IMPLEMENTATION OF ENTERPRISE CONTENT MANAGEMENT SYSTEM IN WESTERN CAPE GOVERNMENT, SOUTH AFRICA

by

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Submitted in accordance with the requirements for

MASTER'S DEGREE

in

the subject

INFORMATION SCIENCE

at the

UNIVERSITY OF SOUTH AFRICA

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JULY 2020

ABSTRACT

The purpose of this study was to investigate the implementation of Enterprise Content Management (ECM) system at Western Cape Government (WCG), South Africa. The study evaluated the state of the implementation in order to establish whether the system met information and records management requirements and objectives. A probability sampling was used on a total population of 51 respondents and participants. The data were triangulated using multi-methods, whereby both qualitative and quantitative approaches were adopted in a sequential manner. A structured online survey questionnaire, online interviews, and document analysis were used to collect data, which were descriptively analysed.

The study revealed that although the WCG has embarked on digitisation projects, which culminated in the department-wide implementation of ECM, the system was not evaluated regularly and consistently. This resulted in an inability to capture the lessons learnt – as well as a failure to realise the full benefits of implementing the system. The findings also showed that ECM implementation at WCG encountered some challenges – for example, inadequate training provided to staff, lack of adequate technology infrastructure, and poor technical support with regard to systems for managing digital records – that impacted on the system's efficiency.

Some of the recommendations of the study are that WCG should consider conducting regular ECM reviews to determine whether the system performs as required in terms of bringing about expected benefits, such as easy retrieval of digitally stored content. Departments should also ensure that there is an alignment among various digital applications for the purpose of creating a single enterprise platform that promotes collaboration and knowledge sharing. A study of ECM implementation in other provinces would enable a comparison of how the system performs elsewhere, including how it could be used as a viable option for organisations to promote digitisation.

Key terms: Enterprise Content Management; digital records; electronic records; legislative framework; evaluation; implementation; Western Cape Government; South Africa; system integration

ACKNOWLEDGEMENTS

First and foremost, I wish to express gratitude to my project supervisor, Dr Collence Chisita, for his invaluable guidance and encouragement whenever the climb became too steep. I also thank all my former colleagues in the Department of Information Science at Unisa for their support with my studies.

A special appreciation goes to all my family members for constantly believing in me and encouraging me throughout this journey.

In addition, I would like to thank the staff of the Western Cape Government for their support and co-operation during the data collection phase.

Lastly, my appreciation goes to the University of South Africa for granting me financial assistance that enabled me to undertake and complete this study.

May the Lord keep and bless you all.

Thank you all!

DEDICATION

This work is dedicated to my parents – Mammuse and Makweshe Mohlala.

God bless you.

DECLARATION

Student number: 34081224

I declare that **Implementation of Enterprise Content Management System in Western Cape Government, South Africa**, is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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Signature Date: July 2020

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LIST OF ABBREVIATIONS AND ACRONYMS

AIIM	Association for Information and Image Management
ECM	Enterprise Content Management
EDMS	Electronic Document Management System
ERDMS	Electronic Records and Document Management System
ERMS	Electronic Records Management System
ERP	Enterprise Resource Planning
InterPARES	International Research on Permanent Authentic Records in Electronic Systems
4IR	Fourth Industrial Revolution
IRMT	International Records Management Trust
MIOS	Minimum Information Interoperability Standards
NARSSA	National Archives and Record Service of South Africa
WCG	Western Cape Government

CHAPTER ONE
INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

Literature reveals that many organisations encounter challenges in managing the overflow of digital content and ensuring that it is easily accessible and retrievable when needed (Andersen 2008; Huff & Dirking 2010; Alalwan 2012; Herbst, Simons, Vom Brocke & Derungs 2014; Arshad, Bosua & Milton 2015). As a storage tool and web platform, Enterprise Content Management (ECM) could thus help organisations manage 'content chaos' that leads to difficulties in finding and retrieving relevant content within an organisation or enterprise (Allen 2008; Alalwan & Weistroffer 2012; Rosman, Aziz & Salleh 2018). ECM refers to strategies, methods, tools or processes that are used to manage, store, integrate, and coordinate structured (e.g. databases) and unstructured (e.g. email, word, spreadsheet, image, audio, and video) content within an organisation (Association for Information and Image Management 2010).

ECM evolved as an integrated modern approach to information management, content management and records management on an enterprise-wide scale (Päivärinta & Munkvold 2005; Rickenberg, Hohler, Newmann & Breitner 2012). ECM is viewed currently as the final point in an evolutionary process, where other concepts such as Electronic Document Management System (EDMS), Electronic Records Management System (ERMS), and Electronic Document and Records Management Systems (EDRMS) were predecessor concepts (Katuu 2012). In tracing the evolution of ECM, a study by Smith and McKeen (2003) revealed that organisations have deployed ECM widely as a strategic tool to manage the ever-expanding digital organisational information flow. According to Hullavarad, O'Hare and Roy (2015: 1), the main goal of ECM implementation is "to have transparent content sharing by making different and incongruent applications (for example, web content management, and records management) interoperable". Similarly, Andersen (2008) states that ECM integrates and connects web content management, workflow solutions, internet, extranet, and other information presented via web technologies. Thus, it enables organisations to improve their business operations and facilitate easy access to, discovery and retrieval of relevant content.

The benefits of ECM, according to Herbst et al. (2014:1), include:

- remote access to files;
- internal and external collaboration;
- improved reliability and quality of content;
- reduced license costs; and
- enhanced organisational memory management.

The proliferation of digital content necessitated the need to devise appropriate digital content management strategies and approaches, which should enable organisations to overcome challenges related to the inability to access and disseminate information. These strategies should be aligned with organisational objectives in order to promote efficiency (Arshad et al. 2014).

Before the introduction of ECM, most of the organisational content was stored in the form of paper documents and files – often located in disparate and disintegrated systems (Sprehe 2005). The lack of systems integration made it difficult to effectively access and retrieve information needed for decision-making purposes. This is alluded to by Kulcu and Cakmak (2012) and Katuu (2016), who noted that the process of managing content-wide information often presents challenges occasioned by systems fragmentation, standalone system platforms, and lack of interoperability. Against this background, Tyrvainen, Päivärinta, Salminen and Livari (2006) asserted that innovations in the field of network technologies provide novel ways for organisations to manage their content in more efficient ways, which enhances connectivity among various platforms, systems and applications.

However, the transition from paper to digital records presented several challenges for organisations. For example, studies by Kalusopa and Zulu (2009), Egwunyenga (2009), Iwhiwhu (2011), and Lowry and Wamukoya (2014) revealed that public sector institutions on the African continent experience an acute shortage of highly skilled professionals to properly manage digital records. The lack of skills in managing digital records could increase the risk of information loss, as well as risk to reliability and authenticity of records and security or privacy.

Other related studies reveal that increasing volumes of records are produced digitally because of advances in technology, which require skills for efficient retrieval and access (Rickenberg et al. 2012). However, despite the sophisticated nature of information and communication technologies (ICTs), technological systems are subject to various defects, including lack of media compatibility and technological obsolescence, which arise from outdated information system infrastructure (Ngulube 2010; Asogwa 2011).

Additional challenges relate to the absence of migration strategies for digital records, and lack of appropriate legislative and policy guidelines for managing digital records (Munkvold, Paivarinta, Hodne & Stangeland 2006; Arshad et al. 2014).

1.2 Background to the study

South Africa has a generally well-established practice of implementing systems to manage digital records (Ngoepe 2008; Katuu 2012). Ngoepe (2017: 32) observes that even though public entities in South Africa began to implement systems to manage digital records in the last few decades, this has not resulted in the development of a viable programme to transfer records into archival custody and digital repository. Various public sector institutions have implemented different systems to manage digital records to enhance efficiency. According to Ngoepe (2017: 32), Rand Water, a water utility agency, was one of the first organisations to implement digital records management in the early 1990s. Subsequently, there have been several other government departments that have implemented digital records management systems since the 2000s. These include: the Department of Public Service and Administration (DPSA), the Department of Transport (DOT), the Department of Science and Technology (DST), the Department of Arts and Culture (DAC), the Department of Trade and Industry (DTI), and the Department of Cooperative Governance and the Traditional Affairs (COGTA) (Ngoepe 2017:33).

South Africa's records and archival regulatory legislation requires all government agencies to manage, retain and make available all forms of records available in a variety of media (National Archives and Records Service of South Africa (NARSSA) 2006). These records need to be managed in accordance with relevant archival legislative guidelines and policies.

In the context of legislation governing digital records, Asogwa (2012) points out that although digital records management has become a common practice in most African countries, records management and archival laws appear to have been written with paper records in mind. As a result, there has been a general silence about records that appear in other media such as digital or audio-visual format.

Although ECM has become an industry standard throughout the world, prevalent in government departments and businesses, this appears not to be the case in South Africa, where it is evident that implementation has only been confined to the Western Cape (Salamntu 2016; Tokosi 2017). The Western Cape is situated on the south-western tip of the African continent and is one of the nine provinces of South Africa. The province is also home to South Africa's oldest city, Cape Town. The Western Cape has 30 municipalities and 14 provincial departments (Western Cape Government: Overview 2019: 2).

According to Draft WCG Digital Government Strategy (2017), the Western Cape Government (WCG) is taking advantage of opportunities provided by technology in promoting efficiency and expanding access to content. The WCG has embarked on digitisation for the purposes of providing faster and easier access to records, since digitised materials are more easily accessible than non-digitised documents.

Against this background, there was a need to address the challenges encountered in managing digital records, as well as to enhance access and improve service delivery. The WCG subsequently introduced ECM, which is a system that involves the use of technology to integrate, capture, manage, store, preserve and deliver organisations' structured, unstructured or semi-structured content (Päivärinta & Munkvold 2005; Alalwan & Weistroffer 2012). Through the implementation of ECM, the WCG aims to "enforce records management policy within the Western Cape and thereby provide efficient access to information; a reduction in paper wastage and storage costs; and the efficient safeguarding of institutional knowledge and institutional memory" (Western Cape Government 2017:2). According to the Western Cape Government (2017) they started implementing digital records management in 2004. Initially, the isolated implementation only solved immediate needs in certain departments. "The digitisation

of the Western Cape Archives has also commenced in providing electronic preservation and access to archival material. Centralised storage, access to information and correspondence tracking will be implemented for transversally enhancing efficiency, accountability and transparency in government bodies" (Western Cape Government 2017:1). The WCG rolled out and implemented a transversal MyContent Solution across 12 different departments to manage enterprise-wide content. Furthermore, the WCG has developed a standard set of functionalities across various departments to implement ECM and promote the overall best practices in records management. Essentially, the WCG sought to implement ECM to ensure that it delivered on its objectives in terms of "reducing paper wastage and storage costs, as well as the efficient safeguarding of institutional knowledge and institutional memory" (Western Cape Government report 2017:2).

According to the Western Cape Government report (2017), the first department that was involved in the Transversal ECM Project, which was introduced in 2013, was the Department of Social Development (DSD), followed by the Department of Transport and Public Works (DTPW). The activities were mainly for archiving (back scanning) of paper documents to reduce storage space taken up in buildings. The rollout to new departments occurred in two phases. Phase 1 saw the rollout to the Department of Cultural Affairs and Sports (DCAS), the Provincial Treasury (PT), the Department of Environmental Affairs and Development Planning (DEA & DP), and the Department of Community Safety (DOCS). Phase 2 saw the rollout to the Western Cape Education Department (WCED), the Department of Economic Development and Tourism (DEDAT), the Department of Local Government (DLG), the Department of Human Settlements (DHS), and the Department of Health (DOH), which implemented the system in hospitals to manage patients' digital records.

A report by the Archive Platform (2014) placed the Western Cape ahead of other provinces in terms of boasting a healthy state of records management. Similarly, in 2015, the *Cape Argus* reported that the Western Cape provincial archives were one of a few "isolated pockets where good is being done" in an otherwise "disgraceful" state of the national archives (Cape Argus 2015).

The healthy state of records management at the WCG could be attributed to the government's decision to establish the Provincial Digitisation Strategy. Its aim was to reduce physical handling of original records, as high-quality electronic images were made available online (Digitisation Policy of Western Cape Governmental Bodies 2017). These developments necessitated and justified the need to focus this study in the Western Cape – with a view to using the province as a possible case study, which could have implications for other provinces.

Salamntu (2016) conducted a study on the benefits of ECM in public sector institutions in South Africa. The study utilised qualitative methods to investigate the attainment of benefits for public organisations that implemented ECM in their operations.

The benefits established by the study included the following:

- Improved collaboration and customer satisfaction;
- Increased consolidation and integration;
- Continuity and flexibility;
- Compliance and security; and
- Improved performance and efficiency.

The study observed the paucity of research pertaining to the achievement of benefits through the use of ECM, and recommended further research to shed some more light on how ECM could be utilised to improve records management in public sector institutions in South Africa. Similarly, Katuu (2012) laments the scarcity of research around ECM implementation in South Africa and calls for a much deeper investigation in this area.

1.3 Research problem

Defining the research problem is a critical step in the research process (Bless & Higson-Smith 2000). The research problem is crucial as it sets the direction of the research process and identifies necessary gaps pertinent to the research realm. According to Mathipa and Gumbo (2015: 35), a research problem should be a "clear, well-constructed paragraph that succinctly states the problem your research will help

resolve". In view of the above context, the main problem investigated by this study was outlined as follows:

Despite many public sector institutions having implemented various digital records management systems to manage their records, it is evident that an evaluation of the implementation of ECM as a digital records management system is hardly undertaken to measure its efficiency or viability (Kwatsha 2010; Salamntu 2016). Muchaonyerwa and Khayundi (2014) observe that the number of studies that evaluate or assess the implementation of various digital records management systems in South Africa's public sector institutions has largely remained insufficient and scanty. This could invariably result in lost opportunities to capture the lessons learnt for continuous improvement (Tokosi 2017; Rosman et al. 2018). Without a systematic evaluation, the various departments that are implementing digital records management systems such as ECM are likely to not operate in an organised or meaningful manner (Salamntu & Seymour 2015; Hullavarad et al. 2015). Consequently, the lack of assessment measures could become an obstacle that could affect the future implementation of other systems.

Evaluation processes are critical in that they enable institutions to apply necessary measures or mechanisms that provide a sufficient basis for assessing the potential value or worth of a particular record management system (Chen 2005; Nguyen, Bellucci & Nguyen 2014). Nguyen (2014) and Nguyen et al. (2014) contend that organisations need to develop evaluation templates with which to examine elements, such as service quality, system quality, user satisfaction, or implementation fundamentals. These evaluation mechanisms need to measure or test if any shortcomings or inadequacies identified during the system implementation and subsequent rollout to other departments have been addressed.

This could also help establish whether the system can perform on a sustainable basis to meet the set objectives and address challenges. Additionally, an evaluation process would help to determine whether the system is working towards meeting the institution's records management requirement processes. Thus, institutions conducting evaluations would be able to identify conditions and problems in institutional records or information system implementation that inhibit advancement (Cronholm & Goldkuhl 2003; Du Toit

2016). It is against the problem outlined above that this study sought to evaluate the implementation of Enterprise Content Management by the Western Cape Government.

1.4 Purpose of the study

According to Creswell (2013), the purpose statement provides the rationale or intent of the study and outlines the road map for conducting the study. The purpose of this study is to evaluate the implementation of Enterprise Content Management at the WCG.

1.5 Research objectives

In view of the purpose, the study seeks to:

- evaluate the implementation of ECM at the WCG to determine whether the system meets records management requirements;
- assess staff's skills and competencies for the management of digital records managed through ECM at the WCG;
- examine the legislative and policy framework governing digital records managed through ECM implemented by the WCG; and
- establish the benefits of integrating ECM with other information applications at the WCG.

1.6 Research questions

The study was guided by the following research questions:

- How efficient and effective is ECM implementation at the WCG in meeting records management requirements and objectives?
- How adequate are the staff's skills and competencies for the management of digital records managed through ECM at the WCG?
- What are the legislative and policy frameworks that govern digital records managed through ECM at the WCG?
- What are the benefits of integrating ECM with other information applications at the WCG?

Table 1.1: Objectives, research questions, research method, population and research tools

Research objectives	Research questions	Research approach	Population	Data collection tools
• Evaluate the implementation of ECM at the WCG to determine whether the system meets records management requirements and objectives	• How effective and efficient is ECM implementation at the WCG in meeting records management requirements and objectives?	Multi-methods	Employees	Questionnaire
• Assess staff's skills and competencies for the management of digital records managed through ECM at the WCG	• How adequate are the staff's skills and competencies for the management of digital records managed through ECM at the WCG?	Multi-methods	Employees	Questionnaire
• Examine policy and legal framework in the management of digital records ECM at the WCG	• What are the legislative and policy frameworks that govern digital records managed through ECM at the WCG?	Multi-methods	Employees	• Interviews • Document analysis
• Establish the benefits of integrating ECM with other information	• What are the benefits of integrating ECM with other information applications at the WCG?	Multi-methods	Employees	• Interviews • Document analysis

Research objectives	Research questions	Research approach	Population	Data collection tools
applications at the WCG.				

1.7 Justification of the study

According to Marshall and Rossman (2006), the significance of the study provides an opportunity to discuss the rationale and contribution of the research to society with regard to its impact. Leedy and Ormrod (2005) contend that a study should justify its worth or importance in adding practical value to the corpus of knowledge.

Even though South Africa's public sector institutions have been implementing digital records management systems for over two decades (Abbot 1999), it appears little has been done in terms of conducting studies that evaluate the implementation of ECM as a digital or electronic records management system. Although there have been previous studies by, among others, Makhura (2005); Kwatsha (2010); and Marutha (2011) which have addressed the management of digital records in public institutions, these have not delved deeper into the concept of ECM.

Studies that focus specifically on ECM implementation in public sector institutions in South Africa have been relatively few, for example, investigations by Katuu (2012), Salamntu (2016) and Tokosi (2017). These studies, however, did not cover an important element that should accompany implementation – namely: evaluation – particularly with reference to a system's performance and viability. Therefore, this study is significant as it builds on the gaps identified in the studies mentioned above, as it provides a renewed perspective in terms of system evaluation to determine usability, applicability or relevance.

This study is important as it builds on the contributions made by other scholars and, by so doing, identifies pertinent issues concerning the implementation of ECM at the WCG – with a view to enhance the system's effectiveness and efficiency. The study aims to provide new insight that could help provide policy direction to other provinces that are

implementing or planning to implement ECM to enhance their operations. The study is also aimed at incorporating lessons learnt from the review of literature to improve the quality of ECM implementation in South Africa. This could also have positive implications for other sectors such as academic institutions and private agencies, which are all involved in records management practices.

If adopted and implemented, the findings and recommendations of this study could inform decision makers and help raise awareness about the possible benefits of implementing ECM nationally. From a practical point of view, the findings could inform practitioners and managers on how they can manage ECM adoption and the implementation process by acting appropriately to address any deficiencies or challenges faced at various stages of ECM.

1.8 Definition of key terms

The definition of the key terms or concepts is necessary because it provides a context within which these key concepts relate to the study. Defining key concepts is also crucial in avoiding possible ambiguity or misunderstanding with regard to the use of concepts within the study (Denscombe 2007).

1.8.1 Enterprise Content Management

The Association for Information and Image Management (AIIM) defines ECM as “the strategies, methods and tools used to capture, manage, store, preserve, and deliver content and documents related to organisational processes” (AIIM 2017:1). ECM tools and strategies allow for the management of an organisation’s structured and unstructured information, wherever that information exists (Kulcu & Cakmak 2012).

1.8.2 Records management

According to ISO 15489-1 (2016), records management is the process of ensuring the proper creation, maintenance, utilisation, capturing, maintenance and management of records, regardless of structure or form, in all types of business and technological environments, over time, to achieve efficient, transparent and accountable governance.

1.8.3 Digital records

Digital records are the types of records generated electronically and stored by means of computer technology (National Archives and Record Service of South Africa Act, No. 43 of 1996). These digitally recorded sources are available and accessible through a variety of multimedia platforms and are aided by information and communication technologies (ICTs). For purposes of this study, the concept digital record was adopted and had the same meaning as the term electronic records.

1.8.4 Evaluation

Evaluation is a designed and a purposeful process that is undertaken in an attempt to gauge how well something meets particular expectations, objectives or needs. According to Cronholm and Goldkuhl (2003), evaluation is concerned with establishing possible deficiencies or benefits of a particular system, strategy or approach on the basis of defined criteria.

1.9 Research methodology

Research methodology is the general approach that the researcher adopts when conducting a research (Babbie 2014). According to Bless, Smith and Kajee (2006), methodology is divided into several approaches such as quantitative, qualitative, and multi-methods. Quantitative research methods are characterised by their use of numerical analysis. This approach reduces the data into numbers, such as percentages, statistics or figures (Kothari 2008). In qualitative research, the researcher aims to understand the phenomena in its entirety and extract deeper understanding and meaning from the interactions (Merriam 2009). The multi-methods approach entails the combination of qualitative and quantitative approaches in a single study (Maree et al. 2016).

For the purpose of this study, the researcher adopted multi-methods as a methodological strategy. The basis for using multi-methods is that the approach allows the researcher to view the research issue from multiple vantage points, thus developing a comprehensive and holistic understanding.

The various aspects of research methodology, which include the different research approaches and associated philosophical paradigms, research design, population, sampling, data collection tools, and data analysis are discussed in more depth in Chapter Three of this study.

1.10 Ethical considerations

In every discipline, it is unethical to collect data without participants' knowledge, willingness and informed consent. The researcher adhered to the UNISA research ethics policy, which requires that the researcher should have a "responsibility towards those involved in or affected by their work. They should make reasonable efforts to anticipate and to guard against the possible undesirable or harmful consequences of research. They should take reasonable corrective steps when they come across misuse or misrepresentation of their work" (UNISA Policy on Research Ethics 2013).
The ethical considerations that will be observed by the researcher include the protection of the rights of individuals from victimisation, as well as their privacy and confidentiality, and acquiring informed consent (Mouton 2001:19). Participants participated in the study voluntarily. They were not coerced, deceived or induced. Honesty, fairness, and truthfulness were the guiding principles in this study (Le Roux, in Mathipa & Gumbo 2015:85; Leedy & Ormrod 2010:101).

The researcher sought permission from the WCG to conduct the study and collect data from the departments identified. Before signing consent forms, participants were informed of the following: the purpose and objectives of the research, what was expected of the participants, the fact that participation was voluntary and that they could withdraw at any time with no negative repercussions.

1.11 Scope and delimitation of the study

According to Simon (2011), delimitation refers to any factors within the researcher's control that may affect both internal and external validity. The scope and delimitation of the study provides a demarcation with regard to the research's focus area and serves as an outline of the study's boundaries (Mathipa & Gumbo 2015).

The study was confined to the six departments within the WCG that implemented ECM – namely: Social Development, Department of Cultural Affairs and Sports, Economic Development and Tourism, Health, Community Safety, Human Settlements. The study focused exclusively on the above mentioned departments because they were best suited to provide answers to the research questions presented in the study.

A selected sample of staff members from the above mentioned departments who work directly with ECM on a daily basis, participated in the study. Seventy-six respondents were targeted through an online survey questionnaire, while six participants (managers) were targeted through online interviews. The interviews were aimed at addressing specific aspects which were not covered in the survey.

Although each department was likely to be different insofar as experiences and conditions regarding the nature of ECM implementation are concerned, the findings would be generalised and considered as representative of the entire scope of the WCG.

1.12 Structure of the thesis

This study is organised into five chapters. The outline of the research is provided below:

Chapter One discusses the introduction and background to the study, as well as the research problem, the purpose of the study, objectives of the study, the research questions, the justification of the study, scope and delimitation, the literature review, conceptual model and the summary. It also defines key concepts and provides an outline of the study.

Chapter Two presents the literature review relevant to this study. The following concepts are discussed in detail in the literature review: evaluation of ECM functionality, policy, legislative and regulatory framework for records management, skills and competencies in the management of digital records, and electronic systems application and integration.

Chapter Three discusses the research approach and method used in this study. This chapter explains the way in which the study will be conducted. It also outlines the research design, population and sampling, data collection methods and procedures, ethical considerations, data analysis and data presentation.

Chapter Four analyses data and interprets results. This chapter presents and analyses the results that were obtained from the responses to the questionnaires and interviews, and the evidence gleaned from documents of the WCG.

Chapter Five presents a summary and conclusions, as well as recommendations based on the objectives and findings of the study. It also provides suggestions for further research.

1.13 Summary

This chapter provided a background of the management of records management in South African's public sector institutions in general and the Western Cape Government in particular. The problem statement, purpose of the study, objectives of the study, research questions, delimitation, and significance of the study were explained, and key terms were also defined. The next chapter provides a comprehensive overview of relevant literature for the study.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The preceding chapter provided the background to the study, the problem statement, the research objectives and questions, the significance of the study, as well as the definitions of key terms. This chapter presents a literature review on digital records management in South Africa's public sector, with a particular focus on the implementation of Enterprise Content Management. The chapter discusses a theoretical model underpinning the study, staff skills and competencies for the management of ECM records; legislative and policy framework governing digital records management in South Africa; and the benefits of systems integration.

A literature review is a critical assessment of research that has been conducted in a particular field of study. The purpose of a literature review is to evaluate and analyse the current state of knowledge about a topic, with a view to extending the body of research in the area (Mathipa & Gumbo 2015:73). The literature review assumes that knowledge accumulates, and that people learn from and build on what others have done (Neuman 2006:5). Neuman (2006:6) further points out that the goal of the literature review is to demonstrate a familiarity with a body of knowledge and establish credibility.

The literature review demonstrates to a reader that the researcher is conversant with the major issues pertinent to a topic or subject. The literature review outlines the direction of research on a question and shows the development of knowledge. As highlighted by Burns (2000:29), the literature review pulls together and synthesises different results, and helps the researcher to find out how others have carried out follow-up research.

De Vos, Strydom and Fouché (2002) also maintain that a literature review reveals what original ideas have been developed regarding the topic of research. It helps the researcher to discuss the proposed study in relation to the current literature and identifies the gaps in the literature to which the study would contribute.

Furthermore, the literature review provides insight into the methods, measures, subjects and approaches used by other researchers, which could ensure a significant improvement in the research design. The rationale behind conducting a literature review is to identify gaps and provide renewed perspectives with regard to the body of knowledge.

2.2 Theoretical model underpinning the study

According to Ngulube, Mathipa and Gumbo (in Mathipa & Gumbo 2015), a theoretical or scientific model is a system or technique that is used to describe a particular phenomenon pertinent to the nature of inquiry or investigation. The authors further proclaim that models provide a simplified reflection of reality, which may lead to the formulation of theories. Pettigrew and McKechnie (2001) posit that theoretical models derive from observing and experiencing the world through a scientific lens. Models illustrate what can be expected to be found in research, including how the variables that the researcher formulates relate to each other.

Babbie (2014) maintains the purpose of a model is to clarify concepts and propose relationships among the concepts in a study and to provide a context for interpreting the study's findings. Models are related to conceptual and theoretical frameworks in that they are concerned with establishing relationships between concepts, variables and assumptions, which have an impact on the phenomena being investigated.

The ECM3 model is one of the approaches that have been developed to assess the benefits of ECM deployments within organisations. The model, as conceived by Pelz-Sharpe et al. (2010), was developed to help organisations to improve their overall ECM capability. According to Katuu (2016: 219), "maturity models are developed on the basis that organisations or processes do not move from zero capability to optimum capability instantaneously, but rather progress along a journey of maturity". The maturity model could also be used as a mechanism to develop a comprehensive strategy that helps to reduce risks that could threaten an organisation with regard to its information and records management characteristics (Pelz-Sharpe et al. 2010).

This study is based on the ECM3 maturity dimension model. Pelz-Sharpe et al. (2010) state that organisations employ the ECM maturity model to measure the implementation of ECM through 13 dimensions across three categories, namely human, information, and systems. The constructs that would be used to help frame the objectives of the study are thus: human (professional expertise), information (legislative policies and procedures), and systems (integration, as well as functionality or usability).

Figure 1 illustrates the interaction among these constructs.

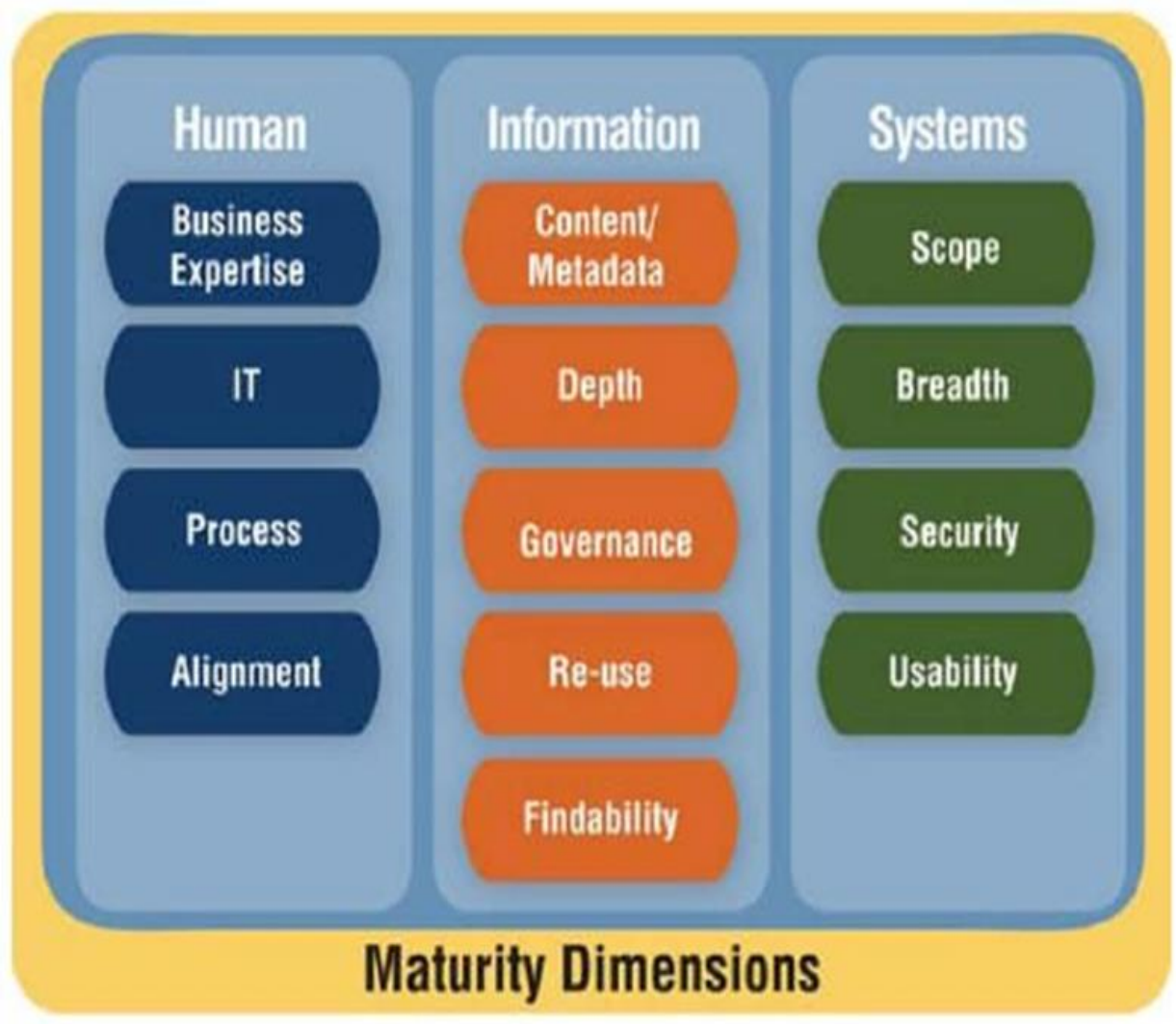


Figure 1: The maturity dimensions in the ECM3 (Pelz-Sharpe et al. 2010)

2.2.1 The 13 ECM maturity dimensions:

Human

Business expertise – employee and executive education and understanding of core ECM precepts

IT expertise – ability to properly take advantage of incumbent and new systems

Process – extent to which enterprise has analysed its content-oriented business processes

Alignment – extent of effective business – IT collaboration, understanding, and synchronisation

Information

Content/Metadata – extent to which enterprise has analysed its content and metadata

Depth – completeness of content lifecycle management

Governance – extent of policies and procedures addressing information management

Re-use – extent realisation of content re-use opportunities

Findability – ability to find the right content at the right time

Systems

Scope – relevant range of ECM functional capabilities (DM, BPM, DAM, etc.) adopted

Breadth – evolution from departmental to enterprise-wide management systems, where necessary

Security – extent to which actual content access reflects enterprise entitlements

Usability – application fitness to purpose

The “Human” category dimensions relate to individual expertise in both business processes and information technology implementation. This includes expertise of different professionals within an organisation, and their capacity to provide strategic alignment between business drivers and the ECM application to ensure institutional success. The dimensions within the “Information” category relate to attributes affecting the digital content itself, while those within the “Systems” category relate to attributes of the ECM applications technical features (Pelz-Sharpe 2010).

2.3 Evaluating ECM functionality for managing digital records

The process of evaluation is critical in testing the efficiency or suitability of a particular system, strategy or approach. Evaluation in this context refers to the assessment and identification of a system's strength or weaknesses, in order to find ways of improving it and ensuring that it fulfils the purposes and objectives for which it was created or developed (Chen, Osman & Nunes 2011). Evaluation is essentially a wholesale assessment and analysis of the capabilities of a system to determine its performance quality or effectiveness, or lack thereof. According to Chen, Osman and Nunes (2011), the process of evaluation is useful in assessing potential costs, benefits and risks associated with the development, implementation and use of particular mechanisms. Evaluation also helps decision makers to take appropriate actions to mitigate or reduce identified risks. Du Toit (2016) proclaims that by evaluating the systems, organisations would be well placed to make judgements regarding the worh, value or benefits of a certain method or approach, in order to maximise its efficiency.

In the context of ECM, implementation is costly and therefore organisations should expect a return on investment (ROI) (Katuu 2016). This creates the need for evaluation to measure the value or quality of the implementation. However, despite the necessity for organisations to evaluate ECM, the challenge is that many of the benefits of ECM are intangible and difficult to measure (Pelz-Sharpe et al. 2010; Katuu 2016).

In the study that investigated the antecedents that drive the achievements of ECM benefits, Rossman et al. (2018) found a correlation between benefit drivers and benefits achievement. Organisations benefited from embarking on evaluation projects that measured the nature of implementation. The benefit drivers include: the implementation of quality, efficient and effective use of the system, and organisational readiness. Achievement drivers, on the other hand, include technological, organisational and environmental aspects. Chen, Osman and Nunes (2011) identify a range of information systems evaluation methodologies, each with its own strengths and limitations. The various evaluation methods are discussed below.

2.3.1 Goal-based evaluation

The goal-based evaluation approach was first developed by Taylor in 1942 as a deductive methodology, in which clear, specific and measurable goals were set prior to conducting evaluation activities (Chen, Osman & Nunes 2011). Essentially, the evaluation programme was developed with a predetermined purpose of attaining the set goals or objectives. Goal-based evaluations traditionally employ the quantitative approach, whereby the focus is on the technical and economic aspects, as opposed to human and social dimensions. According to Chen, Osman and Nunes (2011), the weakness of this method is that it tends to over-emphasise the quantitative aspects of the evaluation and neglect the social, organisational and human effects.

2.3.2 Criteria-based evaluation

Criteria-based evaluation means the evaluation "is conducted according to predefined checklists, heuristics, or principles. These criteria mainly stem from some specific theories as well as sets of guidelines, standards or even legal requirements. The selected criteria for evaluation indicate that evaluators emphasize and focus on certain characteristics more than others" (Chen, Osman & Nunes 2011: 3). This evaluation approach has emerged as one of the most frequently used evaluation methods in the field of information systems. The criteria-based evaluation approach is aimed at evaluating a specific perspective and devising measures for that purpose.

2.3.3 Goal-free evaluation

In contrast with goal-based evaluation, where the focus is on goal attainment, goal-free evaluation employs an inductive methodology. The objective of the goal-free approach is to gather data on diverse and large sections of the phenomenon without knowing the goal of the programme, or without goal attainment as the primary focus. According to Cronholm and Goldkuhl (2003), this approach emerged because of a perceived bias associated with the goal-based approach. Goal-free evaluation is concerned with addressing socio-technical needs (Chen, Osman & Nunes 2011). Both quantitative and qualitative methods could be used in this evaluation approach. This study adopted a goal-free evaluation through the use of the ECM3 model.

2.4 Assessing staff skills and competencies for the management of ECM records

Many scholars such as Keakopa (2007), Asogowa (2012), Katuu (2015), and Katuu and Ngoepe (2015) have highlighted the general lack of appropriate skills and competency in the field of digital archives and records management (ARM) in South Africa and the African continent. The International Records Management Trust (IRMT) (2009a) equally discovered a lack of knowledge, skills and capabilities of information practitioners in the management of digital records in developing countries. The lack of necessary skills and competency pertaining to the management and preservation of digital records was also underscored by Adu and Ngulube (2016). The scarcity of requisite skills in digital records management signifies peril to the digital world, which could result in problems such as the mismanagement of records, delayed and poor service delivery, lack of accountability, and frustrations on the part of the public, who could be directly impacted by such inefficiency (Rinehart, Prud'homme & Huot 2014).

According to Ngulube (2004) and Asogwa (2012), the evident paucity of training in digital records management in most tertiary institutions in Africa is in stark contrast to the situation in the developed countries, where there is a well-developed professional education and training tradition. Adding another dimension to the lack of adequate skills in the management of digital records in Africa is the fact that most archivists and records managers have received training from overseas institutions (Ngulube 2010). As Ngulube (2010:139) attests: "Most of the training offered, though good in itself, does not always suit African conditions though it produces high calibre archivists and other information professionals". This is partly because the economic, political, climatic and technological environments in Africa are very different from those in the developed world. Further compounding the problem of critical skills shortage in the management of digital records is the fact that most public sector institutions are unable to retain the few staff members that possess the much needed skills because they tend to leave to pursue better opportunities elsewhere (Department of Arts and Culture 2010; Archival Platform 2015).

A report by the Department of Arts and Culture (2010) discovered a lack of uniformity in the library and information services curricula that are offered by various educational

institutions in South Africa. This was reflected in the manner in which the training programmes had been designed, which revealed an absence of consistency in terms of entry requirements in some of the curricula offered. In this regard, the University of South Africa (UNISA) was among the first academic institutions in South Africa to introduce a three-year professional bachelor's degree in archives and records management, which commenced in 2018. The programme includes modules in ICT applications in archives and records management, and audio-visual archiving (Unisa Department of Information Science 2018).

According to the Records Management Policy of Western Cape Governmental Bodies (2017), there is a general dearth of expertise in certain technical areas concerning records management. This relates to lack of training on the use of the new technologies to promote organisational efficiency. As an imperative intervention, it was resolved that "all records management staff, including records managers, registry heads, work-study officials, trainers and registry staff must attend the Western Cape Archives and Records Service's Records Management Course and Registry Clerks Course as well as other training that might be offered from time to time to equip them for their specific responsibilities in terms of the Act. Records Management staff shall in turn train other officials within governmental bodies" (Records Management Policy of Western Cape Governmental Bodies 2017).

NARSSA has developed different criteria for assessing the skills level of records management professionals in the public sector. Some of the performance guidelines and objectives include the following:

- to ensure that that records management is an objective in the body's strategy and strategic plan;
- to ensure that information can be identified and retrieved when required by providing well-structured records classification systems and record keeping systems;
- to ensure that the records management staff understand their responsibilities and acquire the necessary skills to manage records effectively; and
- to ensure that there are evaluation criteria in place to monitor compliance with sound records management practices. Competencies include specialist knowledge of records management practices, understanding of the most

prevalent systems currently being employed (i.e. transaction processing systems, database management systems; management information systems; electronic document management systems; electronic records management systems; data warehouses, etc.), knowledge of relevant standards, as well as the statutory and regulatory framework within which the office functions.

The challenges highlighted above might require the development of proper orientation and training programmes for new personnel in respect of technological application in the execution of records management activities. This is because technology has become a critical driver of initiatives aimed at promoting operational efficiency. Therefore, the acquisition of skills and education pertaining to the professional techniques of digitisation of records becomes ever more crucial (Keakopa 2008). In this context, the Skills Development Act of South Africa, Act 197 of 1998, serves to encourage employers to train their employees to develop skills by investing in education and training. The aforementioned Act also encourages self-education.

Job-related training programmes are usually promoted and supported through various ways such as workshops, seminars or practical sessions, as these could help update current skills and knowledge. Thus, there is a need to provide records management practitioners with relevant skills pertaining to the management of digital records, as well as to assess their performance against the training interventions. This is commonly addressed through the introduction of continuous professional development and workplace learning (PDWL), which could help in providing relevant avenues for achieving effective and lasting strategies for enhanced professional development (Smith 2004; Corrall 2010).

2.5 Legislative and policy framework governing digital records management in South Africa

A legislative framework serves as a regulatory guide for the functioning of governmental bodies in terms of executing their mandates. South Africa has a ‘hybrid’ or ‘mixed’ legal system, which consists of three separate legal traditions. The first legal tradition was a civil law system inherited from the Dutch and is commonly referred to as the Roman Dutch Law (Du Toit 2014). The second legal tradition, the Civil Law, was inherited from

the British and is derived from custom and judicial precedent rather than statutes. The third is the Customary Law, which has been in existence prior to colonialism in South Africa (Du Toit 2014; Katuu & Ngoepe 2015). The Customary Law was initially considered an 'unofficial' or unconventional law as it evolved from the traditional ways of life and customs of the African people and not from formal enactment (Du Toit 2014). The Customary Law is now recognised by the South African Constitution under section 211 of the Constitution of South Africa, 1996 (Act No. 108 of 1996).

Legislation should be clear in terms of addressing issues pertaining to the management of records in any form or media, including digital format. According to Ngoepe and Saurombe (2016), apart from South Africa, other Southern African Development Countries' (SADC) legislative and regulatory frameworks are currently silent on whether digital records can be admissible as evidence in a court of law. Some related studies in the Eastern and Southern Africa Regional Branch of the International Council on Archives (ESARBICA) region by Nengomasha (2009) and Asogwa (2012) also revealed that the lack of relevant legal and policy framework remains a major challenge in the area of digital records management.

South Africa's legal and regulatory system has a pronounced impact on how records are managed in the various structures or entities of government. Thus, it is the responsibility of public sector organisations to keep or preserve records in such a way that their integrity is maintained and that they remain traceable and accessible when they are needed. This would allow organisations to account for their past activities and establish whether they comply with the relevant policies or guidelines governing records management (NARSSA 2006).

The WCG, as a provincial structure of the Republic of South Africa, is governed or regulated by legislative policies of the national government. These include policies that are applicable to the management of records, regardless of form or media, created or received in all governmental bodies. This refers to any legislative, executive, judicial or administrative organ of state (including a statutory body) at provincial, regional and local level in the Western Cape province. The legislative frameworks pertinent to the management of records in South Africa in general and the Western Cape in particular are discussed in more detail below.

2.5.1 The South African Constitution

South Africa's Constitution was adopted in 1996 after the first democratic government came into being in 1994. Chapter 2: Bill of Rights (Section 32) of the South African Constitution supports and promotes equal and fair access to information that is required for the exercise or protection of any rights. This includes any information that is held by the state or another person. Sections 141 and 195(1)(f) of the Constitution, 1996, compel governmental bodies to recognise their responsibility to the public by implementing and maintaining sound records management practices. To ensure that records management receives the attention it deserves, it should be a strategic objective in the governmental body's strategic and business plans. Furthermore, heads of governmental bodies should ensure that they budget for records management functions and that the necessary financial, human and technological resources are allocated to support the records management functions (NARSSA 1996).

2.5.2 The National Archives and Records Service of South Africa Act

The National Archives and Records Service of South Africa Act, 1996 (Act No. 43 of 1996) (NARSSA Act) requires the governmental bodies to manage their records, including electronic records, in well-structured record keeping systems, and to implement the necessary policies and procedures to ensure that their record keeping and records management practices comply with the requirements of the Act. For example, in terms of section 13(2)(b) of the Act, the National Archivist shall "determine the conditions subject to which electronic records systems should be managed" (National Archives and Record Service of South Africa Act).

The mission of the NARSSA is to promote efficient, accountable and transparent government through the proper management and care of government records. According to NARSA, electronic records are subject to the same requirements provided in the NARSSA Act that apply to the management of other records. The Act, in sections 13(2)(b)(ii) and 13(2)(b)(iii), provides for the national archivist to determine the conditions according to which records shall be electronically reproduced and the conditions according to which electronic records systems shall be managed. The conditions determined by the national archivist cover aspects such as the

classification/filing, retrieval, access to, disposal and long-term preservation of the records.

In essence, the NARSSA requires all governmental bodies to have a strategy for the effective management of electronic records in place. This entails that Heads of governmental bodies should:

- ensure that all electronic records systems (including email and websites, electronic correspondence systems and electronic records systems other than the correspondence systems) are managed according to the guidelines contained in managing electronic records in governmental bodies: policy, principles and requirements;
- recognise that notwithstanding the provisions of any other Act of Parliament to the contrary (e.g. the Electronic Communications and Transactions Act, 2002), no electronic record may be deleted without a prior written disposal authority issued by the national archivist. They should guarantee that this is strictly adhered to and ensure, among others, that a detailed written policy document and a reliable and auditable process support the destruction of original records after they have been imaged;
- ensure that reliable electronic records are maintained as evidence of official business for accountability, operational continuity, disaster recovery as well as institutional and social memory; and
- document and implement policies and procedures that control the classification/filing, retrieval, access to, disposal, and the long-term preservation of records to ensure that the context of the records is identified and that records are protected against unauthorised addition, deletion and alteration.

2.5.3 Protection of Access to Information Act

The Promotion of Access to Information Act (PAIA) (Act No. 2 of 2000) gives effect to the constitutional right of access to any information held by the state, and any information held by private bodies that is required for the exercise and protection of any rights and to support informed decision-making. PAIA is enforced by the South African Human Rights Commission (SAHRC) and advocates for access to information in its various manifestations. Against this background, institutions are obliged to implement

effective and efficient records or information management systems that provide access to such information. This includes access to information available in digital form.

2.5.4 Public Finance Management Act

The Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA) regulates financial management in the national government and provincial governments to ensure that all revenue, expenditure, assets and liabilities of those governments are managed efficiently and effectively; to provide for the responsibilities of persons entrusted with financial management in those governments; and to provide for matters connected therewith (National Treasury 2018). Section 36(2) of the Act provides for the head of a public sector department to be the accounting officer for that department. One of the responsibilities of this officer is to keep full and proper records of various departments' financial affairs in accordance with generally recognised accounting practices.

2.5.5 Promotion of Administrative Justice Act

The Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000) (PAJA) is a law passed by Parliament to give effect to the constitutional rights to lawful, reasonable and procedurally fair administrative action, as well as the right to written reasons. The aim of the guide is to ensure that administrative action is lawful, reasonable, fair, and properly documented (Department of Justice and Constitutional Development). Elements of PAJA include:

- compliance and accountability mechanisms;
- capacity building;
- alignment to relevant government programmes; and
- enabling policy and legislative frameworks

For the successful administration of justice, institutions rely on access to authentic and reliable records that serve as evidence of decisions and actions that took place. Therefore, governmental bodies that fail to create proper records with integrity and reliability may not be able to prove that their actions and decisions were fair and lawful. This may have an impact on the promotion of administrative justice.

2.5.6 Protection of Personal Information Act

The electronic environment presents challenges pertaining to the regulation of personal information, whose unauthorised access should be safeguarded at all times to uphold confidentiality and privacy. This is because electronic records are easily created, copied and distributed to other recipients with much less effort. It is unconstitutional and unlawful for people to gain access to personal records of others without their permission or consent. The Promotion of Personal Information Act, 2013 (Act No. 4 of 2013) (POPI Act) ensures the protection of personal information and effective access to information. It also promotes privacy and confidentiality with respect to personal information, something to which every individual is entitled. The POPI Act seeks to regulate the processing of personal information by both public and private bodies. Processing means anything done with the personal information of a person, including collection, usage, storage, dissemination, modification or destruction.

The POPI Act aims to promote the protection of personal information processed by public and private bodies. The POPI Act in particular aims to:

- introduce certain conditions so as to establish minimum requirements for the processing of personal information to provide for the establishment of an information regulator to exercise certain powers and to perform certain duties and functions in terms of this Act and the PAIA;
- provide for the issuing of codes of conduct;
- provide for the rights of persons regarding unsolicited electronic communications and automated decision making;
- improve the security of personal information and manage user accessibility;
- control user access to confidential information; and
- regulate the flow of personal information across the borders of the Republic and to provide for matters connected therewith (Department of Justice 2018).

2.5.7 Electronic Communications and Transactions

The ubiquitous nature of technology has rendered electronic communication a relatively convenient activity. ICTs maximise opportunities and provide avenues for governments to facilitate and improve electronic communication and transactions on a wide scale.

The Act stipulates that electronic records or messages are acceptable provided they can be proven beyond reasonable doubt that they are reliable and trustworthy as evidence of the transaction. The Electronic Communications and Transactions Act, 2002 (Act No. 25 of 2002) (ECT Act) aims to provide for the facilitation and regulation of electronic communications and transactions to:

- provide for the development of a national e-strategy for the Republic;
- promote universal access to electronic communications and transactions and the use of electronic transactions by SMMEs;
- provide for human resource development in electronic transactions;
- prevent abuse of information systems;
- encourage the use of e-government services; and
- provide for matters connected therewith (Records Management Policy of Western Cape Governmental Bodies 2017).

2.5.8 Provincial Archives and Records Service of the Western Cape

The Provincial Archives and Records Service of the Western Cape Act, 2005 (Act No. 3 of 2005) serves to provide for a provincial archives and records service for the province of the Western Cape to:

- provide for the proper management and care of public records in the province of the Western Cape;
- provide for the preservation and use of a provincial archival heritage; and
- provide for matters connected therewith (Records Management Policy of Western Cape Governmental Bodies).

Heritage records are vital and valuable, as they contain information of historical and cultural significance, which should be preserved for posterity. In this regard, the WCG implemented the Act to provide for the management of heritage records in various sectors of the provincial government.

2.6 The benefits of systems integration

According to Haider, Aryati and Mahadi (2015), system integration enhances organisational synergy and promotes coordination and interaction. An integrated environment means that there is an interface among systems and that content becomes widely available to organisational staff members within various departments. Furthermore, the fusion of technologies enables a development of a searchable repository for shared knowledge and technical support with regard to digitally recorded information (Haider et al. 2015). Thus, the search for and access to information becomes an almost effortless activity.

The purpose of creating a unified records management system is to ensure that various systems do not operate in an isolated fashion but in sync with one another. According to Chauke (2018), the integration of information systems results in efficient decision-making, enables organisations to collaborate and share data and multiple insights, and significantly reduces risks of sensitive data loss. Chauke (2018:5) further argues that "having multiple disconnected BI projects leads to inefficiencies and fragmentation firmly places the burden of integration, operation and recurring support on the ICT organisation. Generally, systems are implemented independently on the basis to respond to specific user demands and with little attention paid to projects in other areas or to existing software".

Jardim (2013) maintains that digital systems integration allows for the incorporation of various records management systems into a consolidated, comprehensive whole, thereby creating an embedded records management solution in an organisation. Arshad, Mehat and Ariff (2015) contend that an integrated records management system promotes accessibility and usability of records, which could facilitate good decision-making and support records management programmes. Allen (2008) opines that integration is beneficial in that it supports effective organisational workflow and allows for an effective streamlining of content that is crucial for organisational efficiency.

Similarly, another important aspect of systems integration for the effective management and accession of digitally stored records was highlighted in a study conducted by Simons (2010), who found that several organisations developed a single platform to

promote integration, collaboration, convergence and sharing of content. The study further revealed that digital systems integration was crucial as it promoted data coherence, as well as prevented systems fragmentation and disparity. Furthermore, as alluded to by Svard (2013:167), “lack of system integration creates interoperability problems and restricts access to data which negatively impacts business performance”.

2.6.1 ECM collaboration systems

Fundamental to ECM’s operation is collaboration and coordination across various organisational components. Carter and Johns (in Currie & Finnegan 2009:10) proclaim that integration should ideally connect records, archives, documents and other digital files, as well as the systems that manage these elements. The authors expand on this argument by stating that various content applications could be used to manage and integrate digital content. For example, an organisation could integrate OpenText for incoming mail, SharePoint for collaboration among teams, enterprise resource planning (ERP) for a shared database that supports multiple functions used by different departments or units, or customer relationship management (CRM). Similarly, it could incorporate systems, applications and products (SAP) to facilitate the flow of real-time information across departments. It is therefore evident that collaborative systems facilitate and enhance easy information retrieval and promote efficiency.

Khumalo and Mearns (2019) report on the findings of the Microsoft SharePoint implementation evaluation, which revealed that the system was an effective tool that was able to facilitate collaboration and efficient knowledge sharing within a retail sector environment. The study found that the use of SharePoint as a collaborative tool allowed a group of people to work in sync with one another. This resulted in enhanced decision-making processes within the organisation.

In employing collaborative technologies to facilitate the management and accessibility of records, it is imperative, however, for organisations to comply with appropriate standards and requirements for digital records. In this regard, the WCG is mandated to conform to the handbook on minimum information interoperability standards (MIOS) to achieve data coherence across departments and ensure systems interoperability. The purpose of the guidebook is to integrate and interconnect information systems within

government, industry and citizens in order to exchange data (Minimum Information Interoperability Standards for Government Information Systems 2011).

According to the Records Management Policy of Western Cape Governmental Bodies (2017), the WCG has integrated Enterprise Information Management (EIM) with OpenText ECM Suite – as well as with OpenText Content Server. The rationale is to support key information and records management processes and operations in various departments in the province. The purpose is also to promote data coherence and reduce the time it takes to locate digital records.

2.6.2 Security of records managed in the digital environment

The digital space is replete with a myriad of challenges which could have a negative impact on the security and accessibility of records. Some of the challenges are related to compliance procedures, password identification and logins, group filing systems – or lack of integration with existing systems. Disintegrated systems in particular could result in fragmented or dispersed organisational content, which could compromise information access and sharing.

However, given the advantages and benefits provided by automated processing of content, many organisations are shifting to cloud-based solutions to manage email communications and other digitally stored content. The ubiquitous availability of the internet globally has made it possible for cloud computing to thrive especially where conditions for its adoption are in place. Mosweu, Luthuli and Mosweu (2019) found that cloud computing provides appropriate opportunities for organisations to conduct businesses efficiently and improve their records management practices. The authors observed, however, that there are issues related to records storage, jurisdiction, privacy, security and the digital divide, that need to be overcome if organisations are to benefit fully from cloud-based records management services.

According to Hullavarad et al. (2015), the cloud services make use of the virtual and storage capabilities by separating the content from physical infrastructure. The cloud services provide increased collaboration in terms of work functions and enable mobile access as there are no location restrictions. Stuart and Bromage (2010) assert that the

establishment of cloud storage creates a virtual environment where records could be stored and preserved. Virtualisation makes cloud storage appear like the original physical storage of data, while at the same time allowing scalability, availability, elasticity, multi-tenacity, flexibility and ease of use. Cloud computing is used as a model for handling and storing data that enable ubiquitous, convenient and on demand access to a network of shared information resources (Kabata 2012).

There are three common cloud computing deployment models that organisations implement – namely: infrastructure as a service (IaaS), which refers to computer, storage, or other IT infrastructure as a service, rather than as dedicated capability (McKemmish 2013; Kaaniche & Laurent 2017). Platform as a service (PaaS) refers to the online delivery of a custom application deployment environments in which applications can be built and run on service provider systems (Government of South Australia 2015). Software as a service (SaaS) is a type of service model which allows the client to access remotely software that is hosted on infrastructure owned and maintained by the service provider (Low 2012). Its advantage is that the client organisation is able to utilise software that would have been expensive had it been purchased, installed, maintained and updated (InterPARES 2014).

State Information Technology Agency (SITA) serves as a Cloud service provider for the South African government departments. One of the core mandates of the agency is to provide a platform to create and operate a secure and common Cloud service that consolidates government department systems and acts as a mediator for existing Cloud providers (SITA 2019). It also ensures that the cloud-based solutions are aligned with industry best practice and the latest technologies. Furthermore, the agency provides a policy framework to direct Cloud computing adoption by Government departments – as well as standardise all Government departments to ensure that the existing Cloud solutions, systems and applications are interoperable and drive collaboration among the departments (Gillwald, Moyo & Altman 2012).

Given the context provided above, it is evident that mitigating threats to information security is critical in ensuring that records generated through digital systems are properly safeguarded. Because of potential online security hazards, organisations are compelled to develop measures, standards and procedures aimed at securing digital

records. Information security measures are necessary to safeguard and preserve online information against vulnerabilities and threats from unauthorised access, use, disclosure, modifications, or destruction – in order to maintain availability, integrity, and confidentiality of a system (Fuchs, Pernul & Sandhu 2011).

2.7 Summary

This chapter covered the literature that is relevant to the objectives of the study. A review of literature pertaining to the management of digital records in South Africa's public sector institutions, in particular the implementation of Enterprise Content Management at the Western Cape Government, was presented. Furthermore, the literature addressed the challenges experienced in managing digital records. The next chapter discusses the research methodology that was adopted for the study.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter reviewed relevant and related literature pertaining to the management of digital records in South Africa's public sector institutions, with particular focus on the implementation of ECM at the Western Cape Government departments.

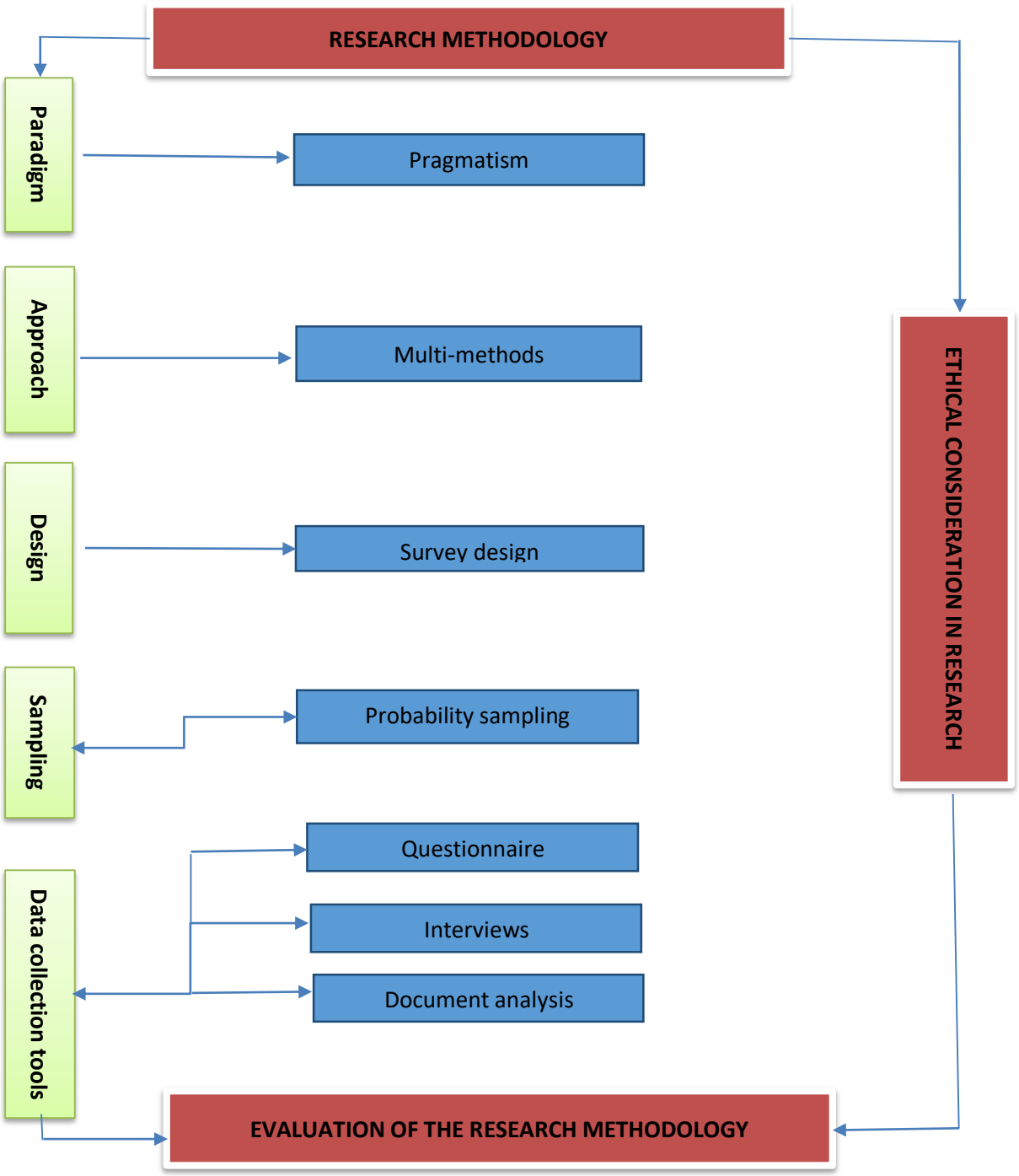
This chapter outlines the research methodology that was used in conducting this study. It contains the research methodology, design, study population, data collection techniques, data analysis and ethical considerations. The chapter also discusses the research instruments utilised in the data collection and the rationale for their use.

3.2 Research methodology

The research methodology is a framework that clearly explains the mechanisms or techniques that are used to conduct a research project. According to Kothari (2008), a research methodology consists of techniques and mechanisms for formulating the problem statement and obtaining results, and reaching conclusions. It entails the designing of a research design, scope, sample, instruments, validity and reliability testing, and analysis. Ngulube (2015) argues that methodology is central to the research process, because it is "the lens through which a researcher looks when making decisions on acquiring knowledge about social phenomenon and getting answers to the research questions" (Ngulube 2015:6).

3.3 The research methodology framework

Table 3.1: Research methodology table



3.4 Research approach and associated philosophical paradigms

The research paradigm is a set of common conventions or agreements shared among scientists about how problems should be understood and addressed. Paradigms are theories that guide the way the research or investigation is conducted (Kuhn 1977). Research paradigms are informed by philosophical assumptions about the nature of social reality. According to Kawulich (2012), a paradigm refers to a worldview or philosophical assumptions that are established and manifested through epistemological and ontological perspectives. Epistemology refers to the ways of knowing with regard to a scientific phenomenon, while ontology signifies what people believe about what they know (social reality).

There are three common philosophical research paradigms – namely: positivism, interpretivism, and pragmatism. The positivism paradigm is associated with the quantitative approach and posits that there is a single and fixed reality, and that true knowledge can only be obtained through observation and experiment (empirically). Interpretivism, on the other hand, is aligned with qualitative methods and contends that reality is socially constructed, that there are multiple perspectives or truths, and that a phenomenon should be understood within a particular context through exploration and examination (Williamson 2002; Kawulich 2012).

The pragmatism approach is generally regarded as an extension of both the positivist and the interpretivist school of thoughts in that it essentially embraces or adopts elements inherent in both paradigms. The pragmatism paradigm advocates the use of more than one research method in a study. According to Creswell (2013), in a pragmatism approach, the researcher collects and analyses data, integrates the findings and draws an inference using both qualitative and quantitative approaches in a single study. Shannon-Baker (2016) argues that pragmatism is outcome oriented and interested in determining the meaning of things. It is based on the belief that “theories can be both contextual and generalizable by analysing them for ‘‘transferability’’ to another situation” (Shannon-Baker 2016:323). For the purpose of this study, the researcher has adopted a pragmatism approach because of its comprehensive and all-encompassing nature. The pragmatism approach was appropriate in this context as it

allows for multiple lenses through which to view the phenomena, thereby gaining a deeper understanding.

3.5 Research methods

Research methods are essentially data collection techniques, plans and procedures that the researcher implements to gather information from the respondents or participants (Creswell 2014). Methods for data collection include the quantitative method, the qualitative method, and multi-methods (Babbie 2014; Bryman 2012). The research method adopted in this study is multi-methods. Multi-methods, quantitative, and qualitative research methods are discussed below.

3.5.1 Multi-methods

Creswell (2013) and Maree et al. (2016) define multi-methods as the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially. Multi-methods involve the integration of data in one or more phases of the research process. Teddlie and Tashakkori (2008) describe multi-methods as the products of a paradigm that combine the qualitative and quantitative approaches within different phases of the research process. According to Morse (2003: 16), multiple methods "are used in a research program when a series of projects are interrelated within a broad topic and designed to solve an overall research problem". The multi-methods approach is essentially a multi-paradigm since it employs both the positivist and the interpretivist approaches (Williamson 2002). In this context, Gray (2014) points out that in multi-methods there could be two types of research questions, two types of sampling procedures, two types of data collection procedures, two types of data analysis and two types of conclusions.

The multi-methods approach is deemed appropriate for this study because, as pointed out by Byrne and Humble (2007), all methods of data collection have weaknesses and the use of multiple methods neutralises or cancels out some of the shortcomings of certain methods and the strength of each approach complements the other. Similarly, Creswell and Plano Clark (2011) point out that using multi-methods provides strengths that limit the weaknesses of both qualitative and quantitative research. Byrne and

Humble (2007) argue that when using both qualitative and quantitative approaches, the results are triangulated to provide a comprehensive understanding. Teddlie and Tashakkori (2009) maintain that using a multi-methods approach helps to deal with complexity and to obtain more comprehensive explanations. With this approach, a richer and fuller understanding of a research topic is gained. Creswell and Plano Clark (2011) argue that multi-methods provide more evidence for studying a research problem than either quantitative or qualitative research alone. Furthermore, the multi-methods approach is practical in that a researcher is able to employ various methods to address a research problem. The multi-methods approach uses triangulation techniques. Triangulation provides a rich and comprehensive exploration of different variables (Flick 2015).

In this study, both quantitative and qualitative approaches were adopted in a sequential manner and a quantitative approach was followed by a qualitative one. Morse (2003) asserts that a researcher's design method could be described as QUAN→qual, indicating that it is a quantitatively driven project, which means that the dominating study is followed by a qualitative one. In this study, both phases were given equal priority. Teddlie and Tashakkori (2009) observe that in sequential design, the strand of the study occurs in chronological order. According to Morse (2003), in a sequential design, one design dominates or they are both treated equally. According to Leech and Onwuegbuzie (2007), a sequential study is one in which quantitative and qualitative phases of the research occur one after the other. The sequential study was preferred because departmental ECM-implementing staff were the primary respondents, while management subsequently provided information that supplemented the one collected from primary sources.

3.5.2 Quantitative methods

Quantitative methods are characterised by their use of numbers to analyse data. This approach reduces the data into numbers, such as percentages or figures. The objective of quantitative research is to develop and employ statistical models, theories and/or hypotheses pertaining to phenomena (Kothari 2008; Creswell 2014). Quantitative methods employ deductive reasoning, where the researcher forms a hypothesis, collects data during the investigation of the problem, and uses the data from the

investigation. This is followed by the analysis of the data and the discussion of the findings, in order to prove the hypothesis (Kothari 2008).

Quantitative research is associated with the positivist approach, which argues that there is a single reality, which can be measured and known. As alluded to by Creswell (2014), positivists promote empiricism, the idea that research must be based on an observable reality and apparent measurements. Creswell (2012) views the quantitative approach as one in which the investigator uses primarily post-positivist claims to develop knowledge, employing strategies of inquiry such as experiments and surveys, and collecting data on predetermined instruments that yield statistical data. Creswell (2012) further proclaims that the quantitative approach views the world as comprising distinct, recognisable elements and events that interact in an observable, determined and regular manner. According to Fox and Bayat (2007), the quantitative approach could be classified as descriptive, analytical or experimental, and creates numbers that are statistically analysed. The values of variables are characterised by numbers or symbols that scientifically test a theory.

Quantitative data are collected through the use of questionnaires and experiments, and data are tabulated in numbers (Fox & Bayat 2007). Quantitative methods are employed to answer questions about relationships among variables with the purpose of explaining, predicting and controlling phenomena.

3.5.3 Qualitative methods

According Merriam (2009), qualitative research employs non-numerical tools – such as interviews, observations, focus groups, case studies, and ethnographic methods – to explore and understand the meanings, experiences and behaviour of the participants. Babbie (2014) opines that qualitative research relies on the interpretivist approach, which posits that reality is socially constructed. This means there is no single observable reality, but rather multiple realities, or interpretations of a single event or phenomenon. Qualitative research is based on inductive reasoning – that is, it involves identifying patterns and relationships to build theories or hypotheses (Denzin & Lincoln 2000). Creswell (2013) argues that a qualitative research has an interpretive character,

aimed at discovering the meaning events have for the individuals who experience them – and the interpretations of those meanings by the researcher.

Biggam (2008) points out that qualitative research is linked to in-depth exploratory studies where the opportunity for quality responses exists. In other words, quality of the participants, in terms of the depth of their responses, as opposed to quantity, is a key feature of qualitative studies. Qualitative methods do not necessarily need a large sample or large population of participants, as the aim is to explore the deeper meanings and give an informative view. Creswell (2013) argues that qualitative research is appropriate for answering 'How?' and 'What?' questions, in contrast to 'Whether' or 'If' questions, which are commonly addressed by quantitative research. In qualitative studies, the sampled individuals are referred to as participants, as opposed to respondents, which are applicable to quantitative research (Merriam 2009). In qualitative research, the researcher investigates the participants in their natural settings and digs deeper into their experiences and behaviour (Rubin & Babbie 2013).

3.6 Research design

According to Mouton (2001:2), the research design is regarded as a plan of how to acquire the participants for a research project and how to obtain information from them. There are different types of research designs, such as experiment, survey and field study. The research design must provide a clear statement of the population to be studied and the methods to be used in processing and analysing data (Bless et al. 2006). Research design is the overall plan for conducting the research project. It articulates what data sets are required, the methods that can used to collect and analyse the data, and how these would assist in answering the research questions. In this study, the researcher has chosen the multi-methods approach because it is deemed appropriate to achieve the best of each method while eliminating possible weaknesses inherent in another (Maree et al. 2016).

In this study, the data were triangulated in order to derive maximum benefits from different perspectives. The basis for opting for methodological triangulation was that the technique allows the researcher to view the research issue from multiple vantage points, thus developing a comprehensive understanding (Maree et al. 2016). As Denzin

(in Flick 2015:10) points out, triangulation is a “complex process of playing each method off against the other so as to maximise the validity of field efforts”. As highlighted by Rowley (2002) and Hussein (2009), triangulation improves the validity of research and evaluation of the findings.

The nature of this study is such that one method alone would not have been sufficient to gain a deeper understanding of the multiple variables of the research issue. This method was deemed appropriate to evaluate the implementation of ECM at the WCG, given the varying nature of the prospective respondents and participants located in various governmental departments.

The study used both primary and secondary data. The primary data were questionnaires and interviews, while secondary data were published documents such as documents belonging to the WCG, theses and dissertations, and other sources dealing with ECM and digital records management in South Africa’s public sector institutions. The study was conducted in two phases. In the first phase, a self-administered survey questionnaire was distributed to the ECM implementing staff. In the second phase, interviews were conducted with management in selected departments. The questionnaire recipients were thus different from those interviewed.

3.7 Population

Babbie (2014) defines population as a group or set of components that are pertinent to a particular study. A population is a group of potential respondents or participants from whom the investigator would be able to generalise the results of the study. This is the target population to which the researcher gains access in terms of collecting data.

According to Bless and Higson-Smith (2000), the population is the identifiable set of interests to the researcher and pertinent to the research problem. It involves the description of the group that is under investigation. Woodwell (2014) and Blaikie and Priest (2017) regard a population as an aggregate or subset of the target population to be studied, and from which the findings emanating from the population (respondents or participants) are expected to be generalised and regarded as representative of the entire population.

Gray (2004) asserts that the research population is generally a collection of individuals or objects that are the main focus of a scientific inquiry. This, therefore, suggests that no research could be conducted without an identified population. Furthermore, if the population is too large, a researcher cannot test every individual in the population because that could become too time-consuming or expensive. Maree et al. (2016) assert that a study may involve a large population, which would make it practically impossible to study in its entirety. This would require a selection of the appropriate elements from the sample. For the results to be generalisable, the sample must be representative.

The target population of the study was made up of 76 employees from six WCG departments who work directly with ECM, and six managers who were responsible for driving strategic and policy direction as regards digital records management efforts. As such, the study's total target population was composed of 76 respondents and participants. Table 3.7.1 illustrates the sampling strategy for the study.

Table 3.7.1: The sampling strategy, target population and sample size

Sampling technique	**Target population**	**Sample size**	**Total sample size**
Stratified sampling technique	76	46 survey respondents	46
Stratified sampling technique		5 interview participants	5
Total sample size		51	51

3.8 Sampling

As the table above indicates, the total sample size for the study was 76 respondents and participants. Of the 76 population sample, 46 responded to the survey, while the sample size of 6 participants elicited 5 responses, which totalled 51 responses.
Sampling represents the subset of the whole population of a study. This subset forms the unit that is investigated or studied by a researcher. Sampling is defined by Creswell (2014) and Blaxter, Hughes and Tight (2001) as the process of selecting a number of

individuals for a study in such a way that the individuals represent the larger group from which they were selected. Sampling involves the selection of a number of study units from a defined study population. It is through sampling that the study is put into proper perspective in respect of selected individuals (Leedy & Ormrod 2005; Babbie 2014).

Although sampling is aimed at achieving representativeness with regard to individuals selected for the study, it is worth noting that sampling is subject to faults and inaccuracies. One of the weaknesses could be sampling error, which, according to Kumar (2011), occurs when a randomly selected sample is not representative of the population owing to faults inherent in the sampling procedure. Choosing a suitable sampling technique as well as the appropriate sample size is therefore crucial as this ensures a true representation and eliminates possible discrepancies that could affect the validity of the research results.

Researchers invariably use a sample, which is a small part of the population with the same qualities as those in the entire population. The selection of a sample is an important aspect as it defines the scope of the research (Saunders 2009). A representative sample is a miniature image or likeness of the population (Marshall & Rosman 2010).

This study adopted a stratified sampling technique, which forms part of the probability sampling method. According to Maree et al. (2016), in the stratified sampling technique, the researcher divides the entire population into different subgroups or strata, and then randomly selects the final subjects proportionally from the different strata. Maree et al. (2016) further point out that the stratified sampling technique has a higher statistical precision and requires a small sample size, which could save time, resources and effort on the part of the researcher.

According to Fink (2013), the choice between probability and non-probability sampling methods often involves both statistical and practical considerations. Statistically, probability sampling allows the researcher to demonstrate the representativeness of a sample, an explicit statement as to how much variation is introduced, and the identification of possible biases (Fink 2013). Therefore, based on the above interpretation, probability sampling was considered relevant for this study. The stratified

random sampling method was used for the questionnaire. It was also used to identify interview participants. Of the total population, 76 were selected through the stratified sampling technique. In addition, other study participants were chosen purposively – that is, six senior managers. The sample was considered to be a representation of the target population. From the six departments sampled for the study, only people who work with digital records management, in particular ECM, were allowed to participate in the study.

3.9 Data collection instruments

Flick (2015) advises that the researcher should keep the research questions in mind when deciding on the data collection instruments, as "more than one strategy or method could be appropriate for the collection of data for a specific research question" (Flick 2015:15). There are different mechanisms that researchers use to collect data, namely interviews, focus groups, observation, and questionnaires (Bak 2004; Creswell 2014).

Previous studies on the implementation of records management in South Africa's public sector institutions by, among others, Ngoepe (2008), Marutha (2011), Coetzer and Le Roux (2012), used a combination of both quantitative and qualitative approaches, with questionnaire and interviews being the major instruments for collecting data. However, it appears that few scholars in the field of records management experimented with the triangulation method. This situation highlights a glaring gap in terms of the experimentation with triangulation as a methodological strategy among scholars. According to Rowley (2002), triangulation provides a platform for the phenomena to be addressed in more depth and balances the limitations inherent in one method. The study collected data through an online survey questionnaire, online interviews, as well as document analysis.

The data collection instruments are discussed briefly as follows:

3.9.1 Questionnaire

A questionnaire is the most commonly used method of collecting original data. Czaja and Blair (2005:5) define a questionnaire as a conduit through which information flows from the world of everyday behaviour and opinion into the world of research and

analysis. Mitchell and Jolley (2004:180) state that with a questionnaire, the response rate would invariably be high due to an element of anonymity.

Questionnaires are distributed easily to a large number of people. A questionnaire may include elements such as rating scales, attitude scales, projective techniques, rating scales, checklists, etc. (Marshall & Rosman 2010:155). As an important research instrument, a questionnaire is the main quantitative data collection instrument.

According to Marshall and Rosman (2010), some of the goals of a questionnaire include the following:

- To increase the level of accuracy and relevance of the data collected;
- To maximise the participation and cooperation of the target respondents; and
- To facilitate the gathering and collection of essential data for analysis purposes.

For this study, an online self-administered questionnaire, in the form of a SurveyMonkey was distributed to 76 staff members who work with ECM in the various departments at the WCG. The survey questionnaire was distributed to staff members in various departments through email and the questions were based on the staff members' experience of implementing ECM in their daily operations. A self-administered questionnaire means the respondents fill in the questionnaire without the researcher's assistance (Marshall & Rosman 2010).

3.9.2 Interviews

According to Kvale (1996), interviews are an interchange of views between two or more people on a topic of mutual interest, which reflects the centrality of human interaction for knowledge production, and emphasises the social situations of research data. Similarly, Denscombe (2007) and Schensul, Schensul and LeCompte (2012) pronounce that interviews involve a set of assumptions and perceptions about a particular situation, which are typically not associated with informal conversations (Interviews are the ideal method to use when collecting data from the participants because they generate information on different views, and the meanings that lie behind those views (Denscombe 2007). Interviews are also useful in generating a rich understanding of participants' experiences and values, as well as gaining depth and

detail (Leedy & Ormrod 2005). Interviews provide an opportunity for probing and unpacking the participants' various perspectives (Gray 2004).

The researcher designed a set of structured interview questions and sent them through email to six managers in six departments that were implementing ECM at the WCG. The interview guide contained questions which were the same for all the participants. Although the questions took the form of a structured format, they were formulated in such a way that the participants were able to elaborate in their responses and give more detailed information. The study employed the stratified sampling technique. The interviews were triangulated, together with the data from questionnaire responses.

3.9.3 Document analysis

Bowen (2009:28) defines document analysis as a "systematic procedure for reviewing or evaluating documents – both printed and electronic (computer-based and Internet-transmitted) material". Johnson and Reynolds (2012:2) define it as "the study of existing documents to understand their substantive content and to illuminate deeper meanings which are revealed by their style and coverage."

Neuman (2000) identifies four types of documents that are used, namely: primary sources, secondary sources, running records and recollections. Maree et al. (2016) explain that the documents deal with data sources in a written format that describes past and current research on a particular topic. Bowen (2009) states that documents could be either published or unpublished. They include policies, reports, memoranda, strategy documents, Acts, minutes of meetings, business plans, or any document that is connected to the investigation.

Primary sources deal with data that are unpublished which the researcher gathers from the participants or organisation directly (Maree et al. 2016). It is believed that they are the original source document. Maree (2007) describes secondary sources as any materials, such as, books and journal articles that are based on previously published works. Beam (2012) regards secondary sources as summaries, restatements or interpretations of the originals.

Maree et al. (2016) advocate that the researcher assess the accuracy and authenticity of information contained in documents before using them. Bowen (2009) recommends that the researcher should determine the relevance and completeness of the documents before using them. When selecting documents, the publication date, the purpose of the document, the context in which it was produced and its link to the study should be considered. According to Beam (2012), it is better to use primary sources rather than secondary sources because when the initial documents are restated, they are often abbreviated, lost, skewed or misstated.

Document analysis was essential in this study because the researcher consulted and analysed data from primary and secondary sources of the WCG, namely policy documents, legislative guidelines, and strategy documents. These documents were relevant to digital records management activities.

3.10 Data analysis

Data analysis is defined by Ngulube (in Mathipa & Gumbo 2015:145) as “a technique that collects and analyses data from texts and messages that are communicated in various ways, including books, newspapers and other physical media.” The main goal of the data analysis is to ensure understanding of the different building blocks of the study through the relationships between the variables and to determine if any patterns can be established (Saunders 2009).

Neuman (2006: 456) states that in data analysis, the researcher carefully examines empirical information to reach a conclusion based on reasoning and simplifying the complexity in the data. According to Cooper (2009:62), data analysis is the practical application of procedures. Furthermore, Cooper (2009:62) asserts that data analysis is concerned with sensitising social researchers to use interpretation and evaluation of relevant data. In quantitative research, data are analysed using numbers while qualitative research makes use of words or pictures.

This study used both quantitative and qualitative methods in analysing data. Quantitative data were analysed electronically through the SurveyMonkey tool and coded on an Excel spreadsheet. The data were analysed and presented using pie

charts, tables, graphs, frequencies and percentages. An Excel spreadsheet was used to create a data file and compute the descriptive statistics (Saunders 2009).

With regard to the qualitative component of the study, the data from participants were analysed and interpreted in relation with the objectives of the study. The analysis focused on certain aspects which were not covered by the survey. Data were coded and analysed thematically, identifying common themes from responses for each question. According to Ross (2010:232), thematic analysis involves organising the data and identifying initial key themes, noting down interpretations, and looking for similarities and differences between cases.

3.11 Validity and reliability

According to Saunders (2009), validity is the extent to which an instrument measures what it is supposed to measure and accomplishes what it is intended to accomplish. Internal validity deals with the question of how much results or findings match reality (Merriam 2009). External validity, on the other hand, is the extent to which the findings of one investigation can be applied to other situations (Merriam 2009). As a process, validation involves collecting and analysing data to assess the accuracy of the questionnaire. There are numerous statistical tests and measures to assess the validity of quantitative instruments, which generally involve pilot testing (Saunders 2009; Schensul et al. 2012).

Reliability pertains to the accuracy of measurements. The same instrument must be able to produce the same data at a later stage under similar conditions. The researcher may do this by means of a retest (Saunders 2009:120). Reliability of research data refers to the degree to which an assessment consistently measures that which it is measuring. The key word is consistency. Reliability is concerned with issues of confirmability. In view of this, the engagement of multiple methods such as observations and interviews led to more valid, reliable and diverse research findings. The researcher ensured consistency in the of handling data. And, in order to ensure validity and reliability of the results, pretesting was conducted through a selected group of peer experts in the field of records management. The rationale for this course of action was to get alternative views and opinions regarding the data collection instruments. This

was crucial for the researcher to identify shortcomings and subsequently rephrase some of the questions to be more clear and relevant to the study. The validity of the research was also enhanced, as the respondents and participants were informed of the theoretical background of the study prior to collecting data.

3.12 Ethical considerations

In every discipline, it is unethical to collect data without participants' knowledge, their willingness and informed consent. Research should be conducted in accordance with the necessary guidelines and regulations. The UNISA Policy on Research Ethics (2013) states that:

> The researcher has a responsibility towards those involved in or affected by their work. They should make reasonable efforts to anticipate and to guard against the possible undesirable or harmful consequences of research. They should take reasonable corrective steps when they come across misuse or misrepresentation of their work.

The ethical considerations that were observed by the researcher include the protection of individuals' right to protection from victimisation, as well as their privacy and confidentiality, and acquiring informed consent (Mouton 2001:19). Participants were not coerced, deceived or induced in any way. Honesty, fairness, and truthfulness were the guiding principles in this study (Le Roux, in Mathipa & Gumbo 2015:85; Leedy & Ormrod 2005:101). The researcher sought permission from the WCG to conduct the study in the various departments identified in the research sample, in order to collect data on ECM implementation. The request for permission was made in conjunction with the UNISA Review Committee and the researcher's study supervisor.

Before signing consent forms, participants were informed about the following: the purpose and objectives of the research, what was expected of the participants, the fact that participation was voluntary and that one could withdraw at any time with no negative repercussions.

The researcher considered the following ethical aspects:

3.12.1 Informed consent

As stated by Powell, Fitzgerald, Tylor and Graham (2012), the researcher should consider informed consent and should help participants decide whether they would like to take part in the study and, if so, be allowed to provide written permission for their involvement in the study. In adhering to the informed consent principle, the researcher outlined the purpose of the research to all respondents and participants before the actual data collection process began. The respondents and participants were then sent a consent form, which they needed to complete. The consent form clearly stated that the respondents and participants' involvement was voluntary, and that they could withdraw from the research at any time if they wished to do so.

3.12.2 Voluntary participation

A basic principle of social research ethics is that participation in research should be voluntary (Marshall & Rosman 2010). In this study, participants were encouraged to participate out of their own free will. The researcher provided a clear statement to participants indicating that they had a right to terminate their involvement without any penalty as their participation was voluntary.

3.12.3 Avoidance of harm

In this study, dangers such as physical, emotional or psychological harm were closely guarded against and thoroughly examined. The researcher ensured that none of the research participants were left harmed emotionally, physically or psychologically (Kothari 2008).

3.13 Summary

This chapter presented the research methodology for the study. Furthermore, the chapter discussed the relevant methods and techniques that were employed to address the research problem. The researcher opted for the multi-methods approach, that is, a combination of both quantitative and qualitative methods, with the data being triangulated. The study population and sampling methods were explained in this chapter. The ethical considerations, data collection tools, and data analysis were also discussed. The next chapter will present the data analysis, presentation and interpretation.

CHAPTER 4
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

The previous chapter (Chapter Three) discussed the research methodology, techniques and data collection tools and procedures that were used to conduct this study. This chapter (Chapter Four) analyses, presents and interprets the results that were obtained from the responses to the questionnaires, interviews, and the evidence gathered from documents of the WCG. The quantitative data were presented using graphs, charts, tables, numbers and percentages. The qualitative data were analysed using a narrative style, where participants' actual expressions and phrasing were at times presented for the purpose of authenticity and emphasis.

The findings are presented according to the following study objectives:

- to evaluate the implementation of ECM at the WCG to determine whether the system meets records management requirements and objectives;
- to assess staff's skills and competencies for the management of digital records managed through ECM at the WCG;
- to examine the legislative and policy framework governing digital records managed through ECM implemented by the WCG; and
- to establish the benefits of integrating ECM with other information systems at the WCG.

4.2 Description of the respondents

The study mainly adopted a quantitative research approach and supplemented it with the qualitative approach targeted at staff members who implemented ECM at selected departments at the WCG, namely: the Department of Social Development, the Office of the Premier, the Department of Human Settlements, the Department of Cultural Affairs and Sports, the Department of Transport and Public Works, and the Department of Health.

For data collection, a draft questionnaire was initially pre-tested using a conveniently selected sample of 10 people who work in government departments in Gauteng. This

was employed more as a trial run, or preliminary testing. The aim was to identify and eliminate problems and to determine aspects that needed improvement before distributing the complete survey to the target population (Radhakrishna 2013). After the researcher was satisfied that the questionnaire was complete and technically sound, 76 questionnaires were distributed electronically to the selected sample of the population. Of the 76 questionnaires distributed, 46 were returned. The other 24 potential respondents did not return the questionnaire. The response was considered to be adequate as it translated to 65.71%. Babbie and Mouton (2001) declare that a response rate that is 50% or above is adequate and acceptable for data analysis. Returned questionnaires were analysed using an electronic survey tool. In analysing each question, the total number of respondents was indicated in each table or graph by "N", for example, N= 46.

The ECM implementing staff members were the main respondents, while the senior managers were the secondary respondents. Data collected from the senior management through interviews were used to augment and complement data obtained from the questionnaire. The study aimed to strengthen the findings by triangulating the data collection tools by corroborating the responses of respondents (who answered the online survey questionnaire) with the responses of five participants in the interviews. As pointed out by Rowley (2002) and Creswell (2014), triangulation is a complementary process aimed at providing multiple ways of understanding and seeing the phenomena.

The rationale for including senior managers as the participants in the study was based on the belief that they were better placed to have useful insights into issues pertaining to legislative framework governing the management of records in their various manifestations. Additionally, the managers were likely to bring to bear different perspectives and viewpoints with regard to the application of integrated digital records management systems in order to enhance efficiency in records management activities.

Although the respondents targeted in this study had varying designations and roles, they had similar attributes – they were all implementing ECM in their operational duties. The survey focused on the professionals who used ECM in their various capacities. These were the personnel who applied ECM as the main content, document, and

records management tool. Thus, the duties and responsibilities of these categories of staff were different but intertwined.

Table 4.1: Response rate of the respondents

Targeted respondents	Targeted number	Responses
ECM implementing staff	76	46
Management	6	5
Overall	76	51

As summarised on Table 4.1, of the total sample of 76 ECM implementing staff, 46 (65.71%) responded to the survey. Furthermore, a purposively sampled population of six participants elicited five responses – which translated into a 99% response rate.

4.2.1 Demographic profile of respondents

To better gain knowledge of the demographic profile of the participants, respondents were asked to indicate their age, gender, occupations, and their highest qualifications.

4.2.1.1 Age category of respondents

The respondents were requested to indicate their age. The reason for that was because only adult respondents – 20 years and above – were allowed to participate in the study. Figure 4.1 illustrates the responses to the question asked.

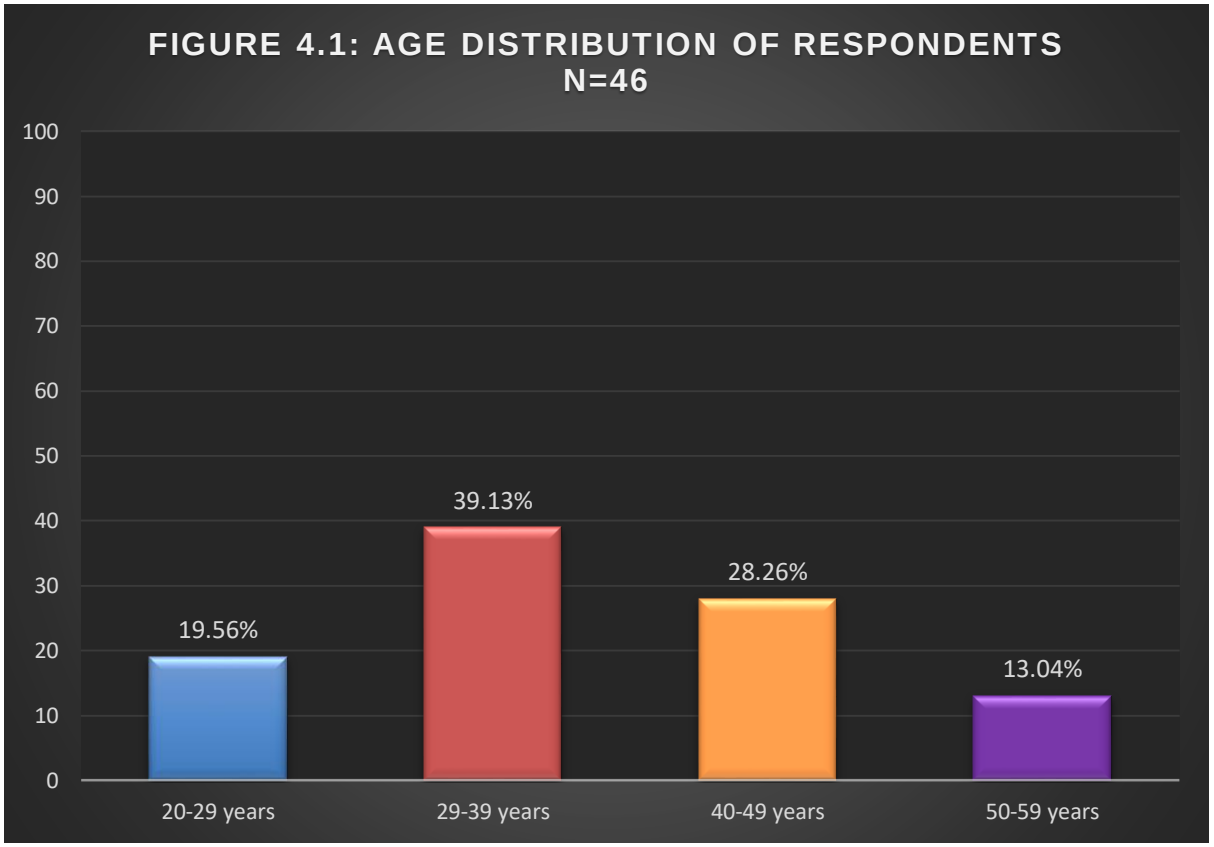


Figure 4.1: Age distribution (N=46)

As shown in Figure 4.1, the largest segment, namely 39.13% of respondents, falls in the age category of 29-39, 28.26% of respondents are in the 40-49 age range, while 19.56% of respondents are between the ages of 18-29. A total of 13.04% of the employees were aged between 50 and 59. It was evident that no respondents younger than 21 years of age participated in the survey.

4.2.1.2 Gender of respondents

Respondents were requested to indicate their gender. The researcher wanted to establish the gender representation of the respondents. Figure 4.2 illustrates the gender of respondents.

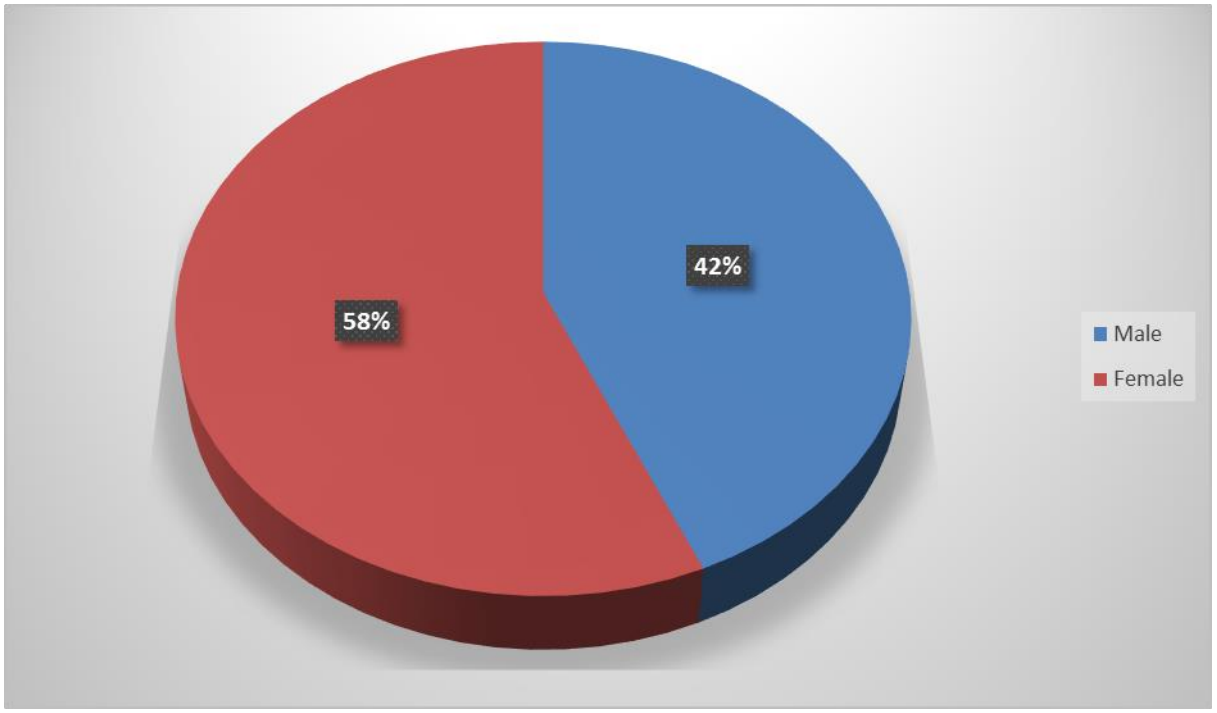


Figure 4.2: Gender distribution of respondents (N=46)

As indicated in Figure 4.2, out of a total of 46 respondents, 46 (100%) disclosed their gender. Female respondents totalled 26 (56.52%) and male respondents totalled 20 (43.47%).

The majority of the respondents were females – that is, 58% versus 42% males. The difference in gender representation between the two categories perhaps suggests that women were the predominant gender in the various departments surveyed. A study by the Department of Arts and Culture (2010) found that 71.4% of the employees in the library and information services and archival services were women and 28.0% were men. This extended to other domains, where the majority of records managers (77.8%), registry/records clerks (76.4%) and other clerical staff (75.0%) were female, while 51.4% of managers were also female. However, the majority of technicians were male (Department of Arts and Culture 2010: 67).

4.2.1.3 Qualifications of respondents

The respondents were requested to indicate their educational qualification in terms of their highest level of education. Figure 4.3 illustrates the responses to the question asked.

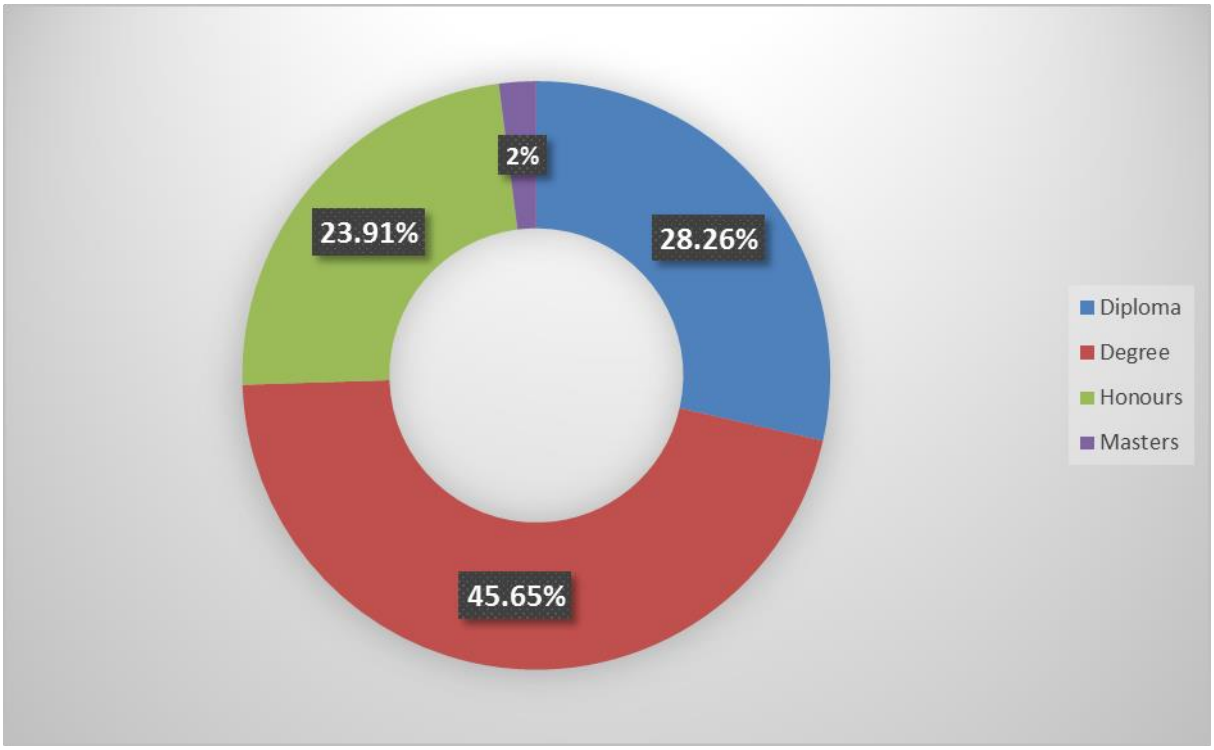


Figure 4.3: Highest level of education (N=46)

As indicated in Figure 4.3, the qualifications for respondents ranged from diploma to postgraduate qualifications degrees.

Out of a total of 46 respondents, 13 (28.26%) had a diploma as their highest level of education, 21 (45.65%) held a degree, 11 (23.91%) possessed an honours degree, and 1 (2.17%) had a master's degree, which is on the National Qualifications Framework (NQF) level 9.

Based on the responses from this question, it was evident that the respondents possessed qualifications and skills relevant to their work. However, when it comes to the management of digital records in particular, studies have revealed that there has been a significant scarcity of skills in this area. For example, a study by the Department of Arts and Culture (2010), which investigated the demand for the skills and the education and training provided by higher education institutions for librarians, archivists, records managers and other information specialists, found that there were skills deficiencies which were largely not being addressed fully by the higher education institutions. The study recommended that the higher education sector should evaluate

the current curriculum models and design viable programmes that emphasised practical skills development and the application of new technologies. This was in line with the relevant market needs. Chisita (2009) highlighted that curriculum issues of LIS education should be considered in the context of the needs the profession, the job market, trends in research and development, status of Information Science, special responsibilities of LIS training schools in developing countries, globalisation, emerging technologies, and the general socio-economic context. Ocholla and Shongwe (2013) discovered that apart from short courses, few, if any, institutions of higher learning in Africa offered programmes that focused purely on digital records management – particularly at a high level of study such as a degree.

4.2.1.4 Designation of respondents

The respondents were requested to indicate their designation. Figure 4.4 illustrates the responses to the question asked.

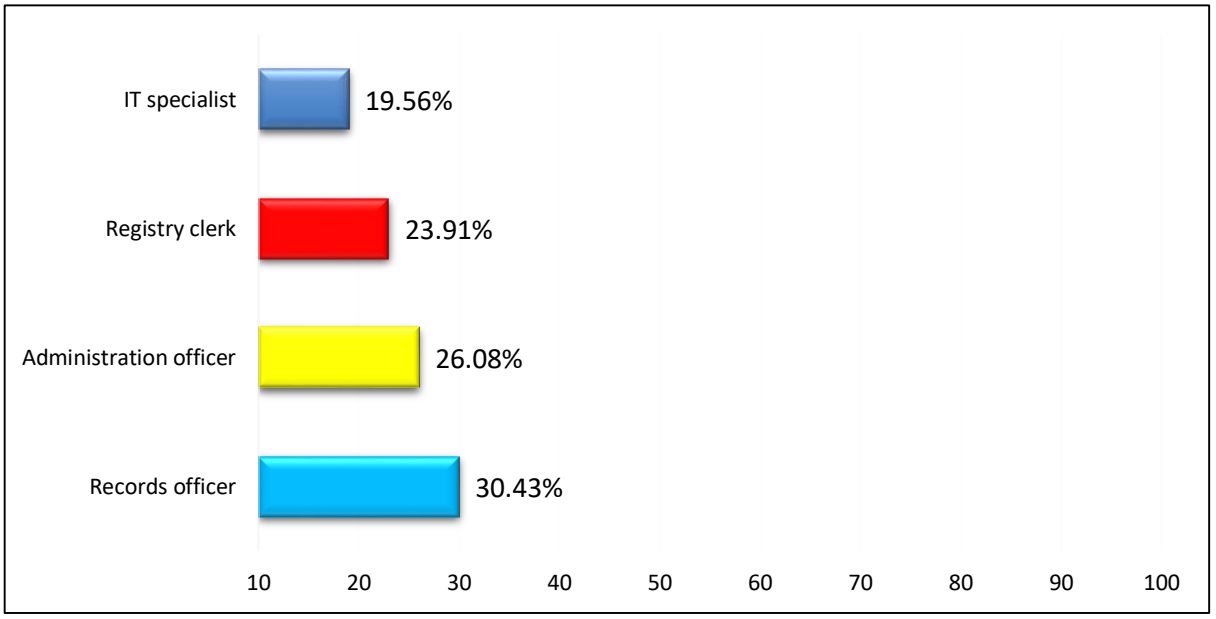


Figure 4.4: Respondents' designations (N=46)

Figure 4.4 indicates that out of the 46 respondents, 14 (30.43%) served in the position of records officer, 12 (26.08%) identified themselves as administrative officers, 11 (23.91%) worked as registry clerks and 9 (19.56%) held the position of IT specialist.

The research findings reveal that despite the respondents' differences in terms of occupational titles, their duties were intertwined and almost similar – they were all involved in information-related activities. They worked with systems that manage digital records or information. In this context, studies are envisaging that the future of work in almost all the sectors would be transformed to embrace the fourth industrial revolution (4IR). This is likely to result in the changing not only of some of the job functions but also occupational titles – new human tasks and new refined skills set would be required that focus on digitisation (Levin & Cunningham 2018).

4.3 Duration of work experience of respondents

The respondents were asked to indicate the duration of service in their respective departments. Figure 4.5 illustrates the responses to the question asked.

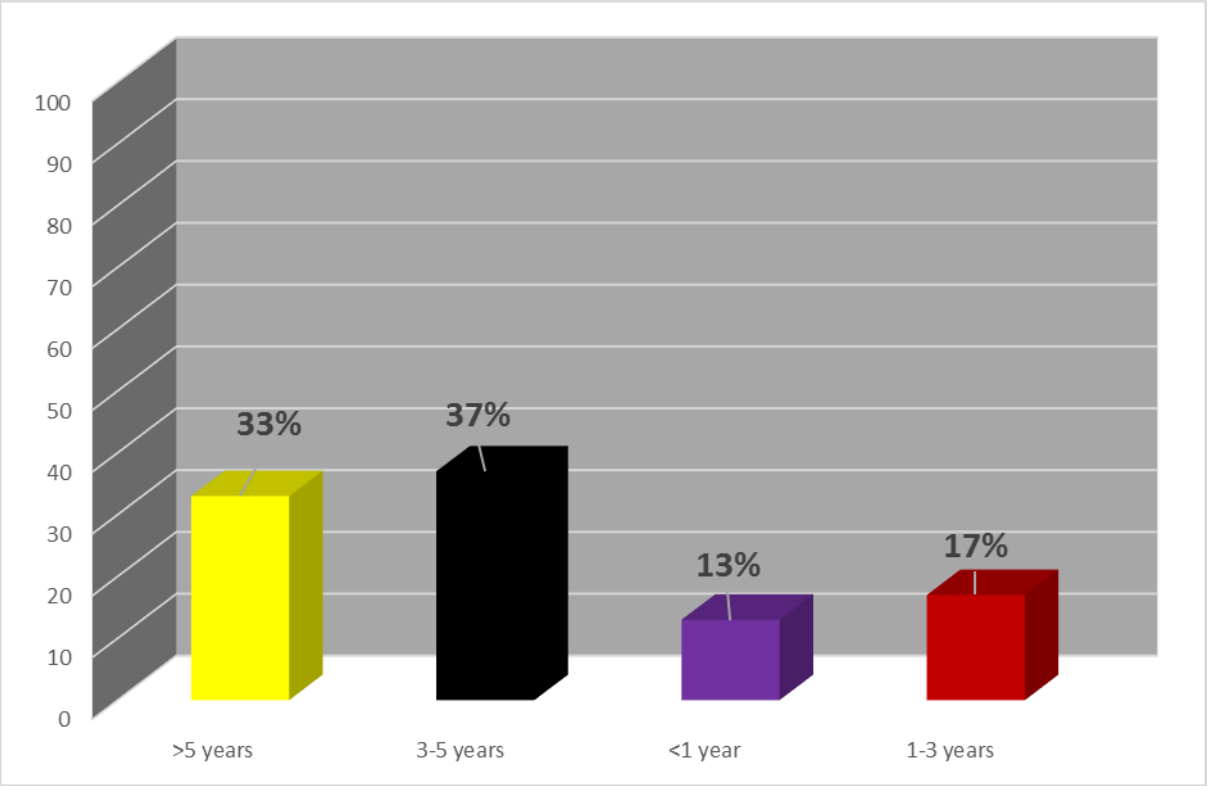


Figure 4.5: Duration of service (N=46)

Figure 4.5 illustrates that out of the 46 respondents, 13%had been in their position for at least one year, 17% had been in their position for between 1 and 3 years, 33% had been employed for between 3 to 5 years and 37% had been there for more than 5

years. The results suggest that there is a general element of longevity in terms of staff retention – something that is linked to the development and maintenance of institutional memory (Van Rensburg 2011). A relatively high tenure could mean that staff have gained experience within their line of work.

4.4 ECM operational usage

The respondents were asked “How often do you use ECM?”

Figure 4.6 illustrates the distribution of responses to the question.

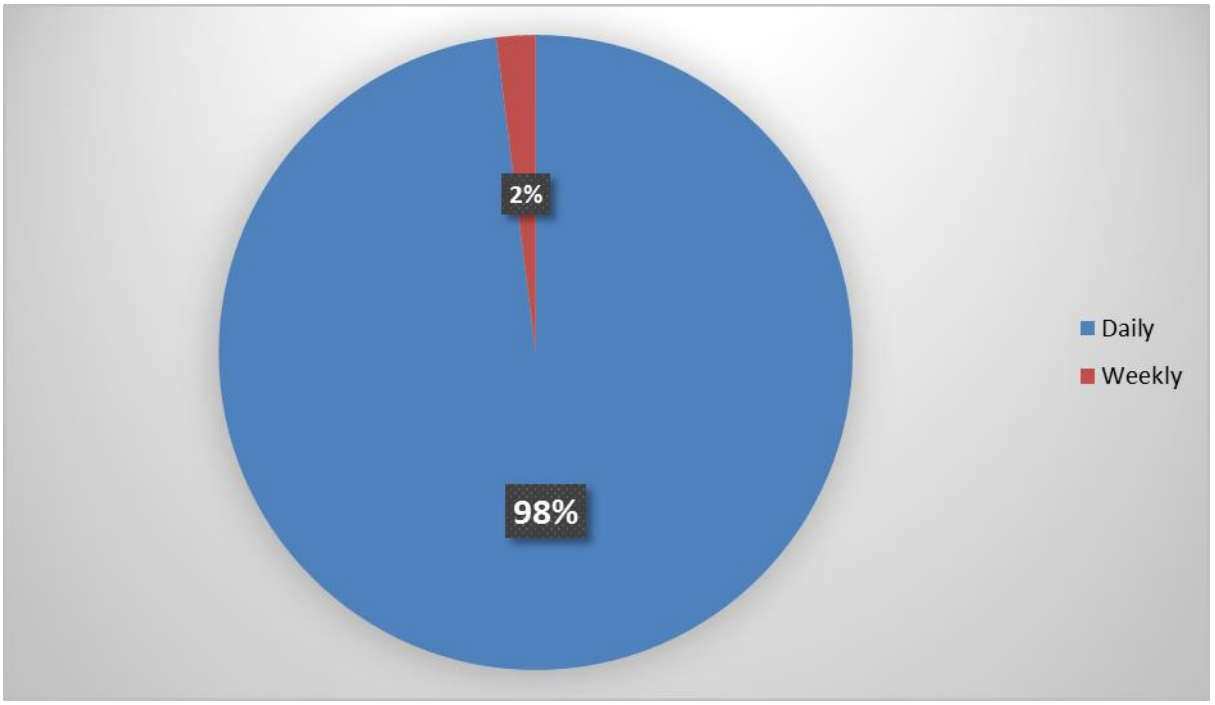


Figure 4.6: How often do you use ECM? (N=46)

Figure 4.6 indicates that 44(98%) of respondents used ECM daily. The other 2% of respondents indicated that they used ECM weekly. And, perhaps not surprisingly, there was no indication from other respondents that ECM was implemented only monthly or occasionally. The findings indicate that ECM has become such a crucially important system that drives daily administrative activities. In highlighting the central role of ECM, Andersen (2008) points out that the system is implemented in a variety of regular functions that include routine transactions, internal and external communication

(information sharing), data capturing and storage. The system is also used to manage regular content and workflow for ease of access and retrieval.

4.4.1 Assessment of ECM's efficiency and effectiveness

The respondents were asked "How would you rate the effectiveness (or lack thereof) of ECM within your department, e.g. in terms of managing, storing, retrieving, and sharing of digital records, etc.?" Figure 4.7 illustrates the responses to the question asked.

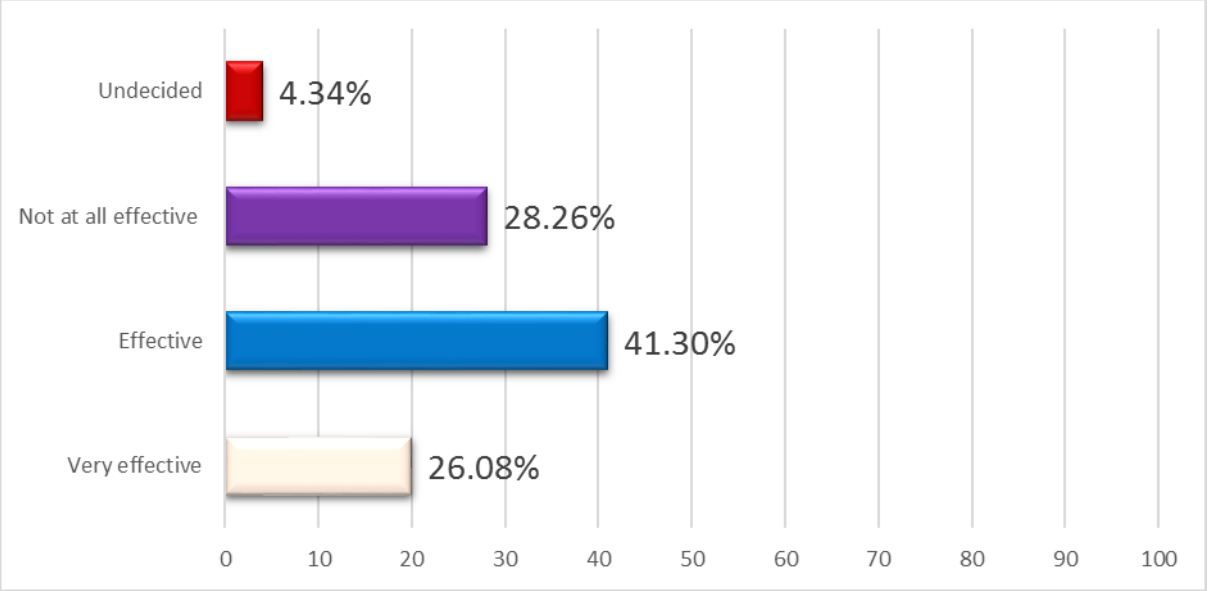


Figure 4.7: Assessment of ECM's efficiency and effectiveness (N=46)

As depicted in figure 4.7, of the respondents surveyed, 41.30% revealed that ECM was effective within their departments. This was evaluated through constructs such as managing, storing, retrieving, and sharing of digital records. A total of 26.06% indicated that ECM was very effective, while a notable number of respondents 28.26% said ECM was not effective at all in their departments. Another 34% of respondents were undecided regarding the efficiency or effectiveness of the system.

Hullavarad et al. (2015) contend that the efficiency of ECM should be determined by the extent to which it allows users to effectively manage, store, retrieve and share content in a way that an organisation achieves its business objectives. Thus, ECM applications should be able to streamline an organisation's information processes and

facilitate a seamless information flow so that staff are able to effectively manage, store, retrieve and share information.

ECM implementation is often hindered by incompatibility between the ECM platform and the existing technology environment. Therefore, the functional needs must drive technology and not the other way around. In her investigation into whether users derived benefits from implementing ECM, Salamntu (2016) found that the majority of the users did not find the system to be beneficial or useful in terms of effectively storing, retrieving and sharing digital content. The study also found that few public sector institutions adopted and subsequently implemented digital records management systems without fully involving the people who would be using the system. Thus, it would seem that in such situations change was often not managed and communicated properly. Consequently, lack of users' involvement in the change may result in a change of attitude among staff, who might feel that the change is imposed on them. According to Ciric and Rakovic (2010) and Boikhutso (2013), effectively managing change and incorporating change management strategies into digital records management implementation projects are critical aspects that could result in the acceptance of the change by all stakeholders.

4.4.2 Experience of using MyContent system

This question sought to find out how respondents perceived MyContent. This is an ECM application module that provides for the creation, management and archiving of records electronically across various departments. The respondents were asked "How has been your experience of using MyContent?"

Figure 4.8 illustrates the responses to the question asked.

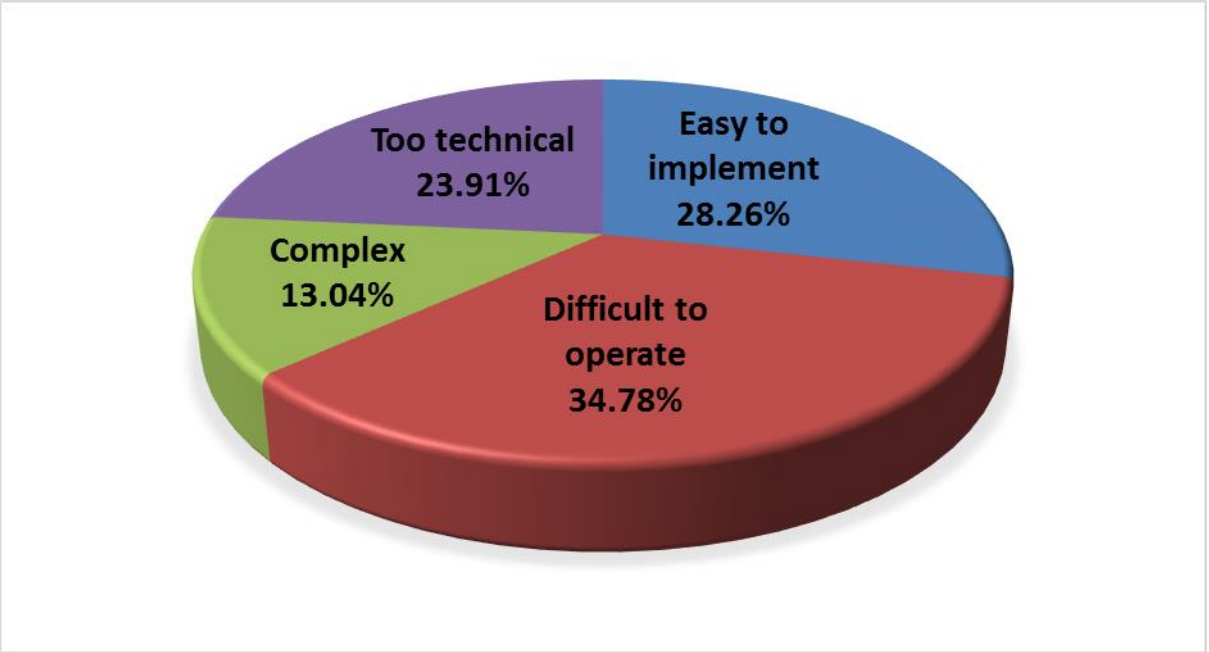


Figure 4.8: Experience of using MyContent system (N=46)

Figure 4.8 indicates that a large number (34%) of respondents revealed that MyContent was difficult to operate, 23.91% found it too technical, 13.04% said that it was complex, while 28.26% perceived it to be easy to apply. The findings correspond with Tokosi's (2017) case study of the clinicians' perceptions of ECM at Tygerberg Hospital in the Western Cape, which found that ECM was not functioning optimally; staff were not fully utilising ECM in their operations; and "hospital management and clinicians are not constantly interacting and discussing. Information turnaround time is lengthy, and the applicability of the system is not well coordinated" (Tokosi 2017:1569).

Yet another related study by Kwatsha (2010) found that although the majority of users who implemented EDRMS – which is ECM's predecessor – were satisfied with the functionality of the system, they considered it difficult to operate. They also found it more time-consuming in terms of accessing and storing documents. Some of the experiences have been ascribed to a lack of proper or adequate training provided to staff.

4.4.3 Regularity of ECM reviews

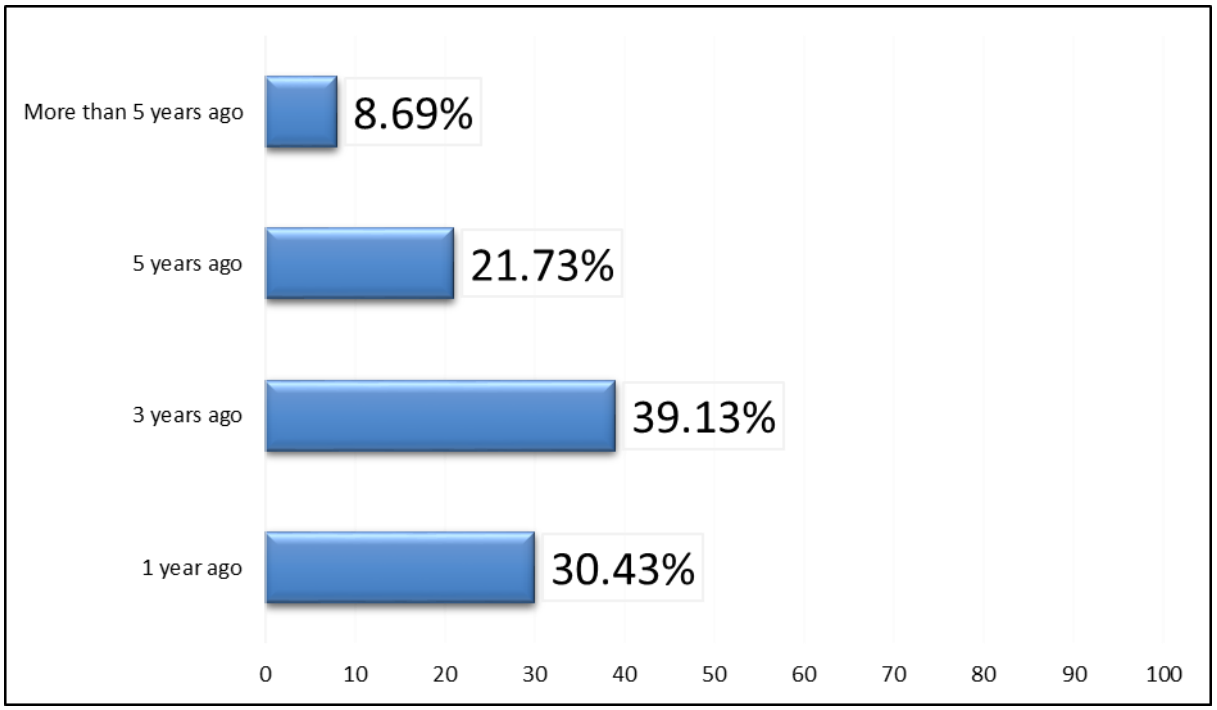


Figure 4.9: Regularity of ECM system evaluation reviews (N=46)

As depicted above, among the respondents who mentioned that ECM was reviewed, 39.13% stated that ECM was last reviewed 3 years ago, 21.73% indicated that ECM was reviewed 5 years ago, while 8.69% revealed that ECM was reviewed more than 5 years ago. Only 30.43% said that ECM was reviewed a year ago. Cronholm and Goldkuhl (2003) and Du Toit (2016) pronounce that it is important for institutions to conduct continuous evaluations in order to be able to identify conditions and problems in institutional records or information systems that hamper implementation projects. These could take the form of surveys or interviews aimed at assessing the value, usability and benefits of the system. Regular evaluation efforts could yield more effective and efficient outcomes. A systematic system review is also important as it could be used to measure ECM's functionality through maturity levels. This would indicate whether or not the system has progressed or regressed (Pelz-Sharpe 2010).

4.5 Training on ECM

The respondents were asked “Have you received formal training on how to use Enterprise Content Management?” Figure 4.10 illustrates the distribution of responses to the question.

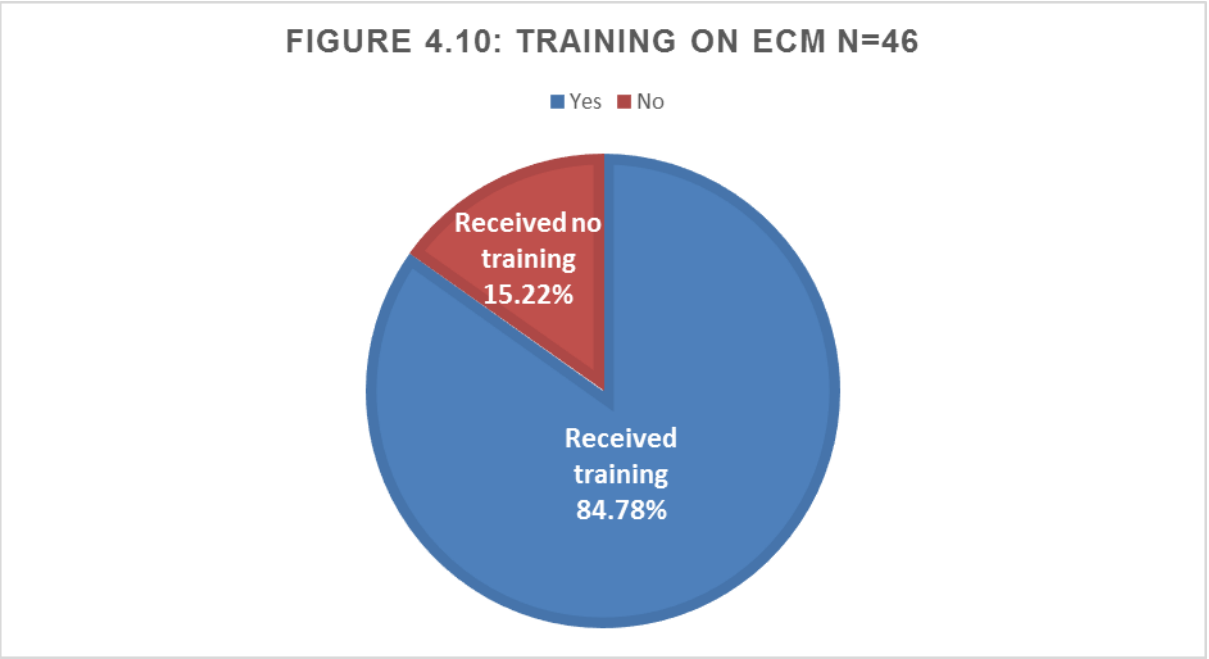


Figure 4.10: Training on ECM (N=46)

As reflected in Figure 4.10, the majority of the respondents (84.78%) indicated that they received training in how to use ECM. Only 15.22% of the respondents had not been trained to use ECM. It is important to note that some staff members may have been new in their departments and, as a result, they would not have received training at the time the survey was conducted. Therefore, such respondents would have possibly answered in the negative. It is probable that those who attended training were more confident in the use of ECM than those who did not attend training.

The uptake and adoption of ECM – in particular the MyContent system – by various departments, necessitated a subsequent training rollout in order to ensure that staff were properly equipped to perform their duties. This is because work-related training is crucial in any organisation as it provides staff members with the relevant skills and knowledge to be able to execute their functions, thereby providing an efficient service

(Skills Development Act of SA, No. 197 of 1998; National Skills Development Strategy III Progress Report 2011-2013).

A study by Munetsi (2018), which investigated the state of digital records in a government department in the Eastern Cape, revealed that it was difficult for staff members with no prior training in records management to work effectively in a digital environment. The study found that 60% of respondents surveyed did not have training in records management in general and digital records management in particular. Furthermore, because digital records are technology dependent, managing them requires a different set of skills, including skills to effectively manage structured and unstructured content.

The WCG's ECM Implementation Evaluation Report (2018) revealed that despite WCG having approximately 4328 number of users (staff) who were scheduled to receive training, the training only reached about 44% of them. That is only a quarter of the total number of registered users (7592). In addition, the results show that some of the respondents who received training did not find the training useful or valuable, and that there was "uncertainty on whom is supposed to provide support in which instances, with users indicating they were being sent back and forth between DCAS and Ce-I" (*ECM Implementation Evaluation Report WCG* 2018:5).

4.5.1 Advantages gained from ECM training

This question sought to find out what advantages were gained by respondents after undergoing ECM training. Figure 4.11 illustrates the distribution of responses to the question.

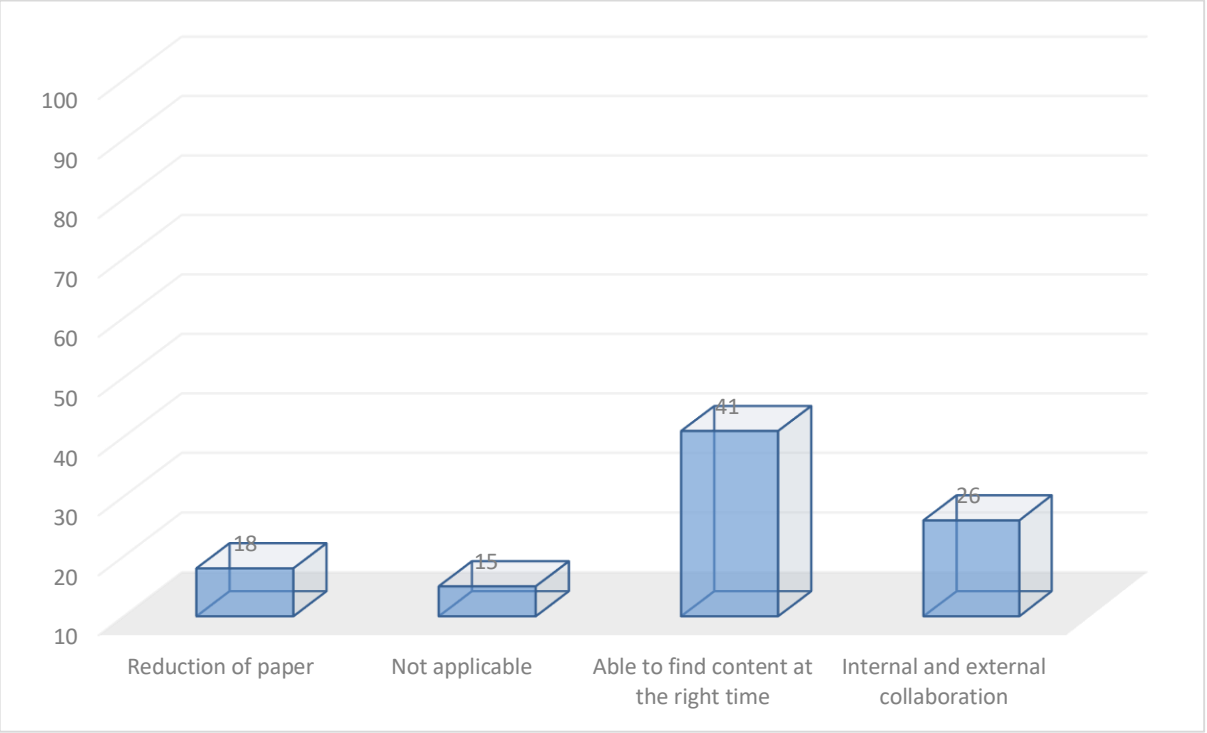


Figure 4.11: Advantages gained from ECM training (N=46)

As can be seen in Figure 4.11, most of the respondents (41%) indicated that training helped them to find content at the right time, 18% said that it helped with reduction of paper, and 26% mentioned that it helped them with internal and external collaboration. A total of 15% of respondents had already stated that they did not receive training as shown in Figure 4.10.

The majority of the respondents recognised the reality that as more records were becoming available in digital format, which require the application of technology, it was imperative that they equip themselves with the necessary skills to be able to work effectively in a digital environment. It was expected that those who attended short, professional training courses on digital records management would be able to apply their newly acquired skills and knowledge to improve their work performance. They would also possibly be expected to share the acquired knowledge with their colleagues.

In a related study pertaining to ECM as an enabler for effectively managing records, Rickenberg et al. (2012) found that the system enhanced the management of digital records by supporting organisations to integrate and coordinate the entire scope of content components and information products. These activities encompass records and

document capture, digital preservation, paperless archiving, and content dissemination. The benefits are thus numerous, which include a synergetic environment, collaborative work teams and systems, and cost-saving measures.

Nguyen (2014) points out that although technology is essential in enhancing operational efficiency for records management, inadequate or lack of regular training in the use of the latest technological systems could result in staff members lagging behind in terms of new technological developments. This could bring about frustration among staff, who could feel that they are not adequately prepared to apply the new technologies.

4.5.2 Types of training provided to staff on digital records management

The respondents were asked to indicate the types of training interventions through which their departments provided them with training. Figure 4.12 illustrates the distribution of responses to this question.

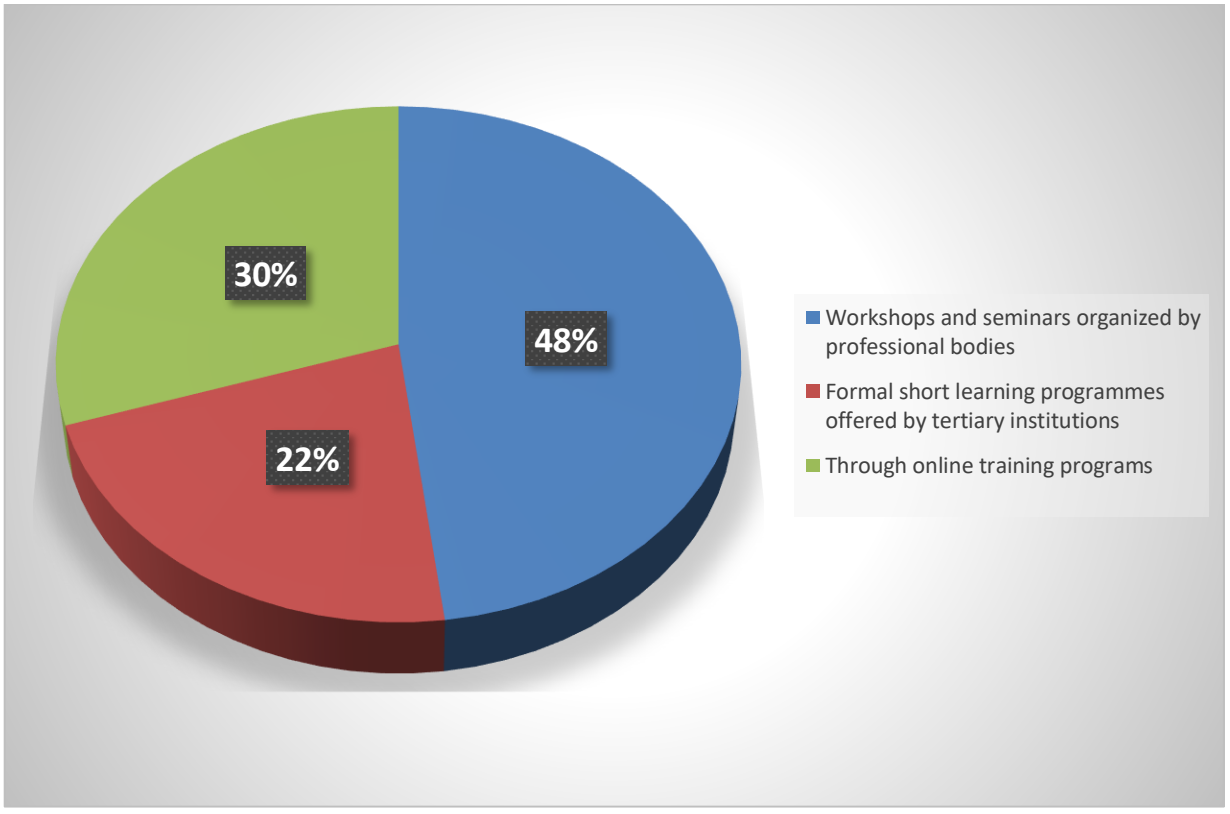


Figure 4.12: Types of training provided to staff in relation to digital records management (N=46)

As shown in Figure 4.12, the majority of the respondents (48%) revealed that they were offered records management training through workshops and seminars that were organised by professional bodies. A total of 30% of the respondents indicated that they were provided with training through online training programmes, whereas 22% received training by way of formal short learning programmes offered by tertiary institutions.

The findings are supported by Wiltzius, Simons, Seidel and Vom Brocke (in Vom Brocke & Simons 2014), whose study found that the method through which training programmes were carried out positively influenced the personnel's acceptance and subsequent implementation of ECM and its associated applications. The appropriate levels of training and support provided to staff in relation to digital records management were also cited as one of the crucial aspects in promoting and enhancing efficiency. Tagbotor, Adzido and Agbanu (2015) found that in-depth practical training is particularly appropriate for operational records management activities such as workflow management, data capturing, and other digital transactional activities. The authors also maintain that in order for training to be effective, it should be conducted by outside experts who have appropriate skills in records management.

4.5.3 How the training needs are identified

This question attempted to find out how respondents' training needs in relation to ECM were identified. Figure 4.13 illustrates the distribution of the responses to the question.

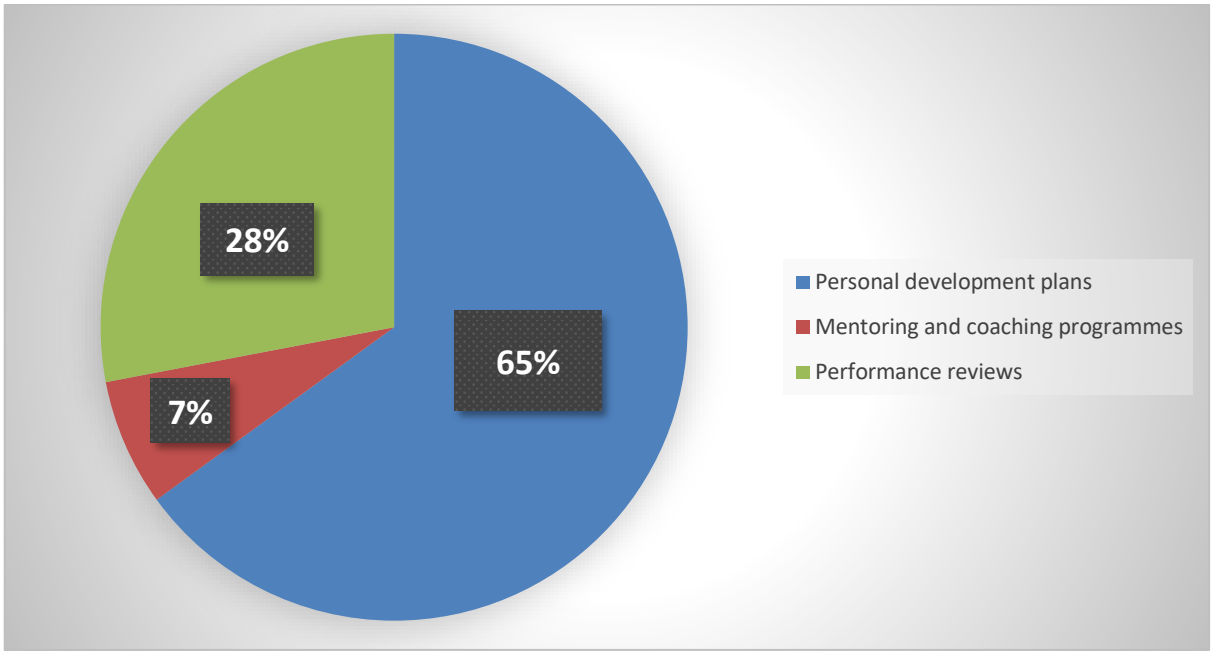


Figure 4.13: How the training needs are identified (N=46)

As it is shown in figure 4.13 above, the majority of the respondents (65%) indicated that their training needs were identified through personal development plans, 28% said this was achieved through performance reviews, while only 7% pointed out that their training needs were identified through mentoring and coaching programmes. In the context of government operations, staff members are usually expected to identify their training and development needs and incorporate them into their personal development plans (National Skills Development Strategy III: Progress Report 2011-2013). The aim of this intervention is to fill the existing knowledge and skills gap in personnel's operational capacity. In addition, as it is common practice, the training needs are required to be in line with the personnel's roles and responsibilities.

4.5.4 Challenges encountered in implementing ECM

The respondents were asked about the various challenges that they faced in implementing ECM to manage digital records. Figure 4.14 illustrates the distribution of the responses to the question asked.

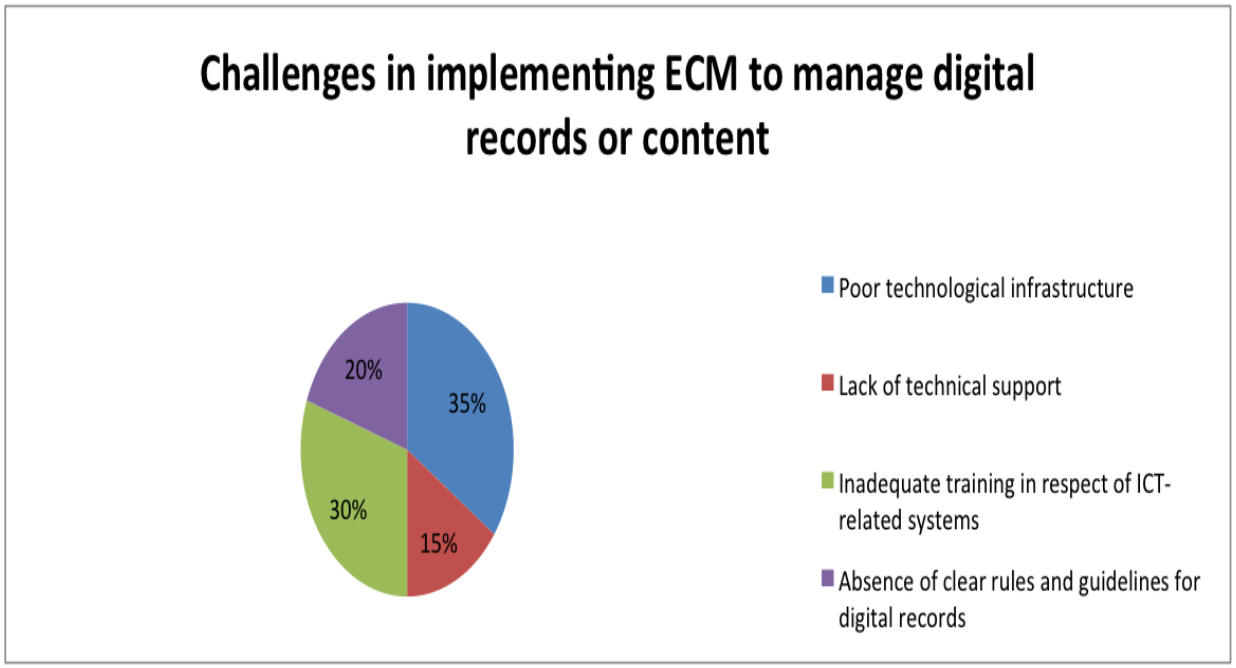


Figure 4.14: Challenges in implementing ECM to manage digital records or content N=46

As illustrated in Figure 4.14, 35% of the respondents stated that they encountered poor technological infrastructure in the process of implementing ECM to manage digital records. Other respondents (30%) said that they experienced challenges with regard to inadequate training for ICT-related systems. A total of 20% of the respondents attributed their challenges to the absence of clear rules and guidelines for digital records. A further 15% of respondents said that they faced challenges of a lack of technical support when implementing ECM to manage digital records.

Literature confirms that ECM implementation faces several challenges, and few of such challenges have been explored. For example, in a study about ECM implementation in the public sector, Salamntu and Seymour (2015) identify, among others, a lack of appropriate technology infrastructure, a lack of top management support, and resistance to accept change among staff, as some of the challenges that hampered successful implementation of the system. Similarly, a related study by Kwatsha (2010) revealed that there were barriers that inhibited successful implementation of digital records management systems in public sector institutions. These include strategic, social and system factors. Strategic factors relate to lack of clear alignment between the business strategies – as devised by top management – and the practical elements required for implementation projects. This ambiguity made it almost impossible to

measure the success and benefits of the system. Social factors are those relating to users' interactions with the system on a regular basis, which include aspects such as whether or not users are comfortable using the system. System factors are concerned with the system's technical functionality – such as whether the system is effective or user-friendly and whether it helps users manage digital records efficiency (Kwatsha 2010:89).

4.6 Analysis and interpretation of findings from participants

In the qualitative component of the study, the target population was six managers from selected departments that implement ECM. Out of the six managers, five participated, which resulted in a response rate of 99 per cent. One member from one department chose not to participate in the study without providing reasons. Thus, the study focused on the five participants. From the participants, three were deputy directors while two were assistant directors. One participant had recently joined one of the departments.

A structured interview schedule was emailed to six participants individually to solicit information that would complement the data from the questionnaire. The rationale behind this decision was to follow up on specific points in order to fully explore some aspects pertinent to the objectives of the study. The follow-up interviews were carried out after the data were collected from the questionnaires to increase the overall effectiveness of the research findings (Adams & Cox, in Cairns & Cox 2008; Creswell 2013). The motivation to opt for an email questionnaire, as opposed to face-to-face and telephone interviews was influenced by distance, time and costs – the researcher is based in Pretoria while the participants are located in Cape Town. Therefore, travelling to the location or making lengthy telephone calls would have been a costly exercise in terms of both time and finances.

According to Fritz and Vandermause (2017), well-constructed emails used in the main part of the interview are likely to elicit rich responses. As a form of orientating the would-be participants in the research project, the researcher began the correspondence email with a welcome statement which provided an outline of the study's purpose and objectives. The participants were further informed about their rights in relation to confidentiality and informed consent, what their participation would entail, the

anticipated amount of time to complete the interview, and the fact that their participation in the study was voluntary.

Meho (2006) points out that some of the advantages of email interviews include the fact that they eliminate the need for transcription of the raw data, as electronic data require little editing or formatting before being processed for editing. Gibson (2010) opines that email interviews are convenient in that participants can decide when to respond to questions, and that "time for reflection and editing can allow participants to create rich and complex accounts of their experiences, in their own words" (Gibson 2010:3).

However, one of the limitations of conducting the interviews through email was that the researcher was not able to add questions as a way of probing for more details or clarification. In other words, the possibility of follow-up questions for the purpose of clarity was non-existent. According to Sarantakos (2013), some of the disadvantages of email interviews are that they are less convenient, are not suitable for sensitive issues, and lack anonymity. With the email interview, the researcher is also unable to observe, interpret, and act upon real-time visual or non-verbal cues such as body language or eye contact, which could contribute to the understanding of the participants' experiences (Fritz & Vandermause 2017).

The study employed structured interviews where the researcher developed a set of predetermined questions where each participant received the same questions, in the same way, with no variation in terms of the wording (Bryman 2012). Structured interviews differ from semi-structured interviews in that the latter are more open and flexible, allowing an opportunity for probing and clarity. As pointed out by Sarantakos (2013), structured interviews provide a significant degree of objectivity and uniformity in terms of responses. They also require fewer interviewing skills than semi-structured interviews, and reduce the possibility of interpersonal bias.

The interview questions were developed in accordance with the objectives of the study and were divided into two sections. Section A focused on legislation and policies for records management, while section B focused on systems integration.

Table 4.6: A summary of participants interviewed

Name of department	Number of participants
Social Development	1
Department of Cultural Affairs and Sports	1
Department of Human Settlements	1
Transport and Public Works	1
Premier	1
Department of Health	0

4.6.1 Legislative framework

4.6.1.1 Knowledge of the legislative framework governing management of records in South Africa

A question was asked in order to find out if the participants were acquainted with relevant legislative framework governing records in South Africa. In response to this question, all the participants stated that they were familiar with the legislative framework that governs the management of records, and indicated that they complied with said legislation. The responses regarding legislative policies governing management of records included the following:

- The National Archives and Records Service of South Africa (NARSSA) Act that was promulgated in 1996 and whose key mandate is the proper management and care of records of governmental bodies.
- The Promotion of Access to Information (PAIA) Act that was promulgated in 2000 and that facilitates public access to records from both public and private sector institutions within a stipulated time.
- The Protection of Personal Information (POPI) Act that was approved in 2013 and whose key objective is the protection of personal information processed by public and private bodies.
- The Electronic Communications and Transactions (ECT) Act that was promulgated in 2002 and that facilitates electronic communications and transactions by promoting legal certainty whenever public administration and private business activities need to be conducted in digital form.

- The Regulation of Interception of Communications Act (RICA) that was promulgated in 2002 and that governs the interception or monitoring of paper-based and electronic communications such as certain telephonic and internet communication.

From the participants' responses to the afore-mentioned question, it became evident that staff members were conversant with the legal prescripts governing the management of records, and that this reality informed how they carried out their roles and responsibilities. As highlighted by the IRMT (2009b), the legal mandate or policy pertaining to records management should provide a framework for developing and issuing guidelines, procedures, and standards for records management throughout an organisation.

4.6.1.2 Managing digital records within the context of South Africa's legislative and regulatory framework

A legislative framework serves as a regulatory guide for the functioning of governmental bodies in terms of performing activities that promote good governance, accountability, and institutional and social memory (NARSSA 1996). Accordingly, legislation is crucial to ensure that records, including digital or electronic records, are managed properly for the effective and efficient running of the current operations of an organisation, as well as for posterity (NARSSA 1996). According to section 3 of the NARSSA Act, South Africa has an obligation and duty to manage and take care of all public records, to preserve public and non-public records, and to make such records accessible and promote their use by the public.

Participants were asked about the importance of compliance with legislation governing the management of digital records. All the participants concurred with the position that the legislative framework is important because it provides direction and assists public institutions in complying with regulatory requirements regarding digital records. This is because legislation is regarded as a fundamental part of the strategic management of records and information resources. This relates to how digital records are created, accessed, distributed, maintained, and so on. Participant A explained that legislation is critical as it helps to stipulate the regulatory provisions for records management by

saying: “it helps define what digital or electronic records are, and how they should be managed by endorsing the use of international standards such as ISO 15489 and DOD 5015.2”.

Participant B emphasised the important role of legislation in ensuring proper management of records available in digital format, adding, however, that they experienced challenges in the implementation of the legislation:
Legislative framework for digital recordkeeping will ensure that all government departments, including municipalities, operate on the same standard. Currently, provincial archives of the Western Cape is unable to receive digitally stored archival records from the various government agencies. Not all government bodies are using an Enterprise Content Management system and are not building their systems in accordance with MoReq2010 or DOD 5015.2 standards, which support interoperability standards for recordkeeping.

It became evident that participants regard legislation as crucial in regulating and controlling how digital records, given their unique nature and form, should be managed in order to promote enhanced decision-making processes. It also became clear that in order to promote a broad application of the legislation, public institutions such as NARSSA should take the lead in terms of providing strategic direction regarding management of digital records. NARSSA could also help ensure that the current legislation accommodates the long-term preservation of digital records, which are increasing in volumes as a result of rapid technological advances.

4.6.2 Policy on digital records management

This section presents both the data from participants’ interviews and organisational document analysis about the importance of policy legislation for managing digital records. A policy provides a set of standards, procedures and principles that must be followed in order to achieve certain goals or objectives.

4.6.2.1 Availability of a legislative policy for management of digital records

The participants were asked whether their departments had a digital records management policy. With the exception of one participant, who indicated that their department was in the process of finalising such a policy, all the other participants indicated that their departments had a digital records management policy in place. In the context of policies governing management of digital records, Asogwa (2012) argues that although digital records management has now become almost a common practice in most African countries, "records management and archival policies and laws were written with paper records in mind and with simpler models of the archival functions and the roles of archival institutions" (Asogwa 2012:9). This suggests that in most archival and records management legislation, the initial definition of the word 'records' did not include digital records. Thus, it would seem the initial focus was on managing and preserving hard copy records, which were considered original or authentic. To underscore this point, participant B stated that: *There have been attempts to separate the digital RM policy from the physical RM policy – and this has created confusion and as such an integrated RM policy exists*.

However, as revealed by Mosweu (2018), the archival and records management legislation has now essentially become an all-embracing and evolving document, as "Countries around the world have archival legislation that promotes the proper management of digital records; for example, Canada has the Library and Archives Act (Government of Canada 2004, amended in 2016), South Africa has the National Archives and Records Services Act (Government of South Africa 1996) and Sweden has the Archives Act (Andersen 2013:2)" (Mosweu 2018:40).

The findings suggest that policy legislation with regard to the management and preservation of digital records ought to accommodate records available in the form other than paper, such as those available through ECM and other digital applications and systems. However, NARSSA is yet to enact a policy aimed at enabling and permitting government entities to develop interim solutions to preserve digital records (Ngoepe 2017).

Nevertheless, as part of digital transformation in government, the WCG has embarked on a digitisation project, whose objective is to facilitate access and preserve the paper records by creating their digital surrogates, while minimising possible loss of these records (Digitisation Policy of Western Cape Governmental Bodies 2017; Draft WCG Digital Government Strategy 2017). These records would serve as evidence of official businesses for the purpose of accountability, transparency, operational continuity, and institutional and social memory.

4.6.2.2 Adherence to digital records management policy

This question sought to establish from the participants whether they adhered to the digital records management policy. In response to this question, participant C replied that *once the formal digital records management policy is in place, all staff in the department will be guided by that policy*. Participant D, whose department had the policy in place, commented in the following manner:
Currently, most departments attempt to adhere to it; however, realistically no departments across WCG are compliant. For example, PDF/A as a standard has not been deployed across WCG. The ECM system deployed has not matured sufficiently for authentic digital recordkeeping. Archives staff is not skilled appropriately in digital recordkeeping. The auditor general has developed a digital authentication auditing standard (via UNISA and the InterPARES Trust). However, this auditing standard has not been deployed.

The findings revealed that in cases where the digital records management policy was in place, there was a general adherence to it. There was also a realisation about the importance of this policy in guiding the departments' operations in terms of managing digital records.

4.6.3 Responsible person for implementation of a digital records management policy

Every programme needs to identify key role players or champions – people responsible for facilitating and carrying out the project's objectives or mandates. In the context of records management, the records manager is usually that champion (Fanning 2013).

When asked about the person responsible for implementing the digital records management policy in their respective departments, all the participants identified the records manager as the “implementer” of policy guidelines on records management. Although records management as an activity should generally be the responsibility of everyone who creates records within an organisation (IRMT 2009), the records manager, as the custodian of good record-keeping practices, is typically the person who enforces compliance with records management policies. The records manager is usually the person who ensures that records, including digital records, are preserved in accordance with appropriate standards.

Against the backdrop of the perspective provided above, the Records Management Policy of Western Cape Governmental Bodies (2017) outlines the following roles and responsibilities of the records manager in relation to policy implementation:

- The records manager must ensure compliance to the Provincial Archives and Records Service of the Western Cape Act, 2005
- Together with the head of the service, the records manager shall periodically monitor implementation of this policy.
- Review the policy when the need arises, to accommodate new developments and changes.
- Provide training workshops when necessary.

4.6.4 How the digital records management policy is communicated to staff

This question sought to find out how the policy on digital records management was communicated to staff. The five participants revealed that they were responsible for formulating, reviewing, monitoring, and communicating the digital records management policy among staff. Their tasks included supervision of the day-to-day records management activities – in order to ensure that records are properly managed and preserved. These include managing systems that manage digital records. The participants mentioned that subordinates were introduced to the policy through knowledge sharing avenues such as meetings, training and workshop sessions. There was a common understanding that if the policy was not communicated properly among staff, it would be difficult for them to perform their functions efficiently.

4.6.5 Challenges faced in managing digital records within the context of South Africa's legislative and regulatory framework

In this section, the study sought to identify and understand the challenges faced when managing digital records within the context of South Africa's legislative and regulatory framework. Some of the following responses were given:

- *Most RM staff members don't understand the regulatory framework for digital records.*
- *IT and executives are not aware of the comprehensive functionality required for authentic digital records configuration in ECM.*
- *Archivists insist on treating digital records and physical records separately. Archives' file plan methodology is seriously outdated and does not align with the ISO 15489-2016, which requires a functional file plan instead of a subject/organisational file plan.*
- *Low levels of computer skills among staff are a concern that needs urgent addressing. Staff needs to be supported in this regard.*
- *Digital records lack documentary form and as a result could be difficult to manage and regulate.*

As previous studies have revealed, technological advances presented records management professionals with both challenges and opportunities that impact on how they manage digital records, while ensuring that the records management systems are utilised in such a way that they are verified as legally compliant (Ngoepe & Katuu 2015). Essentially, digital records lack the characteristics or appearance of a physical (hard copy) record and, as such, they do not have "physical custody". A related study by Mosweu (2018) revealed that there was increasing reliance by governments on the use of information technology systems to authenticate digital records for auditing purposes. This brought to the fore questions related to the credibility, integrity, and reliability of digital records. It also presented an element of uncertainty with regard to continuous availability of digital records over time.

In terms of section 11(2)(b)(iii) of the NARSSA Act, records that reach 20 years must be transferred into archival custody. This, however, becomes a challenge for digital records given their unstable nature; by the time a period of 20 years elapsed, they might

have become unreadable or lost due to technological obsolescence. Thus, managing such records and facilitating their long-term preservation could be an arduous task. Ngoepe (2017) underlines this problem in his study, which found that South Africa was yet to develop an infrastructure to ingest digital records into archival custody. NARSSA has still not enacted a policy that allows government entities to develop interim solutions to preserve digital records.

4.6.6 Records management systems integration

This section presents participants' responses about the importance of having an integrated records management system to manage enterprise-wide digital content.

4.6.6.1 The importance of records systems integration in promoting organisational efficiency

This question attempted to establish whether systems integration is crucial in enhancing organisational efficiency. Further to that, the aim was to find out whether systems integration was regarded as important in achieving data coherence across departments, particularly the integration of ECM with other applications or systems. All the participants indicated that their systems were integrated in one way or the other, although the type and degree of integration differed from one department to another.

Participant E indicated that at the Department of Transport and Public Works (DTPW) in particular, OpenText and BizProjects (Microsoft Project Management), have been integrated. But only the storage of case files for project management was being stored in OpenText. As a result, there have been challenges each time OpenText was upgraded, as external consultants were required to re-work the integration.

Participant C indicated that integration is important because it promotes synergy by merging disparate systems and allowing members to work together and share content. Participant D stated that integration is critical in that it provides a systematic interplay of systems operating collaboratively. Participant A pointed out that in order to ensure consistency, reliability and uniformity, integration should be governed by standards and procedures for integrating records management in ICT systems. This is critical

particularly during systems migration, where data could become lost. Against this background, the WCG complies with the handbook on Minimum Information Interoperability Standards (MIOS), which was issued by the Minister of Public Service in terms of Public Service Regulations. The primary objective of the document is to "set out the Government's policies and standards for achieving interoperability and seamless information flow across government as well as the wider public sector" *(Minimum Information Interoperability Standards 2002: 8).*

The selection of MIOS standards has been driven by:

- Interoperability – only standards that are relevant to systems;
- Interconnectivity –data interoperability and information access are specified;
- Market support – the standards selected are widely supported by the market, and are likely to reduce the cost and risk of government information systems;
- Scalability – standards selected have the capacity to be scaled to satisfy changed demands made on the system, such as changes in data volumes, number of transactions or number of users; and
- Open standards – the specifications for the standards are documented and available to the public at large.

The findings concurred with previous studies by Huff and Dirking (2010), which reported on a correlation between systems integration and efficiency in enhancing the overall performance of an organisation and giving it a competitive advantage. Willis (2016) maintains that it is essential to create an integrated system that could be used to help teams cooperate and share knowledge effectively, as opposed to allowing systems to operate in a fragmented fashion.

4.6.6.2 Benefits of integrated records management systems

When participants were asked for their views about the benefits of having an integrated records management system, some of the responses provided were as follows:

- *In an ideal world, the benefits are numerous with information available at your fingertips – one is able to work in sync with other colleagues and collaborate on projects.* – participant A

- *If you search for information, much like a comprehensive digital library, you should be able to find the information you are looking for.* – participant B
- *Unless South Africa adopts one software solution (such as OpenText) the benefits realisation for ECM will not happen; for example, Australia adopted one software standard so that all government departments could be aligned and this is where the true benefit happens.* – participant C
- *All government departments will operate the same way, same standards etc. Research and configuration expenses can be done at one level and then updated to all government systems across the country. Currently, South Africa Treasury/SITA promotes a soup mix of systems. There really is no standard operating procedure for records management.* – participant D
- *An integrated system provides a viable avenue through which we are able to work on a single platform that incorporates other systems. This creates opportunities for collaboration and interaction. This also enables one to find content easily and share with many.* – participant E

The WCG's ECM evaluation survey (2018), which was conducted on members working in selected government departments, revealed that some of the benefits of integrated information systems included:

- access to remote files;
- ability to work more collaboratively with colleagues;
- less paper;
- reduced search and retrieval time;
- easier access to archived content;
- reduced costs;
- reduced risk of unfavourable audit findings; and
- reduced risk of loss of institutional knowledge.

Closely linked to the findings presented above, Van Niekerk (2015) maintains that organisations could benefit from having a unified records management platform and not an assortment of systems operating disparately. This is because integrated systems allow a seamless flow of information in its various manifestations across an organisation. Huff and Dirking (2010) proclaim that organisations could benefit by

making use of Oracle Enterprise Content Management Suite (OCMS), which provides a single unified platform where ECM applications can be deployed, allowing content to be shared and disseminated.

The findings corroborate the existing literature which affirms that in order for organisations to derive benefits out of technology implementation, particularly with regard to records management, they need to develop a cohesive digital repository. This would encourage collaboration, interaction, alignment, and connectivity of systems (Lheureux, Pezzini & Guttridge 2015; Fleisher & Hursky 2016; Chinyemba 2017). In other words, the systems should talk to one another for the benefit of an entire organisation.

4.6.6.3 The impact of lack of systems integration on the overall performance of ECM

This question attempted to find out whether the lack of an integrated platform with which to manage digital content could negatively affect the performance of ECM as an information storage, integration and sharing mechanism. The general sense among the participants was that unless an organisation has a collaborative system which allows users to access, share and distribute content between and within departments, this would result in some of the following drawbacks:

- Hampering of productivity;
- Unnecessary duplication of documents;
- Incorrect or inaccessible information;
- Lack of organisational synergy; and
- Isolated information that lacks ‘contextual value’.

The above scenario was supported by Smits and O’Callaghan (in Brocke & Simons 2014: 91), whose study discovered that disintegrated systems invariably create less synergy with respect to systems functionality. This often results in organisational information becoming obscure because it would have been located in disjointed and disparate systems. Similarly, an AIIM White Paper (2010) advocates that, in order for organisations to function optimally, they should eliminate information silos, which complicate information searches and also compromise adherence to records

management retention tools. Therefore, there should be alignment among internal systems, which should in turn be aligned to an organisation's strategic objectives.

Furthermore, the results resonate with the findings of a study by Chauke (2018), which investigated the integration of information systems to enhance business intelligence at a government department in South Africa. The study revealed that a lack of systems integration has led to government departments' inability to carry out efficient decision-making and share data across various units. In addition, the study found that "the lack of enhanced business intelligence tools is widespread due to the use of incompatible platforms, networks and applications; unnecessary duplication of functions and systems between line departments and provinces" (Chauke 2018:2).

The following remarks from participant A indicate how the lack of systems integration can impact the overall system performance:
Unless South Africa adopts one software solution (such as OpenText), the benefits realisation for ECM will not happen. For example, Australia adopted one software standard so that all government departments could be aligned and this is where the true benefit happens. All government departments will operate the same way, same standards etc. Research and configuration expenses can be done at one level and then updated to all government systems across the country. Currently, South Africa Treasury/SITA promotes a soup mix of systems. There really is no standard operating procedure for records management.

However, against the backdrop of the situation highlighted above, it would seem that system integration is not occurring in a consistent fashion – and the situation is not confined to the South Africa scene. For example, according to an AIIM White Paper (2010) on bridging the gap between ECM and ERP (2018), 61 per cent of more than 300 companies surveyed in the US had no connection between their ECM and ERP solutions. According to the summarised findings of the study:
*"Of those that have integrated ECM with ERP, 24 percent only have a one-way content link, while a mere eight percent have a two-way link and only seven percent have implemented an AP/AR transaction link. The linkage between ECM and other applications, such as CRM and HRM, is less than 10 per cent" (*AIIM White Paper 2010: 4).

4.6.7 Security of records managed through ECM

When asked whether they believed records managed, stored and shared among ECM applications could be regarded as secure, the predominant response from the participants was that although ECM is a 'sophisticated system', they felt uncertain about the levels of security which the system could actually provide in the often volatile and complex digital environment. For example, possible risks of data loss, data manipulation, loss of privacy and confidentiality, as well as access controls were some of the security issues that were raised. Participant B pointed out that they work with sensitive information which in some instances requires security clearance, which becomes a major challenge. Additionally, the lack of security protocols insofar as handling the flow of digital records was also as a highlighted concern.

Participant C stated that ECM generally provides a secure environment for digital records, because "the system stores and allows for controlled access, metadata capture and dissemination of the records. Thus, depending on the internal governance controls of the organisation, the records can be kept secure".

The findings suggest that ECM, like any technological invention, is subject to complications and defects that could threaten the continuous availability and accessibility of data that are stored and shared through the platform (Hullavarad et al. 2015). Some of the security issues raised by the participants could be attributed to factors such as incompatible systems in which data are stored. Another aspect could relate to the increasing volumes of structured and unstructured information that is widely scattered around departments, which could be difficult to identify and locate (AIIM White Paper 2010). The findings further indicate that issues pertaining to information security present departments with a need to formulate appropriate strategies to maintain the security of records available online – in order to mitigate and minimise further risks.

4.6.8 The deployment of cloud computing models to store records

This question sought to find out whether participants' institutions implemented cloud computing services and, if so, which modules were being adopted. One participant

revealed that they were in the advanced stage of implementing the service, while the other four participants indicated that their institutions implemented cloud computing services. It was discovered that the four departments implemented the same computing model, namely Infrastructure as a Service (IaaS) – which is "a low-level cloud service, with fundamental resources, such as processing, storage, and networks, managed by the provider, giving the consumer the ability to rapidly and conveniently deploy the platform and software" (Kaaniche & Laurent 2017: 3). The service allows end users to work with one another to develop and process content. However, as the landscape of the cloud environment keeps expanding, security and privacy issues are likely to come under significant threat.

According to Kaaniche and Laurent (2017), there are three main attributes that may present security and privacy threats, namely:

- Outsourcing – outsourcing is delegating the responsibility for performing data storage or business functions to a third party. By outsourcing data, users remove the burden of establishing and maintaining a local storage infrastructure.
- Multi-tenancy – this cloud feature means that the cloud infrastructure is shared and used by multiple users.
- Massive data – the volume of data and applications grows exponentially and brings new challenges to support dynamic data monitoring, privacy preservation and security protection, such as image processing and data mining in the cloud context.

Studies conducted on cloud computing within the context of public sector institutions by, among others, Moseti (2017), Kalusopa, Mosweu and Bayane (2017), and InterPARES Project Africa Team (2018) revealed that public sector entities implemented cloud computing services because, among other important things, they drive business process transformation, reduce costs, and increase organisational efficiency. Given the benefits mentioned above, it is perhaps little surprise that departments are increasingly realising the benefits of cloud computing services, and are thus incorporating them into the area of records management. This is evidenced by the fact that the majority (i.e. four out of five) of participants indicated that their departments had implemented the cloud computing service, as opposed to only one participant, who revealed that they were in the process of initiating implementation.

4.6.8.1 ECM application modules

ECM is essentially an amalgamation of various technology applications which function to support an organisation's strategic objectives with regard to records and information management activities. Through the deployment of ECM applications modules, organisations endeavour to manage the overflowing 'content chaos' in order to facilitate and enhance content access, regardless of location or format (Alalwan & Weistroffer 2012).

The participants were asked about ECM applications that were being implemented in their respective departments. The prevailing theme that emerged from the responses was that the departments implemented OpenText Content Suite. The system was implemented with considerable success at the Department of Transport and Public Works. It was reported to have brought some benefits, which included the creation of an electronic repository which delivered consistent updates. The system has also empowered staff and clients with visible, predictable processing and positive collaboration and interaction (Department of Transport and Public Works 2016).

According to the AIIM White Paper (2010), there are various ECM applications that organisations employ to manage their content and streamline business procedures. These include:

- Records management – module that manages the administration of records, including file plans, indexing, and retention policies in ensuring legal and industry compliance.
- Web content management – module controls a website's content through the use of management tools based on a core repository, such as templating, workflow and change management as well as content deployment.
- Workflow management – module that supports business processes, routes content, assigns work tasks and states, as well as creates audit trails.
- Scanning – module that provides image-processing capabilities that allow conversion of paper files to digital images.

The findings reveal that the WCG utilises various ECM applications in order to enhance their overall records management activities. The results also indicate that ECM

applications are applied to create a single enterprise-wide repository that accelerates information access across organisational units. The findings also suggest that while ECM is applied to manage more structured data such as emails, web pages, scanned documents, and images, ERP is used to handle structured data such as customer relationship management (CRM) and human resources management (HR) – in order to create a single enterprise platform.

4.7 Summary

This chapter analysed, presented and interpreted data collected via questionnaires, interviews and documents relevant to the study. Data were collected from ECM implementing staff and management. Data obtained from the questionnaires and interview schedules were triangulated according to the main themes of the study. Variables related to the objectives of the study, namely ECM evaluation, different types of ECM applications, staff skills and competencies for the management of digital records, legislative and policy framework governing digital records, and the benefits of systems integration were examined. In view of the above, it has been established that ECM implementation at the WCG faced challenges that impacted on its efficiency, for example, inadequate training provided to staff, lack of adequate technology infrastructure, poor technical support with regard to systems managing digital records, and so on. The majority of respondents regarded ECM as being complex and difficult to implement. Although there were a few pockets of success, such as improved access to files, and internal and external collaboration, there was an indication that the benefits of ECM were not being fully realised.

The next chapter presents a summary, conclusions and recommendations that may contribute towards wider adoption and implementation of ECM as a viable option for government departments to manage their digital records properly.

CHAPTER 5
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The aim of the study was to investigate, through an ECM evaluation model, the implementation of Enterprise Content Management at the WCG. In the previous chapter, data were analysed, interpreted and discussed. This chapter presents a summary of the findings and conclusions and also recommendations based on the objectives and findings of the study. It also provides suggestions for further research.

In this study, ECM was defined as the tools and strategies that allow for the management of an organisation's structured and unstructured information, wherever that information exists, in whatever format (Kulcu & Cakmak 2012). The main goal of ECM implementation is to ensure transparent content sharing by making different and disparate applications, such as web content management, and records management, interoperable (i.e. exchange information).

5.2 Summary of findings

This section presents a summary of the findings of this study. The following objectives were formulated in line with the aim of the study:

- evaluate the implementation of ECM at the WCG to determine whether the system meets records management requirements and objectives;
- assess staff's skills and competencies for the management of digital records managed through ECM at the WCG;
- examine the legislative and policy framework governing digital records managed through ECM implemented by the WCG; and
- establish the benefits of integrating ECM with other information applications at the WCG.

5.2.1 ECM evaluation

ECM performance review is critical in determining the efficiency and effectiveness – or the lack thereof – of the system in terms of managing digital records. The study evaluated ECM implementation through the ECM3 model. Evaluation involved users' impression and experiences of using ECM's MyContent system to manage digital records. There were barriers that hindered successful implementation, such as poor technological infrastructure, lack of technical support, and inadequate training with regard to ICT systems for managing digital records. It was also revealed that ECM evaluation was not performed as regularly as it should be; as a result, departments were not fully realising the benefits of implementation.

5.2.2 Qualifications and skills of personnel

The respondents who participated in the study were requested to indicate their level of education. This was a significant point because education determines the level of decision-making among staff, thereby helping them to have a good grasp of the complexities of their work. The majority of respondents have appropriate qualifications and skills relevant to their work. A large segment of those surveyed possessed a university degree.

In ensuring efficient and effective records management, there is a need for effective training of staff in records management. This includes training on the use of technological systems to manage digital records. In this context, it was revealed, however, that there were limitations when it comes to skills pertaining to digital records management, which requires in-depth and continuous training, as well as management support.

5.2.3 Legislative and policy framework governing digital records

The increasing use of technology to manage and preserve digital records has significantly changed the way information professionals conduct their business. As such, legislative provisions regarding the management of digital records become crucial in terms of providing guidance and assisting governmental bodies to manage records

in accordance with appropriate procedures and standards. From the interviews conducted with the five participants, it was evident that there was an understanding of the importance of legislation that governs the management of records in general and digital records in particular. The results further indicate that the majority of the departments have established formal digital records management policies and that staff were adhering to the policies. Furthermore, as has been confirmed by literature, there is an indication that archival and records management legislations are endeavouring to embrace records available in digital form.

5.2.4 Systems integration

The main purpose of systems integration is to bring together various applications and ensure that they are able to function in sync, allowing easy collaboration and information sharing. The literature and interview results confirmed that integration has many important benefits, which include easy information retrieval, systems and task alignment, and collaborative information sharing. The integration could be achieved by creating a single digital enterprise content platform. It was further revealed that a lack of systems integration results in absence of organisational synergy, unnecessary duplication of functions, and departments' inability to carry out efficient decision-making, among other shortcomings.

5.3 Conclusions

The purpose of this study was to evaluate the implementation of Enterprise Content Management at the Western Cape Government. The aim of the evaluation exercise was to help determine the efficiency or lack thereof of ECM implementation projects. In this section, the conclusions of the study based on the objectives of the study are discussed.

5.3.1 Evaluation of the ECM system

The success of any system, strategy or method is determined by the extent to which it brings about the intended outcomes; the evaluation process should indicate whether or not the system produced benefit achievements or attainment of goals. It was revealed

that ECM implementation's success was not prevalent across all the departments surveyed. Various constraints limited the system's potential to provide full benefits realisation.

5.3.2 Skills and competencies for management of digital records

It is widely accepted and recognised that in order for staff to execute their tasks properly, they ought to acquire formal qualifications and engage in other forms of development programmes aimed at advancing their skills.

The educational qualifications of the respondents ranged from diploma to master's degree. This indicates, therefore, that they are well equipped to execute their tasks. It is also assumed that the respondents are encouraged to further their studies and deepen their knowledge by registering with some of the higher learning institutions. That is in addition to attending other training programmes organised by the WCG that are aimed at providing staff with the requisite skills to work efficiently in the digital environment.

5.3.3 Legislative and policy framework for managing digital records

Legislation and policy framework are central to the proper functioning of governmental bodies as it provides appropriate guidelines and procedures. It was concluded that staff had a full grasp of the legislative provisions governing the management of digital records. This understanding of the legislative framework enables staff members to apply the regulatory procedures to perform their functions efficiently and effectively. The legislative policy is communicated to staff through appropriate information sharing avenues such as staff meetings, trainings and workshop sessions.

5.3.4 Systems integration

The study concluded that almost all the departments had embarked on collaborative efforts, which brought about benefits such as a seamless flow of information, organisational synergy and alignment of records management functions. Systems integration is crucial for organisational fluidity – and the absence of such coordination

could result in disadvantages such as duplication of functions, lack of data coherence, and information silos. This could have an overall negative impact on an organisation's ability to provide enhanced service efficiency.

5.4 Recommendations

The following recommendations were put forward based on the current study findings as well as its scope and limitations:

- There should be a regular ECM review to determine whether the system performs as required in terms of bringing about expected benefits, such as easy access to digitally stored content. Ideally, ECM evaluation should be conducted at least once a year to identify and address any conditions and problems that could hamper implementation moving forward. The WCG should design an evaluation matrix template that addresses all pertinent issues concerning ECM implementation.
- The various departments within the WCG should invest in internal human resource capacity programmes by providing regular and continuous training on ECM and its various modules. Such up-skilling and re-skilling interventions could go a long way in providing avenues for maximising and optimising competencies among staff in relation to digital records management. It is also critical that training programmes be designed while taking cognisance of opportunities heralded by the 4IR. Furthermore, curriculum development in South Africa's higher learning institutions should include modules on digitisation.
- A legislative policy framework should be clearly formulated and widely disseminated to guarantee maximum reach. This policy framework should guide everything that government departments embark on, including the management of digital records. Records managers must ensure that there is internal and external compliance with regulations and procedures governing digital content access and distribution. There should be consistent monitoring and enforcement of the policy to ensure that all sections perform their functions in accordance with the policy provisions.
- Integration is vital for systems interoperability and, as such, departments should strive to achieve maximum amounts of integration with a view to enhancing and promoting efficiency. MyContent as a system should be aligned with other applications for the purpose of creating a single digital enterprise platform that

promotes collaboration and knowledge sharing. Departments should incorporate various cloud computing services in the area of records management in order to support e-government projects.

5.5 Suggestions for further research

The current study focused on the implementation of Enterprise Content Management at Western Cape Government. The study was limited to the Western Cape only. It was also confined to only five departments. A study of ECM implementation in other provinces would enable a comparison of how the system performs elsewhere – including how it could be used as a viable option for organisations to promote digitisation. The use of digital systems to manage the increasingly growing volumes of digital organisational content should open avenues for more studies focusing on the role of records management in the Fourth Industrial Revolution.

5.6 Summary

This chapter presented the summary and conclusion of the findings in chapters four and five based on the objectives of the study. The study has identified some shortfalls in digital records management processes at the WCG. For example, it was established that ECM at the WCG was not fully deriving benefits in respect of overall records management processes. The system was not fully realising its objectives across the departmental spectrum. Respondents cited, among others, inadequate training, lack of technical support, and poor technical infrastructure as some of the bottlenecks affecting the effective implementation of ECM.

The study also established that the staff members responsible for implementing ECM had appropriate qualifications and skills. They held degrees and some had acquired postgraduate degrees from different universities. Training on MyContent was provided to the majority of respondents. The aims of the training programmes were to improve staff capacity and provide staff members with the necessary knowledge and skills to effectively work in the digital environment.

It was further revealed that the majority of staff members (managers) were acquainted with the relevant legislative framework that governs the management of digital records. Conversely, departments had legislative policies in place to ensure compliance.

The study also established that, in order to ensure data coherence and promote systems interoperability, departments have embarked on integration efforts. Various applications were converged with a view to creating a single enterprise platform, which would improve the storing, access, sharing and management of documents between and within departments. The literature confirms that integration of information systems results in efficient decision-making, enables organisations to collaborate and share data and multiple insights, and significantly reduces risks of sensitive data loss. Integration also allows for the creation of a searchable repository for shared knowledge and technical support with regard to digitally recorded information.

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APPENDIX A: LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH

18 Clara Berea Pretoria Central
Pretoria
0002
08 February 2019

The Director-General
Western Cape Government
9 Wale Street
Cape Town City Centre
Cape Town
8001

Dear Sir/Madam

Request for approval to conduct research

The purpose of this letter is to request your approval for me to undertake a survey on Enterprise Content Management (ECM) implementation in your departments. The following departments have been identified:

- Department of Transport and Public Works
- Provincial Treasury
- Department of Cultural Affairs and Sports
- Department of Health
- Department of Human Settlements
- Department of Social Development

I am a master's student in Information Science at the University of South Africa conducting research entitled *"Evaluating the implementation of Enterprise Content Management at the Western Cape Government departments in South Africa",* under the supervision of Dr Collence Chisita (chisict@unisa.ac.za).

The main aim of this project is to acquire empirical data about the implementation of Enterprise Content Management (ECM) in order to determine if the ECM has been

effectively implemented in accordance with the Western Cape Government's (WCG) aims and objectives.

I view this study as a worthwhile project that will serve as a guide for other provinces or government departments that are currently implementing or are planning to implement ECM in order to improve efficiency in their records and information management operations. The WCG will benefit a lot from the recommendations of this study. I would like to mention that all replies will be treated in the strictest confidence. Data will be presented in the aggregate and responses will not be attributed to particular respondents.

I realise that there are many other demands on the time of your staff members, but I wish to indicate that the results will be beneficial to all those with responsibility for records and information management. It is worth mentioning that on completion of the study, a copy of the dissertation will be donated to the WCG, and the results would be shared and discussed with the staff of the WCG.

The study will entail quantitative approach with a self-administered questionnaire containing open-ended questions as well as interviews with selected management personnel. The researcher would distribute a questionnaire to the departments through email. There will also be email interviews with management to solicit further information.

I look forward to your positive response and support for my academic endeavour.

Yours sincerely
Popopo Mohlala (Mr) MINF student: Unisa
012 429 2306
076 166 8911

APPENDIX B: QUESTIONNAIRE FOR ECM IMPLEMENTING STAFF

Please answer each question by ticking the appropriate box

SECTION A: Demographic profile

1. What is your age?

20-29 [ ]
29-39 [ ]
49-59 [ ]
0ver 60 and above [ ]

2. What is your gender?

Female [ ]
Male [ ]

SECTION B: Skills and educational background

3. What is your highest qualification?

Diploma [ ]
Degree [ ]
Honours [ ]
Masters [ ]

4. What is your position within your department?

Records Officer [ ]
IT Specialist [ ]
Registry Clerk [ ]
Administration Officer [ ]

5. How long have you been employed by the Western Cape Government (WCG)?

0-1 year [ ]
1-3 years [ ]
3-5 years [ ]
5 years and more [ ]

SECTION C: ECM system evaluation

6. How often do you use ECM in your line of work?

Daily [ ]

Weekly [ ]

7. How would you rate the effectiveness (or lack thereof) of ECM within your department, e.g. in terms of managing, storing, retrieving, and sharing of digital records etc.?

Effective [ ]

Very effective [ ]

Not effective at all [ ]

Undecided [ ]

8. How has been your experience of using MyContent?

Difficult to operate [ ]

Complex [ ]

Easy to apply [ ]

Too technical [ ]

9. When last was the ECM review conducted?

1 year ago [ ]

3 years ago [ ]

5 years ago [ ]

More than 5 years ago [ ]

SECTION C: ECM training

10. Have you received training on how to use Enterprise Content Management (ECM)?

Yes [ ]

No [ ]

11. If you have received the training, in what way did the training enhance the management of digital records?

Internal and external collaboration [ ]
Able to find content at the right time [ ]
Reduction in paper [ ]
Not applicable [ ]

12. What type of training does your department provide to staff in relation to digital records management?

Workshops and seminars [ ]
Formal short learning programmes [ ]
Online learning programmes [ ]
Other [ ]

13. How are your training needs identified?

Personal development plans [ ]
Mentoring and coaching [ ]
Performance reviews [ ]
Other [ ]

SECTION E: Challenges encountered in implementing ECM

14. What challenges do you encounter in implementing ECM to manage digital records or content?

Lack of technical support [ ]
Poor technological infrastructure [ ]
Inadequate training in respect of ICT-related systems [ ]
Absence of clear rules and guidelines for digital records [ ]

APPENDIX C: INTERVIEW FOR ECM IMPLEMENTING STAFF

INTERVIEW GUIDE

A: LEGISLATIVE AND POLICY FRAMEWORK GOVERNING THE MANAGEMENT OF DIGITAL RECORDS

1. Are you aware of any legislative framework(s) governing digital records management?

_____
_____
_____
_____

2. If yes, please elaborate.

_____
_____
_____
_____

3. What role does legislative framework play with regard to managing digital records generated through ECM?

_____
_____
_____
_____

4. Does your department have a digital records management policy?

_____
_____
_____
_____

5. If that is the case, do you adhere to it?

_____
_____
_____

6. Who is responsible for the implementation of such a policy?

_____
_____

7. Is the policy accessible to the staff?

_____
_____
_____

8. If yes, how are staff members made aware of the policy?

_____
_____
_____
_____

9. What challenges do you face regarding compliance to the legislative regulatory framework?

_____
_____
_____
_____

B: SYSTEMS INTEGRATION

10. Are you aware of integration between Enterprise Content Management (ECM) and other module applications? Please explain.

_____
_____
_____
_____

11. In your view, what are the benefits of digital systems integration?

_____
_____
_____
_____

12. What would you say is the impact of lack of systems integration in digital management processes? Please elaborate.

_____
_____
_____
_____

13. How secure are records generated by ECM applications? Please elaborate.

_____
_____
_____
_____

14. Does your institution use cloud computing and, if so, which model/s?

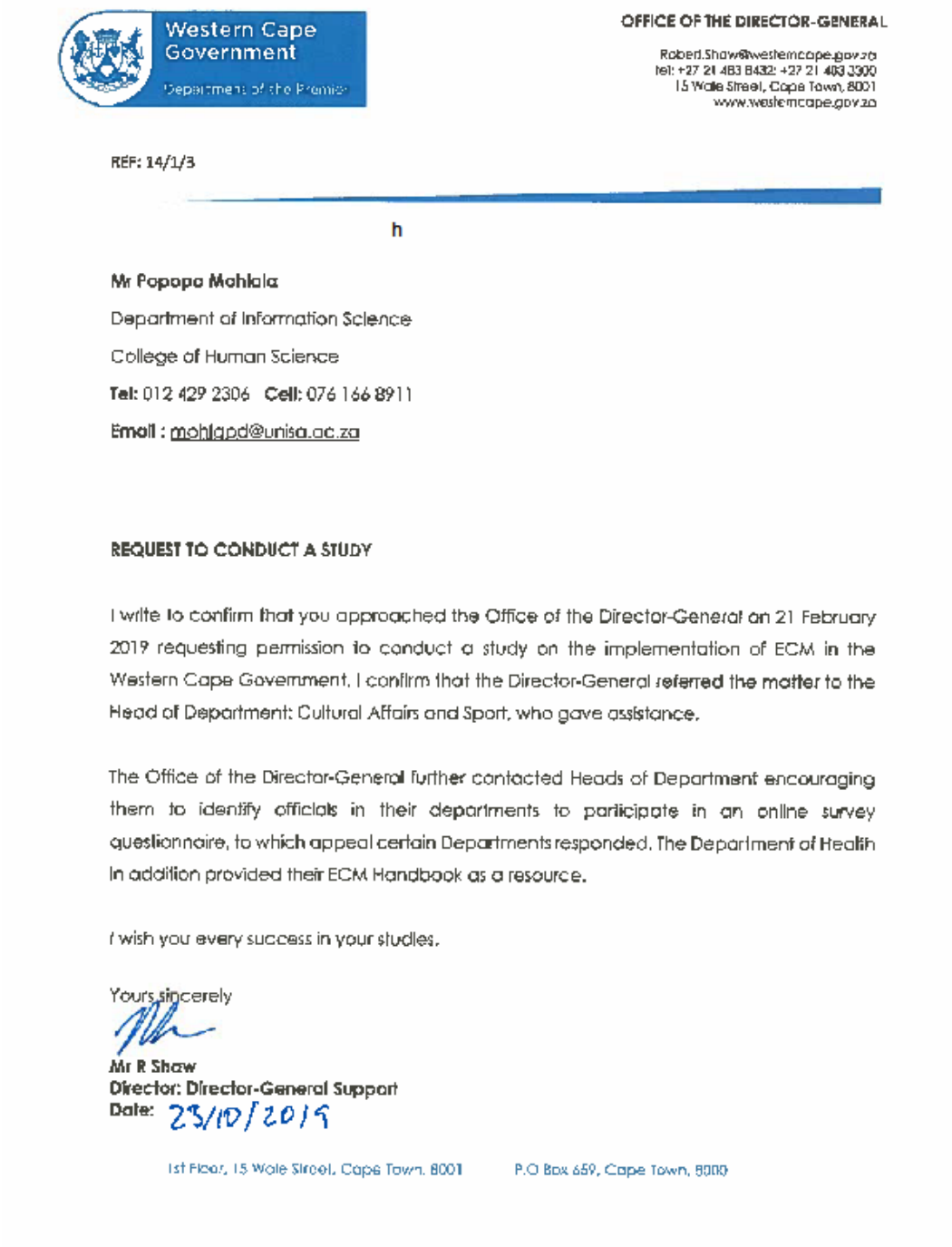
_____
_____
_____

15. What are the ECM applications that your institution currently implements and why?

_____
_____
_____
_____

Thank you for your cooperation!

APPENDIX D: RESEARCH APPROVAL LETTER



Western Cape Government
Department of the Premier

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REF: 14/1/3

h

Mr Popopo Mohlala
Department of Information Science
College of Human Science
Tel: 012 429 2306 **Cell:** 076 166 8911
Email : mohlapd@unisa.ac.za

REQUEST TO CONDUCT A STUDY

I write to confirm that you approached the Office of the Director-General on 21 February 2019 requesting permission to conduct a study on the implementation of ECM in the Western Cape Government. I confirm that the Director-General referred the matter to the Head of Department: Cultural Affairs and Sport, who gave assistance.

The Office of the Director-General further contacted Heads of Department encouraging them to identify officials in their departments to participate in an online survey questionnaire, to which appeal certain Departments responded. The Department of Health in addition provided their ECM Handbook as a resource.

I wish you every success in your studies.

Yours sincerely

Mr R Shaw
Director: Director-General Support
Date: 23/10/2019

APPENDIX E: ETHICAL CLEARANCE LETTER

UNISA

DEPARTMENT OF INFORMATION SCIENCE RESEARCH ETHICS REVIEW COMMITTEE

Date: 24 November 2017

Ref #: 2017_PDMohlala_90354621_001
Name of applicant: PD Mohlala
Student #:X
Staff #:

Dear PD Mohlala,

Decision: Ethics Approval

Name: Title and name of principle applicant, address, e-mail address, and phone number

PD Mohlala, Unisa Information Science, mohlapd@unisa.ac.za; and 012 429 2306

Proposal: Evaluating the implementation of enterprise content management (ECM) at the Western Cape Provincial Government.

Qualification: Masters in Information Science

Thank you for the application for research ethics clearance by the Department of Information Science Research Ethics Review Committee for the above mentioned research. Final approval is granted for 4 year.

For full approval: *The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Department of Information Science Research Ethics Review Committee on 24 November 2017.*

The proposed research may now commence with the proviso that:

1) *The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
2) *Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Department of Information Science Ethics Review Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*

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Preller Street, Muckleneuk Ridge, City of Tshwane
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Telephone: +27 12 429 3111, Facsimile: +27 12 429 4150
www.unisa.ac.za

3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

Note:

The reference number 2017_ICT[illegible]_90354621_001 should be clearly indicated on all forms of communication [e.g. Webmail, E mail messages, letters] with the intended research participants, as well as with the Department of Information Science RERC.

Kind regards,

Signature

Dr Isabel Schellnack-Kelly
Department of Information Science
Research Ethics Review Committee

012 429 6936