 14 |
| Vehicle Tax | 0 |
| Fuel levy | 0 |
| TOTAL REVENUES | 3594 |

Table 5.1. Estimated cost and revenues of the RTMC

A contingency of R2 billion in revenue exists in the difference between the 60% collect ability of fines used as input in the model and a possible 100% collection. A 100% collection of fines is however very optimistic, as some of the best practices benchmarks are not able to collect 100% of fines.²

Local authorities are not making a profit by law enforcement at present because the rate of successfully finalizing traffic offences has dropped to about 15%. Australia has a success rate of 48%. New York uses the AARTO (Administrative Adjudication of Road Traffic Offences) system and they have a success rate of between 93 and 95%¹⁴. South Africa intends to implement the AARTO system, which should be responsible to increase the collection rate of fines.¹⁴

A very large percentage of the revenue to the RTMC is from fines and penalties, and its already been mentioned that this income can be increased by R2 billion if the collection of fines was increased to 100%. The consequences to the model if the collection of fines drops below 60% are even greater. If the collection of fines remains at the 15% rate, which is where it stands at present, the revenue to the RTMC will decrease by R2, 5 billion, which would make the RTMC un-sustainable, and once again, road traffic management would be a nett drain on the taxpayer.

Monies accrued from fines will go to the RTMC, and the RTMC will pay for the cost involved in law enforcement from this money¹⁴. At the moment, traffic law enforcement is a burden to local authorities, and the RTMC wants to right size the law enforcement authorities, so that if law enforcement is done properly, the fines should pay law enforcement. Law enforcement is not to make a profit, but the RTMC should aim for the books to balance.¹⁴

5.5 Financial advantages of the RTMC

Some of the financial effects of a co-ordinated approach of the RTMC will be:²

- Many local authorities, whose ratepayers are currently financing their law enforcement activities by as much R50 million annually, will be able to reallocate most of these funds to provide more important services.
- Provincial authorities may benefit from a structured focus where agents fees are set for specific functions at a lower rate than currently applicable
- The “ring fencing” of functions allows a focussed business approach benefiting all levels of government as well as the user.
- A standardised approach to all aspects of road traffic management throughout the country.

The result of the financial investigation is that vehicle licence tax revenue can accrue to the provincial departments, and the operations of the proposed RTMC could be funded entirely from increased revenue due to dedicated law enforcement and a transactional levy based on the “user pays” principle.²

It is anticipated that income levels of the RTMC will diminish as a result of increased compliance of the law by the driving population through the efforts of focussed law enforcement². Notwithstanding this fact, the RTMC claims that a sustainable level of funding is achievable². This however seems hard to understand as this is the main source of income, and there is a direct relationship between fines issued and monies received if the collection rate remains constant.

5.6 Budgeting Principles

Budgeting has taken a Top-Down budgeting form¹⁷, which is based on the judgements of the past data. The Shareholders Committee has estimated the overall cost for each functional unit. These cost estimates are then given to the functional units, who are expected to continue the breakdown into budget

estimates for each of the specific tasks. Often middle- and lower-level managers will argue for more funds if the budget allocation they have been granted is, in their judgement, insufficient for the tasks assigned. This presumption is often incorrect¹². Instead of reasoned debate, argument sometimes ensues, or simply sullen silence. When senior managers insist on maintaining their budgetary positions, junior managers feel forced to accept what they perceive to be insufficient allocations to achieve the objectives to which they must commit.¹²

Many middle- and lower-level managers may feel that the entire budget system is a zero-sum game, where any individual's gain is another individual's loss¹².

An advantage of this Top-Down budgeting is that aggregate budgets can often be developed quite accurately, though a few individual elements may have significant errors. Not only are budgets stable as a percentage of total allocation; the statistical distribution of the budgets is also stable, making for high predictability.¹⁷

Another advantage of the Top-Down process is that small yet costly tasks need not be individually identified, nor need it be feared that some small but important aspect has been overlooked. The experience and judgement of the executive is presumed automatically to factor all such elements into the overall estimate.¹²

Uncertainty is involved in any forecast, including that of the proposed RTMC budget, although some forecasts have less uncertainty than others⁷. The estimates in 1998 were fairly uncertain, based on the existing costs and expenses, with the expected improvements resulting from the RTMC. This budget is however no longer considered relevant by the National Department of Transport¹⁴. This initial budget however is said to be conservative.

The income allocated from parliament, has been stipulated only if there happens to be a budget short fall during the initial stages of the RTMC¹⁴. The

RTMC however cannot expect that there is a possibility of not requiring this money allocated by parliament, as money will be needed to start the RTMC for paying initial expenses such as the CEO.

Budget estimates are not always the result of deliberate dishonesty, but derive from unintentional errors on the part of estimators¹⁷. There are two different types of errors. Firstly there is random error in which overestimates and underestimates are equally likely. Secondly there is bias, which is systematic error. For biased estimates, the chance of over- and underestimates are not equally likely. Once the RTMC has been implemented, tools such as the Tracking Signal can be used to determine the bias of the budget estimator.¹⁹

In an effort to prevent fraud within the board, the RTMC Act does not allow a member to be on the board if he or she has been convicted, whether in South Africa or elsewhere of any offence of theft, fraud, forgery or uttering a forged statement, perjury or any offence involving dishonesty, becomes a political office bearer, is or becomes an un-rehabilitated insolvent or has committed or commits an act of insolvency.³

5.7 Implementation of the RTMC

The implementation phase of the RTMC is a lengthy process, which has already been in progress for a number of years. It is vital that the implementation process is properly coordinated and managed to ensure the success of the RTMC.¹⁰

The various stages of implementation will be discussed, as well as the methods that managers can use to successfully implement the RTMC.

The road traffic reform process is unfolding in 3 distinctive phases, namely:¹⁰

- Phase 1. Conceptualisation
- Phase 2. Development
- Phase 3. Implementation.

5.8 Road Traffic Reform Process Phases

5.8.1 Phase 1. Conceptualisation.

Over the last number of years, government has placed much emphasis on traffic management. The White Paper on National Transport Policy, published in September 1996, has a special section on “Road Traffic and Safety”. Also on provincial level, a Gauteng White Paper on Transport Policy deals with a number of policy statements on road traffic management.

The National White paper led to a national conference and a Road Traffic Management Strategy (RTMS) consisting out of 19 main and 99 subprojects. In May 1997 it was decided to introduce a short-term implementation programme (STIP) which became known as the Arrive Alive programme, which is now a well-known established programme. ¹⁰

This programme however, can no longer be considered short-term, as it has been operational for a number of years already.

In the beginning of 1998 a small workshop was held in Durban to start addressing the problems mentioned before. Persons attended this from all three levels of government; National, Provincial, and Local government. It was found that the existing structures and processes do not provide enough opportunity to effectively, perform the necessary services at the required service levels, and this was then presented to MINCOM on the 17th March 1998. ¹⁰

The Minister of Transport, Minister Mac Maharaj and MINCOM then initiated an inter-provincial project whereby an extensive viability study was conducted on the possibility of and implications of establishing a Road Traffic Management Corporation for South Africa. In this feasibility study discussions were held with a very wide variety of people and organizations. ¹⁰

The Study Team's final report, containing findings and recommendations was submitted to COLTO and MINCOM in August 1998, and on those levels, approval was given in September 1998 for the creation of a RTMC in South Africa. ¹⁰

5.8.2 Phase 2. Development.

In October and November of 1998, the proposals were also submitted to the different provincial cabinets, and in October 1998 the Gauteng Cabinet took note of the report on the creation of a RTMC as supported by MINCOM. On the 19th October 1998, a Draft Road Traffic Management Corporation Draft Bill was published in the government Gazette for information and comment. ⁸

On the 2nd December 1998, Cabinet approved the Road Traffic Management Corporation Bill, and in April 1999, it was passed as the Road Traffic Management Corporation Act 1999, Act number 20 of 1999²⁰.

5.8.3 Phase 3. Implementation.

Phases 1 and 2 have already been completed successfully. There are two possible implementation options for phase 3⁸, namely:

- Once-off comprehensive implementation OR
- Incremental, phase-in implementation.

Both options have their respective merits and demerits ⁸, but the RTMC has opted to follow the incremental, phase-in implementation. Certain functions will be implemented first, and when these functions are operating properly, and then the next step will be taken to implement the next function. It will not be a "big-bang implementation". ¹⁴

5.9 The Implementation Project

The implementation process of the RTMC can be considered as a project, “a temporary endeavour undertaken to create a unique product or service.”¹⁹ Once the RTMC is completely operational, the project will have been completed.

The project has already begun with the Conceptualisation and Development stages, and now all that remains is the Implementation stage. The typical project begins with a slow start, and momentum quickly builds up and progress is made. Once the end is in sight, completing the tasks seems to take an inordinate amount of time. The typical project life cycle is shown in figure 5.1.¹⁹

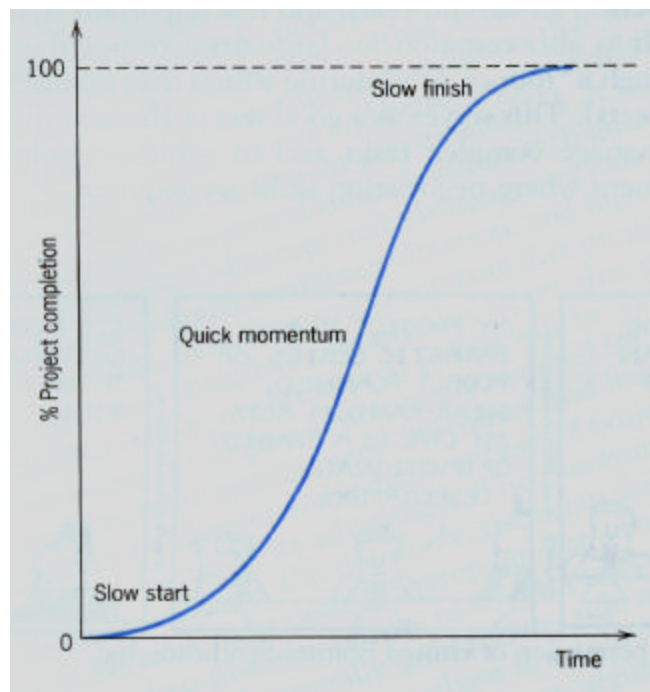


Figure 5.1. Typical life cycle of a project¹⁹

In certain projects however, the life cycle can begin in the same manner, but have a rapid finish toward the end. This is typical for projects in which the output is composed or constructed of several subunits that have little use in

and of themselves, but are useful when put together. The life cycle of this type of project is shown in figure 5.2.¹⁹

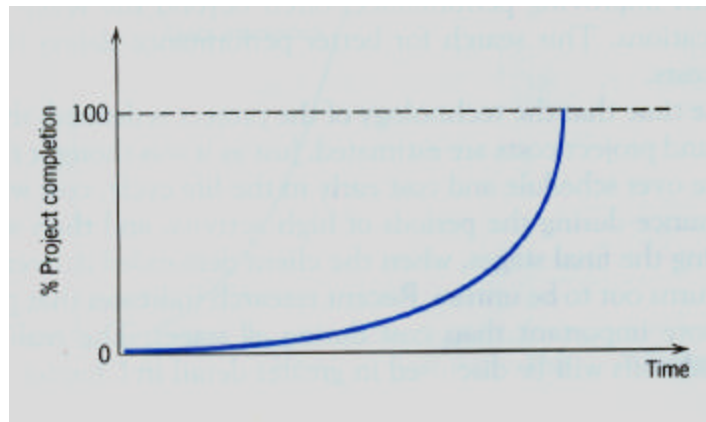


Figure 5.2. Project life cycle with rapid finish.¹⁹

Considering that the approval for the creation of the RTMC was first given in September 1998, the RTMC implementation start has been particularly slow. The RTMC Act was passed in April 1999, but is not in force yet. Because the RTMC touches the lives of so many people, trade unions have also been involved to try and slow down the initiation of the RTMC¹⁴. Because of the pooling of powers, MEC's also perceive their powers to be reduced, the changes in government, and the fact that MINCOM only meets four times a year, are all factors for the slow implementation of the RTMC.¹⁴

The implementation stage is now at the stage of appointing the Chief Executive Officer, and hopefully the implementation stage will gain rapid momentum, which is what is expected if the implementation process is to follow a typical life cycle. The Chief Executive Officer position has been advertised in the media, and the position is to be appointed by mid-December 2001¹⁴.

As the implementation of the RTMC progresses and draws to an end, the implementation phase will begin to slow down, if it is to continue following the typical life cycle of a project. It is not expected to have the rapid finish type

project life cycle as each functional unit has a use in itself, and it will not be the result of something only functioning when the implementation is complete.

The action steps necessary to commence with incremental implementation of the RTMC have already begun. These action steps are:¹⁰

- Establish Shareholders Committee.
- Shareholders Committee to call for nominations and appoint CEO.
- Shareholders Committee to conclude performance contract with CEO.
- Shareholders Committee to reach agreement in respect of national / provincial assets, liabilities, etc.
- Shareholders Committee to reach agreement in respect of staffing and labour relations policy.
- Shareholders Committee to determine its meeting procedure.
- CEO to commence staffing programme for RTMC.
- CEO to commence implementation and management of financial systems.
- CEO to prepare provisional business plan.
- CEO to develop financial allocation plan (funding of road traffic management).

The plan for the implementation of the RTMC is that the RTMC will be fully operational and implemented in 3 years.¹⁴

5.10 The Implementation Plan

For the Implementation phase to be successful, it needs to be adequately planned, monitored and controlled, to form a complete closed loop system. One of the oldest and most useful ways of representing the planned schedule of the implementation phase would be to use a Gantt chart¹⁹. The Gantt chart shows planned and actual progress for a number of tasks. It is a particularly effective and easy to read method of indicating the actual and current progress of each task compared to the planned progress of each task.¹⁹

The major advantage of using a Gantt chart is that it contains a great deal of information, and it is fairly easy to read. Thus all levels involved in the RTMC will be able to understand the planned progress, and will be able to determine what areas need to be addressed to stay on target.¹⁹

A critical path, an activity, that if delayed, will delay the completion of the RTMC implementation, can also be determined from the Gantt chart.¹⁹

5.11 Monitoring and Controlling the Implementation

A monitoring system needs to be put in place to ensure that all activities are operating as planned. The CEO, who can be considered the Project Manager of the RTMC, should monitor performance, cost and time. He should however define precisely which specific characteristics of performance, cost and time should be monitored and then establish boundaries within which control should be maintained.

The best source of items to be monitored is the project plan¹⁹. The monitoring system is a direct connection between planning and control. If the CEO finds any problems during the monitoring of the RTMC, he must take action to control and rectify the problem.

An earned value chart is a device that may be used to depict scheduled progress, actual cost, and actual progress. This can be used to determine spending, schedule, and time variances.¹²

The fundamental purpose of control is to regulate the results by altering the activities, and the stewardship of organizational assets.

The type of control process the RTMC is expected to adopt is the Post control¹⁹. This type of control may be described as “locking the barn after the horse has been stolen”, but post control is not a vain attempt to alter what has already occurred. Instead, post control is directed toward decreasing the chances for future failure. In the case of the RTMC, the CEO may use Post

control, by monitoring the implementation of a functional unit, and where it fails, the CEO can take steps to ensure that this kind of failure is not repeated in the implementation of future functional units.

5.12 Completing the Implementation of the RTMC

At the end of the implementation of each functional unit, termination by integration will occur to each functional unit¹⁹, as the functional unit will be integrated into the body of the RTMC.

Once the RTMC is fully implemented with all its functional units, the project of the implementation of the RTMC will be “terminated by extinction”¹⁹. The project will cease, and the Project Final Report can be prepared, stating that the RTMC has been fully implemented, and where areas of successes and failures have been experienced.

5.13 Conclusion



The structure of the RTMC has already overcome the typical problems experienced in a government organization, and the RTMC will become a financially accountable organization.

Budget estimates have been made for the RTMC as long ago as in 1998. This budget however is now out of date and no longer relevant. The budget principles however still apply. The form of budgeting will follow a Top-Down budgeting style. If the collection of fines is increased to above 60%, the RTMC should be financially sustainable.

The model of the budget implies that that the RTMC should be sustainable and have the resources to improve standards of road traffic management to world-class levels.

The implementation of the RTMC is in its third and final phase, and should be completed within 3 years. The implementation life cycle is expected to follow

that of a typical project life cycle as illustrated in figure 5.1, with a slow start, and then a gain in momentum, and a slow finish. The entire implementation process can be compared to a project, with all the relevant steps necessary to complete a project. The implementation process will be planned, and once the implementation process has been completed, the project of implementation will be terminated.

Now that all the relevant management aspects and principles of the RTMC have been discussed, the following chapter will draw conclusions to the management aspects of the RTMC, and recommendations based on those conclusions are stated.



6. Conclusions and Recommendations

6.1 Conclusions

The present state of road accidents and fatalities on South African roads is appalling, and in urgent need of attention. Road Safety is one of the issues regarding road traffic management which needs immediate attention, yet the RTMC, who is supposed to address this huge problem on our roads, does not even mention road safety in the objectives of the Bill or the forward.

The RTMC provides the solution to many of the problems experienced in road traffic management. While the RTMC will co-ordinate and control operations, the real enhancements will only be achieved by the sustained effort of all stakeholders.

The RTMC model was discussed, considering the existing situation, international best practice and financial requirements. The RTMC has taken many steps to prevent fraud within the RTMC, and it is important that they abide by the regulations already put forward in the RTMC Act. It was shown that not only is the proposed Road Traffic Management Corporation feasible, but also is essential if the current crisis is to be averted.

According to the proposed budget in 1998, the RTMC is financially viable if the collection of fines, which is the primary revenue of the RTMC, is above 60%. However, the collection of fines at the moment is 15%, which would decrease the revenue to the RTMC significantly.

The model allows for the existing Provincial and Local government structures to continue performing road traffic functions on an agency basis.

A matter, which is of concern, is the length of time it has taken to reach the implementation phase. The sense of urgency, which was acknowledged at the

outset, seems to have faded, and this needs to be rectified as soon as possible.

The creation of this innovative new statutory body and the envisaged improved co-ordination and co-operation that could be achieved should dramatically change the ability of government to deal with the current unacceptable situation of road accident fatalities in South Africa.

By introducing the private sector into many of the functions of Road Traffic Management, it should introduce competitiveness and hopefully, at the same time, improve customer service, so that it can be of the high standard, which the study team experienced on their international study tour.²

The proposed Road Traffic Management Corporation covers most parts of road traffic management, except for traffic congestion and ensuring remedial measures resulting from Road Safety Audits. All that remains is for the RTMC to be implemented in practice.

The management style used by the RTMC follows modern management principles, and the organizational structure is a network structure. The organizational shape is also flat, which will encourage efficiency within the organization.

6.2 Recommendations

6.2.1 International Best Practices

Authorities in South Africa must take note of the successes achieved in some of the developed world, and learn from mistakes that the rest of the world have previously made. Provincial authorities must perform core functions, while the role of the national government can be reduced to only policy forming and funding.

An intervention in terms of developing the human resources involved in the management of road traffic in South Africa is required to improve the customer focus. Remuneration levels must also be set to attract and retain the high quality staff involved with road traffic management.

The technological advances in other parts of the world must be implemented in South Africa to keep the technology utilized by South African road authorities on a high standard.

6.2.2 Road Safety

Road safety is not seen as a priority by the RTMC, but rather as a consequence once all other functions have been implemented. The RTMC must make road safety a greater priority and a focus in order to be effective

Conducting Road Safety Audits will not be sufficient to effect engineering improvements on the road; strict measures need to be taken to enforce remedial measures. The RTMC places a high interest on improving safety where there is an opportunity to recoup the funds it spends, such as law enforcement. Improving Road Safety may not always be profitable in every department, but there are some matters that need to be addressed even if it will not directly result in an income to the RTMC.

The RTMC must stipulate that authorities will be forced to effect remedial measures resulting from Road Safety Audits, which can form part of the contract, which the RTMC will have with the authorities. The RTMC may even make provision to fund the most critical and urgent remedial measures required.

Traffic congestion must be addressed by the RTMC, by perhaps making it part of a functional unit. Road traffic management is incomplete if it does not address this issue.

6.2.3 Shareholders Committee

The Shareholders Committee, who forms the top authority of the RTMC, is made up of provincial MEC's. A person who is the MEC representative for a province is very unlikely to be making road traffic the focus of their career. This can be a negative aspect, as it could turn the focus of the RTMC to a political orientated body.

At present, the Shareholders Committee is required to meet at least four times a year. If the Shareholders Committee do not meet more regularly than this, there will be significant impacts on the efficiency of the RTMC. The Shareholders Committee must therefore be forced to meet more often than four times a year. The Shareholders Committee, who forms top-level management, must also consist of members who will be permanently on the Shareholders Committee, and not just fulfilling a political role.

The Shareholders Committee must implement the public/private board, as it is essential in establishing modern management principles in the RTMC.

The CEO should be given the authority to delegate tasks, such as research, to functional managers without having to be authorized to do so each time from the Shareholders Committee.

6.2.4 Improve acceptance

For the success of the RTMC, the national government needs the support of as many, and preferably all persons involved in road traffic management. From the lack of response to the questionnaire by the study team, it is clear that the RTMC does not have the support of all, not even many, of those involved in road traffic management, especially law enforcement.

The RTMC can gain the support of those involved by emphasizing the positive aspects that the RTMC may have on all those involved, and that there exists a career path for them to improve on themselves. This lack of support may just

be the result of a lack of knowledge and uncertainty about the future. Educating the authorities involved about the RTMC, may be able to increase the support of the RTMC.

The RTMC must adopt an integrated approach, whereby all relevant role players take part in decision making so that road traffic management can be brought back to an acceptable level.

6.2.5 Collection of Fines and Penalties

The collection of fines and penalties needs to be addressed, and AARTO must begin improving the collection of fines and penalties to above 60% before the RTMC can become independent and financially stable. If AARTO fails in this regard, it will mean the failure of the RTMC as well. This aspect of financial income needs to be closely monitored by the RTMC.

6.2.6 Implementation

If the implementation of the RTMC is to go forward as a matter of urgency, which has been seen as necessary from the beginning, steps need to be taken now to ensure rapid progress. To ensure rapid progress, the RTMC must begin with having structured goals with specific time deadlines when each goal must be met. This can begin with drawing a typical Gantt chart that shows the begin and completion date for each activity.

It is expected that the implementation stage will slow down towards the end of the implementation project, and the Shareholders Committee needs to address this issue now so that it does not draw out into taking as long as the initial starting phase of the project.

6.2.7 Service Fees

The RTMC must address the issue of the increase in fees, which the customer will have to pay. The RTMC can address this issue by gradually increasing the fees, or it can embark on a campaign to educate the public that this is not just an increase in cost to them, but rather a shift in ways of collecting money from the user rather than from all tax payers, and that the public can expect a saving in other forms of taxes.

6.2.8 Functional Units

The RTMC must strictly adhere to contracts between itself and the functional units in order to maintain control over each functional unit.

The RTMC must try to open the communication channels within the RTMC, and can do this by providing direct access for communication between the functional units and the Shareholders Committee.

6.2.9 Monitoring and Controlling

A monitoring process has been stipulated for each of the functional units, but no process has been formulated for control. Monitoring is pointless without control, and the RTMC must stipulate a control process that may be implemented to rectify problems discovered during monitoring.

Provision must be made to allow for private law enforcement, especially in areas where government authorities have failed. This will at least improve the chances that there will always be law enforcement authorities in every area, even if government authorities' contracts have been cancelled.

6.2.10 RTMC Budget

The RTMC needs to ensure that the AARTO system, which will be implemented to collect fines, is able to do so effectively, and collect at least

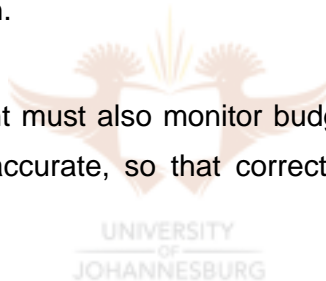
60% of fines issued. If AARTO fails in this regard, the RTMC will fail financially.

The RTMC must address the issue of a decrease in income due to a greater compliance of the law by road users. Fines from lawbreakers are an important income, and the RTMC cannot afford to allow this income to diminish without gaining the depleted funds from another source.

The RTMC needs to update the proposed budget, to ensure that estimates used previously are still accurate, and so that the amount of fees required can be calculated.

Top-level management must allow for participation of lower-level management when determining a budget, so that lower-level management can be satisfied with their budget allocation.

The top-level management must also monitor budget estimates to determine which estimates were inaccurate, so that corrections can be made for the following budget.



6.3 Future Research

This research dissertation is an evaluation of the RTMC before it has been implemented. Future research on the evaluation of the successful implementation of the RTMC after it has been implemented will be constructive; to ensure that all the role players have followed the given guidelines. Future research can also determine the success of the RTMC in practice once it has been implemented, and if road safety has been improved, and to what extent.

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Appendix A

Questionnaire to

Mr. H. Van Tonder



National Department of Transport

ROAD TRAFFIC MANAGEMENT CORPORATION

Questionnaire to H. Van Tonder, National Department of Transport.

By Mark Adams, Faculty of Engineering, RAU.

3 October 2001

Operation of the RTMC.

1. Who manages the NaTIS at the moment?

The National Department of Transport with connection to Ficher Consulting Engineers. At the moment the National Department of Transport is in the process of awarding another five-year contract, but there will be a provision in the contract, that the RTMC will take it over

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2. Private shareholders who buy shares in the functional companies of the RTMC on the JSE, do they have any influence on the RTMC or the way that the functional companies are run, and will they be beneficiaries of the RTMC profits?

No. The RTMC will establish functional units, and from the outset, the RTMC will contract the local authorities currently providing the services, i.e. registration and licensing of vehicles; that is the provincial authorities responsibility, but they make use of the local authorities as their agents. The RTMC will contract the local authorities; they will become the RTMC's agents. At the moment they don't have any contracts, so there is a "free for all" and there is a major difference. With service level agreements and punitive measures, they will continue to provide the service. If they do not comply with

the service level requirements, the end result will be that the RTMC can cancel the contract with them. The RTMC makes provision for private sector involvement, and the RTMC can contract to the private sector to provide according to business principles these services, i.e. registration and licensing. It can be like a franchise, where the RTMC contract to a big company, and then they open offices countrywide. The RTMC is not equal to privatisation, but the RTMC allows for public, private partnerships, it even allows for very big companies to engage with the RTMC, and then to open offices provincial and country wide to provide a certain service to the road users, the road users will then pay the full cost of the service through the transaction fees, and there will be incentives for the private sector to enhance the service and maximise their profits. Private companies will be contracted, who will become the RTMC's agents

3. How will the RTMC promote participation by national, provincial and local spheres of government in light of the poor response to the questionnaires by the study team?

The RTMC consists of provincial and political office bearers as well as the National Minister of Transport who is the chairperson of the RTMC, by doing this; the RTMC is binding the provinces on a political level. As far as the local level is concerned, the main reason for poor performance is the fact that they are not bound by the provinces to operate in a business like manner. If they do not cooperate, the RTMC will phase them out and bring in private service providers. There is only one area where it cannot be done, that is law enforcement. The private sector cannot do law enforcement. The private sector can provide facilities, management expertise. Law enforcement can only be done by authorized officers, that is some one who is in the employ of either a provincial authority or local authority, it could be the SAPS, then there is a small entity called the Road Transportation Agency, RTA. And then the fall back procedure, because the RTMC cannot force the local authorities, law enforcement can be contracted out to provincial authorities, and the RTMC can appoint its own traffic officials. There is nothing the local authorities can do about it. The RTMC will not intervene if law enforcement is done properly

4. How will the RTMC change the perception that there will result in a loss in revenue and authority to local and provincial authorities?

It is only a perception; there will be no loss in revenue to the local authorities. Vehicle testing is run at a loss, then they cross subsidise and 20% of licence fees go back to the coffers of the local authorities, they could have used that for other purposes, but they are using it to pay for services that they render to road users, those road users, they are not the poorest of the poor, so they can afford to pay for service that they receive from the service provider. The RTMC will do financial models and decide on what transaction fee. The transaction fees will be at such a level that the entity providing the service will be able to make a profit out of it, but if that entity is not working effectively and efficiently, then they will not make a profit, and they may close their doors, and the RTMC can go back to the private sector. Local authorities are fuelling this perception that they will be losing money, the reason is there is a lot of bribery and corruption, inefficiencies, and there is a “free for all” which will stop. So it is not in their interest, those who are involved in mal administration, involved in bribery and corruption, that the RTMC should be implemented, because they will suffer. It is difficult to change this perception.

5. National and Provincial MEC's will be incorporated into the board of the RTMC, will authority be taken away from the local authorities?

MEC's will not be on the board, the board is an option, and The MEC's will be members of the shareholders committee. There is a shareholders committee, and the board, which is optional, which the shareholders committee has opted not to establish for now, then CEO and other functional managers. The official organ representing local authorities, SALGA, they also have membership of the Shareholders Committee. Two representatives, selected by SALGA, will have membership of the shareholders committee, and that way, local authorities will be properly representatives.

Local authorities are agents to provincial authorities, and no authority will be taken away from them, unless they refuse the contract to the RTMC.

6. Will the RTMC be seen as a more powerful authority than the provincial authorities?

Yes, the RTMC is a higher body than the RTMC. They will be powerful in a way that once a decision is taken, it will be collectively taken by all the provinces, representatives and the minister of transport, at present the National Department of Transport is working in that manner now, working through MINCOM. Joint decision making, easier to harmonize, and there will be the same approach on a policy level, and on the operational level as far as road traffic management is concerned.

Will the RTMC neglect the stronger provinces, and focus on the weaker ones?

No, definitely not because once the transaction fees have been determined, those authorities must look after them selves, if they are not efficient enough the RTMC may intervene and assist them, but if they do not render the goods or deliver the service, they will be replaced by the private sector or other authorities

Law Enforcement:

7. Do the Law Enforcement Activities that will be paid for by the RTMC include policing? If not, how will the RTMC enforce the law, and if so will the RTMC pay for policing done by local and provincial authorities?

Authorities will be contracted on certain safety critical offences only, not issues such as parking metres, which is not considered safety critical offences. The RTMC is not involved in that. Safety critical offences such as drinking and driving, speeding, the RTMC will do traffic counts, survey's to determine the offence rate, then the RTMC will contract to law enforcement on those particular stretches of road during certain times of the day, and certain days of the month, etc. If authorities do law enforcement, the RTMC will have a very good idea of what the offence rate is, so there should be a relationship between the number of tickets issued and the duration that they do law enforcement on that particular section of road, and if that does not tally up, we know that they are not doing their job, or they are stopping the public, but they are accepting bribes. The RTMC will monitor them on their output. The RTMC will only pay for contracted law enforcement which, could include the patrol services, rendering assistance, but it will not be the focus of the RTMC

Road Traffic Safety

8. What measures will be taken to improve the safety of roads in South Africa?

Unsafe conditions on the roads is a result of things managed well or not managed well, and if the elements in this scenario are considered, it depends on the road environment, do we have a forgiving road system, what does the Road Safety Audits show, neglected signs, that will contribute to road safety, the condition of the road, law enforcement, and the effectiveness, the adjudication of traffic offences, and the success of collecting the fines. IT is also a result of communication and education of the public, change

perceptions, attitudes, etc. It is a multitude of things, which need to be managed properly. If these things are managed properly, then the result will be a safer condition on our roads. If that is not managed properly, the result is unsafe conditions on our roads, and a high fatality and casualty rate on our roads. The RTMC addresses all these things, and seeks to manage each of these areas in a really professional manner. The result will be to enhance safety on our roads. It's not one single thing; it's a multitude of actions, which need to be managed

9. Recommendations resulting from Road Safety Audits, will these recommendations become mandatory tasks, or is it to the discretion of the relevant authority to whether these measures should be implemented?

NRA will be contracted to do the Road Safety Audits. Road Safety Audits consist of proactive, which consists of the plans before the road is constructed, and the reactive, when the potholes, road surface, signage, etc. The RTMC will instruct the authorities to attend to the deficiencies in the road or road system. Ideally the RTMC wants them to enter into contracts with them, so that the authorities provides the RTMC with safety audits of their roads and measures they have taken, but then accident reporting, which is still done by the SAPS, and accident processing system will be done by the RTMC, so the RTMC will use accident records to determine the black spots on our roads. The RTMC will then in a reactive measure look at what the authorities have done, based on these records be able to reconcile. The authorities will have identified this as a problem area, reported back that they have taken remedial measures, and the RTMC will look at accident records and if it tallies, the RTMC will be satisfied, if it doesn't then the RTMC will address the situation with the authorities. The RTMC will use the accident reports to determine where there are problem areas and use that information on a reactive basis to do a safety audit. Engineers and consultants should apply their mind to do proper designs right from the beginning, and the RTMC will not have a direct involvement there. If the authorities do not comply, and say they do not have funds, there is no clarity in that area yet. The RTMC will

not have funds to attend to that or to make funds available for rehabilitation of roads. The clout that the shareholders committee has, the RTMC will exercise pressure on local authorities that get funds from provincial authorities to start prioritising.

If authorities build a new road that has bad safety defects, will the RTMC be able to say anything?

In practice no, because the RTMC will only pick it up later when they get the accident statistics. The authorities do not have to hand their plans to the RTMC to scrutinize if they are satisfactory from a safety point of view

10. What will be done to ensure that authorities will implement safety improvements resulting from Road Traffic Audits?

(Question already answered)

11. The estimated contribution to Road Safety Audits is R50 million, how will the RTMC distribute the funding across the country and who will fund the implementation of road safety measures to improve the safety at these sites?

Road Safety Audits will be based on accident frequency, and also the severity of accidents, not just the high volume roads.

12. How will the RTMC ensure that road safety measures resulting from Road Safety Audits and best practice in road safety engineering are implemented by the National Road Agency? Or other authorities?

Certain functions will be implemented first, and when these functions are working properly, and then the next step will be taken to implement the next function. It will not be a big bang implementation.

Road safety is at the moment at the bottom of the list. Registration and licensing is first and the basis as all other functions rely on a good registration and licensing, then law enforcement, adjudication of fines, education, communication and then safety. The RTMC is starting with what it thinks is critical to make the whole system work. You need an information system for the whole system to work.

The structure of the NRA (National Roads Agency), although they are independent, there is certain management tools that are in place. The minister who is in charge of the NRA will not do anything, which is contrary to the wishes of the RTMC; he is the chairperson of the Shareholders Committee. The NRA must submit their budget to the Department of Transport, and if the minister does not approve the business plan, they must go back, and so the minister can force them to build into their business plan.



13. What power or influence will the RTMC have on improving vehicle safety?

Parliament makes legislation, and the minister is responsible for regulations. New legislation will be approved by the RTMC, and the minister will be responsible for taking it through cabinet and parliament. Vehicle Safety depends a lot on SABS, and we are dictated to by Europe and America with vehicle developments. The RTMC will tamper easily with vehicle designs, although the RTMC could do that. At the moment the Department of Transport sees to vehicle safety measures.

General

14.a) Will the RTMC address the traffic congestion experienced on our major routes?

No, not directly, but indirectly yes, by reducing the number of accidents. The RTMC will not do anything to increase the capacity of the road. In terms of incidence management there will be a significant improvement

b) Will societal costs be included in the management of road traffic by the RTMC?

No, The costs of management to society will not be the responsibility of the RTMC, but the total cost to society will reduce, because if the RTMC is successful, the number of incidence of accidents will reduce, so the total cost will reduce



Funding:

15. With the “user pays” philosophy, there will be an increase in tariffs for vehicle testing and registration as well as driver testing. Will the public not see RTMC as an extra burden and will this not oppose the idea of “customer focus”?

Yes there will be an increase, especially in vehicle testing. Drivers license testing is profitable, and these funds are being used to cross subsidise the vehicle testing, which is wrong, because the people trying to obtain a drivers license are being penalised. There should be no increase to the rates for drivers license testing.

In the case of the registration and licensing office, the license fees go to the province; the road user will pay for the cost of the transaction. At the moment it is coming from our tax system. The cost of the system will come from the transaction fees, which will be ploughed back. There will be a direct cost. It

may be perceived as an added cost, but funds will now be direct from the transaction and not other parts of the tax system. Fees will go up because at the moment it is subsidized from other sources. It may result in other taxes not being increased

16. The RTMC will receive a fee of between R20 and R30 per transaction for driver testing and vehicle registration, and R50 for vehicle testing. Will this result in the fees that are paid by the customer increasing by the same amount?

These figures are guesstimates and are based on work done in approximately 1997, and are no longer relevant.

17. One of the benefits of the RTMC is less dependence on public funding; will this be due to an increase in transaction fees that is not considered part of public funding?

Yes, it is considered part of public funding, but a taxpayer who does not benefit won't subsidize it.

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18. Revenue and notices issued will be managed by the RTMC; will this take away a significant source of income for local authorities?

No, in the contract, the fines will go to the RTMC, and the RTMC will pay all the cost involved. At the moment, traffic law enforcement is a burden to local authorities, and the RTMC wants to right size the law enforcement authorities, and if the job is done properly, the fines will pay law enforcement. Law enforcement is not to make a profit, but the RTMC will aim for the books to balance.

No local authorities are making a profit at the moment because the rate of successfully finalizing traffic offences has dropped to about 15%. Australia 48%. New York uses the AARTO system and they have a success rate of

between 93 to 95%. If the law enforcement is successfully concluded and money is successfully gathered, it is a different story

19. Estimated costs and revenues of the RTMC, are they based on existing figures, or are they the figures that are the goals of the RTMC?

Fines will be standardized across the country. The figures of the income and expenditure are conservative, and the profits are expected to be greater. Any surplus will be paid to the provinces.

20. Estimates show a nett profit of R111 million, why is it then necessary to increase transaction fees?

This nett profit is just a very small portion of the total budget, and is therefore an insignificant profit.

21. Will profits of the RTMC be paid to individuals who are shareholders of the RTMC?

No, not to individuals, but to provinces.

22. How will the RTMC receive monies from AARTO?

Fines issued will be payable to the issuing authority within 28 days. There after, the matter will be handed to AARTO who is responsible for collecting the fines. The guilty party will be responsible for the cost involved to collect the fines.

23. How will the RTMC improve the collection of traffic fines?

AARTO sees to the collection of fines, and is therefore not a task of the RTMC.

24. According to the estimates, law enforcement is profitable by R237 million, but yet ratepayers are currently financing the law enforcement activities by R50 million, how will the RTMC then be able to make law enforcement profitable?

(Question already answered)

25. If the RTMC is profitable, why will monies appropriated by parliament?

Money will only be appropriated by parliament in the beginning to kick start the RTMC, and it is necessary to have this in the Act, but the RTMC will become self-sufficient. The RTMC is not allowed to borrow money.

26. How will funding for the RTMC be generated during the incremental implementation stage?

The “ring fencing” of certain functions and the pooling of resources.

Career at the RTMC:



27. Can an employee of the RTMC follow a career path in the RTMC?

The RTMC has a fairly flat structure, but there will be a career path for employees, from functional areas through to the CEO, but they need to be professionals.

Appointment of staff:

28. Why has the RTMC been slow to initiate?

The Act was passed in April 1999, but is not in force yet. Because the RTMC touches the lives of so many, by also reducing corruption, trade unions have also been involved to try and slow down the initiation of the RTMC. Because of the pooling of powers, MEC's also perceive their powers to be reduced, the changes in government, and the fact that MINCOM only meets four times a year, are all factors for the slow initiation of the RTMC.

29. Has the shareholders committee been established to select the CEO?

First the Act needed to be established, then a business plan. The Shareholders Committee has not been formed, but MINCOM has taken action, which is the same as the Shareholders Committee. The Act is not in force, and depends on the preparation before it comes into force. There is pressure from Parliament to enforce the Act

30. How far is the process of appointing the CEO?

The CEO will hopefully be appointed by mid December.

31. According to the Road Traffic Management Corporation Act, Act Number 20 of 1999, the CEO was to be appointed within 1 month of the commencement of the Act. Are there any legal implications because this has not been done, and will a new amendment to the Act be required?

The Act has not been put in force, but if the Shareholders committee do not appoint the CEO within 1 month of the Act coming into force, the shareholders Committee will be in breach and taken to task by the law, for which they can be prosecuted.

32. How long will the incremental implementation take before the RTMC has been fully implemented?

3 years, but it depends on the success of the implementation.



Appendix B

Engineering Improvements

to

Road Safety



B.1 Introduction

Reliability Management is the management of the quality, dependability, and measure of a product / system's performance. The product / system is the road and the road environment, and methods of improving the engineering aspects of a road and its environment are investigated.

A product / system is reliable when it complies with a customer's expectation. In this case, all road users are the clients, who use the road system to travel to various destinations for work or leisure.

Improving the road system will result in a greater customer satisfaction, which will be less road accidents, and in the event of an accident, the severity of the accident will be decreased.

B.2 Road Safety

Accidents will always happen, even if every vehicle is roadworthy, and every one obeys the road traffic laws. After all, accidents are defined as "an unintended or unforeseen happening"²¹. It would be interesting if data were available as to the number of lives that would be saved if our road systems were safer, and if this benefit would be significant or possibly exceed any of the three primary causes of accidents; speeding, drinking and driving, and commercial vehicle road worthiness. Road traffic engineering deals with these factors, which reduce the possibility of an accident, as well as reducing the consequences in the event of an accident. ⁶

The RTMC aims at improving safety on South African roads by improving the entire management strategy of road transportation, including the management of the road environment, law enforcement, the adjudication of traffic offences, and the success of collecting the fines. It will also be a result of communication and education of the public, which will result in a change in the perceptions and attitudes of the public. The RTMC feels that if road transportation management is improved, road safety as a whole should naturally follow.

Unfortunately, road safety is at the moment at the bottom of the list. The RTMC sees registration and licensing as the first priority and the basis of all other functions which rely on a good registration and licensing, then law enforcement, adjudication of fines, education, communication and lastly road safety. The RTMC is starting with what it thinks is critical to make the whole system work.¹⁴

Road accidents occur for a number of reasons, and road traffic engineers can prevent accidents by providing a safe road that warns drivers of possible dangers, increases the driver expectancy, controls the flow of traffic, and aids in the navigation task.⁶

The road system has failed when it no longer meets these specifications to perform the task of providing the above to the road user in an acceptable manner. Reliability standards, which specify the specifications of roads in South Africa, can be found in the South African Road Safety Manual.¹⁸

Due to the fact that the construction of roads is of a very high cost to the government, it is important that engineers attempt to design every road to a high standard from the very beginning to meet all safety criteria and specifications.

B.3 Road Safety Audits

A Road Safety Audit is defined as “a formal examination of a future or existing road/ traffic project/ any project where interaction with road users takes place, in which an independent, qualified examination team reports on the accident potential and safety performance of the project”.¹⁸

The RTMC has placed an emphasis and strict guidelines on law enforcement, however the methods of improving road safety from an engineering point of view are unclear, and no strict plan exists to improve the road environment. Road Safety Audits are considered by the RTMC as a method of improving

the road environment, but a Road Safety Audit is pointless if there are no remedial measures taken.¹⁸

The National Roads Agency will be contracted to do Road Safety Audits by the RTMC. Road Safety Audits will be based on accident frequency, and also the severity of accidents, not just the high volume roads. The RTMC will instruct the authorities to attend to the deficiencies identified in the Road Safety Audit, but ideally the RTMC wants them to enter into contracts with them, so that the authorities provide the RTMC with the Road Safety Audits of their roads and remedial measures that have been taken. Accident reporting will still be done by the SAPS, but the accident processing system will be done by the RTMC, so the RTMC will be able to use accident records to determine the black spots on the roads. The RTMC will then, in a reactive measure, look at what remedial measures the authorities have taken, and compare accident records. If it tallies, the RTMC will be satisfied with road authorities, if it doesn't then the RTMC will address the situation with the road authorities.

The purpose of a Road Safety Audit is to:

- Minimize the severity and accident risk of road traffic accidents that may be influenced by the road or adjacent environment.
- Minimize the need for remedial measures after the opening of a new road.
- Reduce the full life-cycle cost of a road project by reducing its accident cost.
- Create and maintain an awareness of a safe design practice during all the road stages of a project.

Road Safety Audits are a relatively new concept in South Africa, and it is the process whereby the reliability of a road and the road system can be improved. Once the RTMC Act has been put in place, Road Safety Audits will become more actively conducted, but at present, Road Safety Audits are not conducted often enough in South Africa by road authorities.

The following aspects are key requirements for successful Road Safety Audits¹⁸:

- Adequate time and information to conduct the Road Safety Audit.
- Commitment from management.
- A recognised and agreed Road Safety Audit process.
- An independent Road Safety Audit team or auditor.
- Checklists for the various stages of a road project.
- The development of expertise.
- Evaluation and monitoring of the Road Safety Audit process.

B.4 Reliability of a Road and the Road Environment

Reliability is the “degree to which a product or system fulfils its intended purpose.”²² The purpose of a road is to provide safe mobility and access to all road users.⁶

If the road and the road system are not safe, roadside objects, which are intended to enhance safety, can become a danger.

The failure of a road and the road environment can be directly measured as the number of accidents on a particular section of road, which occurs when, for some reason, the road and its environment do not meet specification. As with all systems, very seldom can there be a system without any failures, and accidents will always happen, no matter how good the system is designed and constructed. These accidents can be attributed to human and vehicle factors.

A road system can be classified as a repairable system, because it can be repaired when it no longer meets specification²². Improving certain components of the road system however, can alter the failure rate of another component. An example of this is where altering the lane width of a road can

improve the reliability of road signs, where heavy vehicles frequently damage road signs because the road is too narrow.

If a road system is never improved, the failure rate will remain constant, and the number of accidents, which occur during a specified time period, will ideally remain constant. This type of failure rate is constant and is represented in figure B1 below:

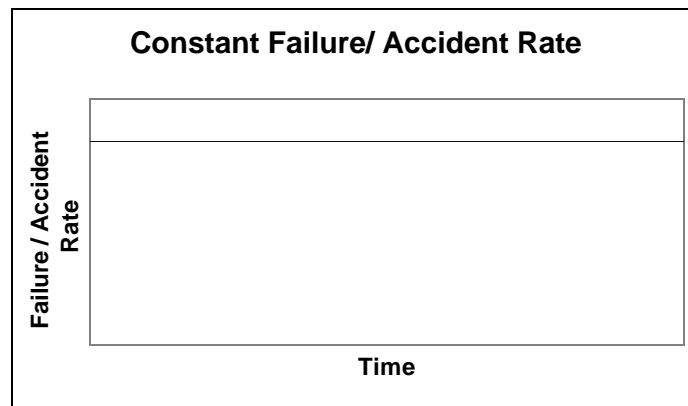


Figure B1. Constant Failure / Accident Rate.

The probability of failure can be described as being normally distributed, with variations that are symmetrically disposed about the mean ²². The road system can also be described as a series reliability system. If one component in the system fails, the road system as a whole has failed, and there is no active redundancy component available. The reason for this is that by providing more information to a road user than necessary can cause driver task overload, which is another problem, which could cause accidents. Thus, only the essential components are provided.

When a road system is designed, design engineers need to design for functional variation, to allow for small human errors. One example is the amber phase of a traffic signal, which needs to allow for a road user to decide weather they should stop or go.

B.5 Monitoring and controlling

Reliability management is the management of the failure rate, with an aim to decrease the failure rate and improve the systems reliability. For the successful management of reliability, measures need to be taken to analyse and control the process. This process and analysis is illustrated in figure B.2 below.

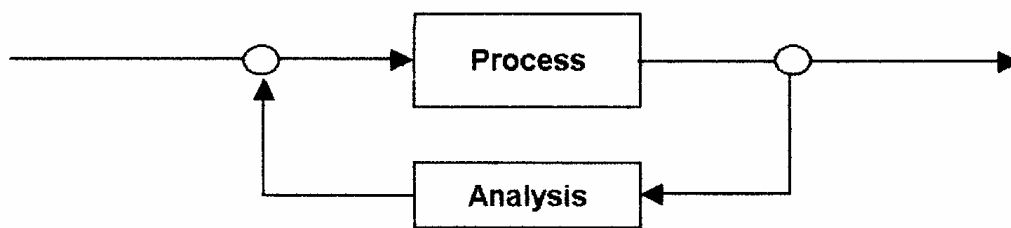


Figure B.2. Analysis of a process to improve reliability

The road and the road environment have a closed loop failure reporting system with Road Safety Auditing. This is a controlled system assuring that all failures and faults are reported, analysed, positive corrective actions are identified to prevent recurrence and that the adequacy of implemented actions is verified by tests.¹⁸

The law of the country requires that all road accidents on public roads must be reported. This ensures all failures and faults are reported. The National Traffic Information System (NaTIS) collects this data and processes it to determine accident causes, and high frequency locations. Once the RTMC has been implemented, the RTMC will take over this task to analyse and process the data collected.

From the data collected, the RTMC will be able to determine “weak links” in the entire roads system. Once these “weak links” have been identified, the

RTMC can instruct the NRA to conduct a Road Safety Audit on that particular section of road. This will ensure that the cause of the failure is determined, so that remedial measures can be taken to improve the road system reliability.

Since the failure of a road system has severe consequences, measures have been taken to provide a system to prevent the road and the road system failing before the road has been opened after its construction.

The South African Road Safety Manual stipulates six different stages at which a Road Safety Audit may be conducted to analyse the road system, five of which are conducted before the road system is opened to the public.

These six stages are ¹⁸:

- Preliminary Design Stage.
- Draft Design Stage.
- Detailed Design Stage.
- Construction Stage.
- Pre-opening Stage.
- Existing Roads



During each of these stages, an independent group of Road Safety Auditors examine the road or proposed road to find methods of improving the road safety. Actions are then taken upon recommendations of the Road Safety Audit. These actions taken will then improve the accident / failure rate of a particular section of road. If Road Safety Audits are conducted on a regular basis at each of the stages mentioned above, the failure / accident rate will be decreasing. The final stage, stage 6 - existing roads, can be repeated as many times as necessary until it reaches a point where road accidents cannot be prevented by the road system and the road environment. This type of decreasing failure can be represented by the typical curve in figure B.3.

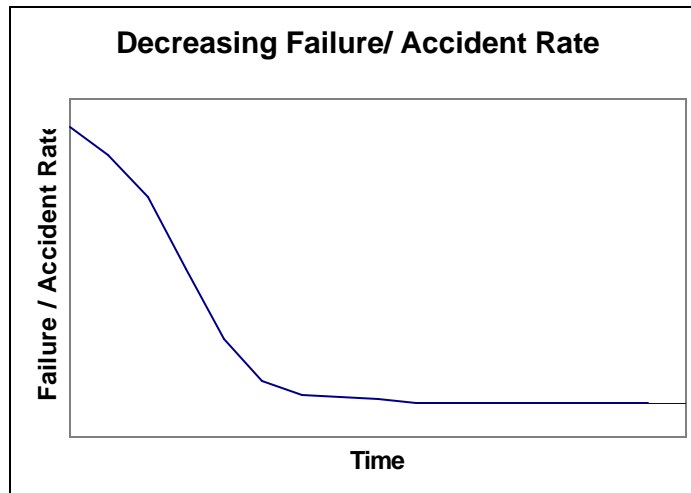


Figure B.3. Decreasing Failure / Accident Rate.

Road Safety Audits performed during an early stage of the project, (stage 1 to 5) can be conducted for all new road projects, as it is far easier and less expensive to change a line on a design or construction drawing than to change an existing road safety problem. It may occur that once a feature is built in, not much can be done to reduce the safety hazard it poses.

Engineers and consultants should apply their minds to do proper road designs right from the beginning, as the RTMC will not have a direct involvement in this and the authorities are not required to hand their plans to the RTMC to scrutinize if they are satisfactory from a safety point of view. In practice the RTMC will not be able to ensure that every new road built has strict safety considerations, but the RTMC will detect it when the accident statistics are processed.¹⁴

Road Safety Audits can be used effectively as an accident prevention method during the preliminary and design stages by identifying potential accident-causing road elements which can be removed before implementation, or as an accident reduction tool on existing facilities by reporting on the safety performance and accident potential of the facility.

During stage 4, Road Safety Audits are conducted during the construction phase as a construction zone can pose a significant danger to road users. The Road Safety Audit process during construction can be seen as a quick check to ensure that the intended traffic accommodation plan provides for the necessary levels of road safety.

The object of good reliability management is to have the failures / accidents that would occur, as low as possible before the road system is opened to the public for first use, yet, road authorities cannot wait an indefinite period of time before the road is opened.

The steps in a Road Safety Audit are shown in figure B.4.¹⁸



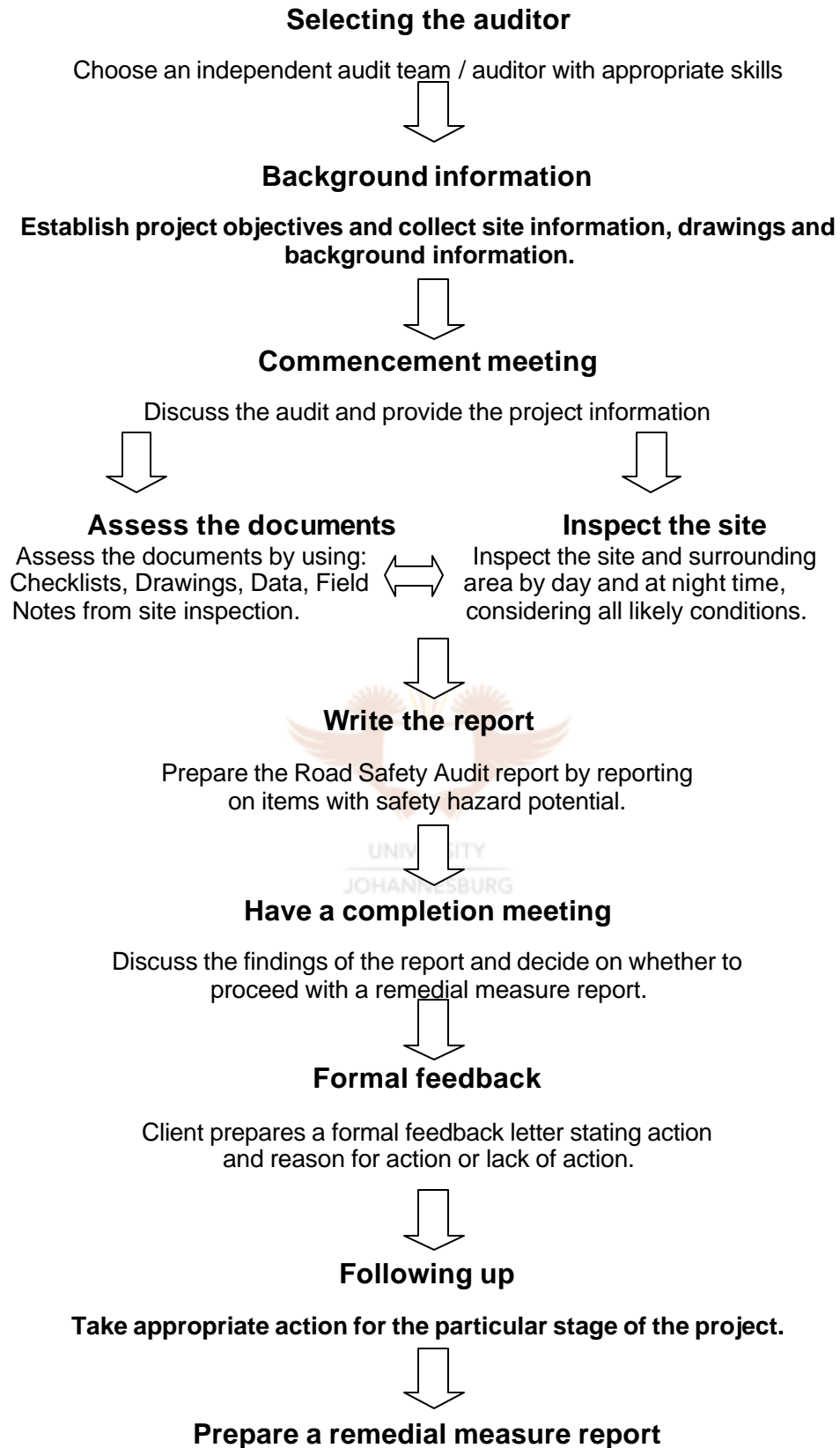


Figure B.4. The steps in a Road Safety Audit.¹⁸

Road Safety Audits have the following benefits if implemented as part of the road safety management plan of a road authority: ¹⁸

- A reduction in the likelihood of accidents on the road network.
- A reduction in the severity of accidents on the road network.
- An increased awareness of safe design practices among traffic engineers and road designers.
- A reduction in expenditure on remedial measures.
- A reduction in the life-cycle cost of a road.

B.6 Road Safety Auditors

Road Safety Auditors need to be qualified, accredited Road Safety Auditors before they can conduct a Road Safety Audit. There are three levels of accreditation of a Road Safety Auditor, namely: Technical Road Safety Auditor, Non-technical Road Safety Auditor, and a Senior Road Safety Auditor¹⁸. The Road Safety Audit team should be independent by:

- Acting as a body separate from the design team.
- Not being in any way involved in the design process.
- Not having a line management responsibility for the work that is being audited.

B.7 Time Deterioration of Roads

As with all things in life, physical elements are subject to wear and tear, and deterioration with age. Warning signs may be damaged and less reflective at night, and the road surface may wear and become smooth providing less skidding resistance.

Thus, as the road system begins to age with time, it can be expected that at some point the reliability will begin to deteriorate if the system is not maintained and repaired. Using alternative materials is the only method to

decrease this type of wear on the system and increase the mean time between failures before maintenance is required. In highway construction this can clearly be seen where the road surface is constructed from concrete instead of tar. The initial cost of a concrete road is far greater, but the mean time between failures for the road surface is also far greater.⁶

As these effects start to occur on a road, the accident / failure rate begin to increase. This is illustrated in figure B.5, a typical bathtub curve.

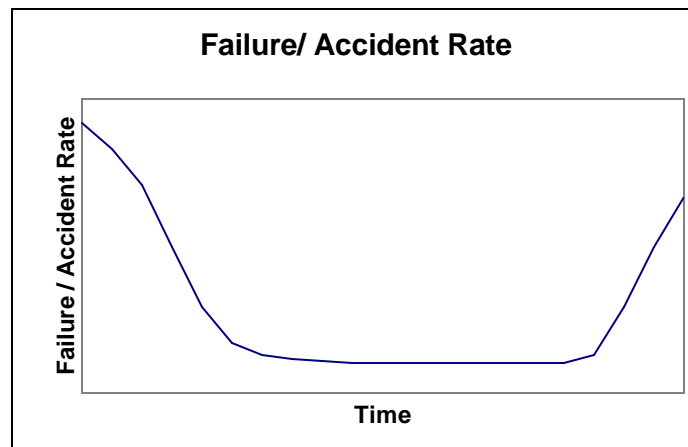


Figure B.5. Failure / Accident Rate, typical bathtub curve

Preventative maintenance is however an option, as road authorities do not need to wait until there is an increase in road accidents before something is done to bring the accident / failure rate back down to the lowest point again. Actions such as resurfacing a road, is preventative maintenance, which can be detected as a potential problem during a Road Safety Audit at stage 6 of an existing road. If road authorities wait until there is an increase in road accidents / failures before remedial measures are taken, the bathtub curve may follow the typical shape illustrated in figure B.6.

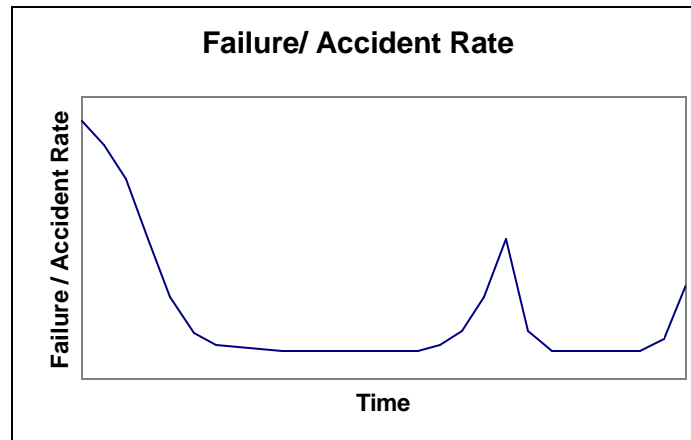


Figure B.6. Accident failure rate with remedial measures.

The road design engineers rely on the components or modules used in a road system, which have been previously tested in practice, or on other road systems. The actual road system layout however, cannot be tested as it is unique, and therefore the design engineer must rely on design codes, so that the system can be as reliable as possible from the beginning.

Items such as roadside barriers are components, which can be tested at testing centres, to evaluate if they conform to certain specification, such as SABS 1350 for W-guardrails.¹⁸

B.8 Effectiveness of Road Safety Audits

For Road Safety Audits to be effective, commitment is required from the management of a road authority. Road Safety Audits should be an integral part of the overall program of an authority, as it will otherwise mistakenly be perceived as a process that questions the competence and professionalism of the designer or road builder. The process therefore requires a spirit of cooperation and mutual respect among affected functional areas.¹⁸

The Road Safety Audit, and the reliability of roads are recognized at the highest level, and have been incorporated into government strategy as part of the, soon to be implemented, Road Traffic Management Corporation, and therefore it has the potential to be really effective.

If the authorities do not comply with the Road Safety Audits, and say they do not have funds to perform remedial measures requested from a Road Safety Audit, the power of the Shareholders Committee will be exercised to pressure local authorities, which receive funds from provincial authorities, to start prioritising the way they spend funds. There is no certain clarity in that area as yet, as to how exactly the Shareholders Committee will deal with this problem. The RTMC will not have funds available for rehabilitation of roads.¹⁴

On a national level, although the National Roads Agency is independent, the minister who is in charge of the National Roads Agency will not do anything, which is contrary to the wishes of the RTMC, as he is the chairperson of the Shareholders Committee. The National Roads Agency must submit their budget to the Department of Transport, and if the minister does not approve the business plan, they must go back, and in this way, the minister can force them to build into their business plan, remedial measures that are forthcoming from a Road Safety Audit.¹⁴

B.9 Cost of Road Safety Audits

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The cost of a Road Safety Audit is project related and also stage related. Australia and New Zealand experience has shown that Road Safety Audits has a maximum of four percent to the cost of a road project. It is, however, necessary to evaluate this cost in terms of the potential benefits of the Road Safety Audit.

Achieving high reliability is expensive. Road Safety Audits was estimated at costing R 50 million in 1997². This can be described as the prevention cost of the road system reliability, as its purpose is to prevent any further accidents. This figure hardly has an impact on the estimated R13 billion it costs the country each year in road accidents.⁵

The direct cost of an unreliable road system is the damage to property, born by the public. Indirect costs of road accidents are for example the cost of time

lost from people being absent from work, and the emotional cost to society. The prevention cost is born by government who takes the necessary remedial measures to improve our roads. Appraisal costs are also born by government who needs to test and measure the reliability of a road system.

B.10 Vehicle Safety

With regard to vehicle safety, Parliament makes legislation, and the minister is responsible for the regulations governing vehicles used on public roads in South Africa. New legislation will first be approved by the RTMC, and the minister will be responsible for taking it through cabinet and Parliament. Vehicle safety depends on actions taken by the SABS, and is dictated to by Europe, America, and Japan, who design and manufacture the majority of vehicles in South Africa. The RTMC will not tamper easily with vehicle designs, as this would require expensive modifications to new vehicles, and expensive testing and design of new systems, although the RTMC could do that. At the moment, the National Department of Transport oversees vehicle safety measures.¹⁴

B.11 Conclusion

Road Safety Auditing is an integral part of the development of a road system, and the engineering improvement process to road networks, which works parallel to the development of the road system.

Only a few road authorities use any method to improve the reliability of a road system at present, but the method proposed, and which is outlined in the South African Road Safety Manual is vital to improve the current state of South African roads. The proposed Road Traffic Management Corporation aims to improve the system of analysing and controlling the road and the road environment by increasing the number of Road Safety Audits, but each authority needs to do their share to improve the reliability of their particular road network.



Appendix C

List of Acronyms and Abbreviations



AARTO - Administrative Adjudication of Road Traffic Offences

CEO – Chief Executive Officer

COLTO - Committee of Land Transport Officials

MEC – Members of the Executive Committee

MINCOM - Ministerial Conference of Ministers of Transport

NaTIS – National Traffic Information System

NRA – National Roads Agency

RTMC – Road Traffic Management Corporation

RTMS - Road Traffic Management Strategy

SABS – South African Bureau of Standards

SALGA - South African Local Government Association

SAPS – South African Police Service

STIP – Short Term Implementation Program

