ASSESSING ASSET MANAGEMENT IN THE NELSON MANDELA METROPOLITAN MUNICIPALITY

by

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DECLARATION:

In accordance with Rule G4.6.3, I, Bukeka Mahlangabeza, declare that the above-mentioned treatise is my own work and that it has not previously been submitted for assessment to any other university or for any other qualification.

SIGNATURE:

DATE: 29 NOVEMBER 2013
ACKNOWLEDGEMENTS

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- My beloved husband, Luyolo Mahlangabeza;
- My supervisor, Dr Figg;
- My family;
- My group members;

I could not have completed this study without the backing and kind contributions of the subjects of this research project.
ABSTRACT

Due to scarce financial resources, over-stretched budgets, pressures for service delivery and the dynamic nature of local government, asset management plays a key strategic role in enhancing local municipal functionality and efficiency. Asset management is the management of physical assets, infrastructure, and immovable assets. It is an evolving discipline that is enhanced by the understanding of asset conditions and performance. It improves decision-making within local government. Every year, local government announces millions of Rands’ worth of assets that are unaccounted for and that go missing in annual reports. It was the purpose of this study to assess the asset management function at the Nelson Mandela Bay Municipality (NMBM). The aim is to improve the management of moveable assets by investigating the following variables: strategic management of assets, knowledge management, governance, leadership, the impact of corruption and skills management. The approach to the study is a qualitative research paradigm with a case study methodology and an interview as a research instrument. The sample chosen comprised people from the top level of municipal management down to municipal asset controllers. The two forms of data that were collected in the study were primary data and secondary data. Primary data was collected from municipal workers and collated together for analysis purposes. Secondary data was gathered from library sources such as journals, books, conference papers, government acts, municipal policies and local newspapers. This data informed the interview questions. The interview strategy was chosen as the best way to conduct the empirical part of this research and was guided by an interview guide. The study found that there are operational defects in the way asset management is organised. This makes the function seem unimportant. The results also indicated a lack of staff members and skills shortages; such as management and computer skills. Indications are that theft, negligence, corruption and carelessness negatively impact the management of assets. Recommendations include the filling of vacant posts, tightening of internal controls, providing the necessary training and improving the asset management. The study makes a contribution to the current body of knowledge.

**Key words:** Asset management, municipality, local government
<table>
<thead>
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<th>Description</th>
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<tr>
<td>AM</td>
<td>Asset Management</td>
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<td>AMP</td>
<td>Asset Management Plan</td>
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<td>IC</td>
<td>Internal Controls</td>
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<td>ICS</td>
<td>Internal Control Systems</td>
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<tr>
<td>CFO</td>
<td>Chief Financial Officer</td>
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<tr>
<td>CRSA</td>
<td>Constitution of the Republic of South Africa</td>
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<td>ECP</td>
<td>Eastern Cape Province</td>
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<td>MFMA</td>
<td>Municipal Financial Management Act</td>
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<td>MAM</td>
<td>Moveable Asset Management</td>
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<td>NMBM</td>
<td>Nelson Mandela Bay Municipality</td>
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<td>PFMA</td>
<td>Public Finance Management Act</td>
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<td>PPE</td>
<td>Property, Plant and Equipment</td>
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<td>RSA</td>
<td>Republic of South Africa</td>
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<td>SAM</td>
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CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

The concept of Moveable Asset Management (MAM) has been on the global agenda, and many countries have prioritised local government's implementing asset management techniques and principles (Buys and Mavasa, 2007). Asset management is an evolving discipline that is enhanced by the understanding of asset conditions and performance, and improves decision making within local government.

Fernholz and Fernholz (2006) define asset management as the management of physical assets, infrastructure and immoveable assets. Academic literature indicates that there is a need to ensure that asset management is strategic in its approach. According to Arien (2000), strategic municipal asset management is an approach to develop and maintain municipally owned assets and infrastructure to ensure that:

- Asset requirements and management strategies are based on defined services levels and are driven by performance standards;
- Scarce financial resources are properly allocated and are optimally managed to maximise investments; and
- A lifecycle approach is undertaken when determining asset acquisition, asset operation, asset maintenance and asset disposal and renewal.

Buys and Mavasa (2007) believe that improvement in asset management processes and application of principles can play an important role in achieving national government's strategic objectives of service delivery, economic growth and employment creation. Effective use of asset management systems can strengthen the performance of asset management (Fernholz, and Fernholz, 2006). Proper strategic asset management is an important undertaking given the trends towards decentralization, devolution of authority and service provision, the increased reliance on local government for service delivery, the increasing rate of urban migration, and
the focus on efficient local government governance. Daya (2004) believes that the challenges for an asset manager, in the modern public service, are corruption and the misuse of public assets.

Leaders need to manage asset, ensure effective use of public assets and maintain essential infrastructure. Mavasa (2007) and Arien (2000) argue that asset management is a key to enabling better service delivery. It contributes positively to the attainment of better levels of macro-economic conditions and the optimal use of public funds by ensuring that scare resources are attained and used in the most cost-effective manner.

According to Daya (2004), the key elements of asset management are:

- Taking a lifecycle approach to asset management;
- Implementing cost-effective long-term management strategies;
- Providing a defined asset management service;
- Managing risk associated with asset failures;
- Ensuring sustainable use of moveable and immoveable assets; and
- Ensuring continuous improvements in asset management practices

The challenges in effective asset management in local municipalities include; the identification of assets, a responsible leadership, corruption, crime, lack of training, lack of implementation of asset management plans, waste, lack of accountability and lack of lifecycle performance of assets (Mavasa, 2007). It is, therefore, important to conduct a study into the management of assets with the aim of improving municipal asset management.

1.2 BACKGROUND TO THE STUDY

An asset refers to any resource that is controlled by the municipality from which future economic benefits are expected to be derived (Nelson Mandela Metropolitan Municipality Finance Act, No.56 of 2003). Assets include: property, plant, equipment, infrastructure assets, vehicles and inventory. Kavanagh (2011) defines asset management as an integrated business approach involving financial planning, and the effective management of existing and new assets.
According to Lampe, Strassner and Fleisch (2006), an organisation needs a system that will not only manage the integrated information, like the total number of assets, but also information about an individual asset; such as the location of the asset, useful life of the asset, last date of evaluation and other critical operational asset information.

An asset that is not accounted for may increase process costs or cause an accident (Lampe, et al. 2006). For example, if there is a fire and disaster management cannot get there because their vehicles are not managed properly, people could lose their lives.

It is not only private businesses that should be interested in techniques that aid responsible asset management but the municipalities as well, as they are entrusted with the management of assets on behalf of their communities (Urquhart and Busch, 2000).

Despite having asset management policies and procedures, there are many assets that are written off before them reaching their useful life span. These assets cannot be accounted for as they are either lost or stolen. The poor management of assets may increase the cost of service delivery.

According to Lapasinskaite (2005), cited in Gokiene and Dagiliene (2011), effective cost management can be one of the methods used by businesses with moveable assets in order to be competitive. Although the public sector is competing, the same cost management principles can be used to control costs. One of the strategies that can be used to achieve this is proper asset management.

Kaganova and Nayyar-Stone (2000) indicate that asset management in the public sectors, at local government level, is at its infancy stages.

The other challenge is that municipal asset management focuses on narrow subsectors and not on all assets that are owned or controlled by the municipality (Kaganova and Nayyar-Stone, 2000).
1.3 IMPORTANCE OF THE STUDY

De Kock (2009) uncovered that the annual stocktaking of assets in the Nelson Mandela Bay Municipality (NMBM) revealed that more than R12 million in moveable assets is missing or cannot be accounted for. More than 4059 assets had been stolen, lost, or not on the asset register. The sum total of the missing assets was R12 577 395 of public funds. The items missing included 25 laptops, 131 plastic chairs and 76 pieces of furniture (De Kock, 2009). The possible cause of the problem was that assets were not being monitored properly. These items were only identified as being missing at the end of an annual stocktaking.

No effective system is in place to control the movement of assets and no person is responsible for tracing the moveable assets. There is the distinct possibility of a lack of accountability (De Kock, 2009). This research treatise seeks to contribute to the solution of this problem.

1.4 PROBLEM STATEMENT

The Nelson Mandela Bay Municipality is losing money due to inefficient asset management methods. The challenge, therefore, is to direct an intervention that would mitigate the harmful effects of this particular challenge on the management of assets. As a first step towards this goal, the challenges facing asset management of the NMBM and what negatively influenced it needed to be established. This was what this research study proposed to do.

1.5 RESEARCH OBJECTIVE

The objective of this study was to improve the management of moveable assets in the NMBM by investigating whether the following variables negatively affect asset management: strategic management, knowledge management, governance, leadership, corruption and skills management. The research will highlight areas that need improvement in the management of moveable asset within the NMBM.
1.5.1 Primary objective

To achieve the primary objective, the following research sub problems were studied:

- Municipal moveable assets are being written off due to poor asset management practices;
- Moveable asset management is not a strategic leadership priority;
- Service delivery is suffering due to poor asset management;
- Municipal moveable assets are not managed throughout the entire lifecycle of the asset;
- Corruption is hampering effective asset management; and
- Lack of accountability is hampering effective asset management.

1.5.2 Research hypothesis

The following research hypotheses have been identified:

H1: Moveable asset management is perceived as not being a strategic priority;
H2: There are no repercussions for losing assets;
H3: There is a lack of effective and proper accounting of municipal moveable assets;
H4: Moveable assets are quickly being disposed of;
H5: There is lack of internal audit control systems to limit corruption; and
H6: There is lack of skilled staff to manage municipal assets effectively.
The hypotheses described above are depicted in the conceptual framework in Figure 1 below.

Figure 1 Conceptual framework of perceived success of asset management

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
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<tbody>
<tr>
<td>Strategic management</td>
<td>Perceived success of asset management</td>
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<tr>
<td>Leadership</td>
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<td>Knowledge management</td>
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<td>Corruption</td>
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<td>Skills management</td>
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Source: Researcher’s own construction

1.6 RESEARCH METHODOLOGY

Collis and Hussey (2003) highlight the importance of using the most appropriate method for collecting and analysing the research data in order to solve the research problem. Research methodology defines and justifies the activities involved in the research method utilised in a study.
The study investigates asset management in the NMBM. The research methodology addresses the research paradigm of this study, the sample from where the data was collected and the research instrument used to collect the required empirical data.

The consideration of research methodology involves the choice of research paradigm or philosophy. The two most popular types of research paradigm are commonly known as positivistic research paradigm and phenomenological research paradigm (Collis and Hussey, 2003).

1.6.1 Research paradigm

According to Collis and Hussey (2003), a research paradigm is a framework that guides the way in which research should be conducted. This research study employs a qualitative approach. Qualitative research emphasizes the socially constructed nature of reality and the intimate relationship between what is studied and the situational constraints that shape the inquiry (Dinzin, and Lincon, 2008). It allows complex issues to be understood, extends existing theories, and advances the body of knowledge. It allows for an examination of real life situations and provides bases for improvements, ideas and the extension of existing methods.

It is classified under the phenomenological research paradigm and is inherently multi-methods in focus. On the other hand, quantitative research compares and analyses different variables. It emphasises the relationship between variables through the establishment of a cause-and-effect relationship and does not focus on the process (Dinzin, and Lincon, 2008). It is classified under the positivistic research paradigm, while qualitative research is not.

The methodology utilised in this research treatise is a case study approach. Due to the exploratory nature of this research study by means of a case study, this research falls within the phenomenological research paradigm. This paradigm is commonly referred to as the qualitative research paradigm due to the production of qualitative data.
1.6.2 The sample

The sample purposefully consists of respondents who work for the NMBM. The sample chosen comprise people from top level management down to asset controllers who deal with asset management at the municipality on a daily basis. The purposive sample identified respondents at all levels, and questionnaires were issued to them. This has led to an in-depth understanding of the case.

1.6.3 The research instrument

A case study approach was utilised in the current study and used a multiple data collection method and analysis technique. The two forms of data that were collected in the study were primary data and secondary data.

The study utilised an interview guide and the questions were constructed based on the literature review undertaken. Secondary data was collected from research articles, books, international journals, newspapers, local government acts and municipal policies.

1.7 DELIMITATION OF THE STUDY

The study is geographical, limited to a Nelson Mandela Bay Municipality in the Eastern Cape Province of the Republic of South Africa. The scope of the study is limited to executive management, asset controllers, and middle managers within the organisation who are responsible for asset management.

1.8 ETHICAL CONSIDERATIONS

In social research studies, ethical considerations are important when there is potential for harm, stress, anxiety, and other possible negative consequences for the research participants (Robson, 2011). There are no vulnerable groups of people involved in this particular study; therefore, an ethics clearance certificate was not required. Invasive questions were not asked. Anonymity of the respondents has been guaranteed and permission to carry out the study was sought and granted.
1.9 OUTLINE OF THE STUDY CHAPTERS

Chapter 1

Chapter 1 introduces the asset management problem and its setting. It discusses the foundation for the importance of the study and the contribution that the study seeks to make. The problem statement, research objective, sub problems and research objectives are presented. This chapter further briefly discusses the research methodology utilised in the study, its suitability and as well as the measuring instrument used in the current study. It concludes with the outline of the chapters.

Chapter 2

This chapter discusses the asset management body of academic knowledge. The aim is to bring the reader up to speed with the contemporary asset management key issues within the local government context. Chapter 2 identifies the research gaps, putting a case forward for the most appropriate methodology to be used in carrying out the current study and discussing current studies in asset management with the aim of identifying research gaps.

Chapter 3

This chapter discusses the research methodology adopted in conducting the study. A case study approach with the use of an interview guide as a research instrument was identified as the most appropriate investigation method and tool. Chapter 3 presents the justification of the chosen research methodology for the study, including the discussion of the sample, the sample size and ethical considerations.

Chapter 4

Chapter 4 is a report of the research results of the study. There were 5 interviewees whose opinions were sought. These results are analysed and interpreted, taking into account the literature review in chapter 5.
Chapter 5

Chapter 5 presents the analyses and the discussion of the research results. The empirical results are analysed in comparison with what the literature review indicates.

Chapter 6

This chapter delivers the study summary, conclusions and recommendations, including further research areas arising as a result of this study.

1.10 CONCLUSION

Chapter 1 introduced the intent of the research, which is to investigate asset management at the NMBM with the objective of improving the way assets are managed. The independent variables that are investigated include: strategic management, knowledge management, governance, leadership, corruption and skills management.

A case study methodology utilising an interview strategy and an interview guide as a guiding instrument was utilised as the best suitable method, technique and tool respectively.

The study is limited to the NMBM and requires no ethical clearance certificate. The study seeks to contribute to the academic body of facilities and asset management knowledge and seeks to improve asset management at the local government level.
CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

A moveable asset is a resource controlled by an entity as a result of past events from which future economic benefits or service potential is expected to flow to the entity (National Treasury, 2008). It is clear to see that there are three components to asset management, namely; control, past events, and economic benefits or future service potential.

The literature review chapter provides a working definition of asset management as applicable to local government. A discussion of asset management discipline, the asset management framework, asset management plan, responsibility of asset management, the standards that govern asset management, asset lifecycle management and the key challenges facing asset management is required (Mavasa, 2007).

In order to understand asset management one needs to know what a moveable asset is, the asset lifecycle, and the relative legislation that governs moveable asset management. Chapter 1 provides that basis for understanding.

2.2 DEFINITION OF ASSET MANAGEMENT

Ngxongo (2003) describes local government as being comprised of local municipalities whose function is to deliver services to the people who, in turn, improve their quality of life.

The functions of municipalities are classified into a direct line function, which contributes directly to the provision of services and support, which contributes indirectly to the provision of services (Ngxongo, 2003). Line function services provided by municipalities include: control and protection function, social welfare functions and economic welfare functions (Buys and Mavasa, 2007).
Behind the scenes are very important, but neglected, support functions of a municipality. These include auditing, economic development, judicial processes, asset management, financing, resource supply, personnel and other administrative functions. All of these functions assist the municipality to provide crucial services such as storm water drainage, cemeteries, crematoria, recreational grounds, water supply, electricity supply, abattoirs, refuse removal, health services, environmental conservation, town planning, licensing, construction and maintenance (Chiarelli, 2012). These services can only be provided speedily through the use of moveable asset management.

An asset is something of enduring value (Mavasa and Buys, 2007). The concept of asset management has been defined by various governmental organisations, transport agencies and industry groups (Pantelias et al., 2009). According to Vanier and Rahman (2004), asset management is a business process and decision support framework that covers the extended service life of an asset, which draws from engineering as well as economics in order to consider the management of a diverse range of assets.

Peterson (2004) explains that asset management is a management process in which an organisation makes and executes the highest value decisions about the care and strategic use of an asset. Moveable asset management is a collective term for a set of management processes to ensure that the value of a moveable asset is optimised throughout its lifecycle, which encompasses strategic planning, acquisition, operation, maintenance management and asset disposal (Government-Wide Immoveable Asset Management Policy, 2005).

Many municipalities use an asset management system. It stores and manages asset information in order to support tactical and strategic decisions regarding the operations, maintenance, rehabilitation and replacement of infrastructure (Baird, 2011). According to Stewart (2012), it is strategic, proactive and long term in approach. The system does not only perform a storage facility function, but should also proactively highlight which assets are due for maintenance (IMIESA, 2007). Moveable assets that need to be maintained include vehicles, computers and software programmes.
According to Mavasa (2007), asset management is meant to help achieve business goals and is determined by the operational strategy. However, a successful management of moveable assets should involve more than an annual coordination of the technical and financial managers in preparation of year-end financial statements. It should be an integral part of the daily function and culture of any organisation (Rowse, 2010). It is important that asset management is undertaken in a truly proactive approach that ties the management of moveable assets to an organisation’s corporate objectives (Mather, 2003 and Singh, et al., 2012).

In order to exploit the advantages available in Moveable Asset Management (MAM) and to support corporate goals and objectives, responsible stewardship and the use of competent and qualified people is critical (Mather, 2003). Thus, an understanding of the framework that guides MAM is required.

2.3 MOVEABLE ASSET MANAGEMENT FRAMEWORK

Asset management practises in local government have, historically, resulted in assets slipping into a state of despair due to improper funding for maintenance or the assets’ being lost (Coleman, 2008).

Literature studies confirm that this practise is a result of a non-uniform governance framework and the lack of an effective monitoring and evaluation system. Literature indicates that asset management is also a low priority to management and, as a result, assets are not being managed to their optimal value (Coleman, 2008 and Chiarelli, 2012).

Too and Too (2010) believe that, for asset management to become a true value-adding undertaking within the cooperate framework, it must be on the corporate agenda. This means that asset managers should be able to assess organisational needs and ensure that asset management functions are able to help deliver organisational goals (Mavasa, 2007).
Strategic asset management is, therefore, aimed at achieving long-term organisational goals and objectives through the alignment of the asset management framework to support those goals. Mavasa (2007) lists areas that the MAM framework covers, which are:

- The business characteristics;
- Maintenance capacity;
- Strategic alignment;
- Planning, scheduling and work order management;
- Predictive and preventative maintenance;
- Asset records and knowledge management;
- Purchasing, storage and parts inventory; and
- Information management

Vanier, Newton and Rahman (2006) emphasise that an asset management framework is needed to determine asset condition, predict remaining service life and prioritise maintenance and capital renewal. Strategic moveable asset management is underpinned by aging assets.

There is an increasing demand for public service delivery, stringent regulations, risk management, limited financial resources and an increased need for accountability (Vanier, Newton and Rahman, 2006).

Figure 2 is a depiction of principles that underlie moveable asset management.
Figure 2 Principles of asset management.


According to Daya (2004), asset management principles should include:

- Service delivery needs that guide asset management practices and decisions;
- Asset planning and management that is integrated with the corporate and organisational plans, budgeting and reporting processes;
- Asset management decisions that are based on evaluations of alternatives that take into account the full lifecycle costs, benefits and risks of assets;
- The recording of ownership accountability and reporting requirements for assets are established, clearly communicated and implemented; and
- Asset management activities should be undertaken within an integrated government asset management policy framework.
The asset management planning process is depicted below in Figure 3

**Figure 3 The asset management planning process**

Source: Mavasa (2007)

Asset management is a continuous process, covering the whole lifecycle of an asset (Buys and Mavasa, 2007). Local government’s asset management decisions should not be made in isolation (Chiarelli, 2008). They should form part of the overall guideline for decision-making in an organisation.

Asset planning must be considered equally and concurrently with the other resource requirements used in achieving organisational objectives. It requires entities to convert programme delivery strategies into specific asset strategies.

According to Daya (2004) the features of an asset management decision-making guideline include:

- It is service or output driven;
- It employs a structured, systematic approach; and
- It is based on a ‘whole-of-life’ concept.
A Moveable Asset Management framework is not simply an amalgamation of individual operational plans developed for each phase of the asset lifecycle. It must be consistent with organisational goals and integrated with other key management strategies. Only through a strategic integrated approach to asset management can municipal subdirectories deliver quality support services efficiently and effectively.

The asset management activities associated with achieving a strategic approach to asset management are depicted in Figure 4 below.

Figure 4 Asset management activities


Mavasa (2007) highlights that moveable asset management activities associated with achieving a strategic approach to asset management need to be:

- Integrated with strategic planning and management;
- Made after comprehensively evaluating all alternatives, which take into account the asset lifecycle cost, benefit and risk of ownership;
- Associated with establishing accountability for asset condition, use and performance;
- Inclusive of disposal decisions, which are based on the analyses of the methods that achieve the best available net return within a framework of fair trading; and
- Effectively controlled through structures and management systems

The purpose of a moveable asset management framework is to provide a holistic approach to MAM in line with the broad objectives of local government (Mavasa, 2007). This is important as it affords the opportunity to achieve cost savings, take advantage of strategic opportunities, optimise investments, better manage asset risk and take action to rehabilitate or renew assets (Chiarelli, 2012).

Mavasa (2007) notes that the framework should be consistent with organisational goals and should also be integrated with other key management structures.

This is depicted in Figure 5 below.

![Figure 5 Asset management framework](image)


The National Treasury (2004) stipulates that the MAM framework should: ensure standardisation and enforce the application of strategic operational standards in
managing, provide guidance for the implementation of the framework that enables the whole of local government to demonstrable linkages between service delivery and resource planning, define the institutional framework and establish accountability for the effective, efficient and transparent management of MA, ensure that decision-making sub-directorates place within a government-wide common framework, and define approaches, benchmarks and monitoring of the planning, acquisition, maintenance and management and eventual disposal of MA within local government.

According to the Government of Western Australia (2011), the aim of the MAM framework is to enhance the sustainable management of local government assets by encouraging ‘whole of life’ and ‘whole of organisation’ approaches and the effective identification and management of risks associated with the use of moveable assets. It encourages a long-term view of asset management and requires municipalities to understand and then meet the impacts of social, economic and environmental change in ways that ensure the sustainable use of physical resources (Flintsch, and Bryant, 2006).

The MAM framework emphasises the importance of municipalities’ developing robust asset management plans linked to rigorous long-term financial and strategic planning as part of an integrated planning approach, as set out within the integrated planning and reporting framework and guidelines (Gelderbloem, 2012). Without this, any attempt to deliver the strategic direction of the organisation effectively and sustainably will be unsuccessful. According to French (2005), the complexity of the asset management approach taken by each municipality will be determined by the range of services it offers and the size of its asset portfolio.

However, the MAM framework will enable local governments to develop a process of continuous improvement in their asset management practice to match both the changing service delivery needs of their communities and the increasing integration of asset management with their strategic directions (French, 2005).
2.4 ASSET MANAGEMENT PLAN

According to Jolicoeur and Barret (2004), the management of moveable asset management in the municipal sector is of growing concern and importance. This is because local municipalities are increasingly faced with shrinking budget facilities, while at the same time having to provide the most suitable moveable asset management function continuously to support the strategic vision and mission of the organisation.

Asset Management Plan (AMP) is the collective set of regulations, procedures and rules that govern the creation, use and maintenance of the asset register and its information. It assigns responsibility and accountability, and is beneficial for financial planning. Halfawy, Newton and Vanier (2006) highlight the functions of an AMP as including the:

- Permitting of a well-organised and methodical collection, safe keeping, data storage, retrieval, management, analysis and reporting of asset information;
- Integrating of the management of various aspects of the asset lifecycle;
- Allowing for the sharing of data across municipalities and their directorates;
- Increasing operational efficiency by assisting in the planning, execution and coordination of maintenance operations; and
- Coordinating for the optimisation and distribution of budgets according to the priority and risk associated with deteriorating moveable assets.

The National Treasury (2004) describes the asset management plan as a process that is designed to ensure that the value of a moveable asset is optimised through its lifecycle, which encompasses strategic planning, acquisition, operation, maintenance management, and the disposal, as depicted in Figure 6 below.
Jolicoeur and Barret (2004) emphasise that the primary intent of the asset management concept is to support decision-making related to the acquisition, remediation and disposal of municipal assets in a manner that ensures that the service delivery is not compromised.

According to Fernholz and Fernholz (2007), the asset management plan guides the execution of inventory evaluation, use of moveable assets, strategic portfolio review of moveable assets, reporting and auditing. Successful strategic moveable asset management occurs under a certain enabling environment, as depicted in Figure 7 below.
Research undertaken by Stewart (2012) highlights the following as challenges related to the comprehensive successful execution of the moveable asset management plan:

- Lack of technically and qualified municipal staff on asset management;
- Minimal resources and guidance available for the asset management division;
- Inability to identify and collect the key internal asset data required;
- Poor document management systems that compromises the integrity of asset management data;
- Inadequate financial software systems to support the integration of moveable asset information;
- Municipal councils that are uninformed with respect to municipal moveable asset management;
- A lack of political and managerial will behind moveable asset management;
- The short-term political cycle of leaders and office bearers;
- Disconnects between municipal directorates;
- Revenue shortfalls, budget demands and unrealistic public expectations; and
- The need for increased capital spending by the asset management function

2.5 RESPONSIBILITY OF ASSET MANAGEMENT

The introduction of the Public Finance Management Act (PFMA), Act No. 1 of 1999 has made public sector managers increasingly accountable for the proper management of assets.

Asset management guidelines were introduced by The National Treasury in 2002 (Daya, 2004). Alegre (2010) articulates that the responsibility of MAM is to manage the physical assets in an optimal way, striking a balance between performance, risk and various costs during the operational life. This ensures that economies and the well-being of modern societies that depend on the good performance of moveable assets are not compromised.

Boshoff and Pretorius (2010) indicate that the Chief Financial Officer (CFO) is ultimately responsible for activities that are associated with the use of immovable assets and the directorate itself. Moveable assets, therefore, need to be safeguarded in a strong and proper manner. Internal Control Systems (ICS) need to be implemented (Nsanganzelu and Nelson, 2011).

ICS refers to the whole system of controls, financial and otherwise, established by management to carry on the business of the entity in an orderly and efficient manner, ensure adherence to management policies, safeguard the assets and secure, as far as possible, the validity, accuracy and completeness of the records. The role of AM is to ensure that IC are adhered to, as a slight failure within the ICS can lead to great losses and operational problems that could have a direct impact to society (Nsanganzelu and Nelson, 2011).
To safeguard moveable assets, it is crucial to keep accounting records in respect of the existence and value of the assets. IC have always been the focus of many stakeholders and auditors due to the fact that tangible assets form an important part of the financial structure.

Assets are expensive; hence they require a high level of management, proper recording, protection and handling (Nsanganzelu and Nelson, 2011). These records should contain sufficient detail that will enable regular physical checks of existence and completeness to be carried out and the acquisitions and disposals of all significant items should be made only by the approved body of authority (Nsanganzelu and Nelson, 2011). An entity’s MAM programme should encompass certain responsibilities.

2.5.1 Needs analysis

Entities must examine the need for service and, after considering all options, decide which assets are required, or whether a new asset is necessary. This ensures that there is not a shortage of assets and that there are no redundant assets.

2.5.2 Economic appraisal

This is a systematic weighing-up of the costs and benefits of the various solutions identified. This process assists in the identification of whether or not an asset is needed or not. Sometimes management just needs to ensure that a specific policy is implemented to respond to a need. In that case, an asset is not needed.

2.5.3 Planning

Planning is the essential tool for achieving service delivery objectives by means of assets. It is important that, when estimating the useful life of an asset, planned maintenance of the asset should also be considered during the planning stage.
2.5.4 Accountability

It involves mechanisms such as rewards and sanctions to ensure that an entity performs to an agreed standard. Each individual is responsible for decisions and actions, including stewardship over the assets in their possession or use (The National Treasury, 2002).

AM must manage the physical assets throughout their lifecycle within a framework of cost effectiveness, efficiency and reduced risks (National Treasury, 2002). AM must also establish uniformity and ensure that the application of minimum norms and standards is applied in the management of assets and the related delivery of services. AM should ensure better alignment of assets with service delivery and better allocation of valuable resources.

This will result in a reduced demand for new assets and a more effective use of existing assets (Government-wide Immoveable Asset Management Policy, 2005).

Gelderbloem (2012) stresses that AM must facilitate ways in which the management of MA can be improved in order to optimise the full potential of an asset and to the maximum benefit to the municipality. A strategic approach is required in order to achieve this objective. There should be planning, management of acquisition, effective holding and disposal policies in place.

According to Daya (2004), government must explore new ways of funding and managing assets to ensure effective and efficient public services, and to achieve sustainable, balanced budgets. AM contributes towards this goal by meeting the required level of service in the most cost-effective way through the acquisition, maintenance, operation and disposal of assets to provide for present and future customers.

Furthermore, AM must develop cost-effective management strategies for the long-term, provide defined levels of service, monitor performance, and manage risks associated with asset failures. Vanier (2001) highlights that the following are challenges faced by moveable asset managers:
The need for seamless data integration;
The requirement for the enhancement and standardisation of currently available tools;
The need for information exchange and knowledge transfer; and
The requirement for additional research in areas such as asset lifecycle management

2.6 STANDARDS THAT GOVERN ASSET MANAGEMENT

The Constitution of the Republic of South Africa (CRSA) (Act No. 108 of 1996) requires that national legislation establish a national treasury. The established national treasury will assist by introducing common treasury norms and standards. It prescribes measures to ensure transparency and guidelines to control expenditure in all spheres of government. It sets the operational procedures for borrowing, procurement, and overseeing the various national and provincial revenue funds (National Treasury, 2004).

Public Finance Management Act (PFMA) gives effect to sections of CRSA that are concerned with the legislation of national and provincial spheres of government. PFMA, 1999 (Act No. 1 of 1999) came into effect from 1 April 2000 and was amended by Act No. 29 of 1999. PFMA was introduced to promote the objective of good financial management in order to maximise service delivery through the effective and efficient use of the limited resources (National Treasury, 2004). This objective will be achieved through:

- Modernised systems of financial management in the public sector;
- Enabling managers who are held accountable;
- The timely provision of quality information; and
- Eliminated waste and corruption in the use of public assets

Chapter 2 of PFMA establishes the National Treasury. The National Treasury consists of the minister and the national department or departments that are responsible for financial and fiscal matters. AM is one of these departments. When
the National Treasury is established, measures that ensure transparency and expenditure control by introducing generally recognised accounting practice, uniform treasury norms and standards must be prescribed (National Treasury, 2004).

Chapter 11 of PFMA establishes the Accounting Standards Board, which will have the power to determine generally recognised accounting practices for the public sector (National Treasury, 2004). The primary objective of the National Treasury is to establish sound and sustainable management of the financial affairs of government on a national, provincial and local level, and to lead such policies and reforms. This includes supporting the development of a clear and logical approach that assists in the improvement of service delivery to communities (National Treasury, 2004).

The National Treasury has played an important role in the introduction of financial management reforms in local government since 1996. The financial management reforms were initiated by introducing the Municipal Financial Management Act No.56 of 2003 (MFMA). The MFMA aims to modernise budget and accounting practices by placing municipal finances on a sustainable footing in order to maximise the capacity of municipalities to delivery services to municipalities. Entities are required to safeguard and maintain their assets, to value them in accordance with the related standards of GRAP (National Treasury, 2004).

GRAP17 is applicable to assets that are under the control of asset management and will, therefore, only consider those applicable standards. GRAP17 provides guidance on how to distinguish Property, Plant and Equipment (PPE) from other non-current assets and the accounting treatment thereof. GRAP17 is applicable only to property that is:

- Occupied by the municipality for administrative purposes to provide services to the community;
- Occupied by employees; and
- Held for social services (e.g. community halls) that are rented out to the other party on irregular basis.
PPE are tangible items that are held for use to supply services or for administrative purposes, and are expected to be used for more than one year reporting period (National Treasury, 2004). An asset will be recognised only if it meets the definition of PPE, the future service potential of the item will flow to the municipality, and the cost of the item can be measured reliably.

The initial value of an asset will be its cost-purchase price including all costs incurred to bring the asset to its location and to the condition necessary for it to be operational. If the asset is acquired at no cost (e.g. a donation), its value will be its fair value on the date of acquisition. A cost model or the revaluation model can be used for subsequent measuring. Under the cost model, assets are carried at cost less depreciation (National Treasury, 2004).

Effective AM prepares an AR that provides details about assets that need to be disclosed in the financial statements. In order to comply with GRAP, an AR must contain the following information as a minimum:

- Detailed asset description;
- A unique number that will distinguish the asset from other assets (bar code);
- Purchase price;
- Acquisition date;
- Location;
- Estimated useful life;
- Depreciation;
- Disposal;
- Condition of the asset; and
- Person responsible for safeguarding the asset
2.7 ASSET LIFECYCLE MANAGEMENT

Phelps (2011) postulates that, traditional approaches to municipal asset management techniques have changed. However, policy still dictates and mandates for proper moveable asset management. Good moveable asset management involves the planning and acquisition of strategic assets to meet current and future service delivery demands.

The asset management lifecycle of an asset therefore requires careful consideration of cost of acquisition and cost of maintenance, including the ultimate retirement of an asset. According to a study conducted by Schuman and Brent (2005), current asset management models show inefficiencies in terms of addressing asset lifecycle comprehensively.
Organisations must attain unprecedented levels of equipment availability, reliability and maintainability in order to maintain operational reliability (Schuman and Brent, 2005). The MAM lifecycle approach is recommended to achieve “best appropriate practice MAM” (Mavasa, 2007). This means considering all management options and strategies as part of the asset lifecycle; from planning and acquisition to disposal. The objective of managing the assets in this manner is to look at long-term cost impacts (or savings) when making MAM decisions. Literature indicates that an asset proceeds through a number of sequential phases during its lifecycle. The asset lifecycle model is illustrated in Figure 9 below.

![Figure 9. Asset lifecycle model](image)


The last decade has seen the environment and recording requirements in which assets operate change (ASP Microcomputers, 2012). This has made the need for properly recorded assets more pronounced, and the information necessary to manage your assets has become more complex. These increases in demands have not always been matched with an increase in resources to manage the asset register, so the need for an efficient, effective, and automated system has become apparent (Too, Betts and Kumar, 2006).
Managing assets could be done by hand on paper, but this is not a particularly efficient option, as there are typically thousands of assets in a municipality. This limits access to an instant and accurate list of moveable municipal assets.

Computerised asset registers could be created using a spreadsheet programme such as Microsoft Excel. However, that is not an efficient system either. Manual asset management also leaves an organisation wide open to theft (Van Wyk, 2007). In addition manual security safety checks may be required from time to time. Manual asset management has been proven to be less efficient than an automated process.

The most versatile solution is dedicated Asset Tracking software, often with barcoded asset tags and portable barcode reading equipment (ASP Microcomputer, 2012). By investing in asset tracking software, businesses, organisations and government departments are better able to keep in control of their assets. Data technology solutions now include portable barcode readers which simplify and speed up the asset identification process and enable easy tracking of warranty and safety inspection dates. Such systems can provide built-in barcode label printing for assets, locations and borrowers; thereby enabling easy tracking of loaned items. A company is then able to audit its asset inventory periodically through the use of portable barcode readers (Van Wyk, 2007).

The more sophisticated automated asset management processes enable staff members that are responsible for this area to carry a complete asset database in the palm of their hand; thereby allowing in-field repositioning of assets and collection of other asset data. While in the past corporations, government departments and organisations have relied on manual asset management, these same entities are now realising the savings and efficiencies offered by affordable asset management solutions now available in the market (Too, Betts and Kumar, 2006).

Any manual data collection process that currently works on a paper basis can be more efficiently managed with barcode labelling and portable barcode readers (ASP Microcomputer, 2012). The efficiencies gained create improved productivity and accuracy (Too, Betts and Kumar, 2006). By simply attaching a barcode to fixed assets, management is able to create an easily accessible account of what the
company owns, conduct periodic physical inventories, quickly track those who have custody of each asset, and minimise the loss (ASP Microcomputer, 2012). This data is captured and stored in a central computer database called an Asset Register.

An Asset Register (AR) is a database consisting of all of the assets of an organisation. French (2005) says that the AR is the records of fixed assets that have a material value. The function of an AR is to provide the information about assets needed for their financial and operational management and servicing (Mavasa, 2007). The main fields of an AR are the asset number and location, date purchased / received, cost price and valuation amount, depreciation rate, current and accumulated depreciation, and carrying value (book value). According to Mavasa (2007), it is important that the assets are recorded, numbered and labelled accurately, and highlights the time frame for property needing statutory inspection. French (2005) says that the establishment of an AR from limited information should include the following steps:

- Identification and assessment of existing information sources;
- Documentary research of records; and
- Physical inspection of the assets

Asset lifecycle management is a key MAM tool that takes into account the whole life span of a moveable asset. Figure 10 below provides a pictorial synopsis of the asset lifecycle management.
According to the National Treasury (2004), an effective asset lifecycle management must have the following basic IC:

- Acquisition and additions of assets – needs analysis before acquisition must be done to ensure value for money;
- Authorised and procedural asset acquisition and disposal should be undertaken by a responsible person utilising proper documentation;
- Relocation of assets – records management is crucial for referencing; and
- Maintenance of the assets register – an asset register should be updated on a continual basis

2.8 KEY CHALLENGES FACING MOVEABLE ASSET MANAGEMENT

The management of municipal moveable assets involves many complex, interdependent and data intensive processes (Halfawy, 2008). The moveable asset management activity faces challenges, which include but are not limited to:

- Knowledge management;
• Skills management;
• Strategic management;
• Governance;
• Corruption; and
• Leadership

2.8.1 Strategic Management

According to Mollenkopf (2012) and Too, Betts and Kumar (2006), a strategic approach to asset management results in the positive benefit of cost-effective and productivity-enhancing accommodation, together with the coordinated management of all other operational resources. This demands a structured and programmed strategy that requires a long-term approach. A short-term approach does not produce optimum results and ends in a needless waste of resources and abortive expense.

This all starts with the setting and alignment of corporate vision and mission (Mollenkopf (2013). These are translated into organisational service delivery strategies by managers who are working together to achieve organisational goals. This mission and vision will set out the context within which the organisation is to operate, defining the scope, direction and the way in which resources are allocated in order to reach the agreed targets (Too, Betts and Kumar, 2006).

A study in strategic management of asset management undertaken by Nsanganzelu and Nelson (2011) found that the following factors negatively or positively affect strategic management of asset management: control environment, effectiveness and efficiency of operations, the accounting system, reliability of financial reporting, compliance with applicable laws and regulations, risk assessment, control activities, non-current asset acquisition, recording system, information management, effective communication and safe keeping.
2.8.2 Knowledge management

Municipal infrastructure decision-making requires access to a multitude of data about infrastructure inventory, condition, risk levels, performance metrics, renewal options, etc. (Halfawy, 2008).

Efficient representation, integration, management and sharing of these data sets can only be achieved practically through the use of comprehensive and integrated databases (Pantelias, Flintsch, Bryant, and Chen, 2008). Data management services such as multi-user data access and editing, concurrency control, version management, data security and authentication and other services are critical for ensuring data integrity and consistency can be realised using an integrated database.

An integrated database makes it possible to store and retrieve data and can generally be implemented using a centralised or distributed architecture (Buys and Mavasa, 2007). A centralised database stores and manages the data in a single repository, while a distributed database stores the data at multiple, homogeneous or heterogeneous repositories. One of the main advantages is that the database structure can be adapted to the municipal organisational structure by implementing a repository for each department (Halfawy, 2008). Therefore, the formalisation of knowledge management seems to be desirable and necessary. Halfawy (2008) confirms the following advantages of knowledge management in effective asset management:

- Serves as a tool for documenting the structure and organisation of key processes and information flow, which would aid in structuring the existing practices and reducing the subjectivity of the decision-making processes;
- Enables municipalities to promote consistent vision and work practices among various directorates, which would aid in process planning and coordination;
- Enables better management of process interdependencies within or across municipal departments, and with external stakeholders and organisations;
• Supports process evaluation and continuous improvement to tackle communication and coordination problems, eliminate inefficiencies associated with data flows, and enhance the overall process efficiency;
• Serves as a framework to classify and organise the vast body of domain knowledge, decision models and technologies associated with these processes;
• Assists in eliciting, documenting, and retaining in-house “expert” knowledge; and
• Guides the design, implementation, and deployment of software systems by identifying the required or missing functionality and interfaces, and directing the efforts on developing needed methods and technologies

2.8.3 Governance

According to Mills, Brown and Waterhouse (2008), governance in asset management offers a lens through which to examine asset managers’ asset management against economic measures and service deliverables.

A study undertaken by Flintsch and Bryant (2006) indicated that there is no one-size-fits-all approach to asset management. The most appropriate approach will depend on the agency’s needs and culture, as well as the availability of economic, technological, and human resources. A gradual implementation of the data collection efforts appears to be the most appropriate approach. Hurdles exist in asset management practice (Flintsch and Bryant, 2006).

The most commonly mentioned hurdles to overcome include no unique way to establish an asset management system and the large number of alternatives from which to choose, and difficulties integrating existing databases and individual infrastructure management systems in spite of the advances in information technology and its applications (Flintsch and Bryant, 2006).
2.8.4 Leadership

According to Fernholz and Fernholz (2006), effective asset management needs to be linked with overall development plans for a municipality. Therefore, the support of the top leadership of the municipality is important. This is usually the mayor and deputy mayor, and / or the municipal council.

A particular department in the municipal government needs to be charged with the function of rationalising the asset portfolio of the municipality. The department would have its own staff, depending on the government’s interpretation of this agency’s functions and the importance given to it. This mandate will, therefore, affect the agency’s overall ability to get relevant and updated information, to prepare strategic asset management plans, and to present and implement proposals, such as sale or investment decisions.

Municipal governments further need to develop and maintain effective approaches to motivate various role players outside the local government whose cooperation is needed to make strategic asset management a reality (Fernholz and Fernholz, 2006). Openness and transparency are powerful means to achieve this goal.

2.8.5 Corruption

There are numerous challenges facing the integration of corporate governance and security – one of which is to convince the senior management of an organisation that it is ultimately accountable and responsible for the protection of the organisation’s assets.

Thomson (2003) explains that the inattentiveness of management to security could be as a result of the fact that managers can normally only allocate a limited amount of time and consideration to security. As a result, management’s attention is often limited to a small set of acute threats and countermeasures that relate to the issues of the day. To protect the organisation from financial loss through breaches in security, management must reduce the inherent risk associated with the assets in the organisation (Thomson, 2003).
2.8.6 Skills Management

Van Wyk (2007) highlights that, for many years, local government has applied cash accounting. However, all national and local government structures are moving towards implementing accrual accounting, which is governed by a set of principle-based accounting standards.

According to van Wyk (2007), apart from the need for sophisticated accounting information systems, officials require high level of skills that they do not necessary possess in order to manage municipal moveable assets effectively. It is apparent that capturing and updating assets on the asset registers for effective management requires trained staff. Another challenge is the expense associated with meeting such a requirement.

2.9 CONCLUSION

The literature review chapter provided a definition of asset management. It further discussed the asset management discipline, asset management plan, asset management framework, the responsible persons for moveable asset management, the asset lifecycle and the relative legislation that govern moveable asset management. The chapter discussed the following challenges to asset management: strategic management, knowledge management, governance, leadership, corruption and skills management.
CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the research methodology utilised in assessing moveable asset management with a view to improving the function. A research methodology is a study of approaches, more especially an approach of gathering research data, the justification of the use of that specific methodology and the method of analysis (Creswell, 2011).

According to Arnolds (2012), a research methodology is primarily concerned with proving answers to the following questions:

- How was the research conducted?
- What and why was a certain technique found to be the most appropriate?
- What research instrument was used?
- Who are the respondents?
- What is the justification for the chosen population?
- What is the justification for the chosen sample size and respondents?
- How was data interpretation undertaken?
- How was data analysis conducted?
- What is the proof of ethical sensitivity?

A research design is a master plan for fulfilling the set out research objectives and answering research questions, including testing proposed hypotheses (Cooper and Schindler, 2009). The literature review chapter confirmed contemporary issues in moveable asset management to be: strategic management, knowledge management, governance, leadership, corruption and skills management.

This chapter defends the chosen research design and paradigm used to test these independent variables identified in the literature. Furthermore, a discussion of the ontology, epistemology and axiological assumptions of the research is presented in order to make the study logical and meaningful. This chapter also discusses the scientific rigour and data analysis techniques used in this study.
3.2 RESEARCH METHODOLOGY

Zikmund et al. (2013) defines research methodology as the master plan for conducting research. It identifies methods and procedures followed to conduct a particular study. It justifies data collection procedures and instruments utilised. It also explains the data collection and the analysis process. Arnolds (2012) emphasises that it is, therefore, very important to discuss the research methodology as it guides the research process.

3.2.1 Research paradigm

A research paradigm is a philosophy or a particular way of thinking (Robson, 2011). There are two main research paradigms that are mostly and mainly used in undertaking social research studies. They are positivism and interpretivism.

Positivism generates hypothesis and allows those hypothesis to be tested using various approaches (Creswell, 2011; Zikmund et al., 2013). According to Collis and Hussey (2009), this research paradigm rests on the assumption that social reality is singular and objective and is not affected by the act of investigation being undertaken. Positivism involves a deductive process with a view to providing exploratory theories in order to understand a social phenomenon (Arnolds, 2012).

The interpretivism research paradigm allows for exploratory research to be conducted by employing various methods such as observations (Cooper and Schindler, 2009; Yin, 2009). According to Collis and Hussey (2009), this research paradigm rests on the assumption that social reality is the way people understand reality and is subjective.

Therefore, social reality is affected by the act of investigating it. It involves an inductive process with a view to presenting an interpretive argument of social phenomena with a particular context (Collis and Hussey, 2009; Arnolds, 2012). The chosen research paradigm in this research study is the interpretivism paradigm. This is because the researcher investigated experiences, processes and perceptions
within a natural setting. This paradigm is the best theory for the identified study objectives and for answering the set research questions.

### 3.2.2 Assumptions of the main research paradigms

Table 1 below displays the main assumptions of the most-used research paradigms, which also help to understand the chosen research paradigm.

<table>
<thead>
<tr>
<th>Positivism</th>
<th>Interpretivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectivists</td>
<td>Phenomelogical</td>
</tr>
<tr>
<td>Quantitative</td>
<td>Qualitative</td>
</tr>
<tr>
<td>Scientific</td>
<td>Subjective</td>
</tr>
<tr>
<td>Experimental</td>
<td>Humanistic</td>
</tr>
<tr>
<td>Traditionalist</td>
<td>New mind set</td>
</tr>
</tbody>
</table>

Source: Creswell (2011).

### 3.2.3 Types of research methodology

Table 2 below is a depiction of the different types of research methodologies and their relative approaches that could be utilised in performing social research.

<table>
<thead>
<tr>
<th>Positivistic</th>
<th>Interpretivism</th>
<th>Mixed methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-sectional studies</td>
<td>Action research</td>
<td>Triangulation</td>
</tr>
<tr>
<td>Experimental studies</td>
<td>Case studies</td>
<td>Investigator triangulation</td>
</tr>
<tr>
<td>Longitudinal studies</td>
<td>Ethnography</td>
<td>Methodological triangulation</td>
</tr>
<tr>
<td>Surveys</td>
<td>Grounded theory</td>
<td>Triangulation of theories</td>
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<td></td>
<td>Participative inquiry</td>
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</tr>
<tr>
<td></td>
<td>Hermeneutics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feminist, gender and ethnicity studies</td>
<td></td>
</tr>
</tbody>
</table>

Source: Collis and Hussey (2009) and Arnold (2012).
The applied methodology in this study is the case study approach. It is used to answer the research question in chapter one, and to test the listed propositions.

### 3.2.4 Case study approach

Boshoff (2009) believes that a case study approach to social research brings an understanding of complex issues and extends experiences of what is already known about a particular phenomenon. The use of this research approach in order to examine a real life situation provides a basis for the application of ideas, theories and extension of methods (Dinzin and Lincon, 2008).

Robson (2011) further adds that a case study approach is more detailed in its examination of a particular group of people, phenomenon and processes in order to come to deeper conclusions about a case. Yin (2009) emphasises that this approach is detailed and uses multiple sources of information, which provide the researcher with rich context. This research approach is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter (Dinzin and Lincon, 2008).

In qualitative research, the researcher observes and records conversations, actions, and events and then tries to interpret them and their meaning through a range of concepts and theories, which owe their explanatory power to factors other than statistical techniques or formulae.

Cooper and Schindler (2009) also point out the different approach of the research study; namely, the one between qualitative studies and quantitative studies. Quantitative studies rely on quantitative information (i.e. numbers and figures), while qualitative studies base their accounts on qualitative information (i.e. words, sentences and narratives). Quality is the essential character or nature of something; quantity is the amount. Quality is the what; quantity the how much. Qualitative refers to the meaning, the definition or analogy, model or metaphor characterising something. On the other hand, quantitative assumes the meaning and refers to a measure of it.
The term qualitative research encompasses several approaches to research that are, in some respects, quite different from one another. Yet all qualitative approaches have two things in common. First, they focus on phenomena that occur in natural settings - that is, in the “real world.” Secondly, they involve studying those phenomena in all their complexity. Qualitative researchers rarely try to simplify what they observe. Instead, they recognise that the issue they are studying has many dimensions and layers, and so they try to portray the issue in its multifaceted form (Leedy and Ormrod, 2005).

The scientific benefit derived from this approach is that it has the ability and potential to open ways for discoveries and hypotheses can also be pursued in subsequent studies, which would advance the body of knowledge (Yin, 2009; Robson, 2011).

The researcher has chosen this research approach as it represents a comprehensive research strategy to undertake this research. The research is the investigation of moveable asset management at a local municipality. There is a limited number of people who work directly with the asset management function. Therefore, a case study approach is preferred to a quantitative approach. The chosen interpretivism research paradigm, which uses the case study approach, is feasible, reliable and less costly for the purposes of this research.

**3.2.5 Ontological assumptions**

According to Arnolds (2012), the word “ontology” comes from the Greek words:

- “Onto” which means existence or being real, and
- “Logia” which refers to the science of study

Ontology is used in both the philosophical context and non-philosophical context. When used in a philosophical context, it is a study of what exists in general (Arnolds, 2011). The concept is used to discuss challenging questions and to build theories and models to understand the ontological status of the world better.
Collis and Hussey (2009) believe that the ontological assumption in an interpretivism research paradigm are concerned with social reality and is subjective because it is socially constructed. It is then understood and accepted that each individual perceives reality in different ways from the next person. Therefore, the ontological assumption of this research treatise is relativism. The reality of asset management is subjective to the interviewees. It is also multiple as seen by the participants of the study.

3.2.6 Epistemological assumptions

Arnolds (2012) explains that the epistemology concept emanates from the original Greek words:

- “Logia” - the science or the study; and
- “Episteme” - knowledge or understanding of a concept in reality

Epistemology is the study of the social context in order to create a new knowledge. It is the study of knowledge in general (Arnolds, 2011). According to Collis and Hussey (2009), epistemology is concerned with what we accept as valid knowledge. Therefore, the epistemological assumption of this research treatise is naturalist and has an emic approach to discovery. Beliefs determine what should count as facts, as emphasised by Collis and Hussey (2009).

3.2.7 Axiological assumptions

Collis and Hussey (2009) discuss axiology and explain that it is concerned with the role of values. The interpretivism paradigm considers the researcher as having values, even if they are not explicit. The researcher’s values determine what is recognised as facts and interprets conclusions from these perceived facts (Collis and Hussey, 2009). The researcher is influenced by the fact that they used to work for a local municipality and thus has critical insights.
3.3 ETHICAL CONSIDERATIONS

Ethics are about the rules that have to do with conforming to a specific code of conduct (Robson, 2011). Ethical dilemmas can be context specific, about anonymity, include confidentiality, issues of consent, dignity and publication protocols (Collis and Hussey, 2009; Robson, 2011).

It is also important that coercion should not be used to force respondents into taking part in the research (Collis and Hussey 2009). The respondents should not be offered financial reward or other forms of reward to induce them into taking part in the research study (Arnolds, 2012). Participation was voluntary and transparency was provided. In this research report, all ethical issues were adhered to.

No vulnerable respondents were used. Therefore, the ethical clearance certificate was not necessary or required. The respondents conceded to be part of the research and they were not coerced in any way. The true nature of the research was revealed to the participants in a covering letter requesting an interview session (see appendix A). The possible invasion of privacy was avoided by allowing the respondents to disclose only what they wanted to disclose of themselves, their organisation, and industry, without being forced. All participants were treated fairly, with consideration, and respect. The findings of the research are not likely to harm those involved. Proper community and society protocols were followed in undertaking this research study. No invasive questions have been asked from the respondents.

3.4 LIMITATIONS AND DELIMITATIONS OF THE STUDY

Collis and Hussey (2009) believe that the limitations of the study are the identification of weaknesses and deficiencies of a research study. The delimitations of the study explain and establish the scope of the research (Collis and Hussey, 2009). The purpose of discussing the limitations and delimitations of a study, according to Arnolds (2012) and Collis and Hussey (2009), is:

- To identify potential challenges that should be resolved or reported in the context of the study; and
To identify, at an early stage, some of the key issues that need to be addressed during the course of the research

The limitations and delimitations of the study this research study are the following:

- It is conducted in a single municipality;
- The respondents vary between management and ordinary staff members within the organisation;
- Some of the research finding cannot be generalised to international, smaller and / or larger municipalities;
- Only a certain number of people that were approached for an interview were willing to participate; and
- The study is seen as a smaller part of a larger study that could be undertaken

3.5 DATA COLLECTION

Daniels (2010) understands data to be information about any particular situation. Primary data was derived from the empirical study as opposed to theory or non-empirical classification. Secondary data was used to lay a theoretical foundation for the study. It included published and unpublished books, theses, journals and conference papers. Qualitative data needs to be contextualised and background information needs to be collected (Collis and Hussey, 2009). To this end, the researcher has paid attention to the period under investigation, including the influences of the geographic location, political, social and economic influences. Contextualising the study has helped the researcher enhance understanding of the qualitative data collected in the research stages (Collis and Hussey, 2009).

3.5.1 Population

The population of a study is the research object or case study unit, which is the focus of the research study being conducted (Daniels, 2010). The population in this research study is located within a local municipality which includes a total number of twenty six asset controllers and managers.
3.5.2 Sample

Daniels (2010) indicates that a sample is the act or process and technique of identifying a suitable representative respondent that best represents the population. There are two main sampling techniques as depicted in Table 3 below.

Table 3 Sampling techniques

<table>
<thead>
<tr>
<th>Probability sampling</th>
<th>Non-probability sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple random sampling</td>
<td>Convenience sampling</td>
</tr>
<tr>
<td>Systematic sampling</td>
<td>Voluntary sampling</td>
</tr>
<tr>
<td>Stratified sampling</td>
<td>Purposive sampling</td>
</tr>
<tr>
<td>Cluster sampling</td>
<td>Snowball sampling</td>
</tr>
<tr>
<td></td>
<td>Event sampling and Time sampling</td>
</tr>
</tbody>
</table>

Source: Arnolds (2012) and Daniels (2010).

The current research study utilises a non-probability sampling technique for data collection, as the study focuses on a single case. A purposive sample was selected. The respondents targeted were in management and general staff positions. A certain number of respondents were interviewed and no other people were further approached because the researcher noticed that no new data was emerging out of the interviewees, therefore, the sample size was five respondents.

3.5.3 Research instrument

The data collection method utilised in this research report is a semi-structured interview. An interview is a method of collecting data in which respondents are asked questions in order to find out what they think or feel to enable a sharing of experiences (Collis and Hussey, 2009). The use of a semi-structured interview as a research instrument allows for responses to be given in-depth thought. The responses have been captured on a tape recorder and the data was analysed for patterns, theories, and critical issues arising out of the interview. This research method and research instrument were choses to be the best, as they provide the following benefits, which outweigh the weaknesses as presented in Table 4 below.
Table 4 Strengths and weaknesses of semi structured interviews

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-structured interviews focus directly on case study topic.</td>
<td>Semi-structured interviews can be biased due to poorly constructed questions.</td>
</tr>
<tr>
<td>Semi-structured interviews provide perceived casual inferences and explanations.</td>
<td>Responses can be biased and inaccurate due to the respondent's poor memory.</td>
</tr>
<tr>
<td>There is positive rapport between the interviewer and interviewee.</td>
<td>The quality of the data acquired depends on the skills of the interviewer.</td>
</tr>
<tr>
<td>It can be a cheap, simple way of gathering data about the emotions and feelings of the case.</td>
<td>The interviewer may lead the interviewee in a certain direction.</td>
</tr>
<tr>
<td>There is high data validity in a semi-structured interview.</td>
<td>Respondents can lie.</td>
</tr>
<tr>
<td>Semi-structured interviews provide an opportunity to ask questions in order to go deeper into the matter and to gain insights and understanding.</td>
<td>If geographic displacement is considered, semi-structured interviews can be expensive.</td>
</tr>
<tr>
<td>It is easy and cheap to record interviews.</td>
<td>Samples tend to be small with limited generalisation of the research findings.</td>
</tr>
</tbody>
</table>

Source: Adapted from Daniels (2010) and Yin (2009).

The researcher has chosen to use the semi-structured interview because the respondents did not only provide answers, but also reason for their answers, which led to further questions being generated. This provided an opportunity for further probing and gaining an increased understanding of the research problem and possible solutions (Please see annexure A for the interview questions).

3.6 SCIENTIFIC RIGOUR

3.6.1 Reliability

Leedy and Ormrod (2005) emphasise that the validity and reliability of a measurement instruments influence the extent of the outcome of a study about a
phenomenon, the probability that statistical significance can be obtained and the extent to which a meaningful conclusion can be drawn from the data.

A qualitative inquiry has reliability (Arnolds, 2012). Reliability is the consistency with which a measuring instrument yields a certain result when the entity being measured has not changed. Reliability is a necessary but insufficient condition for validity. This means that another researcher may arrive at the same conclusion and findings due to the research method. It is concerned with the research instrument being free of error and the consistency and it supplies consistent results. The extensive literature review warrants the reliability of the research instrument utilised.

The interviews were standardised, tightly structured and conversational. Through this methodology, the researcher and the interviewees engaged in a one-on-one discussion. The researcher interviewed several people at different times using the same interview guide and schedule, which enhanced validity. The data was tested against standards that guide asset management, which enriched construct validity.

3.6.2 Credibility

Yin (2009) and Collis and Hussey (2009) underscore that, in an interpretivism research paradigm, data credibility is very high. This is because the responses can be verified and transcribed. The summary of the interview can also be made available. The researcher has recorded the interviews, which increases the credibility of the data.

3.6.3 Validity

Yin (2009) notes that, in an interpretivism research methodology and case study approach, validity is the same as external validity in a positivistic research methodology and quantitative approach. Arnolds (2012) emphasise that the research findings can fit into another context than that found in the current study and the findings are well grounded in data.
A measuring instrument is valid if it measures what the researcher claims it does (Collis and Hussey, 2009). This means that the validity of a measurement instrument refers to the extent to which the instrument measures what it is supposed to measure. Validity in research addresses two issues. Firstly, it assesses the appropriateness of a research method, justifying the logic in the use of a method to the research questions. The second aspect in validity is the interpretation of data (Yin, 2009).

An interpretation of the research data is mostly subjective and emphasis must be placed on tracing the means by which the researcher arrived at a particular conclusion. The validity of research can be observed from the internal validity, which deals with whether or not what has been identified as the cause actually produces the effects claimed and external validity – the extent to which the research findings can be extrapolated beyond immediate research sample (Collis and Hussey, 2009).

To ensure validity in this research, a process of multiple sources of information was used, which ensures that the researcher arrives at common themes. In addition, the following strategies were employed:

- The data was described in detail so that readers can make up their own conclusions; and
- The opinion of subject experts was sought to determine whether they agree with the conclusions made or not

### 3.7 DATA INTERPRETATION

Collis and Hussey (2009) and Yin (2009) indicate that data interpretation in an interpretivism research paradigm seeks to establish relationships among variables. Data interpretation allows for the description of the problem as it exists and recommendations can be deduced from the analysis. The data analysis consists of noticing, collecting and thinking about interesting issues (Daniels, 2010).

To begin the data analysis presentation, descriptive statistics were used. The researcher had to break down the data to look for themes, sequences, processes, patterns and holes in order to make sense of the findings. The researcher grounded and compared the research findings to the literature.
3.8 CONCLUSION

This chapter explained the research methodology that was followed to gather primary and secondary data. A research methodology is the master plan for conducting a study. A research paradigm is a particular way of thinking. The researcher has conducted the study using an interpretivism research paradigm and utilised a case study approach in order to gain an in-depth understanding of the problem.

The study is investigating experiences, processes, and perceptions; hence a semi-structured interview instrument was chosen as the best suited approach as it is a comprehensive research strategy. Details of the sample size and research design process were described and presented.

An explanation on how the survey was conducted and an account of the survey method followed and demonstrated its advantage in conducting the study.

The chapter also discussed the meaning of validity and reliability in this study and explained how empirical significance of the results is determined. No ethical clearance certificate was required. However, confidentiality and anonymity was guaranteed.

Semi-structured interviews were utilised as a research instrument and responses were captured on a tape recorder. The qualitative research used incorporates the design of questionnaires, interview procedure, and empirical results presentation method and data analysis. The responses and data interpretation is presented in the next chapter.
CHAPTER 4: RESEARCH RESULTS

4.1 INTRODUCTION

This section will report on research results. The empirical research was conducted through interviews. The interview was done through structured questions for ease of analysis. The interviews were conducted with 1 asset management director, 1 asset manager and 3 asset controllers. The interview was intended to investigate whether the asset controllers have the necessary knowledge and skills to perform their tasks and, if not, what efforts were being undertaken to rectify this.

It was also conducted to investigate whether or not the NMBM asset management function is a strategic one or not. It was meant to ascertain whether there is control over the movement of assets and whether corruption affects asset management. The intention was also to investigate the role of leadership in asset management at the NMBM. The next section reports on the responses of the respondents.

4.2 INTERVIEW REPORT

4.2.1 Biographical information

This section of the interview report was intended to gather and present personal biographical information about the respondents, their relative work experience, current work occupation and duties.

Interview 1

I am the head of this department and have worked here for more than 10 years. The duties that I perform include: managing and controlling the activities, procedures and outcomes related to comprehensive information service, co-ordinating and controlling tasks associated with controlling personnel performance, productivity and discipline, and administrative duties. The tasks that I perform as an asset controller are not part of the scope of my job. I do it because it is not part of this department’s organogram and no one wants to do it as it is no one’s job.
Interview 2

I am an asset controller. I have worked in this organisation for 6 years, of which the first 2 years I was not a permanent employee. My main duties are: preparing and creating an asset register of moveable assets, conduct training of asset controllers, follow up on internal and external audit queries regarding moveable assets, create a risk register, attend standing committee meetings; namely, asset disposal committee and other committees and performing ad-hoc director’s duties.

Interview 3

I deal with insurance claims. I have been in this position for 4 months and have been in this department for 6 years being an asset controller. My duties entail: processing of insurance claims, charging insurance premiums to departments, authorise EFT payments, and performing duties of the asset controller such as stock taking, bar coding of new assets and monitoring movements of assets. A new asset controller has not been appointed so I am doing my new job and my old job.

Interview 4

I am responsible for the coordination of asset management function in the municipality, to ensure that municipal assets are managed, controlled and safeguarded in a proper manner.

Interview 5

I am an asset controller for my directorate. I update the asset register with new acquisitions and bar coded assets. I manage the control of purchase of computer equipment and cell phones. I run the administration of insurance claims.
4.2.2 Knowledge management

This section of the interview report was meant to collect data, report on how knowledge is managed, and report on whether asset controllers have the knowledge and qualifications that they need to perform their duties.

Interview 1

*Our department needs someone who has an accounting background. This will assist in having information readily available about assets. For instance, we will not need to enquire from asset management about depreciation and book value of our assets as we would have someone with those expertise in our department. Knowledge about the system is not a problem as training on it is readily available and it’s just a matter of time of getting used to it and know how it works. We have been requesting for an asset controller to be appointed since 2007 and, to date, we still do not have this knowledgeable person in our department.*

Interview 2

*Obviously, one needs to know how the asset management system (BAUD) that we use here at work works. Training is needed on when to barcode an asset, install an asset, and stock take, and the processes involved in transferring and disposing of assets. This training is provided when it is needed. However no one knows who needs what training and when.*

Interview 3

*I think asset controllers need to know the whole process involved in asset management. They need to know about risk management. This will make them alert and be able to identify loopholes within the asset management processes so that potential losses can be avoided. This type of training is not available unless one will enrol to a higher institution and study at own cost and time.*
Interview 4

An asset controller needs an understanding of BAUD system (Barcoded Asset Audit System) used by the municipality to track moveable assets. He or she also needs to understand the procedures to be followed when doing stock take of municipal assets. An asset controller needs to be competent in the following:

- Printing of reports, such as unverified assets reports;
- Compiling stolen asset reports;
- Producing a report on assets that need maintenance;
- Compiling an asset replacement report;
- A report of assets that were not found during stock take; and
- The inventory list

The inventory list of assets that is in each office and the occupier of that office is accountable for those assets as well as safeguarding of assets under their control. The controller is also responsible for barcoding of new assets purchased. He or she is also responsible for reconciling assets recorded on the system with assets on the ground to verify the existence of those assets. The controller must also produce monthly reports to management regarding the status of assets within the respective directorate. The training on the earlier mentioned needs is available to us as and when needed.

Interview 5

An asset controller should have training on inventory and stores management, risk management and barcoding and auditing of assets. This kind of training is not currently available as management is focusing on providing and sponsoring mainly academic qualifications.

4.2.3 Skills management

This section of the interview report intends to investigate whether the asset controllers possess the skills they need to perform their duties.
Interview 1

An asset controller needs to have basic computer knowledge and know the asset management system, BAUD. These basic skills are a must. The asset management division provides information on BAUD when it is needed. The municipality has its own training centre where different skills are offered. I believe that the asset controllers possess these necessary skills.

Interview 2

I think an asset controller should have a financial background and be computer literate. Not all asset controllers have these skills or have the financial skills, management skills and computer background.

Interview 3

Asset controllers should know the system BAUD. They must be able to use MS Excel as we use spreadsheets to capture information. I feel that I did not have a structured training and had to learn as I went.

Interview 4

An asset controller needs to have financial and business management skills. This will assist in knowing what asset management is about and how to manage assets of an organisation and what will be left is one to be familiar with the system that we use. Some of them do have these skills but some do not possess them. The ones who do not have them and are only familiar with the system face the challenge of not responding to asset management challenges. They subsequently need to be told how to deal with different situations while who have the required skills know how to respond to the different challenges by themselves and not wait for the director to instruct them.
Interview 5

An asset controller must be computer literate. He or she needs to have a driver’s licence as one will need to move new acquisitions to where they are needed. Writing skills are also required as different reports need to be prepared.

4.2.4 Governance

This section of the interview was intended to investigate whether someone senior had control over the movement of assets.

Interview 1

As the head of this department, I am the senior. Therefore, the assets movement are authorised by me. I acquire assets, do stocktake and approve any applications for movement of assets. There is a risk in process but, as mentioned before, no one has been appointed as an asset controller so I have to do everything.

Interview 2

In my directorate, we receive all applications for asset disposals. These applications are sent to the disposal committee for recommendation to the council. Most of the assets that are on the application forms for disposal are assets that are broken or damaged. To control the acquisition of assets, we use the supply chain system where there is a requisition form that states why the asset needs to be bought and invoices for all moveable assets purchased are sent to asset management and we are able to barcode and capture those assets. Each asset controller controls the transfer of assets and all paper trail for assets that have moved to another location is sent to asset management directorate.

Interview 3

In my department there is no one senior who authorises any asset movements. All our applications transfers and disposals are sent to asset management for approval.
Interview 4

Yes, and also there are relevant committee structures of council where necessary who oversee asset management. There is a huge challenge to get councillors to attend asset management meetings. Maybe they do not see asset management as important, or falling in their sphere of oversight.

Interview 5

There is someone senior who authorises all asset movements but that person is not knowledgeable. Therefore, all movements are authorised based on my word.

4.2.5 Strategic asset management

This part of the interview investigates whether the asset controllers do understand that asset management and its function should be strategic.

Interview 1

In order to be able to answer this question, I will first have to know what is the vision and mission of the Nelson Mandela Bay Municipality. As I do not know them, I am not able to answer this question.

Interview 2

Asset management provide information about how many assets the municipality own and their value. This information is used to complete the annual financial statements of this municipality. This information can be used to make strategic decisions. For example, one can decide whether certain assets are needed or not.

Interview 3

Asset management assist in controlling the assets of the municipality. If we lose assets, then the municipality cannot operate, therefore, will not be able to render
services. For example, if tools are lost in infrastructure then, when there is a flood, there will be no tools to fix any damages. Asset management assist in making sure that does not happen.

Interview 4

The moveable assets are essential in providing service delivery. By controlling and safeguarding the assets, asset management is assisting in making sure that the assets are available when needed and thus enhancing service delivery.

Interview 5

Asset management ensures proper management of assets. This results in an assets being available for service delivery, which is the ultimate goal of the municipality.

4.2.6 Corruption

This part of the interview was intended to investigate whether corruption has an effect on asset management and, if it does, how so and what controls are in place to limit its impact.

Interview 1

Corruption does definitely have an impact on asset management. If computer equipment is stolen, then there will be no device to search for information and that particular computer equipment will need to be replaced. All assets movements need to be documented. No one is given any assets without a signed authorisation form. All computer equipment taken away for repairs by the Information Technology directorate is documented and signed for by Information Technology people. This is because people used to accuse IT of taking computer equipment for repairs and never returning it back. There are also alarm systems in place here at the municipality.
Interview 2

Yes, corruption and theft do negatively affect asset management. Break-ins, burglary of offices, and laptops are being stolen from cars. All these assets need to be replaced as they are needed to provide service delivery. Apart from security, there is a legal form that state should an asset under your control get lost and it is proven that you were negligent, then the cost of that asset will be deducted from your salary for replacement. However, this is not being monitored or implemented as supposed.

Interview 3

Yes, it does. People steal assets as they feel that they will not be held accountable. All assets transfers and disposals need to be authorised for recommendation by a senior staff member or by asset management. IT must leave a signed document stating that an asset is with them, so that people do not say the item is with IT while it has been stolen. The stock take also assist in identifying assets that are missing and need to be investigated. Security people and systems are in place but assets still get stolen under their noses. Cameras catch people walking out with assets.

Interview 4

Yes corruption does negatively affect asset management. This is done through procurement of unnecessary assets or equipment. Proper procurement procedures are not followed and stealing or lack of control results in assets gets missing. Yes, there are internal controls in place but are not immensely effective. There are municipal disciplinary processes and, when a person is found negligent, is held accountable and liable. Annual stock take of assets by all directorates, assist with the completeness of the asset register. Report of asset thefts and losses are sent to relevant structures of council. Physical verification by individual directorates is meant to happen. Asset spot checks by internal auditors helps to identify assets that have been moved to different location without following the asset management procedures and provides an opportunity for that to be rectified. All other internal controls are detailed in approved policy and procedures regarding safeguarding and control of assets owned by various directorates.
Interview 5

It does. I feel that people are careless. They leave their offices open on purposes so that assets may disappear and claim from insurance. I do not feel that people are held accountable, one just need to follow procedures like fill out a relevant insurance claim form, and claim from the insurance and get a new asset. There are security and surveillance cameras but one can still go in and out of the municipal buildings with assets without being checked.

4.2.7 Leadership

This section of the interview was intended to investigate how leadership views and affects asset management. The perceptions of whether or not they see asset management as an important function are uncovered.

Interview 1

As a leader in this department, I attend most of the meetings called by asset management, if not all. I view asset management as an important function. It assists in identifying assets that are redundant in one place but needed in another. Therefore, through asset transfer, these assets can be moved where they will be used efficiently. People can be held accountable for assets that are under their control.

Interview 2

We attend all asset management meetings. We create awareness about asset management through road shows and pamphlets. We teach people about asset management policies. This raises awareness and prevents assets from missing.

Interview 3

I attend all asset management meetings on behalf of my manager. I believe that my manager does view asset management as an important function as we go through the minutes of each meeting together. My manager also holds departmental
meetings about asset management and invites staff from asset management to attend. My manager also intervenes when there issues regarding assets.

Interview 4

It is very rare that the meetings are attended. I do not think that my manager really views asset management as an important function. Our division is not fully capacitated with the relevant staff required and this problem is not addressed by manager.

Interview 5

My manager just sends me to all the asset management meetings. They view asset management as an inferior function. When you advise your manager that you have asset management duties to attend to, you will be advised that you must do all other duties before attend to asset management duties.

4.3 CONCLUSION

The intention of chapter 4 was to provide a report on the interviews conducted. 5 staff members of the NMBM attended the interview sessions. The interview guide was used to solicit answers from respondents. Answers were immediately recorded on paper. The interviews were carried out in a natural setting and responses were not forced. The interview response revealed the actual events, processes and existing situation regarding asset management within NMBM.

The next chapter provides an analysis and discussion of the empirical results. The questions that were posed during each interview (see appendix B) were chosen in light of the problem being investigated. The objective of the interviews was to have a conversation with the interviewees without influencing and directing their answers. The researcher attempted to understand the structure of the organisation and management practices. It was important to request the interviewees’ opinions and reasonings on the organisation’s processes explicitly as a qualitative measurement of asset management practices.
CHAPTER 5: RESULTS ANALYSIS AND INTERPRETATION

5.1 INTRODUCTION

Chapter 5 is the analysis of the findings presented in the previous chapter. The discussion of the results of the empirical study is based on the literature discussed in chapter 2. The hypotheses that were tested and analysed herein are: strategic management, knowledge management, governance, leadership, corruption and skills management. The analyses of the interviews was conducted based on the theoretical foundation of the study.

5.2 DISCUSSION OF KEY ISSUES ARISING FROM THE RESEARCH FINDINGS

5.2.1 Biographical data

The first part of the interview was intended to gather some biographical data from the respondents. The identification of the respondent’s occupation, biographical data and responsibilities is a very important undertaking (Arnolds, 2012). It provides a background of the respondent and allows for a validation of the information received. Table 5 below indicates the job title and the number of the respective interviewees.

<table>
<thead>
<tr>
<th>Title of the interviewee</th>
<th>Number interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Management Director</td>
<td>1</td>
</tr>
<tr>
<td>Manager</td>
<td>1</td>
</tr>
<tr>
<td>Asset controllers</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Researcher’s own construction.

The interviews included director, manager and asset controllers. There is no other asset management director than the one that was interviewed (please see Appendix C). The manager that was interviewed did not belong to the asset management directorate, as per the Asset Management Organogram, but undertook asset controller activities in his own directorate.
Three asset controllers were interviewed and the researcher understood that no further information would surface by interviewing more asset controllers.

An interesting finding that emerged from this section of the interview was that some of the respondents did not feel that the management of assets was part of their responsibilities and duties. The results indicate that there is a lack of staff members that are directly entrusted with the responsibility of managing assets in some directorates. The indication is that directorates add these responsibilities to any willing candidate.

The result is that the functions of asset management are put below all other responsibilities that those individuals have. This is detrimental to the proper management of assets, as it then causes those individuals not to be directly accountable for the asset management function. The responses from asset controllers also indicate that some asset controllers’ responsibilities differ from one controller to the other.

Literature reveals that the asset management function must manage the physical assets throughout their lifecycle within a framework of cost effectiveness, efficiency and risk reduction (National Treasury, 2002). It must also establish uniformity and ensure the application of minimum norms and standards in the management of assets and the related delivery of services. According to Vanier (2001), the following are challenges faced by moveable asset managers:

- The need for seamless data integration;
- The requirement for enhancement and standardisation of currently available tools;
- The need for information exchange and knowledge transfer; and
- The requirement for additional research in areas such as asset lifecycle management.

The results of the empirical data prove that the challenges identified in the literature are actually also facing the NMBM asset management function. It is also possible
that the asset controllers in the different directorates are not being remunerated for their extra responsibilities. This would make some feel that it is not important to carry out the asset management activities.

**5.2.2 Knowledge management**

Municipal infrastructure decision-making and management requires access to a multitude of data about infrastructure inventory, condition, risk levels, performance metrics, renewal options, etc. (Halfawy, 2008). Efficient representation, integration, management and sharing of these data sets can only be practically achieved through the use of comprehensive and integrated databases (Pantelias, Flintsch, Bryant and Chen, 2008).

An integrated database makes it possible to store and retrieve data and can generally be implemented using a centralised or distributed architecture (Buys and Mavasa, 2007). It is, therefore, critical to have technically competent and knowledgeable staff. Skills and knowledge such as financial accounting skills, computer skills and Microsoft competencies are critical in the effective management of assets (Mavasa, 2007).

The results indicate that accounting skills, computer software skills, risk management skills, report compilation skills, inventory management, purchasing functions and stores management are critical in the effective management of assets. However, most respondents claimed that not all asset controllers have the knowledge and skills required. Furthermore, there is an indication from the respondents that not all asset controllers receive computer systems training and other necessary training. The findings indicate that only formal training is being sponsored. This indicates that no one actually arranges to facilitate the soft skills training, such as the BAUD system training.

Literature indicates that, under such circumstances, it would be a challenge to achieve an efficient asset management. Some respondents indicated that efforts have been made to request a competent, skilled, experienced and knowledgeable person in each directorate to undertake the asset management functions, but that
those efforts have not yielded positive results. This could be a result of limited budgets or leadership perceptions that do not perceive asset management as an important function.

5.2.3 Strategic management

According to Mollenkopf (2012) and Too, Betts and Kumar (2006), a strategic approach to asset management results in positive benefits for an organisation. A short term approach does not produce optimum results and ends in needless waste of resources and abortive expense.

The strategic management of assets has to align with corporate vision and mission in order to be strategic (Mollenkopf (2013). Nelson (2011) found that the following factors negatively or positively affect the strategic management of asset management: control environment, effectiveness and efficiency of operations, the accounting system, reliability of financial reporting, compliance with applicable laws and regulations, risk assessment, control activities, non-current asset acquisition, recording system, information management, effective communication and records safe keeping.

Responses were asked the question: how does asset management fit with the NMBM’s vision, mission and operational needs? The answers indicate that respondents do not even know what the NMBM’s vision and mission statement is. It stands to reason that, if asset controllers do not understand the link between the strategic asset management and the organisation’s vision and mission, then no alignment of the asset management function is possible.

5.2.4 Governance

Governance in asset management offers a lens through which to examine asset managers’ asset management skills against economic measures and service deliverables (Mills, Brown and Waterhouse, 2008). This indicates that a certain employee should take responsibility for the management of assets. The empirical
report revealed that the head of department naturally assumes this responsibility. The daily functions related to governance include:

- Authorisation of asset acquisition;
- Undertake approval of application for asset removal; and
- Give permission for asset disposal

This positive report highlights some level of the prevalence of a responsible person for assets, albeit not structured. This is because, in some directorates, authorisation is dependent on the permission reserved from the asset management directorate. This indicates that some directorates do not have an authoritative person when entrusted with the responsibility of moveable assets. In such cases, each asset controller controls the transfer of assets, and the information about asset movements is sent to the asset management directorate, which is the central directorate responsible for the overall asset management within the NMBM.

Further evidence exists to indicate that there are relevant municipal committees and council structures that are tasked with asset management oversight. However, some respondents indicate that councillors do not attend meetings regarding asset management. This could be because they do not regard the oversight of assets as part of their responsibilities. Boshoff and Pretorius (2010) indicate that the Chief Financial Officer (CFO) is ultimately responsible for activities that are associated with the use of immovable assets and the directorate itself.

5.2.5 Corruption

Thomson (2003) explains that the inattentiveness of management to security of assets could be as a result of the fact that managers can normally only allocate a limited amount of time and consideration to security. As a result, management’s attention is often limited to a small set of acute threats and countermeasures that relate to the issues of the day.

Respondents were asked if corruption affects the management of asset. The answer from all respondents was a resounding “yes”. Some respondents explain how this
happens. One respondent said “people used to accuse IT of taking computer equipment for repairs and never returning it back”. This would imply that some IT personnel are not recording assets received for maintenance and then taking them for themselves, as the register would still indicate that the asset is with the person it was assigned to. Whether this allegation is true or not is a subject of investigation. Another possible scenario is that the municipal staff are taking assets in their possession home and reporting them as having been sent the to the IT directorate for maintenance.

Another respondent explained the reason for believing that there is corruption that negatively affects asset management as follows; “This is done through procurement of unnecessary assets or equipment. Proper procurement procedures are not followed and stealing or lack of control results in assets getting missing. Yes, there are internal controls in place but are not immensely effective”. Yet another respondent indicated why this happens when he / she said that, “I feel that people are careless. They leave their offices open on purposes so that assets may disappear and claim from insurance. I do not feel that people are held accountable; one just needs to follow procedures like fill out a relevant insurance claim form, and claim from the insurance and get a new asset. There are security and surveillance cameras but one can still go in and out of the municipal buildings with assets without being checked”.

The results indicate that another cause of corruption and theft is that no one is held accountable. A respondent mentioned that “there is a legal form that state ‘should an asset under your control get lost and it is proven that you were negligent then the cost of that asset will be deducted from your salary for replacement.’ However, this is not being monitored or implemented as supposed”.

To protect the organisation from financial loss through breaches in security, management must reduce the inherent risk associated with the assets in the organisation (Thomson, 2003).
5.2.6 Leadership

The perception of an organisation’s leader on asset management positively or negatively influences their behaviour and, ultimately, sets an example to the rest of the subordinates. According to Fernholz and Fernholz (2006), effective asset management needs to be linked with overall development plans for a municipality.

Therefore, the support of the top leadership of the municipality is important. This usually comes from the mayor and deputy mayor, and/or the municipal council. A particular department in the municipal government needs to be charged with the function of rationalising the asset portfolio of the municipality. The department would have its own staff depending on the governments’ interpretation of this agency’s functions and the importance given to it.

The NMBM asset management directorate organogram shows that the asset management directorate is under-staffed by 5 asset controllers as there are currently only 3 asset controllers and an administrator.

The non-filling of vacancies can be attributed to the lack of proper leadership on the matter. Furthermore, two of the respondents that were interviewed and who work under the asset management directorate indicated that they attend all asset management meetings. However, the other two respondents to the interview indicated that this task is delegated by the managers to other people. This corresponds with the finding that managers and asset controllers in other directorates do not view the function of asset management as their own. Therefore, they do not prioritise asset management as they do not feel responsible for the function in any way. The findings indicate that this starts from the top, i.e. CFO, municipal councillors and some directorate managers.
## 5.3 SUMMARY OF THE KEY FINDINGS

Figure 11 below is the result of the tested hypothesis.

### Figure 11 Factors leading to an effective asset management

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic management</td>
<td>Negatively affects</td>
</tr>
<tr>
<td>Leadership</td>
<td>Negatively affects</td>
</tr>
<tr>
<td>Knowledge management</td>
<td>Negatively affects</td>
</tr>
<tr>
<td>Governance</td>
<td>Negatively affects</td>
</tr>
<tr>
<td>Corruption</td>
<td>Negatively affects</td>
</tr>
<tr>
<td>Skills management</td>
<td>Negatively affects</td>
</tr>
</tbody>
</table>

Source: Researcher's own construction.
CHAPTER 6: RECOMMENDATIONS, FUTURE RESEARCH AND GENERAL CONCLUSIONS

6.1 INTRODUCTION

This research treatise was an assessment of asset management in the NMBM. An interview research instrument was used to test the research hypothesis and find answers to the research problems introduced at the onset. Chapter 6 provides a synopsis of the research objectives, hypothesis, methodology and the sample. Chapter 6 presents the conclusions of the empirical study and, based on the findings, recommendations are made herein. Chapter 6 concludes with the proposals for future research and presents general conclusions.

6.2 RESEARCH OBJECTIVE

The objective of this study is to improve the management of moveable assets in the NMBM by investigating if the following negatively affect asset management; strategic management, knowledge management, governance, leadership, corruption and skills management. The research will highlight areas that need improvement in the management of moveable asset within the NMBM.

6.2.1 Primary objective

To achieve the primary objective, the following research sub problems were studied:

- Municipal moveable assets are being written off due to poor asset management practices;
- Moveable asset management is not a strategic leadership priority;
- Service delivery is suffering due to poor asset management;
- Municipal moveable assets are not managed throughout the entire lifecycle;
- Corruption is hampering effective asset management; and
- Lack of accountability is hampering effective asset management
6.2.2 Research hypothesis

The following research hypotheses have been tested:

H1: Moveable asset management is perceived as not being a strategic priority;
H2: There are no repercussions for losing assets;
H3: There is a lack of effective and proper accounting of municipal moveable assets;
H4: Moveable assets are quickly being disposed of;
H5: There is lack of internal audit control systems to limit corruption; and
H6: There is lack of skilled staff to manage municipal assets effectively.

The empirical results led to an acceptance or decline of the hypothesis that were made and is depicted in Figure 12 below.

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Accept / reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a positive relationship between strategic management and perceived success of asset management</td>
<td>Reject</td>
</tr>
<tr>
<td>There is a positive relationship between leadership and perceived success of asset management</td>
<td>Reject</td>
</tr>
<tr>
<td>There is a positive relationship between knowledge management and perceived success of asset management</td>
<td>Reject</td>
</tr>
<tr>
<td>There is a positive relationship between governance and perceived success of asset management</td>
<td>Reject</td>
</tr>
<tr>
<td>There is a positive relationship between corruption and perceived success of asset management</td>
<td>Reject</td>
</tr>
<tr>
<td>There is a positive relationship between skills management and perceived success of asset management</td>
<td>Reject</td>
</tr>
<tr>
<td>Source: Researcher’s own construction.</td>
<td></td>
</tr>
</tbody>
</table>

The findings of the study revealed that, at the NMBM, there is a lack of proper strategic management, there is lack of effective leadership when it comes to asset management, there is a lack of effective knowledge management, there is poor governance when it comes to asset management, there is corruption, and asset controllers are not skilled enough. There is poor asset management at the NMBM.
6.3 SUMMARY OF THE RESEARCH FINDINGS

It was found that the factors that negatively impact the effective management of assets at the NMBM are:

- The non-existence of strategic management of asset management;
- Lack of knowledge management;
- Poor governance;
- Non effective leadership;
- Presence of corruption; and
- Lack of skills management

6.4 RECOMMENDATIONS

The following are recommendations based on the findings of the study.

6.4.1. Strategic Management

It is important the NMBM makes available its vision, missions and objectives to all employees. This could be done via the organisation’s website and/or intranet services. Asset managers need to emphasise and clarify to all asset controllers and asset management staff the alignment and fit between effective asset management and the NMBM’s vision and mission statement. It is suggested that a company restructuring be undertaken so that all asset controllers can report to one directorate director. Failing internal controls need to be improved.

6.4.2 Knowledge Management

It is evident from the research results that asset controllers receive very limited training in order to undertake effective asset management. It is recommended that properly skilled, knowledgeable and competent staff fulfil the asset management functions. It is also recommended that a companywide training sessions be undertaken to educate employees on the processes and responsibilities of asset management.
6.4.3 Governance

The asset management policies, guidelines and procedures clearly clarify the responsible persons for asset management. The CFO, councillors and asset managers are among those who are designated to be responsible for exercising oversight of the asset management function. These responsible personnel should be held accountable for any ineffective asset management. Minutes should be taken at all asset management meetings and those who do not attend such meetings should be held accountable. It is also recommended that companywide presentations be undertaken to educate employees on the function, responsibility and importance of assets.

6.4.4 Leadership

Local government’s competent leaders are not only responsible for the day to day management of an organisation, but are also required to think and plan strategically for effective service delivery. Formal management training and management short courses enable leaders to develop and enhance this aspect of their competencies. It is recommended that all levels of leadership must be exposed to leadership training through formal or short courses offered by any leading South African business school. This could be achieved by a slow strategic roll-out of an organisation developmental plan facilitated by the human resources management directorate. When hiring new asset management employees, it is recommended that technical and business administration qualifications and skills be possessed by applicants. It is recommended that the leadership needs to priorities the filling of vacant municipal posts in the asset management directorate. It is recommended that the leadership motivates and approves a budgeted that caters for the filling of the post in the asset management directorate.

6.4.5 Corruption

Corruption, theft and irresponsible action leads to a negative impact on effective asset management. It is recommended that security personnel be proactive and ensure that no unauthorised persons vacates any municipal building with
unauthorised access to any moveable assets. Furthermore, repercussions need to be put into effect should there be any employee found to have been negligent or corrupt with respect to any municipal asset. Individuals should also be held accountable for the assets in their position. All assets should be barcoded and captured on the system. Assets should complete their useful life and lifecycle before they are disposed of.

6.4.6 Skills Management

Technically competent employees at the NMBM could give the organisation human resources that could contribute positively to the organisation. Strategic alliances and partnerships with business schools, technical colleges and private collections could yield positive results in the quest for skills such as:

- Financial management skills;
- BAUD training;
- Accounting skills;
- Computer software skills;
- Risk management skills;
- Report compilation skills;
- Inventory management;
- Purchasing functions; and
- Stores management skills

6.5 SUGGESTIONS FOR FUTURE RESEARCH

The research was a case study of a single municipality. It would enhance the study of asset management if the research would be carried out to other local municipalities in order to enhance the generalised state of the research findings. It would also be beneficial to seek the views of all asset controllers, all councillors and the CFO in order to understand what perceptions on the factors that affect efficient asset management. It would be interesting to analyse results of a similar study conducted using a different methodology or approach. It would also be fascinating to investigate what the impact of company culture has on effective asset management.
6.6 GENERAL CONCLUSIONS

The study was an investigation of asset management in the NMBM. The study followed a case study approach. 5 interviews were carried out to solicit primary data. Secondary data was gathered through unpublished books, theses, journals, company policies, government legislation and conference papers. No ethical clearance certificate was necessary as there were no vulnerable individuals involved in the study.

The literature review discussed asset management discipline, asset management plan, asset management framework, the responsible persons for moveable asset management, the asset lifecycle and the relative legislation that governs moveable asset management. The chapter also discussed the challenges facing effective asset management. The variables that were investigated were: strategic management, knowledge management, governance, leadership, corruption and skills management.

The empirical results indicated that the abovementioned variables negatively affected the perceived success of asset management due to poor asset management. It was recommended that the NMBM improves the strategic management of assets, ensures effective knowledge management, improves strategic governance, exercises effective leadership, implements measures to get rid of theft and corruption, and provides training for the improvement of asset management skills and competencies. Future research could be conducted using a different methodology, research instrument, larger sample and different sampling techniques.
LIST OF SOURCES


APPENDIX A – COVERING LETTER

Dear respondent

I am a post-graduate student registered for an MBA (Masters in Business Administration) at the Nelson Mandela Metropolitan University Business School. The topic of my research project involves an assessment of asset management in the Nelson Mandela Bay Municipality.

I am working under the supervision of Dr M. Figg. We believe that the empirical results of this qualitative study will make a positive contribution to gaining knowledge about proper asset management for your company. The empirical results of the study will be made available to you on request.

You are part of our selected sample of respondents whose views we seek on the abovementioned matter. We humbly request a meeting with you to conduct a semi-structured interview with you which should not take more than twenty minutes of your time. Please note that the information gathered will be treated as strictly confidential and not divulged to any third parties and will be used for academic purposes only.

There are no correct or incorrect answers. An interview guide has been prepared for the interview session. Your responses will remain anonymous hence your name will not be recorded therefore ensuring your anonymity. The questions will be asked on a one-on-one basis.

Thank you very much for your cooperation.

Mrs B. Mahlangabeza  Dr M. Figg
Student  Research supervisor:
+27 41 581 6471  +27 41 504 3878
APPENDIX B - AN INTERVIEW GUIDE

The purpose of this questionnaire is to obtain your views and opinions about the management of moveable assets in the Nelson Mandela Bay Municipality. This will assist in finding a way to improve asset management.

The time taken to respond to the below questions is appreciated. Please respond to the best of your ability.

Title: Gender: F/M (Circle one)

Job Tenure: Duties:

1. What training is needed by an asset controller?

1 (a) Do you think asset controllers receive that necessary training?

2. What skills that an asset controller need to have?

2 (a) Do you think the asset controllers have those skills?

3. How does asset management fit with the NMBM’s vision, mission and operational needs?

4. Is there someone senior in your division that approves the movement of assets, namely acquisitions, transfers, disposals and write-offs?

5. Does corruption affect asset management?

5 (a) If yes, how so? If no, why do you say so?

6. Are people held accountable for assets under their control? How so?

7. What internal controls are there to limit corruption?

8. How often does your manager attend meetings called by asset management?

9. Do you feel that your manager view asset management as an important function? Why do you say so?

Any other comments:

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........................................................................................................................................
APPENDIX C – NMBM ASSET MANAGEMENT DIRECTORATE ORGANOGRAM