

Framework for Effective Public Digital Records Management in Uganda

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degree of Doctor of Philosophy

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DECLARATION

I, **David Luyombya**, hereby declare that this research is a result of my original work and that it has never been presented to any University for any academic award. Where other works have been used, this has been acknowledged in the text or footnotes.

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ABSTRACT

This thesis examines the framework for effective management of digital records in Uganda, which was undertaken by a detailed study of the 23 ministries, which form the Uganda Public Service (UPS). Areas of research inquiry included establishing the current state of digital records in the UPS and revealing the factors impeding the managing of digital records. This raised many issues about the way in which digital records are created, maintained and used, including possible lines of action to resolve current digital records management (DRM) problems. It also considered how the DRM services and practices used elsewhere could be adopted to suit the UPS environment. The status of DRM and the factors affecting the creation, use, maintenance and disposition of digital records were critically reviewed and evaluated and, towards the end, the thesis recommends strategies and makes proposals that could contribute to the development of DRM services in the UPS.

The study adopted a mixed methods research approach and drew on the ‘records continuum’ concept for its analytical framework. The study drew on data from primary and secondary (literature and research reports) sources. Data collection from primary sources was carried out using questionnaires and semi-structured interviews, which made it possible to study the personal perspectives and experiences of those involved in the management of records and of digital systems in Uganda. The approach provided insight into the UPS ministries, where data was collected from senior and middle managers, ICT managers and records managers, through a total of 40 interviews. This approach was essential in so far as it focused on the importance of the meanings that emerged as respondents defined their DRM requirements through interpersonal interactions and it guided the data collection, analysis and reflection activities.

The analysis of the findings of the study revealed that the problems with DRM are largely due to the absence of ICT facilities with recordkeeping functionality, a lack of clear policies, guidelines and procedures, and to the fact that the Uganda Records and Archives legislation is not fully implemented and not properly enforced. It is argued that the failure

to fully implement the National Records and Archives Act has led to a lack of appropriate institutional and managerial structures. Other problems include the lack of a reliable power supply and of sufficient financial resources and human capacity.

Although no UPS ministry has a complete Electronic Document and Records Management System (EDRMS), the survey of many ministries provided comprehensive evidence of the dynamism in the use of ICT that led to the generation of digital records. The problems and challenges elaborated upon in the study have shown that a successful DRM service depends on a number of factors. While it is not strictly possible to generalise the findings from this purposive sample to the whole of the Government of Uganda, it is likely that the issues identified in this study will apply to the whole of the Uganda public sector and, to some extent, to other sub-Saharan African countries.

The study concludes that in order to facilitate a DRM service in the UPS, the objective should be to enable increased creation and keeping of records by digital means. The proposed recommendations are categorised into four key factors: the need for formal legal infrastructure; the need to establish formal instruments in particular a national archives agency with appropriate policies, procedures and guidelines; and the development of both robust DRM infrastructure and of appropriately skilled human resource capacity. These factors are necessary and need to be addressed urgently, and specifically for Uganda, in order to ensure accountable government for the citizens of Uganda in the digital world.

DEDICATION

This thesis is dedicated to my mother Mrs. Keziah Nakate Semakula for the encouragement and to my son Kristoff Nsaale Luyombya for the smile even when the going is tough.

May God bless you abundantly.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACARM	Association of Commonwealth Archivists and Records Managers
CITU	Central IT Unit (United Kingdom)
CPMIS	Computerised Personnel Management Information System
DIRKS	Designing and Implementing Recordkeeping Systems Manual (Australia)
DFID	Department of Development Finance (United Kingdom)
DRM	Digital Records Management
DRMS	Digital Records Management Systems
DOD	Department of Defence (USA)
EDRMS	Electronic Document and Records Management System
E-Government	Electronic Government
E-Governance	Electronic Governance
E-mail	Electronic Mail
E-readiness	Electronic Readiness
ERP	Economic Recovery Programme
ESARBICA	East and Southern Africa Regional Branch of the International Council on Archives
GoU	Government of Uganda
ICA	International Council on Archives
ICT	Information and Communication Technology
ICTs	Information and Communication Technologies
IFMS	Integrated Finance Management System (Uganda)
IMCC	Information Management Capacity Check (Canada)
IMF	International Monetary Fund
IRMT	International Records Management Trust
ISO	International Standards Organisation
IT	Information Technology
LAN	Local Area Network
MDGs	Millennium Development Goals
MIS	Management Information System

MoFPED	Ministry of Finance, Planning and Economic Development (Uganda)
MoPS	Ministry of Public Service (Uganda)
MoTTI	Ministry of Tourism, Trade and Industry (Uganda)
MoWHC	Ministry of Works, Housing and Communication (Uganda)
NASA	National Archives of South Africa
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organisation
NIIA	National Information Infrastructure Agenda
NITA-U	National Information Technology Authority-Uganda
NPA	National Planning Authority (Uganda)
NPM	New Public Management
ODA	Overseas Development Administration
OECD	Organisation for Economic Cooperation and Development
PEAP	Poverty Eradication Action Programme (Uganda)
RITD	Records and Information Technology Department (Uganda)
RM	Records Management
RMCAS	Records Management Capacity Assessment System (IRMT)
RMS	Records Management System
SADC	Southern African Development Community
SAP	Structural Adjustment Programme
SITA	State Information Technology Agency (South Africa)
SPIRT	Strategic Partnerships with Industry Research and Training (Australia)
TNA	The National Archives (United Kingdom)
UBC	University of British Columbia
UBOS	Uganda Bureau of Statistics
UCC	Uganda Communication Commission
UCL	University College London
UCS	Uganda Computer Services
UK	United Kingdom
ULRC	Uganda Law Commission
UNBS	Uganda National Bureau of Standards

UNCST	Uganda National Council of Science and Technology
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNRAA	Uganda National Records and Archives Agency
USTDA	United States Trade and Development Agency
USA	United States of America
UPS	Uganda Public Service
UPSC	Uganda Public Service Commission
UPSRRC	Uganda Public Service Review and Reorganisation Commission
UPSRP	Uganda Public Service Reform Programme
WAN	Wide Area Network
WB	World Bank
WSIS	World Summit on the Information Society

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

Digital records have been generated in Uganda as the country has adapted to the use of information and communication technologies (ICTs). The adoption of ICTs in service delivery, which is in line with the New Public Management (NPM) strategy, has resulted in the creation and use of digital records in the UPS. The increased usage of ICTs to conduct business and transmit information contributes to a need to manage the resultant records. Digital records need to be managed well as part of the transition to the electronic environment, since failure to do this could have far reaching implications, such as loss of records leading to serious business, legal and financial consequences. The thesis seeks to establish how digital records are presently managed in Uganda and makes a number of recommendations that need to be adopted for the effective management of public digital records. The study adopts a mixed method approach to assess the extent to which a framework exists for the management of digital records in the Public Service of Uganda (UPS) and to identify areas to be implemented.

This is the first study to assess the extent to which a framework exists in Uganda for the creation and management of digital records and to determine whether digital records management (DRM) strategies capable of capturing, maintaining and providing access to digital records over time are in place. The aim, specific objectives and research context of the study are discussed in this chapter.

The Government of Uganda (GoU) adopted ICT as part of its e-governance agenda in 2003.¹ E-governance has led to the use of information technologies and the continued use of the technologies has led to the proliferation of digital information of which digital records are a part. However, digital records are inherently complex and

¹Uganda, Ministry of Works, Housing and Communications (MoWHC) (2003). *National Information and Communication Technology Policy*. Kampala: MoWHC.

challenging to manage.² This is because information kept digitally is more vulnerable than information on paper, as technologies evolve at such a fast pace. Hardware and software falls out of use and the media on which information is stored deteriorate. Consequently there is no guarantee that preserving a digital record will ensure that it is accessible and usable in years to come without active intervention.

Unless sufficient attention is paid to DRM, ICT systems will not be able to capture records in a form that is intelligible, unalterable and usable over time. This study explores the capacity of the UPS to manage an ICT-mediated transformation of governance and the management of the digital records in the execution of government tasks.

Drawing from the regional experiences of some countries in the East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA)³ which have started implementing digital records management systems, the study focused on investigating the current environment for managing public digital records in the UPS.

1.2 Terms and Concepts

The key terms and concepts as used in this thesis are explained in this section to provide the context in which they are used by reference to previously published definitions in the RM and other relevant literature.

E-governance

E-governance in this study refers to GoU's use of ICT to exchange information and services with citizens, businesses, and other arms of the Government.⁴ It involves the utilisation of digital technology to interact between the Government and citizens.⁵

² J. Hofman (2006). 'Shooting at A Moving Target: The Development of A Digital Repository for the Preservation of Digital Information', at <http://europa.eu.int/ISPO/d1m/fulltext/full_hofm_eng.htm>. Accessed 14 August 2007.

³ ESARBICA is a regional association of the ICA bringing together a group of countries in Eastern and Southern Africa to cooperate and assist each other in professional work relating to records and archives management.

⁴ T. B. Riley (2003). 'Defining e-Government and e-Governance: Staying the Course', *The Riley Report*, May, p.14.

⁵ J. A. Xiong (2006). 'Current Status and Needs of Chinese E-Government Users', *The Electronic Library* 24:1, p.747.

E-governance is not just about government websites and e-mail. It is not just about service delivery over the Internet. It is not just about digital access to government information or electronic payments. E-governance allows citizens to communicate with government, and citizens to communicate with each other and to participate in the government's policy-making process.

E-Government

E-government refers to the use of information and telecommunications technologies (ICTs) to enable government to deliver its programmes and services more effectively and efficiently, to increase the efficiency of internal processes (such as those supporting financial and human resource management) and to increase the participation of citizens in their own governance (such as through citizen consultation and feedback).⁶

For purposes of this thesis, E-government is defined as a way for the UPS to use ICT, to provide evidence of UPS business activities. E-government allows networking capacity with speed, precision, and simplicity, which are desirable features for all government operations.

Information and Communications Technologies (ICTs)

ICTs are instruments that facilitate communication, processing, and transmission of information by electronic means. ICTs embody a full range of old and new technologies such as radio, television, computers and Internet, telephones – both fixed and mobile, fax, printers, scanners and the print media. As defined, ICTs are tools that can enable the creation and management of digital records.

Public Digital Record

A record is defined by the ISO 15489 as “information created, received and maintained as evidence and information by an organisation or person, in pursuance of legal obligations or in the transaction of businesses.”⁷ They provide the corporate

⁶ Z. Fang (2002). ‘E-Government in Digital Era: Concept, Practice and Development’, *International Journal of the Computer, the Internet and Management*, 10:2, p.2.

⁷ International Standards Organisation (ISO) (2001). *ISO 15489-1, Information and Documentation - Records Management Part 1: General*. Geneva: International Standards Organisation, p.3.

memory of the state and evidence of its policies and activities.⁸ Records are further defined as sources of evidence, information and artefacts.⁹ They are sources of evidence when users want proof that a particular activity took place or that it took place in a particular manner. Records provide evidence not only in courts of law but in any situation requiring confirmation that something was done or that it was done correctly.¹⁰ Records are also sources of information. They are artefacts or objects when users are interested in their aesthetic qualities, tangibility, physical form, saleroom value or associations.¹¹

Many definitions of a digital record are emerging in response to the (re)invigoration of ICT in the public sector.¹² These definitions are presented in the literature under the umbrella of ‘electronic records’ and ‘e-records’. All these constitute one and the same thing. This thesis takes the Australian definition of a digital record as “a record created, communicated and maintained by means of computer technology”.¹³ It is an embracing term and includes those records born digital (created using computer technology) and those that are converted into digital format (for example scans of paper documents). Thus, a digital record is digital information, captured at a specific point in time that is kept as evidence of business activity.¹⁴ As such, digital records refer to those records that are ICT-based and maintained by means of digital computer technology.

A public digital record, therefore, refers to the recorded information, documents or data that provide evidence of policies, transactions and activities carried out in e-

⁸ International Records Management Trust (IRMT) (1999). *Managing Public Sector Records: A Training Programme*. London: IRMT, p.3.

⁹ E. Shepherd and G. Yeo (2003). *Managing Records: A Handbook of Principles and Practice*. London: Facet, pp.156-157.

¹⁰ P. Phelan and P. Reynolds (1996). *Argument and Evidence*. London: Routledge, p.99.

¹¹ J. O’Toole (1993). ‘The Symbolic Significance of Archives’, *American Archivist* 53, p.234.

¹² B. N. Hague and B. D. Loader. (1999). ‘Digital Democracy: An introduction’, in Hague, B. N. and B. D. Loader (eds.), *Digital Democracy: Discourse and Decision-Making in the Information Age*. London: Routledge, p.3.

¹³ Australia, National Archives of Australia (2004). ‘Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records’, at <<http://naa.gov.au/recordkeeping/er/guidelines.html>>. Accessed 20 December 2007.

¹⁴ Australia, New South Wales (2008), ‘Standard on Digital Recordkeeping’, at <<http://www.records.nsw.gov.au/recordkeeping/government-recordkeeping-manual/rules/standards/standard-on-digital-recordkeeping>>, p.5. Accessed 27 May 2009.

government environments.¹⁵ Digital records may be categorised as digital documents (files consisting of numeric data, images or sound recorded digitally in one uniform structure).

While the terms ‘electronic records’ and ‘E-records’ are more commonly used in the records management literature, this thesis has adopted the term digital records in preference to ‘electronic’ or ‘e-records’ because the term is widely used when referring to records produced, housed or transmitted by electronic rather than physical means. It relates to technology having electrical, digital, magnetic, electromagnetic or similar capabilities. For most practical purposes to do with this thesis, the terms are interchangeable.

Uganda Public Service (UPS)

The Uganda Public Service (UPS) in the context of this study refers to the Government of Uganda ministries, of which there are 23.

Records Management

Records management in the context of this study refers to the practice of creating and maintaining records by an organisation. Management of records, as an integral part of government processes, is associated with workflow, and is based on administrative and legal necessity.¹⁶ According to ISO 15489, records management is a field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposal of records, including the processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records.¹⁷

Managing records is one of the cornerstones for effective delivery of public services.¹⁸ Sound records management delivers transparency by documenting and providing evidence of an activity, a decision or an agreement. Barrett observed that

¹⁵ International Records Management Trust (IRMT) (2004). *The E-records Readiness Tool*. London: IRMT, p.15.

¹⁶ M. D. Smith (1986). *Information and Records Management: A Decision Maker’s Guide to Systems Planning and Implementation*. New York, NY: Quorum Books, p.4.

¹⁷ International Standards Organisation (ISO) (2001). *ISO 15489-1, Information and Documentation - Records Management Part 1: General*. Geneva: International Standards Organisation, p.3.

“records are an indispensable element of transparency both within government and externally in the private sector.”¹⁹ Records must be accurate and complete, with appropriate access and effective maintenance.

According to Shepherd, there are three key values which can be met by good records.²⁰ First, organisations use records in the conduct of current business, to enable decisions to be made and actions to be taken. Secondly, organisations use records to support accountability, when they need to prove that they have met their obligations or complied with best practices or established policies. Thirdly, records may also be used for cultural purposes: to promote awareness and understanding of corporate history.²¹ Records, therefore, need to be captured, managed and safeguarded in an organised system in order to retain their value as formal corporate records.²² There is need for appropriate mechanisms to ensure that the integrity of digital records is protected as reliable sources of information over time.

Digital Records Management System

This is a system that uses electronic document and records management software (EDRMS) to collect, organise, and categorise born digital records to facilitate their preservation, retrieval, use, and disposition. It is a system used to support the creation, use and maintenance of electronically created records for the purpose of improving an organisation’s workflow.²³

¹⁸ Australia, AS8000 (2003). *Corporate Governance: Good Governance Principles*. Sydney: Standards Australia, p.3.

¹⁹ P. Barrett (2005) *Archives of Australia Advisory Council, 11 August 2000*, at <www.anao.gov.au>. Accessed 23 April 2006.

²⁰ E. Shepherd (2006). ‘Why Are Records in the Public Sector Organizational Assets’, *Records Management Journal* 16:1, pp.6-12.

²¹ Shepherd (2006), pp.6-7.

²² S. Harries (2001). ‘Strategic Use of Electronic Records: Integrating Electronic Document and Electronic Records Management in the Public Sector’, in T. Hendley and R. Broadhurst, *Document Management Guide and Directory: A Comprehensive Guide to Document Management and a Directory of Products and Services* 12th ed. Hertfordshire: Cimtech, p.93

²³ Australia, National Archives of Australia (2004). ‘Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records’, at <<http://naa.gov.au/recordkeeping/er/guidelines.html>>. Accessed 20 December 2007.

Effective Public Digital Records Management

According to the International Standard, ISO 15489-1, effectiveness is about doing the right things.²⁴ It can be viewed as a measure of the degree to which predefined objectives have been achieved. Effectiveness in a DRM programme may be to look at staff satisfaction in locating information since the inception of the EDRMS compared with what existed previously. In other words, an effective DRM programme can be viewed as a measure of the degree to which predefined objectives have been achieved. For effectiveness purposes, this study sought to establish what DRM system exists in the UPS and how it caters for the digital records, so as to decide either to let the system continue or to propose intervention to take corrective action.

Records Management Standards

A standard is something used as a measure, norm or model in comparative evaluations.²⁵ Standards serve as benchmarks for the measure of quality and extent of service or product. In a sense, a DRM Standard is a documented agreement containing technical specifications or the precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, processes and services conform to the desired requirements for managing digital records. Standards can exist at several levels, including national (for example, the Australian national records management standard, AS4390) and international (such as ISO 15489 the international records management standard).

DRM Policy

A DRM policy defines what digital records are, why they should be kept, by whom and until when.²⁶ A formal corporate policy for digital records is the agreement across an organisation on how digital records will be handled and the procedures that will achieve those intentions. An organisation should define and document its DRM policy

²⁴ International Standards Organisation (ISO) (2001). *ISO 15489-1, Information and Documentation - Records Management Part 3: Performance Management*. Geneva: International Standards Organisation, p.12.

²⁵ Oxford English Dictionary at <http://www.askoxford.com/concise_oed/standard?view=uk>. Accessed 23 July 2009.

²⁶ International Standards Organisation (ISO) (2001). *ISO 15489-1, Information and Documentation - Records Management Part 1: General*. Geneva: International Standards Organisation, p.3.

and should ensure the policy is implemented and maintained at all levels of the organisation.

1.3 Arrangement of the Thesis

This study is presented in seven chapters. The first chapter introduces the research problem that the study set out to address, outlines the objectives and poses the research questions. The key definitions are also discussed in more detail in this background chapter. The management of paper records in UPS is outlined and the discussion turns to account for ICT developments and begins to raise questions as to whether Uganda has a unified framework or a unified system for managing digital records. It then discusses the significance of this thesis.

The second chapter presents a review of the literature as the body of knowledge that relates to this study and also addresses the theories guiding the study. The opening sections of chapter 2 take the form of a review of public management literature, which provides a canvas of mainly international work to show that records management (RM) reforms were inevitable as part of public service reforms. The focus then turns to the impact of institutional frameworks, ICTs and public service reforms as they contribute to the creation and use of digital records to support improved government services, efficiencies and good governance. In so doing, the chapter sets the context of the study. This chapter also discusses the broader RM literature and standards and presents the conceptual framework as a diagnostic tool to aid the investigation of factors surrounding the effective management of digital records in the UPS.

The third chapter reports on the research methodology employed in the study. The overall research design, the data collection methods and techniques used in the data analysis are described in this chapter. It includes a description and justification of the methodological choice which this research took and presents an argument as to why the overall research framework is both coherent and appropriate. The chapter also addresses the limitations of the study.

The findings of the study are presented in chapters four, five and six. Data is from the UPS and the ESARBICA region and the empirical findings are reported in accordance with the research questions and objectives of the study.

Chapter four reports on the current state of DRM in the UPS. A detailed analysis of the existing state of digital records is presented, painting a picture of the ICT preparedness, how ICT is utilised, and UPS readiness for DRM. It discusses the ICT capacity, the records management (RM) skills and the legislative environment as part of developing an understanding of the DRM framework in the UPS.

Chapter five reports on the factors currently preventing the effective management of digital records in the UPS. It reveals and examines the factors hindering UPS agencies from creating and managing digital records. It also discusses the emerging conclusion that inadequate investment in DRM infrastructure and generally constrained resources are affecting the management of digital records in the UPS. Analysing the challenges makes the case for identifying the measures needed to improve the management of digital records in the UPS. It serves to test and develop understanding of the requirements for DRM across the UPS. The chapter concludes with a discussion of the need to address DRM requirements for the UPS.

Chapter six presents recommendations for improving the management of digital records in Uganda based on the research findings by providing essential insights regarding the changes required. It builds on the analysis of the state of digital recordkeeping; challenges and problems of managing digital records discussed in chapters four and five within a research framework. The arguments in this chapter reinforce the contention in chapters 4 and 5 that a DRM/ RM framework does not exist in UPS. This chapter further proposes solutions to the problems that require intervention at the institutional or operational level, and also to problems which require a strategic approach.

Chapter seven concludes the research process. It presents a summary of the study and the way forward with reflective evaluation on the status of digital records, the challenges faced and the approaches which need to be adopted. It focuses on such questions as: how widespread is the use of ICT in UPS? What is the technology used for? And has the use of such ICT systems allowed the creation and management of digital records? The chapter proposes a new framework which requires formal

institutions, ICT infrastructure and human resources capacity as a solution to the management of digital records in the UPS. It also highlights areas for further research. The bibliography presents the published works used in this thesis. The bibliography is arranged alphabetically by author surname, with multiple works by the same author arranged alphabetically by title. The bibliography includes all the main sources used in the research, but does not include all general published works on records management and archives, which the author has consulted over the years in which the research has taken shape. In the footnotes, published sources are given their full reference on the first mention, shortened on subsequent occasions to author, date and page. The interview data in footnotes use short references of the level of manager interviewed and date of interview. Full details of the interview respondents are given in Appendix VII.

Supporting material is also provided in the form of eleven appendices, including details of the primary data collection. Appendix I contains the supporting letters; Appendix II contains a copy of the questionnaires; Appendix III a copy of the interview questions; Appendix IV presents the Reading List Guide; Appendix V has the respondent consent form; Appendix VI is a List of the Uganda institutions that participated in the study; VII provides a list of Uganda interview respondents and dates of interviews; Appendix VIII provides a list of interview respondents from ESARBICA countries; Appendix IX provides the existing records and archives management organisational structure in the MoPS. Appendix X is the proposed structure for the Uganda National Records and Archives Agency (UNRAA) and the indicative structure of the needed framework to support DRM in the UPS is provided in Appendix XI.

1.4 Background to the Study

This section provides background to this study. It firstly describes paper records management in Uganda and reports on the public sector reforms and how they contribute to the generation of digital records. It then discusses the history of ICT development in Uganda and also introduces the experiences of the ESARBICA region.

1.4.1 Paper Records Management in Uganda

The management of paper records in the UPS, with particular reference to the RM functions, archives administration, and prevailing legislation are discussed in this section. While this thesis is focused on the management of the digital records under new public management, paper records also need to be addressed here to promote better understanding. The section provides evidence for one argument of this thesis that RM has not been fully understood or accepted in Uganda, and consequently the RM function has been neglected and under-resourced.

Paper records are created by the day-to-day work in the Government ministries of Uganda. Accordingly the records management function falls under the Ministry of Public Services (MoPS), where the functions are discharged by the Records and Information Technology Department (RITD) headed by a Commissioner within the Efficiency and Quality Assurance Directorate.²⁷

There are three Sections under RITD as represented in Appendix IX, that is, the Current Records Section which is in charge of current records across UPS, the Semi-Current Records Section which is meant to be in charge of semi-current records and the Archives Section. The current and semi-current records sections are supposed to be headed by Assistant Commissioners and the Archives Section, headed by the GoU Archivist. While the posts of the Assistant Commissioner for current records and the Government Archivist were filled, the post of the Semi-Current Records Assistant Commissioner was vacant during the time this study was carried out in 2005-9. The Government Archivist post holder changed in early 2009, after the period of data collection which informs this thesis. It is not yet clear what direction the new incumbent will take and this may affect the implementation of recommendations arising from this thesis. The RITD is mandated to establish and promote efficient, economic and effective records and information management systems in the UPS. It is

²⁷ Uganda, Ministry of Public Service (MoPS). *Department for Records and Information Technology* at <http://www.publicservice.go.ug/index.php?option=com_content&view=article&id=65&Itemid=123>. Accessed 14 May 2009.

also responsible for the preservation of the documented heritage (archives) for Uganda's posterity.²⁸

The registry filing system is in use in the UPS for organising the paper-based records. This filing system had its beginnings in the British civil administration. The RM literature indicates that the British implemented a central registry filing system in the offices of their colonial secretaries in colonies throughout their worldwide empire.²⁹ Today registry-type filing systems are used as the basic system of paper recordkeeping throughout many of the public agencies of the former British colonies.³⁰

The most essential, distinguishing feature of the registry filing system is that files are created in a registry and registers are used in form of books and cards to list the receipt and movement of the records. These registers are a type of index to the records, and they serve as the basis for document control in registry filing systems. This filing system is expected to establish control over records at the time of their creation and receipt, before they have been processed or acted upon by the person responsible for handling a particular matter. Case files for the papers pertaining to a particular case or matter are a common type of file in registries in UPS and individual officers' offices, as well as subject files for papers pertaining to a particular subject or topic. Records created or received by a ministry are expected to be registered in the registry books.³¹ Most registry filing systems represent a highly centralised approach in which one central registry office serves as the central recordkeeping repository for all the active files of an entire ministry or GoU agency.

²⁸ Uganda, Ministry of Public Service (MoPS), *Department for Records and Information Technology* at <http://www.publicservice.go.ug/index.php?option=com_content&view=article&id=65&Itemid=123>. Accessed 14 May 2009.

²⁹ For example in Z. Aloufi (2007). 'The Legacy: British Mandate Record Management System in Israel', *Archival Science* 7:3, p.208;

T. R. Schellenberg (1956). 'Chapter 8: Registry System', in *Modern Archives: Principles and Techniques*. Chicago: University of Chicago Press, pp.65-77;

H. Jenkinson (1966). *A Manual of Archives Administration*. A reissue of the rev, 2nd ed. London: Lund Humphries, p.171.

³⁰ D. O. Stephens (1995). 'The Registry: The World's Most Predominant Recordkeeping System', *Records Management Quarterly* 29:1, p.65.

³¹ Uganda, MoPS (1995). *Impact Evaluation Report on Feasibility Study of the Registry Based Computerised Personnel Information System at Ministry of Trade and Industry*. Kampala: MoPS, p.3.

The Uganda National Archives is meant to be the repository for permanent paper records and archives of the GoU as well as historical records of national significance but lacks a clear programme to manage the national archives.³² The beginnings of the National Archives can be traced back in the 1950s when two archivists (P. T. English and J. P. Fowle) were appointed by the Colonial Secretary in succession, but their duties did not extend beyond classifying and listing the records of the colonial administration Secretariat and looking after the Secretariat Library.³³

Whereas most countries in Africa have had National Records and Archives Acts for a long time as the basis for managing their public records, the Uganda National Records and Archives Act is new having been passed by an Act of Parliament in 2001. Prior to 2001 there was no law governing records and archives administration in Uganda. The statutory instruments that existed were: the Records (Disposal) Act 1923,³⁴ which regulated the destruction of records of the High Court that were of no further value. The disposal of personal and financial records is authorised by the Uganda Public Service Standing Orders Chapter 1 R-d5³⁵, and the Treasury Accounting Instructions 1991 paragraphs 905-909,³⁶ respectively. There is a single paragraph in the Standing Orders (Chapter 1, R-d7) which recognises that it is important to preserve reliable information regarding the history of the GoU.³⁷

The Uganda National Records and Archives Act of 2001 provides for the establishment of a National Records and Archives Agency (UNRAA)³⁸ to ensure that GoU agencies follow good practices in managing public records. The Act requires that the Heads of organs of state shall:

³² Uganda (1998). *Records Management Project: Phase Three, Report on the National Records and Archives Bill 1996 Review*. London: IRMT, p. 19.

³³ Uganda (1991). *Uganda National Archives: Report of the workshop held at the Uganda National Archives* by Consultants K. J. Smith and V. J. A. Carr, 21 Jan – 22 Feb, Section 3.1.

³⁴ Uganda (1923). *Records (Disposal) Act*. Uganda: Government Printers.

³⁵ Uganda (1967). *Uganda Government Standing Orders*, Chapter 1 (Sections R and Y). Uganda: Government Printers.

³⁶ Uganda (1991). *Treasury Accounting Instructions*, Part 1 (especially Paragraphs 71 and 905-909). Uganda: Government Printers.

³⁷ Uganda (1998). *Records Management Project: Phase Three, Report on the National Records and Archives Bill 1996 Review*. London: IRMT, p. 32.

³⁸ Uganda (2001). *The National Records and Archives Act*, Part II, Kampala: UPPC.

“be responsible for creating and maintaining adequate documentation of the functions and activities of their respective institutions through the establishment of good records keeping practices.”³⁹

This suggests that heads of ministries are responsible for the current records in their jurisdiction, while section 12 stipulates that the Director of the UNRAA shall accept custody of semi-current records which have been scheduled for further retention and maintain such records within a records centre⁴⁰ and to establish and take charge of the National Archives and any branch archival repositories.⁴¹ However, the regulatory arrangements mentioned above have not been implemented, as the UNRAA has not been established. In the current state, it is the responsibility of each ministry or GoU agency to deal with all its records, current and semi-current.

According to the literature, an archives acquisition policy should guide the efficient development of the collection, avoiding as many potential pitfalls and diversions as possible.⁴² The Uganda National Archives has no collection or acquisition policy which would set out the detail of what is, or is not, to form the fabric of the archival collection. Therefore decisions about which records to collect and how to go about collecting them have not been made. As a result, closed records are kept in their respective ministries, which do not possess adequate standards for the records’ safety.⁴³

With no transfers of archives from UPS agencies to the National Archives dating from after 1962 when the country got independence, the responsibility of the Uganda National Archives has remained to preserve the records of the colonial government, which form the majority of the existing archives collection. The Government Archivist is responsible for their care and control of access to them. The oldest records in the archives date back to 1890 when Uganda became part of the British Protectorate. There are also records relating to the activities of the Legislative Council

³⁹ Uganda (2001). *The National Records and Archives Act*, Section 7, Kampala: UPPC.

⁴⁰ Uganda (2001). *The National Records and Archives Act*, Section 12, Kampala: UPPC.

⁴¹ Uganda (2001). *The National Records and Archives Act*, Section 13, Kampala: UPPC.

⁴² P. J. Crush (2008). ‘Acquisition’ in J. Bettington ... [et al] (ed.), *Keeping Archives*. 3rd ed. Canberra: Australian Society of Archivists, p.208.

⁴³ Uganda, MoPS (2005). *Public Service Reform Programme Strategic Framework (2005/6-2009/10)*. Kampala: MoPS, p.8.

and National Assembly of Uganda from March 23, 1921 up to October 8, 1962.⁴⁴ The latest transfers were made in the late 1960s. This suggests that no clear system has been adopted to manage the post-independence records in Uganda.

Previous surveys of records management in Uganda have revealed a number of problems, such as the lack of suitable premises to house the paper records in adequate repositories, the paper records are often incomplete with inaccurate data and difficult to retrieve.⁴⁵ The Archives themselves are stored in the basement of a building consisting of a number of labyrinthine rooms providing only about 5000 linear feet of storage. Half of the shelving is of timber structure, and half of steel. The present storage space within the Archives headquarters is very small with no space to accommodate any transfers even if they were made. The building management also keeps changing. At the time of carrying out this study the building was under the Ministry of Agriculture.

There has been no establishment of a Records Centre repository as required by Section 5(b) of the Act relating to custody of semi-current records.⁴⁶ A records centre is a facility which would house the vast quantities of records which are no longer required for active use in ministries but which need to be retained for administrative, legal, financial or historical reasons. Absence of the records centre implies that full physical and intellectual control of paper-based records cannot be achieved to cover all phases of the record continuum. Earlier studies recommended establishing a records centre as a way to maintain closed files by the creating agencies and to develop a programme for safely destroying files with no ongoing value and transfer those with ongoing value to the records centre and, ultimately, the National Archives.⁴⁷

The Uganda National Records and Archives Act further stipulates that the Director of the UNRAA shall draw up general retention and disposal schedules. However, no

⁴⁴ Uganda, MoPS (1990). *Uganda Public Service Review and Reorganisation Commission (UPSRRRC): Report of the Public Service Review and Reorganisation Commission 1989/1990*, Main Report, Kampala: MoPS, p.46.

⁴⁵ Uganda (1998). *Records Management Project: Phase Three, Report on the National Records and Archives Bill 1996 Review*. London: IRMT, p. 4.

⁴⁶ Uganda (2001). *The National Records and Archives Act*, Section 5(b), Kampala: UPPC.

general retention and disposal schedules have been drawn and implemented as specified in Section 11(d).⁴⁸ The retention schedules should define the legal and administrative requirements for the records retention but they are missing. All UPS ministries and departments have retained their records and it is a challenge to provide appropriate accommodation for the large volumes of non-current records.

Records retention which involves decisions to determine which records need to be kept and how long the records need to be kept to meet business needs, the requirements of organisational accountability and community expectations, have not been carried out.⁴⁹ No policies regarding records appraisal have been designed, while the appraisal process should broadly identify the records to be kept as records, how long to keep those records and what records are of continuing value as archives.

As indicated above, the guidance on managing the current records is not part of the responsibilities of the Uganda National Archives, as the case is in many other countries. As a result the Uganda National Archives has not been able to assist in the development of a RM programme for the UPS and has remained an insignificant government department, since its relationship with the other government departments is not clearly understood. The present structure separates the management of current records from the archives in a way which is inappropriate from a record continuum perspective and which does not, in any case, meet the standards and structures set out in the legislation.

Considering that the agencies have accumulated records without the benefit of a formal RM programme or any kind of formal mechanism for the identification of records with archival value to GoU, there is a risk that archives could be lost which would not have been the case under a rigorous RM programme.

⁴⁷ International Records Management Trust (IRMT) (1999). *Uganda: Support to Records Management, Meeting with British Council: A Paper for Discussion on 4 June*. London: IRMT, p.7.

⁴⁸ Uganda (2001). *The National Records and Archives Act*, Section 11(d), Kampala: UPPC.

⁴⁹ J. Bettington (2008). 'Appraisal and Disposal' in J. Bettington ... [et al] (ed.), *Keeping Archives*. 3rd ed. Canberra: Australian Society of Archivists, p.143.

A series of records management projects have been carried out in Uganda. The British Council engaged the International Records Management Trust (IRMT)⁵⁰ under British Aid arrangements with the GoU to provide assistance in the development of records management capacity in support of the Public Service Reform Programme (Phase I (1988) Phase II (1992-1996) and Phase III (1998)). However, that support has been remedial in nature, the emphasis being on re-establishing physical control and introducing a basic infrastructure for managing paper records. The scope for introducing sustainable systems has been constrained by delays in implementation of the records legislation.⁵¹

The paper records and archives management system in the country remains in a sorry state. This provides a very weak context for any attempt at the effective management of digital records. According to the report on enhancements to records management by the MoPS, by the year 2003/2004 the GoU had identified several strategies for strengthening the management of records and archives in light of the changing technologies, which included:

- a. equipping of record managers with skills for creating and maintaining adequate documentation of the functions and activities of their respective ministries;
- b. drawing up general retention and disposal schedules for approval and issue by the MoPS
- c. ensuring that records with archival value are identified and transferred into the custody of the Uganda National Archives.⁵²

The above strategies were meant to improve RM in Uganda but they have not been fulfilled and they lack focus on establishing measures to manage the digital records. The strategies say very little about what is required in terms of creating and managing

⁵⁰ The International Records Management Trust (IRMT) is a charitable organisation based in the United Kingdom. It assists governments especially in developing countries to address DRM through building reliable records systems. The IRMT runs consultancies, training courses, hosts seminars and publishes RM documents. Its activities are designed to spread RM professional norms and values and promote DRM best practices.

⁵¹ International Records Management Trust (IRMT) (1999). *Uganda: Support to Records Management, Meeting with British Council: A Paper for Discussion on 4 June*. London: IRMT, p.7.

⁵² Uganda, MoPS (2005). *Public Service Reform Programme Strategic Framework (2005/6-2009/10)*. Kampala: MoPS, p.52.

public digital records. The need to change from the traditional practices and tools has however been suggested by different authors like Gilliland and McKemmish who suggested that technology should shape RM processes.⁵³ In Uganda, with inadequate paper records systems, there is a really pressing need to resolve DRM at the same time.

1.4.2 Uganda Public Service Reforms

The increasing use of ICT in government operations driven by public sector reform around the world, has given impetus to the generation of digital records, touted as strategic assets vital to the functions of the state.⁵⁴ This section explores the background to UPS reforms and how they impact on records management practices in the UPS.

From 1970 to 1986, Uganda was faced with warfare and instability which devastated the economy. The public sector hardly functioned and crime was endemic.⁵⁵ In the public sector, the objective of service delivery became secondary to that of personal survival.⁵⁶ The Public Service structures were interfered with.⁵⁷ The country was characterised by a complete breakdown of law and order.⁵⁸ Neglect and mismanagement of the public sector was prevalent and there was a general collapse of standards in all sectors of the economy and virtually no intellectual or physical control of records.⁵⁹ The outcome of this situation was a decline in public servants' conduct and poor public service delivery.⁶⁰ As a result, the information infrastructure was

⁵³ A. Gilliland and S. McKemmish (2004). 'Building an Infrastructure for Archival Research', *Archival Science* 4: 3-4, pp. 150.

⁵⁴ J. Wamukoya and S. M. Mutula (2005). 'E-records Management and Governance in East and Southern Africa', *Malaysian Journal of Library and Information Science*, 10:2, pp. 67-83.

⁵⁵ E. A. Brett (1997). 'Adjustment Policy and Institutional Reform: Rebuilding Organisational Capacity in Uganda', in P. Langseth, J. Katorobo and E.B.J Munene (eds.), *Uganda Landmarks in Rebuilding a Nation*, p.33.

⁵⁶ A. Kreimer (2000). *Uganda Post-Conflict Reconstruction: Country Case Study Series*. Washington, DC: The World Bank, p.36.

⁵⁷ World Bank (1982). *Uganda: Country Economic Memorandum*. Washington: The World Bank, East African Regional Office, p.8.

⁵⁸ B. Nyeko (1996). *Uganda*. 2nd rev. ed. (World Bibliographical Series); 2. Oxford: CLIO Press, p. xix.

⁵⁹ J. R. Ikoja-Odongo (2002). *A Study of Information Needs and Uses of the Information Sector of Uganda*, Ph.D. thesis, University of Zululand, p.75.

⁶⁰ R. Reinikka and P. Collier (eds.) (2001). *Uganda's Recovery: the Role of Farms, Firms and Government*. Washington, DC: The World Bank, p.26.

damaged and the records management function was a low priority in the Uganda Public Service.⁶¹

When the major civil war ended in 1986, the GoU embarked on economic reforms. Accordingly, the Ministry of Public Service (MoPS) set up the Uganda Public Service Review and Reorganisation Commission (UPSRRC). This was against the background of Government's realisation that the Public Service (the implementing machinery of Government), had become inefficient, ineffective and was generally not delivering.⁶² The reforms initiated by the UPSRRC were aimed at strengthening and modernising the public service institutions, making them efficient and accountable in the use of public resources and service delivery.⁶³

Over the last two decades, the GoU has been implementing a wide range of reforms, which included political and economic reforms.⁶⁴ The Government focused its energy on developing capacities and infrastructure that were seen as crucial for the success of the reform programme. These included restructuring and revitalising the economy by instigating the economic recovery programme.⁶⁵ The donor community, especially the World Bank (WB) and the International Monetary Fund (IMF), responded positively to the Government's wish to reform the economy and to enhance corporate governance and accountability.⁶⁶ This was necessary to fight corruption and abuse of office. However, there was no strategic plan for records management and the creation and keeping of records relied on individual Government officers.⁶⁷

⁶¹ Uganda, MoPS (1990). *Uganda Public Service Review and Reorganisation Commission (UPSRRC): Report of the Public Service Review and Reorganisation Commission, 1989/1990*, Main Report, 1. Kampala: MoPS, p.245.

⁶² Uganda, MoPS (1990). *Uganda Public Service Review and Reorganisation Commission (UPSRRC): Report of the Public Service Review and Reorganisation Commission, 1989/1990*, Main Report, 1. Kampala: MoPS, p.1.

⁶³ United Kingdom, Department of International Development (DFID)(2001). *Eastern Africa, Uganda Brief Review of UK Support to the Uganda Public Service Reform Programme 1990 to 2000*, DFIDEA (U), March.

⁶⁴ Uganda, MoPS (2005). *Public Service Reform Programme Strategic Framework (2005/6-2009/10)*. Kampala: MoPS, p. vi.

⁶⁵ Kreimer (2000), p.19.

⁶⁶ A. Bigsten and S. Kayizzi-Mugerwa (2001). *Is Uganda an Emerging Economy? A Report for the OECD Project Emerging Africa*. Uppsala, Sweden: Nordic African Institute, p.31.

⁶⁷ Uganda, MoPS (1993). *Civil Service Reform Status Report I*, June 1st – October 31st 1993. Kampala: MoPS, p.3.

After the introduction of a series of structural adjustment measures, the Government of Uganda (GoU) formulated a new national development plan, Vision 2025, which was launched in February 1999.⁶⁸ The vision provides an overview of long-term goals and aspirations, by the year 2025. It also recognises that ICT plays a vital role in the process of modernising a country. The focal elements of this aspiration include improving the country's competitiveness by technological innovation in the collection, storage, processing, transmission and presentation of information. This has resulted in shifting from manual to digital methods of records creation and storage. This element has led UPS to focus on a wide ICT utilisation programme, leading to increased generation and keeping of digital records.

Following the measures aimed at rationalising and streamlining UPS reforms, the Government set up commissions of inquiry into the management of the Public Service agencies. The commissions of inquiry have revealed poor records management practices in the UPS. For example, the Judicial Commission of Inquiry into Corruption in the Uganda Police Force in 1999 noted a dearth of documentation of its operations.⁶⁹ The Commission was particularly concerned with poor or non-existent recordkeeping, which was a disregard for the Uganda Police Force's formal procedures and processes.⁷⁰ Investigations into the management of grants from the Global Fund to fight AIDS, Tuberculosis and Malaria in Uganda in the late 2006 also revealed that deliberate tampering with records, illegal destruction and poor or negligent records management is common in the UPS.⁷¹ The Commission identified that at times, officials transacted business without any or minimal documentation.⁷² Other commissions of inquiry established that systematic removal and destruction of records goes on in UPS agencies.⁷³ Unethical or poor records management practices extended to records creation, maintenance, security and improper use of the

⁶⁸ Uganda, MoFPED (1999). *Vision 2025: A Strategic Framework for National Development*. Kampala: MoFPED.

⁶⁹ Uganda (2000). *Report of the Judicial Commission of Inquiry into Corruption in the Police Force 1999-2000*, Main Report. Kampala: UPPC, p.297.

⁷⁰ Uganda (2000). *Report of the Judicial Commission of Inquiry into Corruption in the Police Force*, Part 2.12, p.79 and 80.

⁷¹ Uganda (2006). *Report of Commission of inquiry into Allegations of Mismanagement of the Global Fund to fight Aids, Tuberculosis and Malaria*. Legal Notice no. 15. Kampala: UPPC

⁷² Uganda (2006). *Report of Commission of inquiry into Allegations of Mismanagement of the Global Fund to fight Aids, Tuberculosis and Malaria*. Legal Notice no. 15. Kampala: UPPC, p.8.

information that records contain. The experience of the commissions of inquiry highlight that the problem of poor records management has not been solved within the UPS in spite of the ongoing reforms.

The problem, which these commissions of inquiry expressed, is a threat to the entire public service delivery of services and the New Public Management (NPM) initiative.

1.4.3 New Public Management in Uganda

NPM was introduced to turn around public business processes efficiency and the aim was to make the public sector lead to greater cost-efficiency for governments.⁷⁴ NPM reforms aimed at addressing fundamental problems in public sector administration and delivery of public services, and also at preparing ground for ICT use. The introduction of NPM in Uganda can be traced to the recommendations of the Uganda Public Service Review and Reorganisation Commission (UPSRRC)⁷⁵ report which concluded that the UPS had decayed.⁷⁶ In response, Uganda adopted several programmes that included NPM through which it hoped to use ICT to attain efficient service delivery.⁷⁷

As in other countries worldwide, NPM in Uganda served as a catalyst to use ICT systems.⁷⁸ It formed the basis for applying ICTs in the delivery of public services.⁷⁹

⁷³ Uganda (2000). *Commission of Inquiry (Purchase of Military Helicopters)*. Legal Notice no.2. Kampala: UPPC; Uganda (2002). *Report of the Commission of Inquiry into Allegations of Corruption in the Uganda Revenue Authority*. Legal Notice, no.3. Kampala: UPPC.

⁷⁴ E. C. Kamarck (2004). *Government Innovation Around the World*. Institute for Democratic Governance and Innovation, John F. Kennedy School of Government: Harvard University, p.2.

⁷⁵ Uganda, MoPS (1990). *Uganda Public Service Review and Reorganisation Commission (UPSRRC): Report of the Public Service Review and Reorganisation Commission 1989-1990, Main Report*. Kampala: MoPS, p.6.

⁷⁶ Uganda, MoPS (1990). *Uganda Public Service Review and Reorganisation Commission (UPSRRC): Report of the Public Service Review and Reorganisation Commission 1989/1990, Main Report*. Kampala: MoPS, p.6.

⁷⁷ Uganda, MoPS (2002). *A Handbook of Results Oriented Management: A Guide for Public Service Managers*. Kampala: MoPS, p.4.

⁷⁸ P. Langseth (1995). 'Civil Service Reform in Uganda: Lessons Learned', *Public Administration and Development* 15:4, p.365.

⁷⁹ J. Matovu (2003). 'Towards Management Information System in Public Administration in Uganda and South Africa', *Proceedings of 4th annual DLIS-LISA Conference*, University of Zululand, 08 September, p.53.

⁷⁹ Uganda, Decentralisation Secretariat (1996). *Decentralisation in Uganda: Challenges, Shortcomings and Advances, Status Report on the implementation of Decentralisation*. Kampala: Ministry of Local Government, p.14.

The GoU applied ICTs as a strategy for ensuring efficiency in the delivery of public services.⁸⁰ Developments in ICTs gave rise to a new set of information systems, broadly referred to as Management Information Systems (MIS). These formed a basis to improve the management of public information. The MIS focused on networking of public workstations to provide an effective way of information sharing. Through the management of information and control systems, the government aimed at enhancing the use of available technologies.⁸¹

The decentralisation and devolution of power programmes in Uganda was part of the NPM initiative. With decentralisation of local governments, ICTs were identified as critical in ensuring efficiency in the delivery of public services. This resulted in the establishment of the Local Government Information and Communication System to monitor the performance of local governments.⁸² With the adoption of the ICT systems, local governments in Uganda began to create and keep records in digital format.⁸³

In spite of using ICT systems, the first report of the Local Government Finance Commission reflected considerable inefficiency in records management.⁸⁴ Thus it can be argued that although NPM initiative was committed to better delivery of public services, accurate and complete records remained elusive. This means that something beyond ICT systems was still lacking in regard to streamlining RM services in Uganda. The NPM initiative is further discussed in this thesis under Chapter 2.

⁸⁰ Uganda, MoPS (2002). *A Handbook of Result Oriented Management: A Guide for Public Service Managers*. Kampala: MoPS, p 42.

⁸¹ United Kingdom, Department of International Development (DFID)(2002). *Eastern Africa, Uganda Project Memorandum - Bringing Support for Public Service Reform 2002-2003, Draft 2.0*, July.

⁸² Uganda, MoFPED (2003). *The Integrated Financial Management System (IFMS: Frequently Asked Questions (FAQs)*. Kampala: MoFPED, p.1.

⁸³ J. Matovu (1994). *Information Support System for Industrial Development in Uganda with Special Reference to the Small-Scale Sector*, M.Sc.I.S Thesis, Addis Ababa: Addis Ababa University.

⁸⁴ Uganda, Decentralisation Secretariat (1996). *Decentralisation in Uganda: Challenges, Shortcomings and Advances, Status Report on the implementation of Decentralisation*. Kampala: Ministry of Local Government, p.14.

1.4.4 History of Information and Communication Technologies Development in Uganda

This section provides background to ICT development in Uganda, including the coordination and implementation of ICT initiatives. This background is important as it provides information and enables an understanding of the underlying technological infrastructure required to support DRM.

Uganda recognised ICT as a tool to improve the efficiency and effectiveness of Government and this is manifested through numerous ICT initiatives since the 1990s.⁸⁵ The Uganda National Council of Science and Technology (UNCST) was established in 1990 as a semi-autonomous Government agency.⁸⁶ The Council has a mandate to develop and implement policies and strategies for integrating science and technology into the national development policies; advise the Government on policy matters for promoting science and technology; and coordinate and guide national research and development in Uganda.⁸⁷ The Uganda Constitution 1995 Article 11 subsection 11 also spells out that, the GoU shall “stimulate technological and scientific development by adopting appropriate policies and the enactment of enabling legislation.”⁸⁸

In addition, the Uganda Vision 2025⁸⁹ which provides the country’s long term goals and aspirations, identified ICT as a vital component in the process of modernising the country. According to the vision, Uganda should have an ICT-driven economy by 2025 in order to foster rapid economic growth.⁹⁰ This challenged the GoU to develop, among other things, a framework to guide the implementation of ICT.

⁸⁵ D. Wafula and N. Clark (2005). ‘Science and Governance of Modern Biotechnology in Sub-Saharan Africa - The Case for Uganda’, *Journal of International Development*, p.680.

⁸⁶ Uganda (1990). *Uganda National Council for Science and Technology (UNCST) Act (CAP 209)*. Kampala: UPPC, p.1.

⁸⁷ Uganda, Uganda National Council for Science and Technology (UNCST) at <<http://www.uncst.go.ug/>>. Accessed 5 June 2006.

⁸⁸ Uganda (1995). *The Constitution of the Republic of Uganda*, Article 11. Kampala: UPPC, p.5.

⁸⁹ Following the introduction of a series of structural adjustment measures started from 1987, The Government of Uganda (GoU) formulated a new national development plan Vision 2025 in 1999, which provides an overview of long-term goals and aspirations by the year 2025 (The theme for the Vision is: “Prosperous People, Harmonious Nation and Beautiful Country”).

⁹⁰ Uganda, MoFPED (1999). *Vision 2025: A Strategic Framework for National Development*. Kampala: MoFPED, p.142.

The recognition of the contribution of ICT to the effective delivery of services meant introducing it in a number of national programmes such as the Poverty Eradication Action Plan (PEAP).⁹¹ The PEAP sets targets for poverty reduction that are linked to the Millennium Development Goals (MDGs).⁹² As a driver of growth and development, ICT is a target to help in the realisation of the PEAP and MDGs within the Uganda national development planning framework elaborated in terms of the national vision, long-term perspective, medium-term and annual national plans. Incorporating ICTs is seen as complementing the overall Government reform agenda. Technology was considered to provide the solution to improve the efficiency and effectiveness of the GoU.

In accordance with the overall economic reforms, the Uganda Communications Act was passed in 1997.⁹³ Central aims of this Act include spearheading the development of the telecommunication industry in the country. Its main function is to set national telecommunications standards; ensure service quality and equitable distribution of services; establish tariff systems to protect consumers; promote competition; and license and monitor communication services. The Communications Act created the Uganda Communications Commission (UCC) in 1998 and empowered UCC to regulate the electronic media operations, and to develop ICT services further, particularly beyond the few urban centres.

The National Information Infrastructure Agenda (NIIA) for Uganda was commissioned in 2001.⁹⁴ The NIIA emerged out of a year-long project entitled “Developing an Information Infrastructure Agenda for Uganda”. This was a planning process that addressed the uncoordinated strategies in implementing and sustaining ICT-enabled development in Uganda. The NIIA project focused on strategies that Uganda should adopt in its efforts to integrate ICT in all sectors. This model could be used in developing DRM. For the first time a forum of multisectoral stakeholders was

⁹¹ Uganda, MoFPED (2002). *Background to the Budget Financial Year 2002/2003: Enhancing Production and Exports for Poverty Eradication*. Kampala: MoFPED, p.42.

⁹² E. Nakkazi (2006). ‘Uganda Takes War on Poverty to Cyber Space’, *I – network Uganda: Knowledge Sharing of ICT Development Experiences*, March – April, p.1.

⁹³ Uganda (1997). *Communications Act*. Kampala: UPPC.

⁹⁴ Uganda (2001). *Uganda’s National Information Infrastructure Agenda (NIIA) Summary Report: Information and Communication Technology (ICT) for Development*, Uganda’s National Guide. Kampala: UPPC.

convened to discuss information needs and strategies for harnessing ICT for development. The NIIA has since been the springboard for ICT activities in Uganda. This prompted a stakeholders' policy workshop in December 2000 to commission the National ICT policy drafting process.

The process led the GoU to adopt an ICT framework in 2003 with the main goal of promoting the development and effective utilisation of ICT.⁹⁵ The vision of the framework is a Uganda where the overall national growth and development is sustainably enhanced, promoted and accelerated by the application and use of ICT. This is an umbrella framework covering a wide range of issues such as establishing conditions for the growth of digital societies and economies, e-administration and ICT-based services. The purpose of the framework was to provide focused direction on information management, of which records management should have been a part. Inevitably, the adoption of this framework was preparing Uganda for the introduction of e-governance so should include DRM.⁹⁶

In recognition of the need for Uganda to fast track and harness the benefits of ICT applications in all aspects of national development, the National Planning Authority (NPA) was established in 2002 and one of its tasks is to consolidate national ICT plans.⁹⁷ The NPA was established against the background of a countrywide lack of a consistent, coordinated and integrated framework and systems of managing national planning for development and service delivery, coupled with an absence of set performance targets, which could be monitored and evaluated. The NPA was therefore charged with producing comprehensive and integrated ICT development plans for the country.⁹⁸ The NPA should address DRM so that the records generated and held by ICT systems will be managed effectively.

To address the need to promote ICT use, a planning team with members drawn from the private sector, academia, parliament, civil society and other interest groups for

⁹⁵ Uganda, MoWHC (2003). *National Information and Communication Technology Policy*. Kampala: MoWHC.

⁹⁶ R. Heeks (2001). 'Information Systems and Developing Countries: Failure, Success and Local Improvisations', *Information Technology for Development* 7:1, p.6.

⁹⁷ Uganda (2002). *National Planning Authority (NPA) Act*, at <<http://www.npa.or.ug/>>. Accessed 13 November 2006.

women, youth and the disabled was constituted by the NPA. The team's first assignment was to prepare and develop the Uganda e-governance strategy framework and to recommend implementation of ICT and e-government across the public sector. In pursuing the e-governance strategy, the Government aimed at introducing new technologies to facilitate inter and intra- agency communication and cooperation, and consequently to support widespread use of electronic services.⁹⁹

The Ministry of ICT (MoICT) was formed in 2006 to provide both political and technical leadership in the overall coordination of ICT development and implementation in Uganda. The Ministry supports centralised ICT planning and management.¹⁰⁰ It should focus on strategies that Uganda would adopt in integrating ICT in its development programmes and it is the government body in charge of implementing e-government initiatives.¹⁰¹ The MoICT is in the initial phase of coordinating a number of ICT activities with all other Government ministries and departments. The overall goal is to promote the development and effective utilisation of ICT such that quantifiable impact is achieved throughout Uganda.¹⁰²

The GoU also has plans to establish an independent ICT regulatory body, the National Information Technology Agency (NITA) through the proposed National Information Technology Agency Bill.¹⁰³ The Bill proposes an agency as a coordinating, monitoring and supervisory body to promote national IT development in support of the principles of modernisation within the context of poverty eradication and to provide a national IT-policy framework and technical support for IT related services for Government-wide use. NITA is to take on a central role in the management, coordination and monitoring of IT policy, IT utilisation and capacity building for IT

⁹⁸ Uganda (2006). *ICT Policy issues*, at < <http://www.wougnnet.org/ICTpolicy/ug/ugictpolicy.html>>. Accessed 06 January 2008.

⁹⁹ V. Baryamureeba (2008). 'ICT-enabled Services: A Critical Analysis of the Opportunities and Challenges in Uganda', *International Journal of Computing and ICT Research* 4, p. 226.

¹⁰⁰ The Ministry of Information and Communications Technology (MoICT) was established in Uganda in June 2006.

¹⁰¹ Uganda, MoWHC (2005). *Uganda E-government Strategy Framework (Draft Report)*. Uganda: MoWHC, p.1.

¹⁰² V. Baryamureeba (2007). 'ICT as an Engine for Uganda's Economic Growth: The Role of and Opportunities for Makerere University', *International Journal of Computing and ICT Research* 1:1, p.48.

¹⁰³ Baryamureeba (2008), p. 224.

in GoU. It is to guide the infusion of ICT in the GoU business processes.¹⁰⁴ The vision of NITA-U is the “Promotion of sustainable growth of IT as an enabling tool for the social and economic development of Uganda.”¹⁰⁵ At the time of this study the implementation of NITA was at an advanced stage with the appropriate legal framework under development.

Other efforts by the GoU to incorporate ICT functions in the various sectors include the establishment of the Rural Communications Development Fund (RCDF) administered by the Uganda Communication Commission. The fund provides subsidies to facilitate access to basic communication services such as telephones, computers and Internet within reachable distances for all in Uganda.¹⁰⁶ There is also the Electronic Media Act 1996 which regulates all the technical aspects of telecommunications and broadcasting in the country. DRM should be a feature of all these bodies.

The public documents reviewed indicated that there are attempts to improve ICT capabilities and infrastructure in Uganda but with no corresponding action plan for DRM. There is no evidence of establishing an infrastructure that will provide the solution to DRM problems. Other weaknesses are gaps and poor linkages in the overall national ICT structure itself as it fails to address the requirement for DRM. Exploiting the benefits of DRM resides with the ICT infrastructure.

1.4.5 Regional Context

This section introduces the ESARBICA countries in order to provide contextual data for this study. This is because this study sought to compare and learn from the experiences of the ESARBICA countries’ National Archives services in managing digital records so as to draw relevant lessons for Uganda.

¹⁰⁴ Uganda, MoICT (2007). *Report of the Sessional Committee on ICT on the Ministerial Policy Statement and Budget Estimates for the Financial Year 2007/2008*. Kampala: UPPC, p.15.

¹⁰⁵ Uganda (2007). *National Information Technology Authority Uganda Bill*. Kampala: UPPC.

¹⁰⁶ R. Heeks and D. Mundy (2001). ‘Information Systems and Public Sector Reform in the Third World’, in W. McCourt and M. Minogue (eds). *The Internationalisation of Public Management*. Cheltenham: Edward Elgar.

ESARBICA is one of the branches of the International Council on Archives (ICA), which is a network of institutions and professionals dedicated to the advancement of archives through international cooperation. Relating Uganda to ESARBICA was prompted by the fact that Uganda is situated within the geographical area where the ESARBICA membership is drawn and the ESARBICA member countries have also been subject to public service reforms. ESARBICA member countries include Angola, Botswana, the Comoros, Kenya, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Seychelles, Tanzania, Zambia, Zanzibar and Zimbabwe which are neighbours to Uganda.¹⁰⁷ (See Fig. 1).

Figure 1: Map of Africa showing Uganda and the ESARBICA countries



Source: Map of Africa, at http://www.shoortravel.com/image/Map_of_Africa.gif

In step with the objectives of the International Council on Archives (ICA), ESARBICA is concerned with the proper management of records and archives and promoting their use through regional co-operation and providing a forum for the exchange of professional ideals and expertise.

¹⁰⁷ P. Ngulube and V. F. Tafor (2006). 'The Management of Public Records and Archives in the Member Countries of ESARBICA', *Journal of the Society of Archivists* 27:1, p.59.

The Africa Competitiveness Report 2006 of the World Economic Forum's Global Information Technology has ranked some ESARBICA countries, for instance, South Africa, Botswana, Kenya, Namibia and Zimbabwe as top economies in exploiting global ICT developments, well ahead of Uganda.¹⁰⁸ The report presents the results of a collaborative research project, which assessed the extent to which ICTs are being used by economies to better leverage the development process. It is a valuable benchmarking tool for determining national ICT strengths and weaknesses.

From a historical perspective, the countries of East, Central, and Southern Africa which form the ESARBICA, shared a lot in common. All the countries, excluding Mozambique and Angola, are ex-British territories, just like Uganda. The countries had the same parliamentary, institutional and legal provisions, having inherited the Westminster tradition of governance.¹⁰⁹ The Public Service in ESARBICA countries had its roots in the British Civil Service system. Because of the influence of the government of the United Kingdom, these countries followed, broadly, a common form of political structures and administrative systems moulded along the traditional British experience. They have similar Acts of parliament and parliamentary regulations pertaining to the civil services of the national assemblies. In general, the countries share similar administrative traits and challenges that go with them.

Uganda also shares a common administrative history and background with most countries of ESARBICA, but it does not belong to ESARBICA or any other regional group of the records and archives management profession. It is therefore appropriate to learn and benefit from the experiences of the ESARBICA region.

Several member states of ESARBICA are at different levels of ICT implementation and development of e-government applications.¹¹⁰ A study on e-readiness of the Southern African Development Community (SADC) member countries (90% of which are members of ESARBICA) established that South Africa, Botswana,

¹⁰⁸ World Economic Report (2006). *The Networked Readiness Index Rankings 2005*, at <http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/gitr_2006/rankings.pdf>. Accessed 30 February 2006.

¹⁰⁹ M. Bevir and R. A. W. Rhodes (2003). 'Searching for Civil Society: Changing Patterns of Governance in Britain', *Public Administration: an International Quarterly* 81:1, p.43.

Namibia, and Mauritius were some of the countries that had advanced telecommunication infrastructure and were making good progress in implementing ICT initiatives.¹¹¹ For example, as far as ICT connectivity readiness was concerned, Mauritius, South Africa, Botswana and Namibia were ranked as having made very good progress.

The assessment further showed that there were two distinct groups of countries in the region regarding ICT utilisation. Group one which included Seychelles, Mauritius, South Africa and Tanzania had more developed ICT infrastructure than the rest, to the extent that they were using more online services. Group two, on the other hand, countries such as Namibia, Botswana, Swaziland, Lesotho, and Zimbabwe showed significant potential for using online services.¹¹²

Efforts are being made within the ESARBICA member countries to establish institutional frameworks to enhance ICT. For example, the member countries were signatories to the region's ICT protocol with a goal of improving and broadening equitable access to ICT as a means to support the day-to-day operations of government services and interactions.¹¹³ The 2004 e-readiness ranking by the Economist Intelligence Unit of sub-Saharan Africa rated South Africa the most e-ready country in the ESARBICA region.¹¹⁴

It is thus evident that ESARBICA countries are strongly pushing for efforts to transact business electronically and this is driven by public sector reforms as argued in the literature. This has resulted in the generation of digital records. Wamukoya and Mutula argued that public sector reform initiatives of the 1990s which coincided with the ICT revolution, especially the Internet and the World Wide Web, and their increased use in the management of public institutions is a drive to increased

¹¹⁰ V. Tafor (2003). 'Digital Technology– Understanding the Problems Posed by Information Technology in Generating and Managing Records from a Third World Perspective', *ESARBICA Journal* 22, p.72.

¹¹¹ Southern African Development Community (SADC) (2002). *SADC E-Readiness Review and Strategy*, at <http://www.schoolnetafrica.org/english/policy_centre/e-readiness.html>. Accessed 15 March 2007.

¹¹² Southern African Development Community (SADC) (2002), p.15.

¹¹³ Southern African Development Community (SADC) (1999). *SADC in the Next Millennium: The Opportunities and Challenges of Information Technology*, at <<http://www.eldis.org/static/DOC7242.htm>>. Accessed 15 March 2007.

generation of digital records and the need for their proper management within the ESARBICA countries.¹¹⁵

Other authors indicated that the ICT infrastructure including websites, intranets and extranets are increasingly becoming a major source of information created by governments in the ESARBICA countries.¹¹⁶ Ngulube and Tafor state that the World Wide Web and its associated technologies have greatly influenced the development and growth of e-governance and digital records in the ESARBICA region.¹¹⁷ As a result, ESARBICA national archives services have been pressurised by the new technological developments to change and modernise their recordkeeping practices and in particular to take up the challenge of managing digital records.¹¹⁸

Renowned records management authorities¹¹⁹ have revealed that there are attempts to address DRM concerns in the ESARBICA countries. A study conducted in 2001 by the Director of the National Archives of Zambia to assess the technological infrastructure and needs in the ESARBICA region concluded that there are positive DRM indicators in the region.¹²⁰ She pointed out that the national archives as agencies with statutory responsibility to manage records are playing a leading role to guide public agencies to manage their digital records.¹²¹ However, Uganda seems not to be following this regional trend, where the national archives plays a key role in guiding DRM, an issue which will be explored in later chapters.

The ESARBICA countries and Uganda share similar historical, cultural and administrative traits and the challenges that go with them. Therefore, the experiences of the ESARBICA countries in ICT utilisation and DRM provide potential lessons which could inform the managing of digital records in the UPS.

¹¹⁴ East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA) (2004). *ESARBICA/NEPAD Meeting, 26 July*. NEPAD Secretariat Office, Midrand, South Africa: p. 4.

¹¹⁵ J. Wamukoya and S. M. Mutula (2005). 'E-records Management and Governance in East and Southern Africa', *Malaysian Journal of Library and Information Science*, 10:2, pp.67-83.

¹¹⁶ Ngulube and V.F.Tafor (2006), p.70.

¹¹⁷ Ngulube and V.F.Tafor (2006), p.70.

¹¹⁸ S. M. Keakopa (2007). *The Management of Electronic Records in Botswana, Namibia and South Africa*, Ph.D. thesis, University of London, p.ii.

¹¹⁹ Some of these include: N. Mutiti, S. M. Mutula, P. Ngulube, S. Katuu, J. Wamukoya, V. Harris, K. Moahi and H. Kemoni, S. M Keakopa etc.

¹²⁰ N. Mutiti (2001). 'The Challenges of Managing Electronic Records in the ESARBICA Region', *ESARBICA Journal* 21:1, pp.57-61.

¹²¹ Mutiti (2001), p.58.

1.5 Statement of the Problem

Before 1990, public records management had broken down in Uganda resulting in many records being lost, and in the case of those available, being in a form that made it difficult to find or share information.¹²² Since 1992, efforts have been underway to reform the records and information management systems in UPS by promoting the use of ICT as a strategy to overcome the shortcomings of paper-based records.¹²³

Projects to implement ICT systems have been a prominent feature of the effort of the GoU to streamline its processes in recent years. The use of ICT has led to the generation of digital records that are potentially more vulnerable than paper records. Whereas progress has been made in the use of ICT, there are substantial challenges regarding the management of the records that are created and held in digital systems. Specifically, there are frequent reports of loss of data, poor accountability and failure to guarantee satisfactory access to required information especially where digital systems are used to create and keep records.¹²⁴ It seems that ICT is being integrated in the UPS business processes without the necessary framework preparations and required arrangements for DRM.

The introduction of ICT presents challenges to managing digital records held in ICT systems. However, ICT initiatives appear not to be coordinated in Uganda and there is no plan of how digital records will be managed.¹²⁵ This raises the problematic issue as to whether an integrated framework for effective management of digital records could be a key function of the UPS.

Although use of ICTs may enhance the UPS processes, it will be a futile exercise if issues pertaining to managing the resultant digital records are not adequately addressed. This leads this study to question whether Uganda's ICT management

¹²² Uganda, MoPS (1990). *Uganda Public Service Review and Reorganisation Commission (UPSRRC): Report of the Public Service Review and Reorganisation Commission 1989/1990, Main Report*, Kampala: MoPS, p.243.

¹²³ Uganda, MoPS (1998). *Draft for Discussion: Extension of the Computerised Personnel Management Information System, Proposal for ODA Assistance*. Kampala: MoPS.

¹²⁴ Uganda, MoPS (2005). *Public Service Reform Programme Strategic Framework (2005/6-2009/10)*. Kampala: MoPS, p.9.

¹²⁵ P. Cain and A. Thurston (1998). *Personnel Records: A Strategic Resource for Public Sector Management: (with case studies from Uganda, Ghana and Zimbabwe)*. Toronto: Commonwealth Secretariat, p.49.

initiatives support DRM and whether they reflect a well conceived understanding of the importance of digital records? If it cares about this issue, shouldn't the country have a framework for timely technological adoption and management of public digital records?

Without an appropriate supportive framework for adoption and absorption, it can be argued that the UPS will most likely lose significant public records during their capture, storage, retrieval and disposal, a situation which will undermine the country's governance process in the digital era. The above concerns call for further investigations regarding readiness of the UPS to manage digital records to support governance.

1.6 Aim of the study

The aim of the study was to establish whether Uganda has a framework for DRM which can provide strategies for effective management of digital records, based on the findings from the UPS. The following specific objectives contributed towards the achievement of this aim.

1.6.1 Specific Objectives of the study

1. To examine the state of digital records management in the UPS.
2. To reveal the factors preventing the effective management of digital records in Uganda.
3. To discover how efficient DRM can be established in the UPS in order to develop a framework for improvement.

1.6.2 Broad Research Question

The broad research question was to find out whether Uganda has in place a framework to enable the establishment and operation of an efficient public DRM system.

1.6.3 Specific Research Questions

The study was trying to find answers to the following questions:

1. What is the state of digital records created and held in ICT systems in the UPS? including:
 - 1.1 How widespread is the use of ICT systems in UPS?
 - 1.2 What technology is used and has the use of such technology allowed digital records to be created and managed in the UPS context?
 - 1.3 Why is the state of DRM important and significant for UPS?
2. What are the factors affecting the management of digital records in the UPS? including:
 - 2.1 What is the impact of ICT on RM processes?
 - 2.2 What are the challenges affecting the management of digital records in the UPS?
3. What measures for the capture, long-term safeguarding and accessibility of digital records exist in UPS and what frameworks are needed for the future?
In other words:
 - 3.1 What measures already exist for DRM in the UPS?
 - 3.2 What are the universal principles for DRM best practice across the region?
 - 3.3 What strategies and measures will help improve the management of digital records for the efficient delivery of public services in the UPS?

1.7 Significance of the Study

This study is important as it comes at a time when the management of digital records is of widespread concern and censure.

A study of the current approaches to DRM in the UPS is needed to establish the attention paid to digital records. Unless sufficient attention is paid to digital records, the digital systems can fail to deliver their intended benefits. It should trigger understanding of DRM issues by the different managers across the UPS.

This study identifies best practices regarding the management of digital records in the UPS as it investigates how ICTs lead to the generation of digital records. Hence it complements the DRM literature that is available in Uganda as it seeks to reveal the status of DRM in Uganda and the factors currently preventing the effective management of digital records.

It is further anticipated that the study will support the GoU's goals for e-government as it suggests solutions to the challenges of managing digital records. The significance of NPM and the requirements to develop DRM functionality in the ICT-based systems will be discussed to create awareness of the need to manage digital records which is a key requirement for e-governance.

Likewise, the study maps out the benefits of DRM. This is a vital input into the realisation of Uganda's Vision 2025 which aims at establishing e-governance through the development of an effective information management system in the delivery of public services.¹²⁶ Strategies to be proposed should provide direction towards achieving effective public DRM. In this way, the study is expected to support Uganda in realising its Vision and ICT strategies through the DRM solutions it will provide.

It is also hoped that the knowledge generated by the study will provide direction in terms of what factors need to be improved in order to have a reliable framework for the realisation of a DRM regime, which is a necessary goal for Uganda in order to meet the Millennium Development Goals (MDG) targets. When DRM principles become a standard part of Uganda's reform agenda, the DRM strategy required to support MDGs will be attained.

At the academic level, the results of this thesis are expected to benefit records management practitioners, students and researchers. The students and researchers, especially those undertaking studies related to ICT and RM, need to know about current research on DRM. The RM practitioners in Uganda and those from other countries with similar conditions like Uganda could use the findings as a reference point while implementing DRM frameworks.

The findings, conclusions and recommendations of this study are therefore designed to benefit the policy makers, RM students, DRM practitioners and researchers. The findings of the study anticipate providing solutions to the challenges of managing digital records by supporting the enforcement and implementation of formal institutions, ICT infrastructure and DRM human resource capacity.

1.8 Chapter Conclusion

This chapter introduced the overall research problem and the key questions that this thesis investigates. It briefly examined the environment in which the ICT strategies evolved in Uganda and introduced the ESARBICA region as a useful reference point regarding good practices that can provide lessons leading to successful DRM in Uganda. It established the importance of the research area and provided the structure of the thesis. The detailed description of the research unfolds in subsequent chapters, beginning with a review of the related literature in chapter two.

¹²⁶ Uganda, MoFPED (1999), p.86.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter aims to introduce the research context for this thesis, in particular DRM, as reported in the relevant literature. It first reviews the theoretical issues in records management then extends the study to factors leading to the emergence of digital records, the challenges of managing digital records, efforts to address the challenges of managing digital records, the emerging issues in public service administration and the research gap that needs to be filled. The focus of the review is to understand the intricacies of DRM within the context of a framework for digital governance processes.

2.2 Theoretical Debates Related to the Study

This section provides the background to the theoretical foundation for the study by exploring the theoretical debates around the management of digital records. The study introduces the Records Lifecycle Theory and focuses on the Records Continuum Theory as a basis for managing an organisation's digital records. These theories indicate the principles and practices that guide RM. Each of the theories has different origins and a different focus, as discussed below.

2.2.1 Records Lifecycle Theory

This theory, developed at the National Records and Archives Administration of the United States of America in the 1930s, is based on the concept that a record has a life.¹ The lifecycle approach to records divides the life of records into stages, that is, a record is born (created), it lives (used and maintained) and it 'dies' (disposed of).²

¹ I. A. Penn, G. B. Pennix and J. Coulson (1994). *Records Management Handbook*. 2nd ed. England: Gower Publishing Co, p.9.

² J. McLeod and C. Hare (2006). *How to Manage Records in the e-Environment*. 2nd ed. London: Routledge, p. 39.

As articulated in the works of Schellenberg,³ the lifecycle theory suggests that records move from one phase to another, over time, in a linear rather than a cyclical way, from creation, receipt and use, to disposal. Creation, receipt and use form the primary stages of a record's life, while preservation in an archive provides an opportunity for secondary use. Described in this way, the theory contributes to the creation of strict demarcation of responsibilities between archivists and records managers as it identifies what will happen to a record at different stages. Hence records managers are the key players in primary uses and archivists are managers of records for their secondary uses.

However, there are weaknesses in the theory such as its strict separation of records management responsibilities.⁴ Some theorists have argued that records must be managed, from the moment of creation, by the recordkeepers, that is, the records managers and archivists working together because there is no distinction between a record and an archive especially in the digital era.⁵ The challenges posed by the management of digital records in particular have increasingly led to recognition of the inter-dependence of responsibilities between records management and archives administration. No phase of records management can be treated in isolation in the digital environment; all phases need to be managed in a continuous way. As noted by one scholar: "successful management of digital records can only be achieved if digital records are managed as a continuous process."⁶

Other scholars like Yusuf and Chell pointed out that the records lifecycle theory could not be used in managing digital records and needed to be replaced by a model which appropriately reflected the special characteristics of digital records.⁷ They emphasised that as technology changed, the record was prone to transformation and conversion and this required coordination between the stages of the record's lifecycle. The

³ T. R. Schellenberg (1956) *Modern Archives: Principles and Techniques*. Chicago: University of Chicago Press.

⁴ P. C. Bantin (2008). *Understanding Data and Information Systems for Recordkeeping*. London: Facet, p.18.

⁵ For example, C. Hurley (1998). 'From Dust Bins to Disk-Drives and Now to Dispersal: the State Records Act (New South Wales)', *Archives and Manuscripts* 16:2, pp. 390-409.

⁶ E. Shepherd (2006). 'Tradition and Position in England' in N. Butikofer, H. Hofman and S. Ross (eds), *Managing and Archiving Records in the Digital Era*. Baden: Swiss State Secretariat for Education and Research, p.55.

⁷ Z. Yusuf and R. Chell (2000). 'The Records Lifecycle: An Inadequate Concept for Technology-Generated Records', *Information Development* 16:3, pp.135-141.

perceived weaknesses of the records lifecycle theory in relation to the management of digital records suggested that the records continuum theory is more applicable to this thesis.

2.2.2 Records Continuum Theory

This study is situated within a continuum framework which recognises a record as part of a business process that begins with the record's creation and continues through its use at all stages of its existence.⁸ Australian archivists have developed the records continuum theory which, in contrast to the lifecycle theoretical approach to records management, has been defined as a “consistent and coherent regime of management processes from the time of creation of records (and before creation in the design of recordkeeping systems) through to the preservation and use of records as archives”.⁹ The theory's aim is to provide a model with which to understand records and recordkeeping processes, regardless of form and of situation, and from which practices for recordkeeping in digital environments may be developed.¹⁰ It is based upon an integration of the responsibilities between records managers and archivists. When responsibilities are separated then digital records documenting vital transactions may never be created, fully documented or survive.

The records continuum theory as expounded by Upward¹¹ addresses the inadequacies of the records lifecycle theory, which fails to integrate the processes of records management and archives management. Under the records continuum theory, records are not classified as current or non-current and the role of archivists becomes one of working with records managers at all the stages of a record's existence.¹²

As argued by Kemoni, with the records continuum theory these benefits would be realised: ensuring the creation of the right records containing the right information in

⁸ E. Shepherd and G. Yeo (2003). *Managing Records: A Handbook of Principles and Practice*. London: Facet, p.8.

⁹ Australia, Standards Australia (1996). *AS 4390-1/6: Records Management*. New South Wales: Homebush, Part 1: General, Clause 4.22.

¹⁰ S. McKemmish, G. Acland, N. Ward and B. Reed (1999). 'Describing Records in Context in the Continuum: the Australian Recordkeeping Metadata Schema', *Archivaria* 48, p.4.

¹¹ F. Upward (1996). 'Structuring the Records Continuum Part One: Post-custodial Principles and Properties', *Archives and Manuscripts* 24:2, pp.268–285.

¹² S. McKemmish (1993). 'Recordkeeping, Accountability and Continuity: the Australian Reality', in McKemmish, S., Upward, F. (eds.). *Archival Documents: Providing Accountability through Recordkeeping*. Melbourne, Australia: Ancora Press, p.18.

the right formats; organising the records to facilitate their use; systematically disposing of records no longer required; and protecting and preserving records.¹³

The records continuum theory argues that the management of records is a continuous process where one element of the continuum passes seamlessly into another.¹⁴ The theory is interpreted as both a metaphor and a new worldview, representing a technology-driven pattern shift in RM.¹⁵ The records continuum approach of targeting DRM makes it very relevant to this thesis.

This study is informed by the continuum theory because managing digital records should be seen as a continuous process. One scholar observed that rather than focus on the records and their status at different points in time, this theory focuses on processes and activities, and therefore fits well within the digital environment where DRM systems become the centre point.¹⁶

In diagrammatic form, the theory is represented by four concentric circles. As represented in Fig. 2, the records continuum theory provides an integrated approach to managing records, rather than one made up of separate stages. Its four levels of perspective include:

- Dimension 1, the regime applies itself to identifying records management actions and ensures that reliable evidence of them is created by capturing records of the related/supporting transactions.
- Dimension 2, recordkeeping systems manage "families" of transactions and records series documenting processes, hence intellectual control of records relating to the arrangement and description of both records and archives.
- Dimension 3 presents RM actions which relate to the maintenance and use of records, while archives management actions relate to the description of archives.

¹³ H. N. Kemoni (2008). 'Theoretical Framework and Literature Review in Graduate Records Management Research', *African Journal of Library, Archives and Information Science* 18:2, p.108.

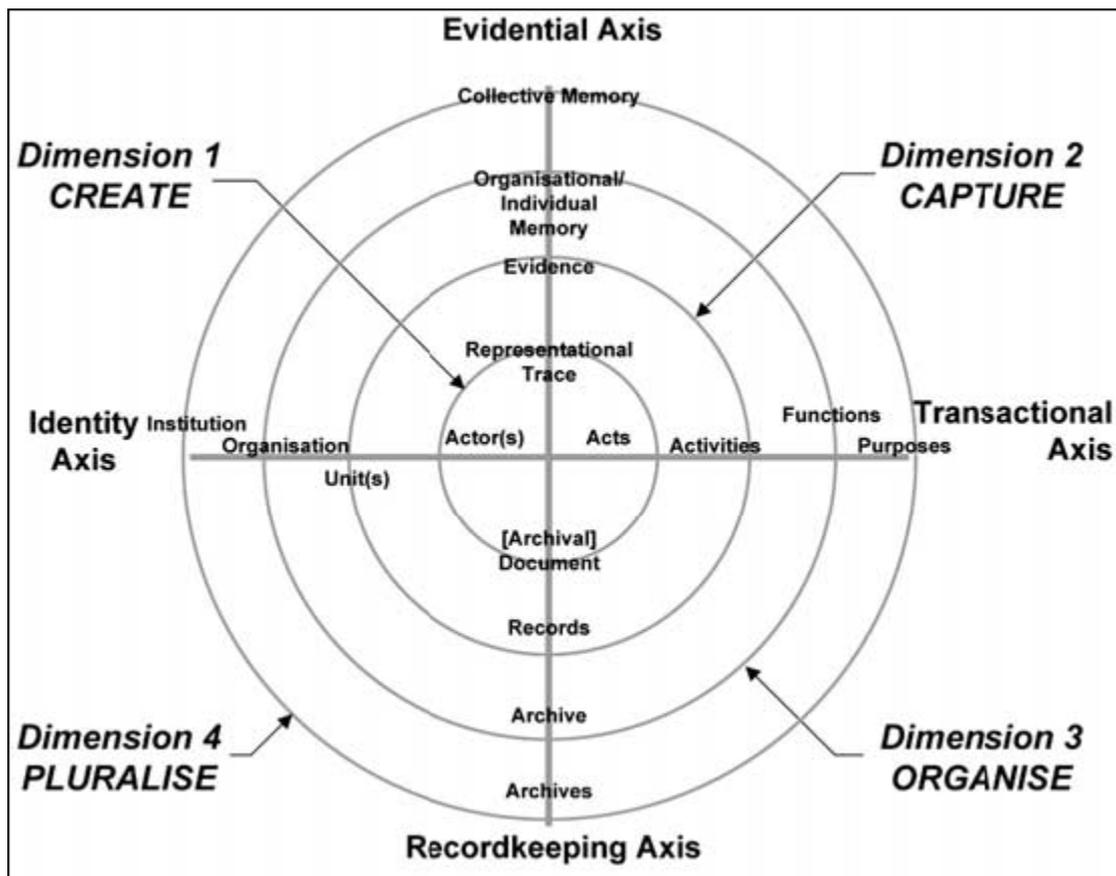
¹⁴ E. Shepherd and G. Yeo (2003). *Managing Records: A Handbook of Principles and Practice*. Facet: London, p.9.

¹⁵ D. Bearman (1989). *Archival Methods*. Pittsburgh: Archives and Museum Informatics, p.98.

¹⁶ B. Reed (2005). 'Reading the Records Continuum: Interpretations and Explorations', *Archives and Manuscripts* 33:1, p.19.

- Dimension 4 relates to physical control where disposal of records is by destruction, or their transfer to the archives, while archives management actions relate to the preservation and use of archives.

Figure 2: The Records Continuum Theory



Source: S. McKemmish (2001). 'Placing Records Continuum Theory and Practice', *Archival Science* 1, p.351.

The axes as illustrated in Fig. 2 represent major records management themes (transactional, identity, evidential and recordkeeping) while the circles represent the dimensions of the continuum (create, capture, organise and pluralise). In a continuum there are no separate steps. The figure shows that with a digital system, records do not pass through distinct stages, as implied by the records lifecycle theory, but the stages act as a point of reference rather than as functions of records management. These stages are interrelated by the records continuum theory, forming a continuum in

which both records managers and archivists are involved to varying degrees in the management of recorded information. Therefore the theory calls for records managers and archivists to operate at the appropriate stages of the records continuum to meet their sometimes different but harmonious objectives.

Writers who reflect on the continuum theory, such as Bearman,¹⁷ Cook¹⁸ and Upward¹⁹ have advanced debates in favour of the records continuum theory arguing that it offers the best model for managing digital records. In essence, the records continuum theory provided this study with a framework which enabled it to assess whether a broader legal and regulatory environment, ICT infrastructure and human resource capacity exists for the UPS to manage its digital records. The question arising is whether the UPS has integrated the responsibilities of records and archives management in managing its records.

Although it is the records continuum theory that informs this study, this does not invalidate the usefulness of the records lifecycle theory, especially with management of paper-based records in organisations. As Shepherd and Yeo²⁰ argue, the lifecycle theory still offers a useful framework from which to assess how records are managed in practice in an organisation. The lifecycle theory is therefore still relevant to the UPS since manual systems are still prevalent and paper records still continue to grow, even with increased use of ICTs, as it will be discussed later in this thesis. It could be looked at as an additional strategy to rely on for assessing how records are managed in the UPS.

2.3 Factors Leading to the Emergence of Digital Records

A number of authors have discussed the emergence of digital records in governments. They have indicated that there are several factors leading to this phenomenon such as New Public Management (NPM), e-governance processes, the role of ICT institutions

¹⁷ D. Bearman (1996). 'Item-Level Control and Electronic Recordkeeping', *Archives and Museum Informatics* 10:2, pp.195-245.

¹⁸ T. Cook (2000). 'Beyond the Screen: the Records Continuum and Archival Heritage', Paper Delivered at the Australian Society of Archivists Conference, Melbourne, 18 August, at <<http://archivists.org.au/sem/conf2000.terrycook.pdf>>. Accessed 17 January 2007.

¹⁹ F. Upward (2000). 'Modelling the Continuum as Paradigm Shift in Recordkeeping and Archiving Processes and Beyond – A Personal Reflection', *Records Management Journal* 10:3, pp.115-139.

²⁰ Shepherd and Yeo (2003), p.10.

in Public Service administration and the digital revolution. This section discusses the literature relating to these factors.

2.3.1 New Public Management (NPM)

As discussed in Chapter 1, NPM is a new management style resulting from the collapse of the conventional approach to Public Service administration. It is a management philosophy used by governments since the 1980s to modernise the public sector. The NPM reforms in the public sector were important prerequisites to the realisation of ICTs and networked governance initiatives in public administration.²¹

The NPM was adopted as a response to the decay and inefficiencies of the old institutions especially those that were rigid and bureaucratic.²² The elimination of the old systems and their replacement by NPM was hastened by the rapidly changing information-rich, knowledge-intensive society and economy of the 1990s.²³ As a result, structures were put in place to underpin the public accountability of governments. New corporate managerial lines replaced the old administrative culture.²⁴ The new management styles of NPM advocated ICT use combined with ICT tasks and communication functions. Overall, NPM contributed to integrating ICTs in public service administration. NPM defined new functions, techniques and the creation of digital records became generally accepted as a corporate responsibility.²⁵ This made information management a core area of NPM.²⁶

²¹ E. C. Kamarck (2004). *Government Innovation Around the World*. Institute for Democratic Governance and Innovation, John F. Kennedy School of Government: Harvard University, p.2.

²² O. E. Hughes (2003). *Public Management and Administration: An Introduction*. Basingstoke, UK: Palgrave, p.65.

²³ D. Osborne and T. Gaebler (1992). *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector from Schoolhouse to State House*. Reading MA: Addison-Wesley, p.xix.

²⁴ B. Nolan (2001). 'Conclusion: Themes and Future Directions for Public Sector Reform', in B. C. Nolan (ed.), *Public Sector Reform: An International Perspective*, p.187.

²⁵ A. Lipchak (2002). *Information Management to Support Evidence-Based Governance in the Electronic Age: A Public Policy Forum Discussion Paper*, at <www.ppforum.ca/ow/ow_p_11_2002B_es.pdf>. Accessed 13 December 2005.

²⁶ A. Willis (2005). 'Corporate Governance and Management of Information and Records', *Records Management Journal* 15:2, p.88.

NPM brought changes that both developed and developing countries considered important in assessing and improving their public services. The utilisation of information technologies resulted from NPM application.²⁷ These technologies served a variety of ends; including, better delivery of public services to citizens, improved interactions with business and industry, citizen empowerment through access to information, and more efficient management. Use of ICTs provided new ways of organising and delivering public services.²⁸

In Africa, NPM became a major feature of public service administration.²⁹ The common element was the attempt to bring a corporate culture concerned with businesslike efficiency and outcomes into public agencies.³⁰ One of the outcomes of the adoption of NPM was the diffusion and increased governance networks supported by advances in use of information technology.³¹ Many ICT projects were set up to give support to NPM initiatives and this led to the digital era governance and consequently to the generation of digital records.³²

The central focus of public management reform was on the economy's efficiency and effectiveness.³³ Pollitt and Bouckaert argued that NPM reforms were necessary for making the operations of governments more efficient and effective.³⁴ The reforms consisted of deliberate changes to the structures and processes of public sector organisations with the objective of getting them to run better.³⁵ Rhodes claimed that NPM contained doctrines such as a focus on information systems management.³⁶ With NPM, networked forms of governance were realised. For example, ICTs were

²⁷ R. B. Heeks (ed.) (2001). *Reinventing Government in the Information Age*. London: Routledge, p.52.

²⁸ Hughes (2003), p.23.

²⁹ New Partnership for Africa's Development (NEPAD) (2003). 'Case Studies: A Collection of African Experiences in Public Sector Reform Initiatives', *4th Pan African Conference of Ministries of Public Service, May 7th*. Stellenbosch, South Africa, p.5.

³⁰ South Africa (1997). *White Paper on Public Service Transformation*, at

<http://www.polity.org.za/govdics/green_papers/ps&e.htm>. Accessed 19 January 2007.

³¹ E. W. Russell and D. G. Bvuma (2001). 'Alternative Service Delivery and Public Service Transformation in South Africa', *International Journal of Public Sector Management* 14:3, p.244.

³² R. Heeks (2002). 'e-Government in Africa: Promise and Practice', *Information Polity* 7:2/3, p.98

³³ L. Kaboolian (1998). 'Public Management', *Public Administrative Review* 5:3, p.190.

³⁴ C. Pollitt and G. Bouckaert (2004). *Public Management Reform: A Comparative Analysis*. 2nd ed. Oxford: University Press, p.6.

³⁵ Pollitt and Bouckaert (2004), p.8.

³⁶ R. A. W. Rhodes (1991). 'Theory and Methods in British Public Administration: The View from Political Science', *Political Studies* 34:3, p.534.

seen to be deployed in governments and hence the impact of ICTs in strengthening networks was seen as part of NPM.

While NPM focuses on structural, financial and planning techniques, its benefits may not be effectively realised when information is not managed properly. Mutula and Brakel observed that information provided a framework for the public sector to monitor economic, social, cultural and political developments.³⁷ Other scholars like Cunningham and Phillips advised that information would not be available for governments to make appropriate decisions unless there were strategies in place to actively describe and preserve it.³⁸ RM, which involves describing and preserving information, is therefore an important aspect of NPM.³⁹

According to Willis, records and information are vital ingredients to the survival of NPM.⁴⁰ Willis argued that sound records management underpins in a direct and indirect way, many of the vital aspects of corporate governance which lead to the success of NPM. Good RM delivers transparency, accountability and security of corporate information which are key requirements for good corporate governance.⁴¹ In assessing efforts to boost public service delivery, records are required as a key component. To maintain a complete audit trail of NPM, it was important for records to be well managed. This was the only way the NPM doctrines can work as a whole.

When delivering services according to the NPM requirement, governments have to provide evidence of business transactions as a record of how things were done.⁴² NPM was about increased accountability from those entrusted with public administration, thus replacing a system where public service operated almost independent of society. Bardoville argued that NPM was the panacea for addressing the inefficiencies of government and a means to ensure that governing practices

³⁷ S. M. Mutula and P. V. Brakel (2006). 'An Evaluation of E-readiness Assessment Tools with Respect to Information Access: Towards An Integrated Information Rich Tool', *Information Management*, pp.212-223.

³⁸ A. Cunningham and M. Phillips (2005). 'Accountability and Accessibility Ensuring the Evidence of E-governance in Australia', *ASLIB Proceedings: New Information Perspectives* 57:4, pp.301-317.

³⁹ Cunningham and Phillips (2005), p.304.

⁴⁰ Willis (2005), p.86.

⁴¹ Willis (2005), p.87.

⁴² M. Power (1999). *The Audit Society; Rituals of Verification*. Oxford: University Press, p.69.

become congruent with the principle of ideological constructs of accountability.⁴³ Scharitzer and Korunka stated that under NPM, public administrators were put under pressure to execute their services in a more accountable way.⁴⁴ McLaughlin, Osborne and Ferlie acknowledged that NPM brought benefits of efficiency and service effectiveness to public management and helped to address fundamental weaknesses in the systems of accountability and controls in public services.⁴⁵

Bovens observed that “there was a drive in many Western democracies to strengthen accountability arrangements and to design and add new ones”.⁴⁶ According to him, various governments were striving to enhance accountability as a result of adopting NPM doctrines. The notion that accountability obligations had to be part of NPM was put forward by various scholars. Behn talked about the ‘accountability dilemma’ that he felt growing upon contemporary policy makers.⁴⁷ Halachmi signalled nothing less than an ‘accountability trap’ as administrators were being audited more frequently and intensely as a requirement posed by the accountability forums.⁴⁸ Effective accountability meant that records were generated and kept. With ICT, digital records were inevitably generated.

However, NPM has been criticised for failing to deliver in Africa because of weaknesses in ICT and DRM infrastructure.⁴⁹ For instance, Larbi observed that in Ghana, information systems were found to be too rudimentary to serve as a reliable basis for effective performance of the public sector. This is associated with weak

⁴³ N. C. Bardoville (2000). ‘The Transformation of Governance Paradigms and Modalities Insights into the Marketisation of the Public Service in Response to Globalisation’, *Roundtable: the Commonwealth Journal of International Affairs* 89:353, p.82.

⁴⁴ D. Scharitzer and C. Korunka (2000). ‘New Public Management: Evaluating the Success of Total Quality Management and Change Management Interventions’, *Public Service from Employee and Customers Perspectives* 11:7, p.941.

⁴⁵ K. McLaughlin; S. P. Osborne and E. Ferlie (ed.) (2002). *New Public Management: Current Trends and Future Prospects*. London: Routledge, p.11.

⁴⁶ M. Bovens (2005). ‘Analysing and Assessing Public Accountability: A Conceptual Framework’, *Paper Presented at Accountable Governance: An International Research Colloquium*, October 20-22. Belfast: Queens University of Belfast, pp.1-21.

⁴⁷ R. D. Behn (2001). *Rethinking Democratic Accountability*. Washington, D.C: Brookings Institution Press, pp.11-13.

⁴⁸ A. Halachi (2002). ‘Performance Measurement, Accountability, and Improved Performance’, *Public Performance and Management Review* 25:4, pp.370-74.

⁴⁹ G. Larbi (1998). ‘Management Decentralisation in Practice: A Comparison of Public Health and Water Services in Ghana’, in M. Minogue, C. Polidano and D. Hulme (eds.), *Beyond the New Public Management: Changing Ideas and Practices in Governance*. Cheltenham: Edward Elgar, p.189

institutions.⁵⁰ But more than the existence of institutions is the question of their appropriateness. Another author observed that NPM is slowly dissipating within Africa because of a lack of readiness for e-government. This is because where e-government projects are introduced; they mainly end in failure either partial or total.⁵¹ Therefore, if improvements are to be made in the UPS delivery of services, the institutional capacities of RM in supporting and documenting developments need to be assessed and improved.

The literature on NPM surveyed for this chapter confirms that records are made and kept for accountability, such as performance measurement and other audit purposes. However, it would be wrong to regard NPM as a factor operating independently for the generation of digital records, with no reference to the wider context within which the public sector operates. Linked to these developments has been, for example, the prevalence of digital government and e-governance trends, as discussed below.

2.3.2 Digital Government, E-governance and Digital Records Management

A digital government strategy was conceptualised in the 1990s throughout the world with various interpretations.⁵² Emerging with e-government is the digitalisation of public organisations, leading to structural and process change in public administration.⁵³ Unlike NPM, e-government is not primarily motivated by fiscal stress, administrative and/or political crisis, or dissatisfaction among public managers. Rather, it is a technology-driven reform movement for improving the delivery of public services and reducing costs.⁵⁴

E-government initiatives have come with dozens of digital applications that can be implemented across a broad range of functional government areas. These technologies serve a variety of different ends, including transactions between government and business, government and citizen, government and employee, and among different

⁵⁰ Russell and Bvuma (2001), p.243.

⁵¹ Heeks (2002), p.97.

⁵² Z. Fang (2002). 'E-Government in Digital Era: Concepts, Practice and Development', *International Journal of the Computer, the Internet and Management*, 10:2, p.2.

⁵³ Fang (2002), p.2.

⁵⁴ K. Schedler and M. C. Schaf. (2002). 'Exploring the Interrelations Between Electronic Government and the New Public Administration: A Managerial Framework for Electronic Government', *IFIP*

units and levels of government.⁵⁵ They collect and analyse data, monitor budgets, and execute legally mandated government activities. These government services require monitoring which result in imposing requirements for effective information and records management. Government should be able to document their services delivered through ICT application.

It is now almost impossible to study the outcome of digital government and e-governance processes without touching digital records since they appear to be part of the digital era as various authors in the literature argue. For example, Nolan regarded the use of ICT systems as a dominant reform model for the public service when he linked the implementation of ICT to effective documenting of government services and knowledge sharing.⁵⁶

Governments are now striving to manage their digital records in order to reap digital dividends envisaged in the social, economic and political spheres, and lately to achieve the United Nations' Millennium Development Goals (MDGs). Among the digital dividends envisaged is e-governance that would enhance citizens' engagement with their governments.

There is a link between RM and e-governance as the implementation and sustenance of e-governance systems are predicated upon efficient, pervasive and affordable information access and service principles. Many studies show that e-government services are derived from using ICTs. For example Forlano⁵⁷, Garson⁵⁸, Roper and Millar⁵⁹ argue that the reasons and goals for e-governance were to improve service delivery through use of ICTs. Studies by Basu⁶⁰ and Forlano⁶¹ reported that the

Conference Proceedings 2002, at <<http://www.mariascharf.com/SchedlerScharf2001.pdf>>. Accessed 26th April 2006.

⁵⁵ Fang (2002), p.5.

⁵⁶ Nolan (2001), p.188.

⁵⁷ L. Forlano (2004). 'The Emergence of Digital Government: International Perspectives', in A. Pavlichev and G. D. Garson (eds.), *Digital Government: Principles and Best Practices*. Hershey, PA: Idea Group Publishing, p.35.

⁵⁸ G. D. Garson (2004). 'The Promise of Digital Government', in A. Pavlichev and G. D. Garson (eds.), *Digital Government: Principles and Best Practices*, Hershey, PA: Idea Group Publishing, p.2

⁵⁹ M. Roper and L. Millar (eds.) (1999). *Managing Public Sector Records: Principles and Context*. London: IRMT, p.52.

⁶⁰ S. Basu (2004). 'E-Government and Developing Countries: An Overview', *International Review of Law, Computers and Technology* 18:1, p.110.

⁶¹ Forlano (2004), p.36.

enthusiasm for e-governance has been widespread among both developed and developing countries although the opportunities and challenges differ from country to country. However, in line with Forlano, Lipchack and McDonald note that absence or weaknesses in legislation, policies and guidelines and technological requirements are factors hampering the implementation of e-governance in developing countries.⁶²

The success of e-governance in improving the efficient delivery of public services hinges on viewing it as transformation where technology is the tool.⁶³ The infiltration of this technology itself into government agencies has led to the generation of digital records.⁶⁴ This has been the trend worldwide. For example, in the UK, the e-governance programme was first led by the office of the e-envoy and had among its mandates, to ensure that all services, which can be electronically delivered, be so delivered.⁶⁵ This explicitly led to creation and management of digital records. E-government is therefore seen not only as a new way of designing, organising and providing services to citizens, but also, significantly, as being responsible for the emergence of digital records. The question of whether the digital records created from e-governance activities in the UPS are effectively managed remains elusive.

2.3.3 The Promotion of ICT in Public Service Administration

The promotion of ICT use in public service administration by institutions like the Organisation for Economic Co-operation and Development (OECD)⁶⁶ and the World Summit on the Information Society (WSIS)⁶⁷, has made an impact on ICT utilisation.

⁶² A. Lipchack and J. McDonald (2003). *E-Government and E-Records: E-Records Readiness and Capacity Building, An Electronic Discussion Paper*, 19Nov – 12 Dec, at <<http://www.irmt.org/download/DOCUME~1/GLOBAL/discussionpaper.pdf>>. Accessed 7 July 2006.

⁶³ M. Cross (2004). 'Direct to Your Destination', *The Guardian* 4 March, at <<http://www.guardian.co.uk/online/story/0,3605,1161041,00.html>>. Accessed 7 May 2006.

⁶⁴ European Research Consortium for Informatics and Mathematics (ERCIM) News (2002). *Special theme: E-Government*, at <http://www.ercim.org/publication/Ercim_News/enw48/intro.html>. Accessed 8 May 2006.

⁶⁵ United Kingdom, 'E-government Unit', at <<http://www.cabinetoffice.gov.UK/e-government/index.asp>>. Accessed on 10 August 2008.

⁶⁶ The Organisation for Economic Cooperation and Development (OECD) with its headquarters in Paris, France comprises of partners from Europe and USA possessing complementary skills that make them prominent and knowledgeable in using ICTs.

⁶⁷ The World Summit on the Information Society, at <<http://www.itu.int/wsis/index.html>>. Accessed 09 2008.

Such efforts and intensified global competition have forced governments to utilise ICTs in corporate governance.⁶⁸

The OECD promotes the application and use of ICT in governments of member countries.⁶⁹ It has issued long-term strategies on how ICTs, the Internet and other types of networks can boost public sector efficiencies. The OECD promotes ICT uptake and use. According to OECD principles, the presence of an effective ICT system across an economy provides a degree of efficiency that is necessary to foster digital governance and this presents challenges for member governments to identify strategies for DRM.

The World Summit on the Information Society (WSIS) whose vision is to promote the use of ICT-based products, such as network services and applications, has also influenced the generation of digital records. The WSIS focuses on promoting ICT utilisation at the national, regional and international levels.⁷⁰ Its aim to use ICT for the achievement of internationally agreed development goals has also made it necessary to manage the resulting digital records. Development goals are premised on international cooperation, and indicative targets serve to promote the use of digital systems to provide adequate evidence of their compliance with the WSIS requirements.

Such institutions have led a digital revolution.⁷¹ Authors like Kraemer and King⁷² show that the focus of ICT use in governments especially in Europe and America has changed over time. In the 1950s they were characterised by the use of defence technologies. The 1960s and 1970s saw the introduction of huge mainframe computers which carried out large-scale repetitive tasks. In late 1970s and 1980s the

⁶⁸ Organisation for Economic Cooperation and Development (OECD) (2004). *OECD Principles of Corporate Governance*. Paris: OECD, at <www.oecd.org/dataoecd/32/18/31557724.pdf>. Accessed 24 May 2006.

⁶⁹ Organisation for Economic Cooperation and Development (OECD) (1995). 'Governance in Transition: Public Sector Management Reforms in OECD Countries', *OECD Public Sector Management Committee*. Paris: OECD, p.56.

⁷⁰ World Summit on the Information Society (2005). *Action Plan*, at <<http://www.itu.int/wsis/docs/geneva/official/poa.html#c1>>. Accessed 24 May 2006.

⁷¹ M. Mesbahi (2007). 'The Third World and the Paradox of the Digital Revolution', *International Review of Information Ethics* 7:9, at <www.i-r-i-e.net/inhalt/007/04-mesbahi.pdf>. Accessed 10 February 2008.

⁷² K. J. Kraemer and J. L. King (2003). *Information Technology and Administrative Reform: Will the Time After E-Government Be different*, at <www.crito.uci.edu/publications/pdf/egovernment.pdf>. Accessed 10 January 2009.

use of large databases and networks of personal computers (PCs) became the dominant paradigm. The databases and networks have become the basis for the generation of digital records.

According to the WSIS, the digital revolution has fundamentally changed the way governments operate.⁷³ It has forged new ways to create knowledge and disseminate information. It has restructured the way the world conducts economic and business practices, runs governments and engages politically. The digital revolution has created the platform for a free flow of information, ideas and knowledge across the globe.⁷⁴ This revolution has made an impact on the way governments create, generate, send, and receive digital information. There are also digital systems including networked and non-networked systems on different levels. It is possible to have distributed and decentralised networking systems existing simultaneously and managing information of different levels of sensitivity and security in separate network environments.⁷⁵

The digital revolution has led to increased electronic communication and increases in the quantity of records created and maintained in digital format. The ability to create digital records in most governments has expanded rapidly since the advent of the digital revolution. The extent to which the digital revolution is taking hold of the public sector worldwide creates a need to manage the digital records. The question is what has been the extent of the digital revolution in Uganda. This study hopes to establish how far the digital revolution has led to DRM for the case of the UPS.

2.3.4 The Legal Implications

The legal environment is one of the contexts for RM. The literature indicates that public organisations need to be aware of their legal and regulatory obligations, and to be able to provide adequate evidence of their compliance with the regulatory

⁷³ World Summit on the Information Society, at < <http://www.itu.int/wsis/basic/why.html>>. Accessed 3 June 2007.

⁷⁴ Australia, State Records Authority of New South Wales, *Standard on Digital Recordkeeping* (2008), at <<http://www.records.nsw.gov.au/recordkeeping/government-recordkeeping-manual/rules/standards/standard-on-digital-recordkeeping>>, p.5. Accessed 27 May 2009.

⁷⁵ International Council on Archives (ICA), Committee on Electronic Records in An Electronic Environment (2005). *Electronic Records: A Workbook for Archivists*, at <http://www.ica.org/biblio/Study1_6ENG_5_2.pdf>. Accessed 5 May 2007.

environment in the records of their activities.⁷⁶ This is because some legislation specifies the requirements to create and retain certain records, while other legislation specifies how long the records should be retained and yet other legislation shows how to govern the format in which records may be stored if they are to be admissible as evidence in a court of law.⁷⁷ This confirms that there are laws and regulations that require institutions to create and keep records.

Scholars argue that while some laws and regulations contain explicit DRM requirements, for instance the need to create specific types of digital records and the need to keep digital records for a specific length of time, many more contain implicit requirements for DRM.⁷⁸ For instance, the Freedom of Information (FOI) legislation of a jurisdiction supports the creation and retention of digital records, since it presupposes that whatever government does is subject directly or potentially to public scrutiny.⁷⁹ FOI legislation should promote a culture to keep required digital records.

Some laws also require government agencies to develop and implement digital recordkeeping systems.⁸⁰ For example the Library and Archives of Canada Act 2004⁸¹ requires government agencies to use DRM systems to promote confidence in the use of digital records, while the 2001 amendments to the National Archives of South Africa Act 1996 require the National Archivist to approve DRM systems for use by the public agencies.⁸² This implies that with ICTs, governments will seek to use systems that embrace good DRM practices in order to account for the digital records they hold.⁸³ The legislative requirement to manage digital records therefore promotes the proper maintenance of digital records.

⁷⁶ International Standards Organisation (ISO) (2001). *ISO 15489-1 Information and Documentation – Records Management Part 1: General*. Geneva: International Standards Organisation.

⁷⁷ J. Kennedy and C. Schauder (1998). *Records Management: A Guide to Corporate Recordkeeping*. 2nd ed. NSW, Australia: Longman Cheshire, p.48.

⁷⁸ McLeod and Hare (2006), p.60.

⁷⁹ R. Snell and P. Sebina (2007). 'Information Flows: the Real Art of Information Management and Freedom of Information', *Archives and Manuscripts* 35:1, p. 68.

⁸⁰ Bantin (2008), p.32.

⁸¹ Canada (2004). *Library and Archives Act of Canada*, at <<http://laws.justice.gc.ca/PDF/Statute/L/L-7.7.pdf>>. Accessed 12 January 2009.

⁸² South Africa (1996). *National Archives and Records Service (Act, no. 43) as amended 2001*, at <<http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwezaf.htm>>, Section 13(2)(b)(iii). Accessed 12 May 2006.

⁸³ Snell and Sebina (2007), p. 73.

It is argued in the literature that records and archives legislation is of importance in determining the manner in which a government can address DRM issues.⁸⁴ However, as noted by Higgs, legal structures do not guarantee success for DRM, but they are the essential prerequisite of strategic action for the creation of digital records.⁸⁵ Such legislation should mandate the creation of digital records and their management over the whole of their existence.⁸⁶ Parer recommends that archives legislation should incorporate legislative instructions regarding digital recordkeeping along with legislative instruction pertinent to archiving, as both are aspects of the records continuum.⁸⁷

As noted by Wilkins, Swatman and Holt, governments around the world are steadily issuing laws and regulations covering DRM.⁸⁸ Among the national endeavours is, for example, Australia's Corporations Law of 1989 (revised in 2001) which authorises the use of electronic record media in business recordkeeping, provided the information can be reproduced any time in written form.⁸⁹ The United States government has also passed or amended some pieces of legislation such as the Federal Rules of Bankruptcy, Civil and Criminal Procedure, and the Federal Rules of Evidence, which together affect related areas of recordkeeping such as early attention to issues relating to digital recovery, accessibility and production of documents, including mandated retention requirements for certain types of records. Of the many pieces of legislation or regulation relating to recordkeeping requirements passed in the UK a number stand out, including: the Modernising Government White paper, which requires all central government agencies to create and manage records electronically; the Anti-Terrorism, Crime and Security Act 2001, which requires the retention of communication data for the protection of national security; and the full implementation of the Freedom of Information Act 2000, which encourages public

⁸⁴ D. Parer (2001). *Archival Legislation for Commonwealth Countries*. London: Association of Commonwealth Archivist and Records Managers (ACARM), p.1.

⁸⁵ E. Higgs (1994). 'Information Superhighways or Quiet Country Lanes? Accessing Electronic Archives in the United Kingdom', *Playing for Keeps: Conference on Electronic Records held in Canberra, Australia, 8-10 November*, Canberra: Australian Archives, p.53.

⁸⁶ Parer (2001), p.1.

⁸⁷ Parer (2001), p.34.

⁸⁸ L. Wilkins, P. M. C. Swatman and D. Holt (2009). 'Archived and tangible benefits: lessons learned from a landmark EDRMS Implementation', *Records Management Journal* 19:1, p.38.

⁸⁹ D. O. Stephens (1995). 'The Registry: The World's Most Predominant Recordkeeping System', *Records Management Quarterly* 29:1, p.99.

agencies to consider records as corporate evidence of activities. These legal provisions have been matched with progress in creating and managing digital records.

The legislative provisions provide a benchmark for implementing DRM and a basis for using EDRMS and demand that institutions design programmes for effective DRM. Since a legislative environment has been hailed as encouraging the creation and managing of digital records,⁹⁰ this thesis assesses the Uganda legal framework to establish whether it supports the management of digital records.

2.3.5 Risk Management

The creation of digital records has been identified in terms of risk reduction. This is because a RM programme is in itself a risk management tool. A RM programme ensures sound recordkeeping practices that support business activities and assist in the capture and maintenance of corporate memory. RM helps organisations to efficiently manage business processes. Risk management is about the costs of losing records or not creating the required records. Shepherd reported that effective RM will help public sector organisations to respond to planned and unplanned events such as audits or disasters.⁹¹

In the context of this study, risk management provides the means to question what digital records to create or capture as driven by the potential risks if the records were not created or retained. Therefore a risk management approach can provide a basis for records creation and keeping.⁹² According to the New York State Office for Technology in applying risk management to RM in an organisation business context, the following questions should be asked:

1. What records truly merit protection because of their content and value?
2. What are the risks if the information is available, if it is not available, or if it falls into wrong hands?

⁹⁰ C. MacKinnon (2004). *Looking Forward: the Evolution of RM in the Electronic Workplace*, at <www.Peertopeer.org>. Accessed 25 April 2006.

⁹¹ E. Shepherd (2006). 'Why Are Records in the Public Sector Organisational Assets', *Records Management Journal* 16:1, pp.6-12.

⁹² A. Egbuji (1999). 'Risk Management of Organisational Records', *Records Management Journal* 9:2, p.101.

3. What is the likelihood that the records would be subject to or needed for a legal action?
4. Are the records required for an extended period of time?
5. Do the records have significant cultural or historical value?⁹³

The creation of records is therefore a business decision related to the value of the records in question, the risk entailed if these records were unavailable and the cost to address the risk.

An understanding of risk in DRM can be based on what Weale called the 'information deficit' model of public understanding of risk.⁹⁴ This model lies behind a number of public information campaigns. According to the Royal Society, the model stressed the unquestionable need for public involvement in activities to control records management.⁹⁵

Sampson argues that how well records are created and managed will have an impact on certain risks such as the loss of revenues and violation of the law.⁹⁶ The creation of records should therefore be driven by potential risks and costs if the records were not created.⁹⁷ In light of the above, Egbuji contends that risk management plays a role in the operations of government, thereby leading to generation and capturing of required records.⁹⁸

2.4 Challenges of Managing Digital Records

The previous sections have presented factors leading to the generation of digital records in public institutions. While digital records are increasingly generated, there are challenges that should be overcome if digital records are to be utilised for good governance and as evidence of organisational transactions. According to Johare, changes in technology and multimedia have brought new types of records into

⁹³ United States of America, New York State Office for Technology (2001). *Electronic Records Management Guidelines for State Government: Ensuring the Security, Authenticity, Integrity and Accessing of Electronic Records (Exposure Draft)*, at <http://www.dir.state.tx.us/standards/NEC3-Records_Mgmt_ED.pdf>. Accessed 6 May 2008.

⁹⁴ B. Weale (ed.) (2000). *Risk, Democratic Citizenship and Public Policy*. Oxford: University Press, p.3.

⁹⁵ Royal Society (1983). *Risk Assessment*. London: The Royal Society, p.16

⁹⁶ K. L. Sampson (1992). *Value-Added Records Management: Protecting Corporate Assets and Reducing Business Risks*. London: Quorum books p.72.

⁹⁷ United States of America, New York State Office for Technology (2001), p.6.

⁹⁸ Egbuji, p.110.

existence. “They are more difficult to identify and therefore challenge the ability of the record keepers and those who are involved in managing these records, to capture them in a static or permanent form that will enable them to provide evidence of business or administrative transactions.”⁹⁹ The literature on the challenges of managing digital records is significant to this thesis, but only selected topics relating to the conceptual framework, as presented at the end of this chapter and summarised in Fig.3 on page 82, have been perused extensively here. Four factors seem significant: Formal Legal Infrastructure, Formal Instruments, DRM Infrastructure and Human Resource Capacity; and these are discussed in detail in chapter 6.

2.4.1 DRM Infrastructure and the Technological Challenges

Technological implications such as fragility of media, file deterioration, media obsolescence, and hardware and software obsolescence pose a challenge to managing digital records. Barry, referring to the state of DRM in developing countries, argues that in an environment where there is no technology architecture, countries are computerising inefficient manual recordkeeping systems.¹⁰⁰ However, it should be noted that technology not only poses challenges but also offers opportunities in terms of access, retrieval and user interface. The challenge is to determine what hardware and software is essential for DRM. This is something that is difficult because of the increasing sophistication of information technology. The technological challenges are many.

2.4.1.1 Accessibility and Security of Records Over time

The DRM literature indicates that digital records and data are usually easy to delete, and can be very easy to amend or update. The literature also indicates that both the survival and the readability of records can easily be endangered in the electronic environment. Thus designing and building systems that ensure the survival,

⁹⁹ R. Johare (2006). ‘Education and Training in Electronic Records Management (ERM). The Need for Partnership Building’, in C. Khoo, D. Singh and A. S. Chaudhry (eds.). *Proceedings of the Asia-Pacific Conference on Library and Information Education and Practice (A-LIEP 2006), Singapore, 3-6 April*, at <dlist.sir.arizona.edu/1433/01/77.Rusnah_Johare_pp541-549.long.pdf>. Accessed 15 March 2009.

¹⁰⁰ R. A. Barry (1997). ‘Electronic Records Management ... the Way We Were ... the Way We Are: One Man’s Opinion’, *Records Management Journal* 7:3, p.167.

accessibility, availability and integrity of digital records is a challenge that every record keeper and organisation needs to meet.¹⁰¹

There are security concerns when it comes to management of digital records. Shepherd¹⁰² and Bearman¹⁰³ stated that digital records depend on technology for their generation, access and use over time and that they should be protected from unauthorised and undocumented alteration or deletion. This is because records created and maintained in digital form are continually at risk of inadvertent or intentional alteration.¹⁰⁴ Maintaining the security of digital records over time is a big challenge to many governments.¹⁰⁵ According to the Australian Digital Recordkeeping Guidelines,

“The manipulable nature of digital records means that, in the absence of appropriate safeguards, it is relatively easy to alter or delete the digital records – whether intentionally or unintentionally. Alterations to digital records can be virtually undetectable, undermining their evidential value as records.”¹⁰⁶

Wato¹⁰⁷ and Lekaukau¹⁰⁸ have argued that technological developments have allowed easy access to records and caution records managers to take the necessary measures to maintain the safety of digital records. As Thibodeau explains, one of the difficulties of digital record keeping is the ease with which digital records can be changed or deleted, hence the need for a digital archive system to be designed to minimise risks of this type.¹⁰⁹ The challenge is to provide security controls to prevent potential abuse of recordkeeping systems. Fuzeau has argued that without a high level security framework, confidence in digital systems would be difficult to build as records can

¹⁰¹ R. A. Barry (2003). ‘Report on the Society and Archives Survey’, *COMMA: International Journal on Archives* 2/3, pp.209-217.

¹⁰² E. Shepherd (1994). ‘Managing Electronic Records’, *Records Management Journal* 4:1, p.44.

¹⁰³ Bearman (1994), p.21.

¹⁰⁴ Bantin (2008), p.34.

¹⁰⁵ Australia, National Archives of Australia (2004). *Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records*, at <<http://www.naa.gov.au/records-management/publications/Digital-recordkeeping-guidelines.aspx>>. Accessed 12 May 2009.

¹⁰⁶ Australia, National Archives of Australia (2004), p.45.

¹⁰⁷ R. Wato (2002). ‘Challenges and Opportunities of Information Technology for Archival Practices in the 21st Century’, *ESARBICA Journal* 21, pp.125-134.

¹⁰⁸ M. Lekaukau (2000). ‘Serving the Administrator: the Archivist in the New Millennium’, *Archivum* 45, pp.119-123.

¹⁰⁹ K. Thibodeau (2002). *Overview of Technological Approaches to Digital Preservation and Challenges in Coming Years*, at <<http://www.clir.org/pubs/reports/pub107/pub107.pdf>>. Accessed 10 May 2007.

easily be deleted or changed at any time.¹¹⁰ With IT there is potential for an ever expanding access to the entire information process involved in the conduct of business. This creates enhanced possibilities to compromise security concerns.

Rothenberg pointed out that there is also a danger that digital records are particularly vulnerable to obsolescence resulting in difficulties in reading the records in the future.¹¹¹ Technological obsolescence can render records unusable and this means that digital records can become inaccessible. Hardware and software rapidly become obsolete, which makes it difficult to maintain digital records over time. Skelton also discusses technological obsolescence when he states that records created using IT technologies do become unreadable.¹¹² Keakopa warns that technology can become outdated in a matter of months even though it is proving a great benefit to the delivery of public services.¹¹³ According to Keakopa when the equipment becomes outdated, it is a threat to the security of the records. It is also argued by Ngulube that losing digital records is common and is one of the most feared situations.¹¹⁴ Hence there is need to provide appropriate security controls in order to manage the digital records and also as a means to promote confidence by users of DRM systems. The overall picture as a consequence of technical challenges is one of turbulence and uncertainty, in which ICTs present a wide range of both opportunities and threats that may defy the established ways of doing business and working in organisations.

The discussion of the challenges in this section describes security risks which may lead to record loss, data corruption, and unauthorised access and to ways in which the integrity, reliability and confidentiality of digital records could be compromised. This raises the question of whether the security of the digital records has been addressed in the UPS.

¹¹⁰ P. Fuzeau (2005). 'Records Management: Two Case Studies from the French Private Sector', in J. McLeod and C. Hare (eds.) *Managing Electronic Records*. London: Facet, p.159.

¹¹¹ J. Rothenberg (1995). 'Ensuring the Longevity of Digital Documents', *Scientific American* 272:1, pp.42-47.

¹¹² K. Skelton (2000). 'Designing An Electronic Recordkeeping System', *Selected Essays in Electronic Recordkeeping in Australia*. Australia: Australian Society of Archivists Inc, pp.71-77.

¹¹³ Keakopa (2007), p.34.

¹¹⁴ P. Ngulube (2003). *Preservation and Access to Public Records and Archives in South Africa*, Ph.D. thesis, University of Zululand, p.82.

2.4.1.2 Digital Records Storage and Preservation

The literature indicates that lack of storage and preservation measures inhibit DRM in many countries. Duranti reported that digital records are far more vulnerable than paper records and must be carefully managed to ensure their accuracy and authenticity as proof of accountability and that the term preservation as applied to electronic records no longer refers to the protection of the medium of the records, but to that of their meaning and trustworthiness as records.¹¹⁵

Keakopa¹¹⁶ agrees with Bearman¹¹⁷ that the long term preservation of digital records is still a challenging task in a number of countries. Keakopa¹¹⁸ explains that long-term preservation of digital records is one of the unresolved problems associated with the impact of technology on recordkeeping. The major concern is, as Cook put it, 'If digital records exist as virtual documents, how does an institution preserve evidence of and provide accountability of specific transactions?'¹¹⁹ This raises the question as to how the digital records are stored and maintained in the UPS.

The rapid rate of technological change also means that the hardware and software have to be upgraded constantly to ensure continuing use of the digital records. Reading and understanding information in digital form requires equipment and software, which is changing constantly. This raises the need for strategies to maintain access.¹²⁰ One of these is migration, where it is possible to move a digital record from one system to another while maintaining the records' authenticity, integrity, reliability and usability. However, migration to give maximum protection against loss of information comes at a cost. The cost of migrating records is seen as far exceeding the resources of archival institutions especially in the developing countries due to scarcity

¹¹⁵ L. Duranti (1999). 'Concepts and Principles for the Management of Electronic Records', *Records Management Journal* 9:3, pp.153-175.

¹¹⁶ Keakopa (2007), p.33.

¹¹⁷ D. Bearman (2007). 'Fundamental Issues for Electronic Records Management', *Proceedings, Seminar on Electronic Documents: Management and Preservation, Belo Horizonte Brazil, November*, at <<http://www.archimuse.com/papers/200711-bearman-brazil/200711-bearman-brazil.html>>.

Accessed 6 May 2009

¹¹⁸ Keakopa (2007), p.35.

¹¹⁹ T. Cook (1997). 'The Impact of David Bearman on Modern Archival Thinking: An Essay of Personal Reflection and Critique', *Archives and Museum Informatics* 11:1, p.23.

¹²⁰ Migration is defined as the periodic transfer of digital materials from one hardware/software configuration to another, or from one generation of computer technology to a subsequent generation, ISO 15489, p.3.

of resources.¹²¹ Prohibitive costs of DRM hardware and software make it inconceivable for some organisations especially in the developing world to use the required DRM technologies.

2.4.2 Lack of Formal Institutions with Legal and Regulatory Provisions

The lack of formal institutions such as a functioning national archive has a significant implication for DRM.

The national archives often provide guidelines to help agencies with how records can be identified, accessed, disposed of, or transferred to new systems should their required retention extend beyond the life of the system in which they were originally created or stored. In order to ensure that digital records are properly managed, the national archives provide advice on DRM. They define the responsibilities of government agencies to organise, protect, provide access to, and properly dispose of their records, including the transfer of non-current records with enduring value to the national archives.¹²² Maintenance of digital records of long-term value usually depends on cooperation between state agencies and the national archives.

2.4.3 Human Resource Challenges

The literature indicates that the lack of trained records managers and archivists affects the work practices related to the management of digital records. User education and training provide a solid foundation for managing digital records, but it is lacking in most of the developing countries.¹²³ Yusuf and Chell argued that there is sometimes no standard approach to the DRM training, which affects the quality of the services provided.¹²⁴

¹²¹ Barry (1997), p. 168.

¹²² United Kingdom, The National Archives (2003). *Proposed National Records and Archives Legislation: Proposal to Change the Current Legislative Provision for Records Management and Archives, Consultation Paper CP 01/03*. London: The National Archives, p.28.

¹²³ Z. Yusuf and R. Chell (1998). 'Records Management Education and Training World-wide: A General Overview of the Current Situation', *Records Management Journal* 8:1, p.26.

¹²⁴ Yusuf and Chell (1998), p.26.

Barata, Cain and Thurston also advance the argument highlighting the problem of training. They note that DRM training and education is lacking in most developing countries and hence a need for ongoing training and awareness raising about the role of digital recordkeeping within an organisation. They also suggest that both the keepers and users of records require more understanding of the value of records to improving the economy and efficiency of their organisations.¹²⁵

Katuu's analysis of education and training of record practitioners in African countries indicated that little had been done in terms of education and training specifically for DRM, despite the push for electronic government in many of the countries he surveyed.¹²⁶ He even revealed that the records managers and archivists were not thoroughly trained to function in the modern information era, as DRM requires specialised knowledge of computers and related technology which was significantly missing.

A review of the literature of the IRMT on DRM in developing countries also includes some critical statements which reflect that the human resource problem is prevalent in relation to DRM. Statements such as a lack of knowledge, skills and abilities in managing digital records, and the need for re-education and re-training are common in the IRMT literature.¹²⁷

Evidence from the review of the literature indicated that many countries especially in Africa lack DRM experts. The IRMT literature specifically confirmed that the DRM knowledge and skills are lacking and need to have a strategy to overcome the human resource problem.

¹²⁵ K. Barata; P. Cain and A. Thurston (1999). *From Accounting to Accountability: Managing Accounting Records as A Strategic Resource* (infoDEV980121-257). London: IRMT, p.92.

¹²⁶ S. Katuu (2003). 'Engaging Orality within the Archival Discipline: its Contents and Discontents', *COMMA: International Journal on Archives* 1, p.85.

¹²⁷ For example: A. Lipchak (2002). *Evidence-based Governance in the Electronic Age: A Summary of Key Policy Issues*. London: IRMT.

International Records Management Trust (IRMT) (1999). *Managing Public Sector Records: A Training Programme*. London: IRMT.

International Records Management Trust (IRMT) (2009). *Fostering Trust and Transparency in Governance: Investigating and Addressing the Requirements for Building Integrity in Public Sector Information Systems in the ICT Environment Final Report*. London: IRMT.

2.5 Addressing the Challenges of Managing Digital Records: Cases from the Literature

The need to address the challenges of DRM has been widely acknowledged in the international archival and records management literature. There is a wide range of research projects and approaches to finding a lasting solution to the challenges of managing digital records. Many national, regional and discipline-specific attempts have been made to provide guidance for DRM and this makes them relevant to this thesis. Such approaches are discussed here with a view of establishing whether they can offer guidelines to the UPS and whether the UPS can adopt them.

2.5.1 Legal Requirements

Legal requirements provide a powerful incentive for institutions to actively engage in DRM. Most governments have therefore provided a legislative framework to assure the accuracy and comprehensiveness of the records they make. Laws such as public record laws or archival legislation enable DRM readiness. According to the South Africa records legislation, the responsibility for records management should be shared among recordkeeping organisations, records users, and the National Archives and Records Service deals with digital records including e-mails and provides for their long-term preservation in a demonstrably authentic and reliable form.¹²⁸

There is also other legislation which bears on records and archives, notably the access and privacy laws. For example the UK legislation such as the Data Protection Act of 1998 provides for proper management of personal data held in records.

The Data Protection Act of UK provides strong data protection requirements for maintaining security of records regardless of format.¹²⁹ The UK Act contains seven data protection principles stating that data must be:

- processed fairly and lawfully
- obtained and used only for specified lawful purposes
- adequate, relevant and not excessive in relation to the purpose or

¹²⁸ South Africa (1996). *National Archives and Records Service* (Act, no. 43) as amended 2001, at <<http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwezaf.htm>>. Accessed 12 May 2006.

¹²⁹ United Kingdom (UK) (1998). *Data Protection Act*, Schedule 1. London: HMSO.

purposes for which they are processed

- accurate and where necessary kept up-to-date
- kept for no longer than necessary
- processed in accordance with individuals' rights
- kept secure.

The implementation of the UK's Data Protection Act implies that organisations must have in place well designed and effective recordkeeping systems. The question is whether Uganda could learn from this the measures required to keep the security of the public digital records and to develop recordkeeping systems that manage records privacy.

Other governments have proposed to renew and update their existing legislation to address DRM through a new records and archives Act. The literature indicates a range of options, from minimal change to more wide ranging proposals, which would require substantial change and innovation to implement.¹³⁰ The main concern is to make a firmer legislative basis with regard to managing, preserving and authenticating digital records in central governments.

What is inferred from the requirements for legislative provisions for managing digital records is that records created in digital formats and subsequently stored, managed and accessed using ICT, should be provided for within the meaning of the legislation.

2.5.2 Development of Metadata Standards

One way of meeting the challenges of managing digital records is to develop DRM metadata standards. Metadata in a RM context refers essentially to data that describes, contextualises and facilitates the management of records. According to Cumming, effective application of metadata could help the achievement of better information accessibility and maintenance in business operations.¹³¹ This is because without sufficient documentation describing the content of the record and the context of its

¹³⁰ United Kingdom, The National Archives (2003), p.9.

¹³¹ K. Cumming (2005). 'Metadata Matters', in J. McLeod and C. Hare (eds), *Managing Electronic Records*. London: Facet, p.34.

creation and use, the record loses its value as evidence and in some cases ceases to be a record at all.¹³² A number of initiatives over the past decade have sought to elicit and codify DRM metadata requirements. There are national and regional metadata efforts. Some of these are discussed in this thesis, as they provide one part of the solution to the challenges of managing digital records. The focus has been on what information needs to be captured to create and manage digital records. The central goal was to develop strategies for creating and managing of authentic and reliable digital records over time. Haynes discusses the purpose of metadata and suggests it is important for documenting ownership and authenticity of digital resources, and interoperability.¹³³

The Functional Requirements for Evidence in Recordkeeping Project at the University of Pittsburgh¹³⁴ mainly dealt with the recordkeeping function and identified the requirements that DRM systems should include to create authentic digital records. The project identified authentic records as those which an authorised records creator must have originated. The Pittsburgh project recommends that digital records should not be transferred into archival custody as the act of transferring across custodial boundaries wrenches them from their recordkeeping context. Some Australian archivists also believe that digital records can be kept and managed, indefinitely, in the agency of origin. This is because removing records from their agency of origin removes records from their context.¹³⁵

The International Research on Permanent Authentic Records in Electronic Systems project (InterPARES I (1999-2001), II (2002-2007) and III (2007-2012)) run at UBC described the requirements for assessing the authenticity of digital records. It identified a set of baseline requirements for the production of authentic copies of digital records.¹³⁶ The project produced a template of analysis which identifies all known elements of digital records that make it possible to store and retrieve them with

¹³² Bantin (2008), p.45.

¹³³ D. Haynes (2004). *Metadata for Information Management and Retrieval*. London: Facet, p.26.

¹³⁴ W. Duff (1996). 'Ensuring the Preservation of Reliable Evidence: A Research Project Funded by the NHPRC', *Archivaria* 42, pp.28-45.

¹³⁵ For example, C. Hurley (1998). 'From Dust Bins to Disk-Drives and Now to Dispersal: the State Records Act (New South Wales)', *Archives and Manuscripts* 16:2, pp.390-409.

¹³⁶ InterPARES: *International Research on Permanent Records in Electronic Systems (InterPARES) Project*, at <<http://www.interpares.org>>. Accessed 14 May 2009.

assurance that the records are not altered.¹³⁷ Because records themselves are time bound, structure and description must be verified within a context which is both current and historical. Records cannot remain current unless the structure and description is externally validated.¹³⁸

The baseline requirements that were generated out of InterPARES 1 Project¹³⁹ specifically address how records creators can assess the authenticity of records. As noted by Evans and Lindberg:

“The benchmark requirements identify the record attributes (metadata) that need to be ‘explicitly expressed and inextricably linked’ to a record in order for its identity and integrity to be asserted. The benchmark requirements also identify ‘the kinds of procedural controls over the record’s creation, handling and maintenance that support a presumption of its integrity.’ The role of the benchmark requirements is to act as a tool for preservers to use in assessing the authenticity of digital records. The higher the number, and the greater the degree to which a system meets these requirements, then the stronger the presumption of the authenticity of the digital records held within it.”¹⁴⁰

Cumming concludes that all recordkeeping metadata are created to satisfy one of seven particular purposes below, which were articulated in warrants in one way or another:

1. Unique identification;
2. Authentication of records;
3. Persistence of records content, structure and context: by fixing their content, ensuring that their structure can be re-presented, and maintaining sufficient organisational and functional context to preserve their meaning over time and beyond their context of creation;
4. Administering terms and conditions of access and disposal;
5. Tracking and documenting use history, including recordkeeping and archiving processes;
6. Enabling discovery, retrieval and delivery for authorised users; and
7. Restricting unauthorised use.¹⁴¹

¹³⁷ L. Duranti and K. Thibodeau (2006). The Concept of Record in Interactive, Experiential and Dynamic Environments: the Review of InterPARES’, *Archival Science* 6:1, pp.13-68.

¹³⁸ C. Hurley (1995). ‘Ambient Functions: Abandoned Children to Zoos’, *Archivaria* 40, p.22.

¹³⁹ L. Duranti (ed.) (2005). *The Long-term Preservation of Authentic Electronic Records: Findings of the InterPARES Project*, San Miniato, Italy: Archilab, pp.204–219.

¹⁴⁰ J. Evans and L. Lindberg (2004). ‘Describing and Analyzing the Recordkeeping Capabilities of Metadata Sets’, in *DC-2004: Proceedings of the International Conference on Dublin Core and Metadata Applications, October 11-14 2004, Shanghai, China*, at <http://www.dublincore.go.kr/dcpapers/pdf/2004/Paper_27.pdf>. Accessed 15 May 2009.

¹⁴¹ K. Cumming (2005). *Purposeful Data: The Roles and Purposes of Recordkeeping Metadata*, Ph.D. thesis, Monash University, p.136.

InterPARES 2 was interested in what descriptive data is needed to manage metadata schemas through time and across domains. A version of a metadata schema is a record of a metadata structure at a particular time. Hence, in order for information objects to be understandable through time, metadata about their metadata, i.e. the structure and semantics of elements, must also be maintained. Capture and maintenance of this 'meta' metadata is essential, particularly to support digital preservation and metadata re-use.¹⁴²

The Recordkeeping Metadata Project of the Records Continuum Research Group at Monash University, Australia, focused on the development of structured context information for use in recordkeeping systems.¹⁴³ It views records as agents of action and active participants in the business process. The project describes significant features of the business context in which records are created, managed and used. This project has produced conceptual models that define what it takes to create digital records that are reliable and authentic.¹⁴⁴ The metadata will ensure that record structures can be represented, and maintained in sufficient organisational and functional context to preserve their meaning over time and beyond their context of creation.¹⁴⁵ The work of the Monash research group is relevant to this thesis, as it indicates the metadata needed to manage digital records. It requires that the metadata be integrated in ICT systems during their planning and design, rather than being added during or after implementation. This makes the identification of metadata requirements crucial for the management of digital records. Sufficient metadata is required to make digital records available, understandable and usable over time.

Other scholars like Guercio and Pipliapoco have also made attempts to identify elements of metadata requirements as registration, classification content, structure,

¹⁴² M. Day (2003). *Integrating Metadata Schema Registries with Digital Preservation Systems to Support Interoperability: A Proposal*, at <http://www.siderean.com/dc2003/101_paper38.pdf>. Accessed 7 May 2007.

¹⁴³ See Records Continuum Research Group (1998). *Create Once, Use Many Times - The Clever Use of Metadata in eGovernment and eBusiness Processes in Networked Environments*, at <<http://www.sims.monash.edu.au/research/rcrg/research/crm/>> Accessed 7 May 2005.

¹⁴⁴ F. Upward (2000). 'Modelling the Continuum as Paradigm Shift in Recordkeeping and Archiving Processes and Beyond: A Personal Reflection', *Records Management Journal* 10:3, pp.115-139.

¹⁴⁵ J. Evans. (2007). 'Evaluating the Recordkeeping Capabilities of Metadata Schemas', *Archives and Manuscripts* 35:2, p.57.

context and archiving metadata.¹⁴⁶ According to Bearman, digital records require sufficient descriptive data for their management and preservation.¹⁴⁷ Bearman argues that if the metadata is linked to and retained with the data associated with each business transaction, it will guarantee that the data will be usable over time, be accessible under the terms and conditions established by the creator, and have properties required to be fully trustworthy as evidence and for purposes of executing business. Metadata required for evidence must therefore be associated with the records to which they relate over time and neither the record or the record content to be altered.¹⁴⁸ This means records metadata is a crucial part of any DRM system.

Some projects have developed a series of templates for creating, handling and preserving the reliability and authenticity of digital records during their active and semi-active life.¹⁴⁹ For example, the Preservation of the Integrity of Electronic Records project at the University of British Columbia (1994-1997), which provides requirements for preserving digital records over time.¹⁵⁰ It focused on ways to protect digital records from alteration and to ensure that they contain sufficient metadata information to prevent changes to the digital documents that have been designated as records.¹⁵¹ From this perspective, ensuring the authenticity of digital records requires protecting records against alteration from the moment of creation through any reproduction and preservation arrangements. Dollar observed that this is crucial because providing long term access to digital records involves reformatting, copying, conversion, and/ or migration operations that expose the records to the risk of alteration or loss of contextual information.¹⁵² The key lesson here is that digital records can only be preserved if they are managed together with all the other records belonging in the same context.

¹⁴⁶ M. Guercio and S. Pioliapoco (1997). *Proceedings of the DLM-Forum on Electronic Records, Brussels, December 18-20 1996*. Luxembourg: Office for official Publications of European Communities, p.50.

¹⁴⁷ Bearman. (1996), p.196.

¹⁴⁸ D. Bearman. (1997). 'Capturing Records' Metadata: Unresolved Questions and Proposals for Research', *Archives and Museum Informatics* 11:3/4, p.272.

¹⁴⁹ L. Duranti and H. MacNeil (1996). 'The Protection of the Integrity of Electronic Records: An Overview of the UBC-MAS Research Project', *Archivaria* 42, p.57.

¹⁵⁰ Interpares Project (1994-1997). *Preservation of the Integrity of Electronic Records*, at <<http://www.interpares.org/UBCProject/intro.htm>>. Accessed 15 May 2009.

¹⁵¹ P. Marsden (1997). 'What is the Future? Comparative Notes on the Electronic Recordkeeping Projects of the University of Pittsburgh and the University of British Columbia', *Archivaria* 43, p.159.

¹⁵² C. M. Dollar (2000). *Authentic Electronic Records: Strategies for Long-term Access*. Chicago: Cohasset, p.14.

Regional efforts have also come up with metadata requirements for effective management of digital records. The European Commission's Model Requirements for the Management of Electronic Records (MoReq) provides requirements for capturing, registering and maintaining digital records.¹⁵³ MoReq restricts itself to technical matters like metadata elements to create, capture, manage and preserve authentic digital records over time.

Individual countries have also defined metadata requirements for DRM systems. These requirements give details of the features which DRM systems should have. The National Archives of Australia published the recordkeeping metadata standard (version 2.0, 2008) that describes information about records that the National Archives recommends be captured in EDRM and business systems used by Australian government agencies.¹⁵⁴ It describes a detailed list of metadata requirements for any EDRM system which must be considered when making choice of a DRM system, hence its ability to capture the following: entity type or specifying the type of record being described as record or agency, the category, identifier, name, date range, description, related entity, change history, jurisdiction, security classification, security caveat, permissions, rights, contact, position, language, coverage, keyword. This list provides the minimum metadata as identifiers necessary to ensure that digital records remain accessible and usable over time.

The recordkeeping metadata requirements for the government of Canada (2001) consists of 26 elements to enable public agencies to capture and describe the identity, authority, content, context, structure and management requirements for digital records.¹⁵⁵ The UK has also developed the e-government metadata standard (e-GMS) that lays down the elements, refinements and encoding schema to support DRM.¹⁵⁶ It

¹⁵³ MoReq2 Specification (2008). *Model Requirements for the Management of Digital Records*, at <www.moreq2.eu/downloads.htm>. Accessed 16 June 2009.

¹⁵⁴ Australia, National Archives of Australia (2008). *Australian Government Recordkeeping Metadata Standard Version 2.0*, at <<http://www.naa.gov.au/records-management/publications/AGRkMS.aspx>>. Accessed 12 May 2009.

¹⁵⁵ Canada (2001). *Recordkeeping Metadata Requirements for the Government of Canada*, at <<http://www.tbs-sct.gc.ca/im-gi/mwg-gtm/rm-gd/docs/docs-eng.asp>>. Accessed 13 May 2009.

¹⁵⁶ United Kingdom (2006). *E-Government Metadata Standard Version 3.1*, at <http://www.govtalk.gov.uk/schemasstandards/metadata_document.asp?docnum=1017>. Accessed 13 May 2009.

provides a standard system when creating or accessing public digital records from central portals.

In addition to the metadata projects, the MoReq reference model highlights the essential elements for a DRM system such as EDRMS. It specifies the required classification scheme metadata, security controls and retention and disposal provisions.¹⁵⁷ The question is whether MoReq offers solutions for the UPS to consider regarding DRM.

Although the metadata specifications differ from country to country as discussed in ISO 23081 in Section 2.5.3 below, the fact from all these efforts is that metadata are required in a business context and requires special attention as a response to the challenges presented by a rapidly changing technological environment. Recordkeeping metadata is an issue of critical importance to this thesis, which seeks to identify the DRM metadata required to capture and manage records in UPS. This is because the creation and keeping of records is ultimately dependent on the existence of metadata that fix digital records into their business context and trace the business and recordkeeping actions they undergo throughout their existence.

From the metadata projects, it is clear that public institutions in a given jurisdiction need to use standardised metadata for any EDRM system so as to ensure continued management of the digital records. This thesis poses a question as to whether the above metadata standards can be used to improve DRM practices in UPS. The questions to be answered are: has UPS established the recordkeeping metadata it needs to support DRM? Are digital records already being captured and if so, where and how? Could the metadata standards provided in the literature be used in the UPS? How can they be incorporated effectively into the UPS business applications?

¹⁵⁷ MoReq2 Specification (2008). *Model Requirements for the Management of Digital Records*, at <www.moreq2.eu/downloads.htm>. Accessed 16 June 2009.

2.5.3 Records Management Standards

There are also a number of RM standards that have been issued by national archives and the International Standards Organisation (ISO) to guide the management of digital records. The literature indicates that archives should be responsible for setting mandatory standards for the creation of digital records and that archival legislation should specify that such standards are binding on all government agencies and that compliance should be the responsibility of each agency's chief executive.¹⁵⁸ This is because DRM standards specify DRM requirements and their aim is to ensure that DRM systems are capable of capturing sufficient recordkeeping metadata to establish and maintain the authenticity, reliability and integrity of the generated records.

The first international standard for RM was introduced in 2001. This was the International Standard on Information and Documentation - Records Management ISO 15489. ISO 15489 provides methodology and processes that guide the management of records. It provides a framework for any organisation, public or private, to adopt and use to manage its records, irrespective of the medium on which the records are created, captured and maintained. The standard covers aspects which should be addressed in order to implement a DRM system such as policy and responsibilities, strategies for designing and monitoring a DRM system. It is written to be used by anyone within an organisation, be they recordkeepers or other information professional or not, a manager or not. The standard highlights that responsibilities for records management need to be defined and assigned, and promulgated throughout the organisation so that, where a specific need to create and capture records is identified, it should be clear who is responsible for taking the necessary action.¹⁵⁹ It advocates collaboration between records management professionals, senior management/executives, systems specialists/administrators and everyone in the organisation. This supports the recognition that records are inputs and outputs of business processes and therefore their creators and users have a role in managing them.

¹⁵⁸ Parer (2001), p.35.

¹⁵⁹ International Standards Organisation (ISO) (2001). *ISO 15489:1*, Section 6, Subclause 6.3.

ISO 15489 standard clearly shows how an organisation can systematically and effectively document its digital transactions and do so in such a way that the business objectives are supported. The standard also provides a common international language for organisations to record and file material, in any medium or format or in any combination of media. It also provides a basis for an organisation to develop policies and procedures which will ensure that information assets have the essential characteristics of accuracy, integrity and reliability. The question is whether the UPS could learn from ISO 15489 the guidelines for implementation of entire DRM framework in the UPS.

ISO 23081-1:2006 Metadata for Records and Records Management Processes explains that authoritative records are those accompanied by metadata defining their critical characteristics. The characteristics must be explicitly documented rather than being implicit, as in some paper-based processes.¹⁶⁰ This standard aims to act as a guide to understanding and implementing the metadata requirements of ISO 15489 by laying out a framework and principles for creating, managing and using records management metadata and exploring implementation issues. The second part of ISO 23081: 2 establishes standardised description of records and critical contextual entities for records to enable reuse of metadata for managing records over time and across applications.¹⁶¹ Under development is ISO/CD TR 26102 Information and Documentation- Requirements for long term preservation of electronic records.

Many national and regional governments have issued standards or endorsed ISOs. For example, The National Archives of UK has endorsed a security standard BS ISO/IEC 27001:2005 Information technology - Security Techniques - Information Security Management systems – Requirements. The standard is to be used by all types of organisations, including government agencies. It specifies requirements for establishing, implementing, operating, monitoring, reviewing, maintaining and improving a documented information security management system (ISMS) within the context of the organisation’s overall business risks. It specifies requirements for the

¹⁶⁰ International Standards Organisation (ISO) (2006). *23081-1–Information and Documentation – Records Management Processes- Metadata for Records –Part 1:Principles*. Geneva: International Standards Organisation.

¹⁶¹ International Standards Organisation (ISO) (2009). *ISO 23081-2: Information and Documentation – Managing Metadata for Records- Part 2: Conceptual and Implementation Issues*. Geneva: International Standards Organisation.

implementation of security controls customised to the needs of individual organisations. The ISMS is designed to ensure the selection of adequate and proportionate security controls that protect information assets and give confidence to interested parties. If an organisation already has an operative business process management system, it is preferable in most cases to satisfy the requirements of this standard within the existing management system. By implementing this security standard, organisations are able to reduce information security risks and threats. It provides a framework for improving security controls and their implementation.

There are also guidelines for designing and implementing a recordkeeping system issued by the Australian National Archives.¹⁶² These provide steps which public organisations can follow to ensure that they maintain adequate security for their digital records and systems. This list is not exhaustive and public agencies are encouraged to select a combination of methods to suit their needs:

1. Limit access to digital records, and the systems on which those records are created and kept, to authorised personnel in order to protect the integrity of the record and prevent unlawful alteration or destruction of records.
2. Establish network security systems, such as firewalls, to protect against unauthorised access (eg hackers) to systems that are accessible through external connections, such as the Internet.
3. Install appropriate gateway filter software on messaging systems, and ensure that filter definitions are regularly updated, to protect against spam, denial of service attacks and malicious code, such as computer viruses.
4. Implement public key infrastructure (PKI) encryption technologies to ensure secure transmission of digital records to external parties.
5. 'Lock' final digital records to prevent any subsequent alterations or inadvertent destruction (eg finalising records as 'read-only' within an electronic recordkeeping system).
6. Use digital signature technologies to authenticate digital records and provide security and confidence in authorship.
7. Store vital digital records either offline or on systems without external links.
8. Establish appropriate systems backup procedures and disaster recovery strategies to protect against loss of digital records.

¹⁶² Australia, National Archives of Australia (2004), p.45.

9. Develop and implement audit trails to detect who accesses a system, whether prescribed security procedures were followed and whether fraud or unauthorised acts have occurred, or might occur.¹⁶³

The State Archives of New South Wales (NSW) has also issued a standard on digital recordkeeping.¹⁶⁴ This standard sets out the minimum compliance requirements for NSW public offices for defining their digital records, digital recordkeeping system functionality and the creation and management of recordkeeping metadata for digital records. The standard was formed so that appropriate attention and protection is given to all records, and that the evidence and information they contain can be retrieved more efficiently and effectively, using standard practices and procedures.

The major lesson is that metadata requirements for DRM should be identified before the DRM systems are developed. This will involve developing a list of precise traceable requirements that could be used for building or procuring a DRM system. These requirements make it possible to install DRM systems which support an organisation's business process. Identifying what the DRM system can do in the UPS is important in the digital environment.

2.5.4 Human Resource Training Programmes for Digital Records Management

A number of authors have indicated that a key factor in meeting the DRM challenge is the provision of education and/or training for employees and potential employees, for example students. This proposition is grounded in the belief that DRM can impact government efficiency and effectiveness.¹⁶⁵ McLeod, Hare and Johare wrote that managing records in the digital environment is a major challenge, but they argue the training should be provided at the appropriate level of detail and in the appropriate areas of the subject and commensurate with roles and responsibilities so that these people can discharge, both effectively and efficiently, their responsibilities for

¹⁶³ Australia, National Archives of Australia (2004), p.45.

¹⁶⁴ Australia, State Records Authority of New South Wales (2008). *Standard on Digital Recordkeeping*, at <<http://www.records.nsw.gov.au/recordkeeping/government-recordkeeping-manual/rules/standards/standard-on-digital-recordkeeping>>. Accessed 27 May 2009.

¹⁶⁵ R. Johare (2001). 'Electronic Records Management in Malaysia: the Need for an Organisational and Legal framework', *Records Management Journal* 11:2, p.98.

managing records in the digital environment.¹⁶⁶ Katuu suggests that within the strategies to improve the management of records, the education and training strategies should be given priority to ensure that the people responsible for the recordkeeping infrastructure have the requisite knowledge, skills and ability to manage these records.¹⁶⁷

According to Johare in order to face the DRM challenges, the different recordkeepers need to be made aware and informed of their roles and responsibilities in regard to DRM. They need to be educated and trained afresh. Empowered creators and users need to learn about their new roles and responsibilities. They need to understand the methods of managing the records they create and/or use; records professionals (records managers and archivists) need updated knowledge and skills necessary to meet the new challenges; IT and other systems administrators need to understand the fundamentals of records management; and senior managers/administrators need to appreciate their role and responsibility for supporting good records management practice and its relationship with risk management, corporate governance and competitive advantage.¹⁶⁸

A number of governments and institutions have developed training materials in DRM. For example, the International Records Management Trust (IRMT) has developed a study course: Understanding the Context of Electronic Records Management, which assumes two key functions for DRM. The first of these is the positive assumption that there is crucial importance to manage digital records in the information technology environment. This claim is not restricted to any particular form of government which suggests that DRM requirements have to be integrated in ICT systems.

The second major assumption of IRMT training material is more value-laden. Thus the repeated statement that:

“The increasing prevalence of ICTs is a challenge to good government and accountable record keeping. However, ICTs are considered by many to be ‘the

¹⁶⁶ J. McLeod, C. Hare and R. Johare (2004). ‘Education and Training for Records Management in the Electronic Environment – the Research for an Appropriate Model’, *Information Research* 9:3, at <<http://www.informationr.net/ir/9-3/paper179.html>>. Accessed 16 June 2009.

¹⁶⁷ Katuu (2003), p.88.

¹⁶⁸ Johare (2006), p.543.

solution' to information management problems, and often ICTs are installed in organisations with little consideration for what tasks they will perform and how the products of those actions – the records – will be managed.”¹⁶⁹

The training materials have demonstrated the significance of introducing new laws, policies, systems and capacity needed to effectively manage digital records over time.

Over the last decade, the IRMT has developed a series of assessment tools aimed at supporting governments in assessing the quality of their records systems, identifying weaknesses and introducing appropriate solutions. One of these is the Records Management Capacity Assessment System (RMCAS) developed 2002-2004 which assesses RM systems based on the capacity levels of managers.¹⁷⁰ It makes a link between strengths and weaknesses in DRM infrastructure and systems and also highlights areas where capacity building may be needed in relation to the management of environment of policies, procedures, skills and resources. RMCAS's focus on DRM makes it relevant to this thesis which uses the opinions of different levels of managers to assess DRM in UPS. As such, the RMCAS questions influenced the research questions for this thesis.

The E-Records Readiness Assessment Tool developed by IRMT in 2005 aims to enable governments to assess the capacity to create, manage, share and use digital records in relation to other aspects of e-government and to determine whether the records and information management infrastructure is capable of supporting e-government initiatives.¹⁷¹

The IRMT has also developed a training kit with requirements for using DRM systems in public sector information systems. The Integrating Records Management in ICT Systems: Good Practice Indicators assessment tool developed in 2006-2008,¹⁷² defines internationally recognised good practices and links them to a set of

¹⁶⁹ International Records Management Trust (2009). *Training in Electronic Records Management: Understanding the Context of Electronic Records Management*, p.1 at <<http://www.irmt.org/educationTrainMaterials.html>>. Accessed 14 May 2009.

¹⁷⁰ International Records Management Trust (IRMT) (2005). *Records Management Capacity Assessment System (RMCAS)*, at <<http://www.nationalarchives.gov.uk/rmcas/>>. Accessed 7 May 2007.

¹⁷¹ International Records Management Trust (IRMT) (2004). *E-records Readiness Assessment Tool*, at <<http://www.nationalarchives.gov.uk/rmcas/downloads.asp#additionaltools>>. Accessed 7 May 2007.

¹⁷² See International Records Management Trust (IRMT) (2009). *Training in Electronic Records Management*, at <<http://www.irmt.org/educationTrainMaterials.html>>. Accessed 7 May 2007.

performance indicators that can be used to measure the level of records management integration in ICT systems. The IRMT makes a link between ICT and DRM best practices.

Staffing, education and professional training was recommended by a study on DRM in the ESARBICA countries as one of the ways to develop and implement a government-wide DRM programme. Keakopa's study recommended that training institutions offering DRM studies need to restructure and strengthen existing courses to provide appropriate levels of detail and areas of subjects in the management of digital records. It advocated introducing short courses at a regional level to cater for professional accreditation. It also advocated that universities collaborate with national archives, other government agencies, the ICT industry and professional associations so as to identify the needs and issues to be included in the DRM curriculum.¹⁷³

The International Council on Archives (ICA) has also resolved as part of its strategic plan 2008-2010 to promote education, training and continuing professional development for records and archives professionals around the world, through the provision of workshops, courses, scholarship programmes and online resources.¹⁷⁴ This is meant to build the capacity of the records and archives profession by developing and promoting best practices and standards in the main professional areas like advocacy and education. Training plays a key role in the development of major knowledge and skills in the intellectual management of digital records.

The IRMT and ICA training initiatives are relevant to this thesis as their education and training materials, assessment tools and research reports are geared towards establishing a framework for managing digital records which is the prime focus of this thesis. The IRMT's future plan to establish a centre of excellence in East Africa, as I was informed when I visited the IRMT offices in London, and expanding their education and training programme in response to the challenges of managing records in the digital environment makes the work of IRMT very relevant to this thesis.

¹⁷³ Keakopa (2007), p.266.

¹⁷⁴ International Council on Archives (2008). *ICA Strategic Plan 2008-2018*, at

A study on DRM in ESARBICA countries considered creating awareness of the importance of digital records, especially among senior managers within an organisation, and encouraging them to embrace the use of DRM systems.¹⁷⁵ Keakopa identifies two audiences for the awareness campaign, namely, the senior managers including those with the responsibility for managing IT and those with the responsibility for managing records and hence meeting the information needs of both audiences.

Wider cooperation and partnership is another area recommended in the literature as part of training and education to overcome DRM problems. Keakopa noted that ICT and recordkeeping professionals need each other, as they can benefit from such a relationship through exchange of information and expertise. According to her, cooperation between management, staff who create and handle digital records, specialists in information system design, and agency records officers is also essential for the management of digital records.¹⁷⁶ Granstrom also advances the argument in favour of building partnerships and working together.¹⁷⁷ He notes that records managers and archivists must work closely with IT personnel such as data administrators and system designers, as the latter are responsible for designing, implementing and maintaining systems which include DRM systems. Through training, it would be possible for the recordkeepers to share common ideas about DRM with the IT personnel and specialists.

Keakopa's study on DRM in ESARBICA countries also advocated developing a regional framework to tackle challenges of managing digital records. In recognition of the achievements of ESARBICA, Keakopa recommended that ESARBICA develop a regional plan which can be used to seek funding and use the financial support as a platform to support DRM activities and facilities. According to that study, although each country has its own development path to follow, broader objectives should be initiated at the regional level to create a harmonised and coordinated approach to

< http://www.ica.org/sites/default/files/AGM%202008-10%20Strategic%20Direction_2.pdf>. Accessed 7 May 2009.

¹⁷⁵ Keakopa (2007), p.262.

¹⁷⁶ Keakopa (2007), p.269.

¹⁷⁷ C. Granstrom (1999). *Relationship Between Creators, User and Custodians of Information: Paper presented at the DLM-Forum on Electronic Records of the European Communities held on 18-20 December Brussels*, at <www.mcu.es/archivos/docs/ReportArchives.pdf>. Accessed 7 July 2007.

DRM in the region.¹⁷⁸ Recommendations of that study are relevant to this thesis as they consider training as a factor to promote DRM in public administration.

Organisations like ESARBICA and the IRMT are raising awareness, stimulating collaborative efforts, providing tools, training and strategies to improve DRM readiness in developing countries. This collaborative arrangement provides a valuable forum to share experiences, concerns, ideas and solutions that reflect the needs, resource and opportunities for improving the management of digital records.

2.5.5 Emerging Records Management Policies, Procedures and Guidelines

The DRM literature indicates that there are emerging policies, procedures and guidelines to ensure that digital records are effectively managed.

The UK National Archives (TNA) has issued DRM guidelines, the first volume of which deals with the principles of electronic records management¹⁷⁹ and gives guidance on the development of a corporate DRM policy. TNA places importance on the development of formal corporate policies to establish the importance of digital records and the principles which should guide their management. Such a policy statement, endorsed by senior management, is a strong platform for the systematic development of consistent organisation-wide procedures, and provides backing when seeking compliance in practice.

In line with establishing policies, procedures and guidelines as a solution to managing digital records, the New South Wales Government in Australia has issued a policy and supporting guidance on digital records preservation.¹⁸⁰ This policy establishes principles which agencies should follow in developing practices and systems for recordkeeping in the digital environment. The State Records Authority of New South

¹⁷⁸ Keakopa (2007), p. 270.

¹⁷⁹ United Kingdom, The National Archives/Public Record Office (1999). *Management, Appraisal and Preservation of Electronic Records Vol. 2: Procedures*, at <<http://www.nationalarchives.gov.uk/electronicrecords/advice/guidelines.htm>>. Accessed 7 May 2006.

¹⁸⁰ Australia, State Records Authority of New South Wales (1998). *Policy on Electronic Recordkeeping*, at <<http://www.records.nsw.gov.au/recordkeeping/government-recordkeeping-manual/rules/policies>>. Accessed 25 April 2006.

Wales is developing a range of more detailed guidelines, manuals, training and other support to help agencies implement this policy.

The National Archives of Australia has developed guidelines for managing digital records which address the creation and capture, managing and preserving of digital records.¹⁸¹ The guidelines cover areas such as how to create digital records, keeping digital records in DRM systems, determining how to use DRM metadata, storing and securing digital records and how to manage the migration of digital records. These guidelines also specify the type of digital records such as word-processed documents, emails, web-based digital records, and records in business information systems or databases. The guidelines emphasise that digital records should be created as evidence of business activity and captured into DRM systems along with metadata that describes their content, structure and content.

The National Archives of Australia have also issued guidelines for implementing a recordkeeping system which is applicable of managing both paper and digital records. It sets out an eight-step process for agencies to use to improve their records and information management practices, including the designing and implementing of recordkeeping systems (DIRKS) methodology.¹⁸² The stages of the DIRKS methodology are:

1. Preliminary investigation of the organisation's boundaries, mission, decision-making processes, mandate and corporate culture
2. Analysis of business activity including the identification of core functions and processes by means of which they are delivered
3. Identification of evidential needs and recordkeeping requirements
4. Assessment of the organisations existing systems
5. Identification of strategies for recordkeeping
6. Design of a recordkeeping system
7. Implementation

¹⁸¹ Australia, National Archives of Australia (2004). *Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records*, at < <http://www.naa.gov.au/records-management/publications/Digital-recordkeeping-guidelines.aspx> >. Accessed 12 May 2009.

¹⁸² Australia, National Archives of Australia (2007). *DIRKS Manual: Strategies for Documenting Government Business*, at < <http://www.records.nsw.gov.au/recordkeeping/dirks> >. Accessed 25 April 2008.

8. Review and monitoring.

As mentioned by Tough and Moss, the DIRKS approach may be applicable to studies investigating the design and implementation of DRM system in organisations.¹⁸³ These guidelines are relevant to this thesis as they suggest in practical ways how digital records must be actively managed. UPS may consider using these guidelines in order to manage its digital records.

Keakopa's study recommends a number of strategies to overcome the challenges of managing digital records in public sector settings. It considers speeding up development and implementation of ICT policies as an important input to guide governments to establish a DRM infrastructure.¹⁸⁴ The study pointed out that without policies and procedures for the management of digital records, it would be difficult to manage the digital records. To Keakopa, the policies should be formulated and implemented to ensure that digital records do not continue to suffer neglect. They should be linked to ICT policies and consequently to the broader national objectives.¹⁸⁵

The above issues relating to policies, procedures and guidelines are highlighted in the literature as key requirements for a sustainable DRM system. However developing the necessary guidance measures requires the support of the national archives for effective implementation of the required procedures. These guidelines could be used to provide benchmarks and guidance on DRM within the UPS ministries and departments depending on the emerging views from this thesis.

¹⁸³ A. Tough and M. Moss (2006). *Recordkeeping in Hybrid Environment: Managing the Creation, Use, Preservation and Disposal of Unpublished information Objects and in Context*. Oxford: Chandos Publishing, p.7.

¹⁸⁴ Keakopa (2007), p.261

¹⁸⁵ Keakopa (2007), p.264.

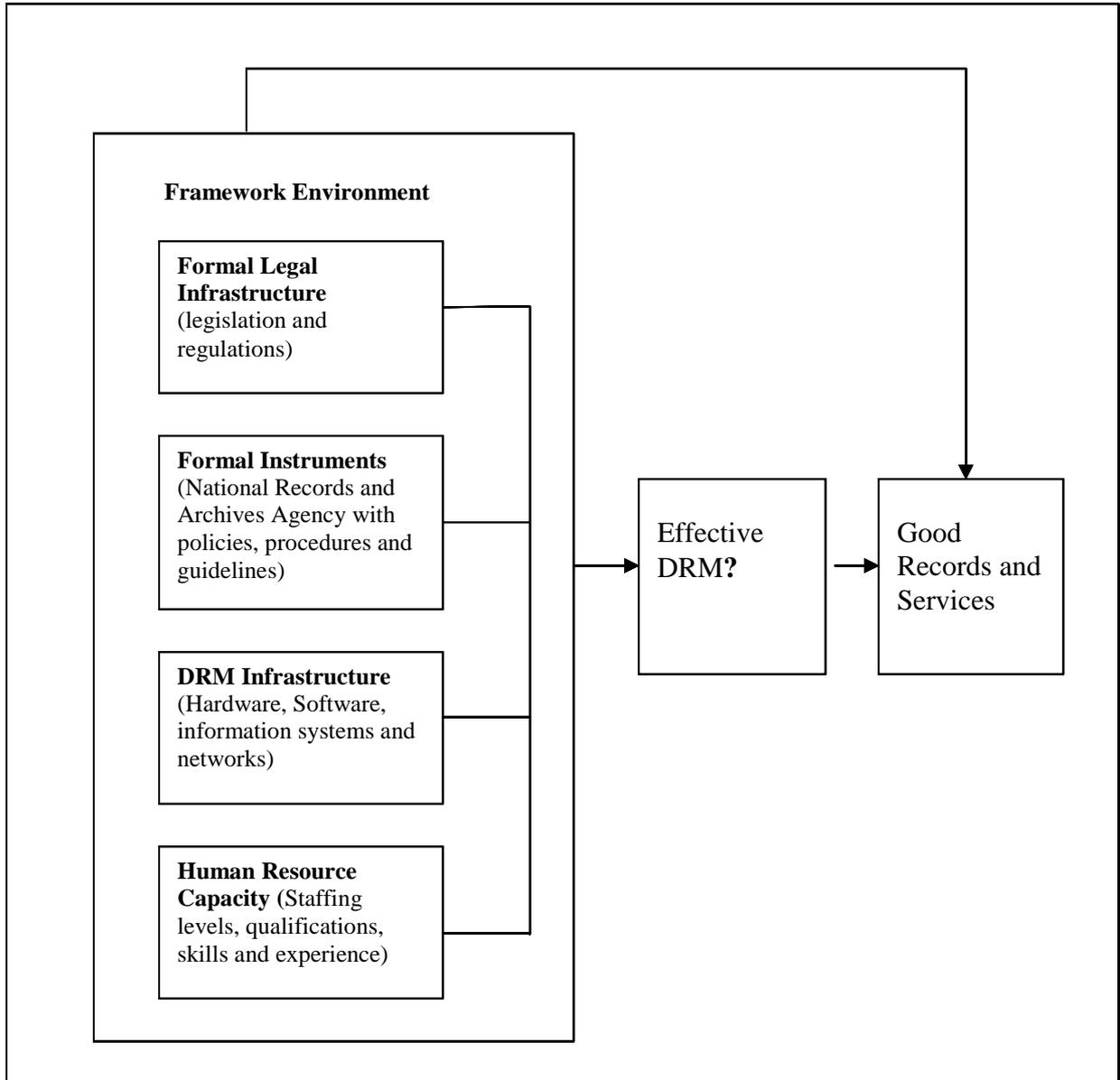
2.6 Emerging Issues and the Research Gap

The reviewed literature has revealed that governments the world over, are increasingly recognising the importance of managing information, including digital records, for good governance. This raises a number of questions for the UPS:

1. Does the UPS have in place the necessary formal legal infrastructure with laws and regulations to promote DRM?
2. Has the UPS created an infrastructure of policies, standards and procedures to support a sustainable DRM programme?
3. Has the UPS adopted the ICT infrastructure to promote the creation and management of digital records over time (that is, the technical factors)?
4. Does the UPS have the human resource capacity required to effectively manage the digital records?
5. How, if at all, are the above factors (that is, the technical, legal and human resources) inter coordinated to create a conducive environment to promote DRM in the UPS?

The above questions have been summarised in the conceptual framework below which the author of this thesis developed to provide a basis for examining the measures for managing digital records in the UPS. It is derived from the RM standards and theoretical literature, which emphasise that several factors need to be addressed for digital records to be managed effectively. The conceptual framework for this study is presented in Fig. 3 on page 82 and explained briefly in the following section.

Figure 3: A Conceptual Framework for Effective Digital Records Management in the Public Service of Uganda



Source: Developed by the author of this thesis, 2007-9

As illustrated in Figure 3 there are four key factors affecting DRM which this study investigated.

Formal legal infrastructure that places some specific roles and responsibilities on public agencies to ensure the creation and preservation of official records of enduring evidential or informational value, such as national records and archives legislation.

Formal instruments establishing a body responsible for governing DRM such as a National Records and Archives Agency with policies, procedures and guidelines in place that effect DRM.

DRM infrastructure, that is, the hardware, software, information systems and network infrastructure in place upon which DRM is based.

Human Resource Capacity refers to the staffing levels, qualifications, skills and experience available and responsible for DRM

Figure 3 provides an illustration of how the developed concepts relate to the management of digital records. The diagram also depicts the inter-relationship and the linkages between the key factors, namely legislation, formal institutions, DRM infrastructure and human resource capacity. This thesis will demonstrate that these linkages are fundamental to the effective management of digital records. This study seeks to provide strategies needed towards effective management of digital records, which is not possible without close examination of the above factors.

The assumption behind the conceptual framework is that it is not just one factor that affects the management of digital records in public administration, but several factors that are interrelated and that affect one another. These factors formed the theoretical basis for determining the status of DRM in the UPS, the challenges and strategies needed to improve the DRM function and service in the UPS. Effective DRM cannot be achieved without these factors, which support each other and form a coherent whole. When these factors are thoroughly examined, then a framework for improved management of digital records can be determined.

2.7 Chapter Conclusion

This chapter has discussed the challenges, strategies and framework for DRM and how that corresponds with the NPM doctrines as presented in the literature. The chapter introduces the records continuum framework within which this research is positioned. It shows that the management of digital records requires legislation, strong formal institutions, DRM infrastructure, and human resource capacity in line with the continuum thinking. The literature offers a framework in which to address many of the technical, cultural, and organisational issues in the management and preservation of digital records. The next chapter discusses the research design used to investigate these issues.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology that was adopted to pursue this investigation into the management of digital records in Uganda. It begins with a discussion of the area of study and then presents the research design approach. The chapter then discusses Uganda as the choice of the study area, the institutions from which data was collected, the respondents from whom data was collected, the sampling criteria for their choice, how the data was collected and analysed, data quality control and ethical issues, and the limitations of the study.

3.2 Area of Study

Uganda is the focus of this thesis. The choice of Uganda was based on the fact that the researcher is a Ugandan who has undertaken research in RM in Uganda and he is knowledgeable about the broad RM context. My previous research and consultancy experience into issues of policies and strategies for records management in Uganda provided further motivation to undertake this study in Uganda.¹

The other reasons that triggered this study is that Uganda is modernising the conduct of public affairs by automating the delivery of public services.² The process of modernising the economy has led to the generation of digital records, hence this thesis's focus on the assessment of the existing approach to DRM. Although studies have been undertaken in other African countries like Botswana, Namibia and South Africa,³ there is a lack of detailed research addressing DRM in Uganda and practical solutions for the problem of the management of digital records in the country.

¹ D. Luyombya (1999). *Strategies and Policies for Records Management: A Case Study of Makerere University, Kampala*, MA Dissertation, Monash University, Australia.

² Uganda, MoFPED (1998), p.13.

³ Keakopa (2007). 'The Management of Electronic Records in Botswana, Namibia And South Africa', Ph.D. thesis, University of London.

3.3 Research Design

The study adopted a mixed methods approach and used qualitative and quantitative techniques to examine how digital records are managed in the UPS. Using the two methods yielded an enriched and elaborated understanding of DRM. Collecting diverse types of data using different methods provided this study with a broader understanding of DRM.

The rationale for using both methods was because neither a quantitative nor a qualitative method alone would have been sufficient to capture the trends and details of DRM. When used in combination, quantitative and qualitative methods complemented each other and allowed for a more robust analysis.⁴

Quantitative methods in this study enabled precise measurements of some of the variables of DRM. The techniques consisted of counting the frequency of variables and presented these frequencies as summaries in tables and graphs. The aim of this method was to analyse the DRM technologies in the UPS and to explore them by systematic measurement rather than seeking and interpreting meanings people attach to their own actions. Quantitative methods were used to collect data in Uganda to establish the extent of utilisation of ICTs and how these have resulted in the creation, use and management of digital records. The quantitative focus was on aspects of DRM that are most patterned and can be quantified through measuring and assigning numbers to them.

Most quantitative methods however, do not deal with a rich description of data; hence they cannot come out with explanation and interpretation of the phenomenon under study.⁵ In order to interpret and describe how digital records are established and managed in the UPS, qualitative methods were applied. As a result, qualitative methods in this study were alternated with the quantitative methods so as to triangulate the data sources.

⁴ M. B. Miles and A. M. Huberman (1994). *Qualitative Data Analysis: A Sourcebook*. 2nd ed. Thousand Oaks, CA: Sage, p.5.

⁵ N. V. Ivankova; J. W. Creswell and S. L. Stick (2006). 'Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice', *Field Methods* 18:1, pp.3-20.

Triangulation means using different types of measures, or data collection techniques to examine the same variable.⁶ Triangulation was adopted in this study to use different methods that corroborate each other to seek confirmation of apparent findings. Validation of views from the respondents was done through triangulation of sources to corroborate each other to get a clear picture of how digital records are managed. A number of different levels of managers in different organisational positions were in the sample and interviewed in order to gather a variety of perspectives on the research problem.

Qualitative methods were used to capture what framework was in place, how it functioned, interlinked or coordinated in managing digital records. This enabled the researcher to make comparisons across data to generate all embracing conclusions. The qualitative methods in this study enabled a comprehensive understanding of the management of digital records from the experiences of the respondents who create, use and manage them. While the qualitative method allowed the researcher to understand the perspectives of those involved in events, it is also vulnerable to criticism in that it tends to limit the breadth of the data collection and does not allow for a detailed perspective.

Triangulation was required to raise the researcher above personal bias that stems from using single methodologies. This was in line with authors like Guba who reported that the credibility of the data gathered in research is enhanced if it can be confirmed from several sources.⁷ By triangulating data collecting methods, the researcher was able to provide both the macro and micro-level perspectives of how digital records are established and managed.

⁶ R. S. O. Onyango (2002). 'Data Collection Instruments in Information Sciences', in L.O Aina, *Research Information Science: An African Perspective*. Ibadan: Stiling-Horden Publishers, p.102.

⁷ E. G. Guba (1981). 'Criteria for Establishing the Trustworthiness of Naturalistic Enquiries', *Educational Communication and Technology Journal* 29:2, p.85.

3.4 Population of the Study

Digital records within the UPS were the focus of this study. Existing DRM systems and methods for managing digital records in the UPS were studied. The institutions, ICT infrastructure and human resource capacity were studied with a view to evaluating and examining their suitability for the management of digital records in the UPS. Criteria for the examination and evaluation of the framework environment were developed to establish the state of the existing digital records and the challenges faced. All this was after wide reading of the literature about DRM in other parts of the world. Various levels of managers were included because the management of records cannot be achieved by one group of professionals.⁸ It requires a team of people working together and contributing their own unique knowledge and skills to the process.

A study in the management of digital records has to take into account the creators and managers of the digital records so as to establish their concerns regarding the management of digital records. Persons involved in the creation and management of digital records constituted the high level administrators like the Head of the Agency, Senior Manager, Middle Manager, ICT Manager and the Records Managers. In this study, Head of Agency refers to the Permanent Secretary while Senior Manager refers to a Head of Department, Commissioner or Director for Ministries that have Directorates. The Middle Manager refers to a Principal Officer/Analyst while the ICT Manager means the Information Scientist/ Information Technologists or Systems Analyst and or Network Administrator, System Administrators and Principal Systems Officer or Information Manager according to the structures of the ministry. In general, the ICT manager refers to the one in charge of ICT services and the Records Manager is the one in charge of the records department.

3.5 The Case Study Approach

This study adopted the case study research approach. Case studies are used to illustrate problems or indicate good practice.⁹ The case study method provided a useful means to investigate and describe the establishment and management of digital

⁸ Bantin (2008), p.287.

records in their natural setting. This enabled the study to capture and understand the management of the records in the context within which they are established and used. In this regard, case studies provided real-life situations and enabled exploration of the lived experience of respondents in relation to the management of digital records.

Specifically the study sought to identify the current technologies, capacities and processes utilised in DRM in the UPS. In doing so, the strength and shortcomings of the Uganda approach to DRM was identified so as to contribute towards building ideal capacities and processes for effective DRM. The study also sought to learn from the experiences of ESARBICA member countries the requisite technologies, capacities and strategies for effective digital records management. The study argues that ESARBICA member states, with the same public sector structure as Uganda, will provide lessons, which will enable the UPS to address the challenges associated with managing digital records. The lessons will provide benchmarks on which the country can establish appropriate DRM strategies capable of supporting DRM initiatives.

3.5.1 Selection of Case Study Institutions

Four case study institutions from the UPS were originally selected in order to maximise opportunities to elicit data regarding the capacity of the UPS to meet requirements to manage digital records. The institutions comprised the Ministry of Information and National Guidance (whose mandate is to oversee media and information management); the Ministry of Works, Housing and Communications (MoWHC) - which was overseeing the national ICT strategy before June 2006 when this role was passed on to the Ministry of Information and Communication Technology (MoICT); the Ministry of Public Service (MoPS) - responsible for information management and public records; and the Ministry of Justice and Constitutional Affairs (MoJCA) – responsible for overseeing the national legislative framework. The thesis focused on these ministries because in one way or the other they contribute to information management of which digital records are a part, either in terms of policy design or overseeing the management of records. For instance, the MoWHC was responsible for issuing ICT implementation guidelines, while the MoPS

⁹ R. K. Yin (2002). *Case Study Research, Design and Methods*, 3rd ed., Newbury Park: Sage Publications, p.2.

is expected to issue records and archives guidelines. Furthermore, these ministries were selected because the Uganda ICT Master Plan recognised the vital role they play in information management.¹⁰ The combined effort of these institutions towards information management influenced the researcher to include them in the sample.

While in the field, it was established that those institutions alone could not inform the study of the ongoing efforts towards managing digital records. As such other institutions were identified on an ongoing basis during data collection. The other ministries and institutions were also purposefully selected. Some had ongoing ICT projects, which offered potential for DRM implementation while others had had their records reorganised by the IRMT funded by the British Council¹¹ and all these offered useful lessons for others. The MoPS was instrumental in identifying these additional institutions and the contacts there. A total of 6 ministries, 7 Government planning institutions and 1 ICT civil society organisation (listed in Appendix VI) were eventually included in the sample for the interviewing aspects of the study.

The strategy used to select this purposeful sample was that of critical case sampling which permits logical generalisation and maximum application of information to other cases.¹² In this study, the critical case sampling strategy involved selecting ministries that had an ICT project or coordinated ICT-related projects. In this way, ministries that would yield the most information were selected.

For the purposes of gaining knowledge on types of technology and its usage in records management, the study targeted four levels of managers in each of the UPS ministries. The focus was those departments responsible for implementing respective institutional ICT strategies and action plans. The UPS is made up of 23 fully-fledged ministries, which ministries formed the focus for identifying the ICT capacities and strategies and how they manage the digital records resulting from ICT usage. The 23 ministries formed the sample for the quantitative aspects of the study.

¹⁰ Uganda, MoICT (2006). *Uganda ICT Master Plan and E-Government Feasibility Study*. Uganda: USTDA, p.15.

¹¹ The International Records Management Trust undertook arrangements to provide assistance in the development of records management capacity in support of the Public Service Reform Programme. The project, which was funded by the British Council, included three phases to examine these issues.

¹² M. Q. Patton (2002). *Qualitative Research and Evaluation Methods*. 3rd ed. Thousand Oaks, CA: Sage Publications, p.174.

While the focus of the study was the UPS, additional data was sought from the ESARBICA national archives services. This involved examining strategies employed by national archives services of the regional countries in the management of digital records. Archival institutions were selected from the ESARBICA countries so as to learn from their varied experiences in managing records generally and digital records particularly. The reason behind this selection was that national archival institutions within ESARBICA countries are involved in debates seeking solutions to DRM.¹³ Therefore, the data derived from these institutions enabled the study to meet its broad objective of understanding the capacities needed for DRM. The DRM initiatives within this region could provide lessons to Uganda to enhance its records management framework.

3.6 Sampling and Sampling Strategies

The case study institutions and the respondents were selected using purposive sampling. Purposive sampling was used to detect cases within a wide range of situations. It provided the richness and the depth of the case description. Institutions were chosen because they had particular features or characteristics which enabled detailed exploration of the DRM phenomenon.

As noted by Marshall and Rossman, valuable information is gained from people selected on the basis of the positions they hold in administrative realms of their institutions.¹⁴ The need for in-depth data collection in this study demanded that respondents be purposively sampled. This sampling involved selecting those respondents who were knowledgeable in records management, ICT and e-governance so as to provide lived and professional experience. The respondents provided relevant data on the way digital records are managed and the institutional capacities required for their effective management. The combined knowledge of these officers in respect of ICT and records management enabled the study to attain in-depth knowledge of the DRM phenomenon.

¹³ International Records Management Trust (IRMT) (2009). *Fostering Trust and Transparency in Governance: Investigating and Addressing the Requirements for Building Integrity in Public Sector Information Systems in the ICT Environment Final Report*. London: IRMT.

Besides the purposive sampling method, this study also relied on the Records Management Capacity Assessment System (RMCAS) which assesses the strengths and weaknesses of records management systems by grouping respondents according to their expertise and competence.¹⁵ RMCAS provided a means of evaluating whether the existing ICT infrastructure, legal and regulatory frameworks, resources and capacity are adequate to manage digital records that are created in the UPS. Thus, adoption of the RMCAS framework enabled this study to explore the way records are managed in the public sector settings ranging from policy makers to records users.

The decision to interview various levels of managers was in recognition of the fact that there are many actors whose cooperation is necessary when streamlining the capacities of public sector records management. This results from the fact that in an organisation, there will be differences in values, roles, perception and interests in DRM dependent on employment position level. By combining purposive sampling of respondents and by complementing the selection with the choices arrived at by RMCAS, this study sought to understand all the requirements which would contribute to the efficient management of digital records in Uganda.

3.6.1 Sample Size

The key population included in the study was a non-statistical sample. Some were required to respond to questionnaires while others were interviewed. The target population were ICT and records managers as well as senior and middle managers. Archivists were also included to cover the ESARBICA member states.

75 questionnaires were distributed in the 23 UPS ministries and 51 (68%) were returned. A total of 24 (32%) questionnaires were not returned. Thirteen questionnaires were mailed to cover the ESARBICA member states and 6 (46%) were returned registering a 54% non-response rate.

¹⁴ C. Marshall and G. B. Rossman (1999). *Designing Qualitative Research*. 3rd ed. Thousand Oaks, CA: Sage, p.113.

It was originally planned that two (2) respondents from each managerial level for each of the four (4) ministries be selected which would lead to a minimum sample size of thirty-two (32) interviews to be conducted in Uganda. However, while in the field, the number of respondents changed to forty (40). This was as a result of identifying other information-rich cases. Five (5) chief archivists were interviewed from the ESARBICA region, one lecturer from Moi University in Kenya, two senior lecturers from the University of Botswana and one archival researcher from South Africa.

3.7 Data Collection Methods and Instruments

There are many forms of data collection methods depending on the research process and particular methods employed. The mixed research strategy employed in this research draws primarily on both primary and secondary methods of gathering information and data. With the primary method, the researcher engaged in the collection of raw data from the field and interviewed key informants. Secondary methods involved reading published and unpublished literature and government official documents. These methods are discussed below.

The first phase of field study took place between October 2006 and March 2007, and this focused on collecting data from Uganda. The questionnaires were also posted to the National Archives in the ESARBICA region during this period. The second phase of data collection in Uganda was between July and August 2007. At this phase, the respondents from the ESARBICA region were interviewed as they attended the 19th ESARBICA General Conference between 19 -22 June 2007 in Dar as Salaam. The rest of the period was used to cross check data from the UPS.

3.7.1 Desk-Based Research and Reading List Guide

Desk-based research dealt with secondary data, where secondary data refers to data that has been collected by others.¹⁵ In gathering secondary data, documents deemed relevant to DRM were read. Taking into account that the DRM phenomenon is a fairly new concept, it was important to identify the background information to its

¹⁵ A. Griffin (2004). 'Records Management Capacity Assessment System (RMCAS)', *Archival Science* 4:1-2, p.71.

¹⁶ C. Frankfort-Nichmias and D. Nichmias (1996). *Research Methods in Social Sciences*. 5th ed. London: Arnold, p.23.

development. The review of relevant literature therefore provided the link between the past and present relating to ICT and DRM development.

The documents took various forms including textbooks relevant to records and information management, monographs, scholarly journals, dissertations, GoU publications and policy reports, conference proceedings and public reports. Scholarly journal literature was referred to most for being current, while public reports were used for being focused and topical. A number of approved PhD dissertations were also used. An in depth review of the literature forms Chapter 2 of this thesis.

The study made good use of the Internet to access current literature in full text journals. The library and information services of University College London, British Library and the Senate House Library in the United Kingdom were used. Equally useful were the library and information services of Makerere University and the Uganda ministries of Public Service (MoPS) and Finance, Planning and Economic Development (MoFPED) plus the International Records Management Trust (IRMT).

Tentative themes based on the objectives of the study were identified early enough before compiling the reading list guide (Appendix IV). The guide was divided into sections that presented the following themes among others:

- (a) NPM and the way the concept influences change in public service administration;
- (b) The effect of ICT uptake in public administration;
- (c) The challenges to managing digital records in public service administration; and
- (d) Measures for improved management of digital records.

The aim of using themes was to focus the study without reducing its openness. A comprehensive review of the documents was possible with the help of the reading list guide. Documents both published and unpublished were identified and read, and relevant information indicating DRM developments and relationships was extracted. A list of reference materials and bibliography was compiled by aid of the reading guide to the study. Data from these sources helped to identify gaps, trends and relevant theory to DRM.

Through reviewing the literature, the capacities, strategies and frameworks required to manage digital records were analysed. Participating institutions were requested to provide literature which they routinely produce. This literature included RM procedures, DRM policies, principles and requirements. The ICT policy documents were also a valuable source of reference. GoU policy and legal instruments relating to ICT and DRM were read. Documentary research helped to narrow and delineate the research problem and to develop a firm understanding of the subject under study. It also enabled the researcher to supplement data obtained through interviewing and questionnaires thus arriving at profound understanding of the way digital records are managed and the institutional framework currently in place for the purpose.

However, GoU official reports were not all readily available. Furthermore, there were differences in response to my request for official reports from one ministry to another and even within the same ministry, depending on who handled the request, there were difficulties. Dealing with the MoPS Library was a very frustrating experience in the beginning as my request to access GoU reports was turned down by the librarian despite having obtained permission from the Permanent Secretary. It necessitated the Permanent Secretary talking to the librarian first by telephone. Eventually, I was allowed to access the library and as a consequence I discovered GoU reports that were highly relevant to this thesis.

Relying on documents was a conscious decision but posed a problem as documents do not provide a complete picture of events because some issues especially those to do with policy and political commitment may not be detectable from an examination of the official records. To compensate for such gaps in the records, the questionnaires provided an important subtext to the documents.

3.7.2 Field-Based Research

3.7.2.1 Self-Administered Questionnaire

Quantitative data was collected through self-administered questionnaires. The questionnaires were distributed in Uganda and to the ESARBICA states and targeted those departments which promote the ideals and processes of DRM. The choice of the

questionnaire as a research method was because questionnaires are a quick method of collecting data.¹⁷ A copy of the questionnaire structure is in Appendix II.

Questionnaires allowed collection of large amounts of data in a short period. They therefore provided this study with a systematic means of collecting data that assessed Uganda and ESARBICA's capacities, strategies and institutional frameworks for DRM. The questionnaires elicited a broad picture of the state of ICT in the UPS and indicated technologies applied to the management of digital records from the perspective of the users and those who harness the technology.

Questionnaires in this study were self-administered to give respondents a chance to state their views. One questionnaire was for the UPS ministries and departments and the other was for ESARBICA countries. They were developed to enable the collection of standardised and general information about the types of ICTs used for daily administration of public affairs and those used to manage records among other things.

The questionnaires comprised both open-ended and closed questions. Open-ended questions allowed respondents to convey the fine shades of their attitudes to their satisfaction instead of forcing them to choose one of the several statements usually found in closed-ended questions. They enabled respondents to answer questions in a relatively unconstrained way. The decision to use open-ended and closed questions was taken in order to reap the benefits of the strengths of both types of questions.

The UPS questionnaire was pre-tested in 2 UPS agencies to eliminate questions that could have been vague or ambiguous and to ascertain its validity and reliability. The purpose of testing the questionnaire was to determine whether the data it would produce was sufficient for the study or not. The results of the pre-testing determined the level and depth of the revisions that were made on the questionnaires. The researcher as much as possible maintained rigorousness and objectivity, so as to avoid bias in the study.

¹⁷ C. A. Moser and G. Kalton (1979). *Survey Methods in Social Investigation*. Hampshire: Gower Publishing, p.41.

A set of questionnaires was distributed to ICT and top-level managers in the UPS ministries (Appendix 2.1) between October 2006 and March 2007. Another set was mailed to the ESARBICA member states (Appendix 2.2) in August 2006 and the directors of archival institutions participated in the study. Six archives directors were later interviewed at the 19th bi-annual ESARBICA regional meeting that was held in Dar as Salaam, Tanzania between 19th and 22nd June 2007. This was done to validate and enhance the results of quantitative analysis.

The main problem of data collection through questionnaire was not the difficulty of reaching the whole population but the complexity of obtaining responses. To maximise the response rate, the researcher made follow-up telephone calls and physical visits to the respondents with a view of reducing the non-response rate. With vigorous follow up, the questionnaire had a 68% response rate which complemented the data collection process in UPS. However, the response rate to the questionnaire sent to the ESARBICA countries was 46%.

The other problem with a questionnaire is the limited kind of information it provides. The information obtained from a questionnaire does not give a holistic picture to fully understand what is happening within a case study under investigation. This situation was resolved by carrying out the in-depth interviews with the questionnaires informing the interview schedule of this thesis.

3.7.2.2 In-Depth Interviews

Qualitative data was collected through in-depth interviews which are described as a “conversation with a purpose.”¹⁸ Interviews in this study were composed of semi-structured questions which allowed for a precise and deep insight into the management of digital records. The interview schedule was piloted in two UPS agencies before undertaking actual data collection. Pilot testing was done to address complexities and ensure clarity of the questions posed. Therefore, questions were evaluated against the data collected to establish whether they generated the type of data that was wanted. After piloting the study instrument, the research questions were

¹⁸ R. Kahn and C. Cannell (1957). *The Dynamics of Interviewing*. New York, NY: John Wiley, p.149.

revised to remove unnecessary elements and to improve the wording for clarity so as to facilitate capturing useful data. The pilot study confirmed that the sampling methods functioned in the ways expected. A copy of the interview structure is in Appendix III.

The interviews were qualitative in nature and were useful for understanding the lived experiences of the respondents. In-depth interviews allowed a new line of inquiry to uncover issues that may not appear exhaustively covered in the questionnaire. Through the interviews, the study was able to understand the capacities which institutions possess and also the needed requirements for successful DRM.

Interviews were conducted in the selected institutions in Uganda with a focus on one (1) Head of Agency, two (2) Senior Managers, two (2) Middle Managers, one (1) ICT officer, and two (2) Records Officers. The reason for choosing at least two respondents for each level of management was based on Zaltman and Duncan's argument that in understanding an organisation, a good rule of thumb would be to talk to at least two people occupying the same organisational role.¹⁹ Zaltman and Duncan further argue that gathering views from more than one person at each level in the organisation is helpful to understand the phenomenon under study since different people at the same level may have different perceptions of the organisation. This approach was chosen for two reasons. Firstly, the interview subjects were assumed to be knowledgeable about issues relating to the management of digital records and secondly, the interview's purpose was to elicit their analytical views and understanding.

Interviewing allowed interviewer-respondent interaction which would not have been possible with the questionnaire. Interviewing allowed both parties, the researcher and interview subject, to explore the meaning of questions posed and answers proffered and to resolve any ambiguities. When respondents did not understand the question or were uninformed on the topic, the face-to-face interaction provided ways to clarify issues of misinterpretation common with questionnaires. With face-to-face interviews, complete responses were attained because it was easy to seek clarification. The

¹⁹ G. Zaltman and R. Duncan (1977). *Strategies for Planned Change*. New York, NY: John Wiley and Sons, p.45.

sessions also allowed comments on themes and expression of emerging patterns that contributed to the results.

Interviews were recorded on tape after the respondent had given consent. Slater suggests that when the interviews are recorded in the respondent's words, it offers the opportunity to explore the experiences of the respondent.²⁰ Recorded interviews allowed a return to the gathered data in its original form as often as possible which enabled the researcher to understand fully all the views raised. Notes were taken during interviews regarding the participants' non-verbal behaviour that would not be recorded on tape.

The in-depth interview guide (in Appendix III) deliberately selected open-ended questions for the interviews. The open-ended questions enabled the study to explore in detail the issues around DRM within the broader realm of new public management. The guide allowed the interviewee to respond to a series of topics without being bound to a static list of questions. The guide helped to elicit information regarding capacities and strategies that are necessary to effectively manage digital records. This enabled the researcher to discover the respondents' views and to understand the meaning they hold on DRM.

The collection of data through interviews ceased when theoretical saturation was reached. Theoretical saturation occurs when new interviews cease to bring any new data. The themes and issues under discussion were saturated and there was no need for further interviews.

3.8 Data Analysis and Presentation

This section discusses the approaches that were followed when analysing the documents, interviews and questionnaire data. The purpose of data analysis was to reduce sets of data as a basis for data management. Both non-quantifying and quantifying techniques of analysis were used to present the research findings.

²⁰ M. Slater (1990). 'Qualitative research,' in M. Salter (ed). *Research Methods in Library and Information Studies*, London: Library Association, pp.107-127.

3.8.1 Documentary Data Analysis

Documents were analysed for relevant information relating to DRM. Preliminary units of data were determined and consequently broad categories of data units were created from the reviewed documents. The documents related to NPM and its impact on public service reforms, how digital records are created, indexed, stored, retrieved and what policy and standards related to the creation and management of digital records existed. Data were gathered and detailed analysis involved identifying trends, status and challenges to managing digital records. This formed a basis for understanding the existing framework for DRM in the UPS. Data results were presented as descriptive statements.

3.8.2 Quantitative Data Analysis

Quantitative data analysis entailed categorising and summarising data in order to find answers to the research questions. Quantitative data were analysed by using statistical tools to reduce the data, summarise it and make the most important facts and relationships apparent.

Quantitative data from both the questionnaires and interviews was subjected to statistical analysis using the Statistical Package for Social Sciences (SPSS) with the help of a Quantitative Economics student at Makerere University. The statistical package facilitated the break down of categories of data and helped to organise the data more quickly. The reason for this choice was that the results of the study establishing the patterns of ICT usage and its utilisation in the management of records could be shown in descriptive detail in tables, graphs and illustrations which the SPSS generated. With the results from the SPSS analysis, it was possible, for example, to rank the Uganda ministries according to what ICT technologies are available. The statistics revealed which institution has a high level of capacity for DRM and the potentially significant contrasts between them became apparent. Quantitative results were also presented with descriptive statements.

3.8.3 Qualitative Data Analysis

The qualitative data collected in the study were analysed through data reduction, editing and categorising into themes that were in line with the objectives of the study. According to Miles and Huberman, data reduction is “a form of analysis that sharpens, sorts, focuses, discards and reorganises data in such a way that ‘final’ conclusions can be drawn and verified.”²¹ While the descriptive data was quantified using frequencies, the bulk of the analysis was interpretative to enable the researcher to discover concepts and relationships in the raw data. This provided an insight and understanding of the framework for DRM in the UPS.

Initial coding of each interview transcript began with manual annotation of scripts during a process of close reading, line by line, to highlight each concept and label it. Lincoln and Guba argue that this process is necessary to confirm interpretations and coding decisions including the development of categories.²² Subsequent iterations of reading and coding of each interview transcript in a constant comparison with previous interview transcript and coding allowed emergence of categories and themes. The data themes were developed according to the research questions and these allowed an audit trail to be maintained, tracking the development of analysis with annotations for major decisions and researcher input.

Interview results were presented using relevant and substantive quotations. There is a deliberate use of the ‘voice’ of various respondents by clearly stating whose opinion is being represented and through the use of quotations. Reproducing the words of participants communicates their attitudes and depth of feeling while simultaneously advancing the argument being made. I have tried to distinguish my voice as author of the thesis from those of the participants by clearly stating when an assertion or position belongs to a particular respondent or group. Themes of varying size, words and phrases connected to records management were applied to identify relevant subject areas in the data.

²¹ M. B. Miles and A. M. Huberman (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. 2nd ed. Thousand Oaks, CA: Sage.

²² Y. S. Lincoln and E. G. Guba (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage, p.203.

Mostly, interview material was not relied on for factual information, rather to help the researcher understand the perspective of various respondents. In some cases, helpful suggestions were made such as pointing the researcher in the direction of approaches which need to be adopted.

3.9 Data Quality Control

Reliability and validity are important qualities of research and must always be taken into account for effective data quality control.²³ An assessment of collected data hinges upon determining the reliability and validity of the data collection instruments.

In order to get consistent answers to the research questions, the reading list guide, interview guide and self-administered questionnaire were designed to collect data for the study. Piloting the interview guide and pre-testing the questionnaire was used as a tool for content validation. Content validation compares the relevance of the content to the characteristics being measured.²⁴ Content validity was achieved by making sure that questions were related to the DRM framework and ICT utilisation in a public service setting. In order to ensure reliability and validity, the instruments were piloted and pre-tested for appropriateness, clarity, completeness, consistency, relevance and shortcomings.

The results of data analysis were triangulated in order to strengthen the research findings and conclusions. This involved alternating data collection instruments whereby different types of data provided cross-data validity checks. Multiple methods of data analysis including coding, tabulation and use of descriptive statements were also used to ascertain the quality of the findings.

3.10 Ethical Issues

As a matter of principle, ethical considerations were kept in mind at every stage of the study. Permission to carry out research in Uganda was obtained from the Uganda

²³ L. W. Neuman (2003). *Social Research Methods: Qualitative and Quantitative Approaches*. Boston: Pearson Education.

²⁴ H. R. Bernard (2000). *Social Research Methods: Qualitative and Quantitative Approaches*. Thousand Oaks, CA: Sage, p.50.

National Council of Science and Technology (UNCST). The Council approved the study in liaison with Makerere University. The UNCST provided the researcher with a letter and an Identity Card (ID) for identification purposes during the study. Appendix I shows copies of that communication. Informed consent and confidentiality were observed before giving out the questionnaire or carrying out the interview. Respondents were assured of their rights, including the rights to consent, protection from disclosure of information and respect for their privacy.

For reasons of privacy and confidentiality, anonymity and confidentiality was promised and maintained throughout the study. Where permission was granted interviews were recorded and later transcribed. A few respondents did refuse tape recording and this was respected. Data and the information gathered and used have been acknowledged and/ or cited in addition to maintaining intellectual honesty. A copy of the consent form is in Appendix V.

Permission was also sought from the institutions where data was collected in advance of the study and then again at the beginning of each interview or questionnaire session. Sources used as well as fair use of their views were acknowledged. However, they were difficulties of trying to limit confidentiality because of the focus on different levels of managers which made total anonymity impossible. Though the positions of the managers (respondents) are given in this thesis their names are not disclosed.

3.11 Problems Encountered During the Study

Several problems were experienced in research design and methodology. For instance, some data collection methods adopted for the study have inherent disadvantages. As such frequent reminders were sent to increase the number of questionnaires that were returned. Some participants were outside Uganda which made it difficult to access them. In most cases, it proved very difficult to access top level managers who were found to be extremely busy with cabinet related activities. In many of the cases, the researcher had to solicit interviews through their personal assistants.

Some of the respondents did not want to be interviewed. Several interviewees, particularly the middle-level managers, expressed fatigue about being the subject of

research with hardly any tangible personal benefits accruing at the end of the exercise. Others complained that they neither get to know the results nor see the impact of studies in which they participate, while others thought it was a records/registry staff affair. This affected the research timetable.

However, in order to get the cooperation of the interviewees, the researcher explained that this was an academic study and this made the respondents more receptive. Some of interviewees claimed that they did not have time to be interviewed. In order to increase willingness to participate, interviewees were given the freedom to choose a convenient time and venue. The majority of the heads of institutions, for example, preferred to be interviewed outside their offices in a quiet room away from interruptions. Although this issue may not have affected this study much, the general research patience in scheduling interviews is something that future researchers will need to take into consideration.

A sit-down strike by the teaching staff (lecturers) at Makerere University Kampala, which led to the closure of the University between November 2006 and January 2007 was another problem faced in the field. It must be noted that the field study was sponsored by Makerere University and the process of approving funds was put on hold until the strike was suspended.²⁵ This was a month after I had arrived in the field, and it affected the research time. However, funds were released and this factor did not impinge on the overall reliability of the data.

3. 12 Chapter Conclusion

This chapter has outlined and justified the research design used to investigate the framework for public DRM in Uganda. It introduced and justified the choice of Uganda as the study area. It set out the mixed research methodology approach which was adopted to examine how digital records are managed in the Uganda Public Service (UPS). It established the case study research approach as the basis to investigate and understand the creation and management of digital records in the UPS.

²⁵ The reader will note that though I am a student at UCL, I am referring to Makerere University at this point in this thesis. This is because I am a lecturer at the University and as such they supported this study by providing me with the support letter and financing the fieldwork.

It then detailed each of the research activities noting the strengths and limitations of the various data collection and analysis techniques employed. This chapter also reported on the development of an analysis process to assess the UPS capabilities and facilities. These research activities and their outcomes are discussed in detail in order to show how understanding of the mixed methodology requirements evolved throughout the research process. The next chapter is a presentation of the state of DRM in Uganda.

CHAPTER FOUR

THE CURRENT STATE OF DIGITAL RECORDS MANAGEMENT IN THE PUBLIC SERVICE OF UGANDA

4.1 Introduction

This chapter reports the findings of the research relating to the state of DRM in the UPS. The findings presented here are responses to the first objective of this study, which was to examine the state of DRM in the UPS. This chapter analyses the existing technological infrastructure and capacity, which provide the basis for governments to improve the delivery of information and services to streamline public sector functions. It begins with a discussion of the DRM preparedness, followed by the evaluation of ICT utilisation by drawing on a survey of existing ICT initiatives. The readiness status of the UPS for DRM is then discussed. The chapter also presents data from the ESARBICA region in order to set the UPS into a wider regional context. It concludes that DRM must be built in to ICT programmes to ensure a sustainable DRM service.

4.2 Formal Instruments for DRM Existing in the UPS

Formal instruments such as policies and regulations are one of the key determining factors for the successful creation and management of digital records. This section identifies and assesses the policies and measures that commit the UPS to implement DRM, and the ICT infrastructure and the human resource available to enable DRM services to be used in the UPS.

4.2.1 Policies and Measures in Support of DRM in the UPS

The Uganda policies on information management were examined to determine their support of DRM services and to assess to what extent DRM is or may be present. Policies for managing digital records are an important element of a recordkeeping framework.

The review of GoU's plans and assessments indicated that the Uganda National ICT Policy framework was finalised in 2002 and adopted by Cabinet in 2003. The Policy states in subsection 4.1.3 that its goal is: "to promote the development and effective utilisation of ICT such that quantifiable impact is made throughout the country".¹ It further stipulates that it aims to promote and enable the building and establishment of an appropriate infrastructure that supports ICT development in Uganda.² Other ICT-related policies identified were the Rural Communications Development Policy for Uganda³, the National Broadcasting Policy⁴, the e-Government Strategy Framework⁵, and the National Industrial Policy.⁶ These provide a good foundation for DRM development as suggested by Keakopa when she remarked that ICT policies contribute significantly to the generation of digital records.⁷

Despite the existence of the ICT-related policies it was established that a DRM implementation strategy is lacking in Uganda. Many of the recommended strategies in the ICT-related policies that would support the creation and keeping of digital records, such as initiation of the e-governance programme to digitise public domain information and make it available through appropriate dissemination media, have not been implemented, as is reported in the background to the National Industrial Policy released in 2008.⁸ Inconsistencies in the policy environment are an obstacle to achieving the required DRM infrastructure. ICT-related policies ought to be a core part of the DRM infrastructure.

The Uganda e-Government Network Feasibility Study of 2006 reported that the application of ICT was on the increase in the UPS but that the policy function remained an 'ad hoc' affair, causing conflicts of interest, with each individual

¹ Uganda, Ministry of Works, Housing and Communications (MoWHC) (2003). *National Information and Communication Technology Policy*. Kampala: MoWHC.

² Uganda, MoWHC (2003), p.6.

³ Uganda, Uganda Communications Commission (UCC) (2001). *Rural Communications Development Policy*, at <www.ucc.co.ug/rcdf/default.php>. Accessed 17 July 2007.

⁴ Uganda (2004). *National Broadcasting Policy*, at <www.wougnet.org/ICTpolicy/ug/ugictpolicy.html>. Accessed 17 July 2007.

⁵ Uganda, National Planning Authority (NPA) (2006). *Uganda E-Government Strategy Framework (Final Report)*. Kampala: NPA.

⁶ Uganda, Ministry of Tourism, Trade and Industry (MoTTI) (2008). *The National Industrial Policy: A Framework for Uganda's Transformation, Competitiveness and Prosperity*. Kampala: MoTTI.

⁷ Keakopa (2007), p.261.

⁸ Uganda, MoTTI (2008), p.2.

ministry seeking its own ICT policy.⁹ The feasibility study concluded that the ICT policy had developed ‘piecemeal’ with no clear long-term strategy for information management and recommended that priorities needed to be implemented and coordinated. The Uganda Vision 2025 also held the view that the ICT Policy needed to be reviewed to address the developmental challenges facing the country and to focus on technologies to deliver online services in both the public and private sectors.¹⁰

Similarly, data gathered by this study based on a survey about the existing management of the digital records indicated the absence of a DRM framework at various levels of UPS agencies, including those ministries directly responsible for communication and information management, like the Ministry of Presidency; Public Service (MoPS); Information and National Guidance; and Justice and Constitutional Affairs (MoJCA). When asked what the state of the DRM strategic plan or policy was in their respective ministries, the responses from Senior Managers varied. Some examples of the responses from those ministries responsible for ICT given are in Table 4.1.

Table 4.1 Sample Data documented by Senior Managers on DRM Strategic Plan/Policy in the UPS

Ministry	DRM Strategic plan/Policy in place
Presidency	Yet to be developed – workshop conducted
Public Service (MoPs)	Not in place – being drafted
Information and National Guidance	No response
Justice and Constitutional Affairs (MoJCA)	Not formal but they need to write one
Information and Communication Technology [MoICT]	Drafting policy

Source: Field Data, 2007

⁹ Uganda, MoICT (2006). *Uganda E-Government Strategy Framework (Final Draft)*. Kampala: MoICT, p.13.

¹⁰ Uganda, MoFPED (1999). *Vision 2025: A Strategic Framework for National Development*. Uganda: MoFPED, p.122.

Table 4.1 above reveals that the key players for communication and information management in Uganda have poorly developed DRM policies and do not have an integrated DRM strategy, which is a prerequisite for DRM services. These views reflect the perception of the senior managers that there is no roadmap to integrate DRM into the UPS's wider and administrative, governance and ICT context. Their concern was that the Uganda National ICT Policy is not consistent in basic concepts and does not define and specify strategies that need to be pursued to manage digital records.

A national centralised paper records management policy is also not promoted within the UPS. As a result, individual ministries have set up their own systems and procedures just to satisfy individual ministry needs. This confirms that the RITD has not developed and promulgated a records management policy. The data reveals that some managers are not even aware of the existence of the RITD. In the same tone, the Uganda Cabinet Sub-Committee on policy coordination, which facilitates top-level political coordination and oversight of all GoU policies and programmes, was silent about a DRM policy for Uganda.

When asked whether clear policies were in place for DRM in Uganda, respondents could hardly agree whether there were such policies. There was widespread lack of understanding of what a DRM policy is and how it could be implemented. There was also disagreement on what role it would play in the UPS and of the benefits of such a policy. The Uganda Government Archivist reported that there is “no formal DRM policy which states what digital records are and why it is important to manage digital records in UPS”. To him, there is no DRM policy and formal requirements to account for the digital records. However, the GoU Archivist indicated that this is a priority area that needs to be addressed.¹¹ The literature indicates that a DRM policy is necessary to provide the framework within which a governmental body affirms its commitment to create authentic and reliable records.¹² According to Read-Smith,

¹¹ Interview with Government Archivist, at the Uganda National Archives, Entebbe, on 12 January 2007.

¹² N. Mnjama and J. Wamukoya (2007). ‘E-government and Records Management: An Assessment Tool for E-Records Readiness in Government’, *The Electronic Library* 25:3, p.275.

Ginn and Kallaus, a clear policy is required to define the organisation's approach to managing digital records.¹³

This study established that there is no clear plan to direct DRM activities and operations in Uganda. A DRM policy is needed which would explain in broad terms the objectives of the DRM programme. Considering the ESARBICA countries, a study of DRM in Botswana, Namibia and South Africa established that South Africa has taken great strides in developing policies and procedures for the management of public digital records¹⁴ although even in many of these countries the procedures are yet to be implemented as reported in the IRMT report of 2009.¹⁵

This study discovered that many countries in the ESARBICA region were drafting DRM policies. The National Archives of South Africa for example, has taken its position on using digital systems and issued a formal policy, principles and requirements that can be used to manage digital records.¹⁶ The development of DRM policies was considered as part of a foundation needed for the implementation of secure practices to capture and preserve digital records.¹⁷ The view in South Africa is that a policy is required to guide the management of digital records. As institutions create digital records, they need guiding principles and regulations to underpin DRM implementation. When the developments in the ESARBICA countries were described to the interviewees in the UPS, one suggested a need to learn from the ESARBICA strategies and master plans for DRM.¹⁸

It was acknowledged by the UPS respondents that national policies should reflect the values, principles, aims and objectives of DRM services. However, as this section indicates, there is currently no policy to address digital recordkeeping requirements in

¹³ J. Read-Smith, M. L. Ginn and N. F. Kallaus (2002). *Records Management*. 7th ed. Cincinnati, Ohio: South-Western, p.318.

¹⁴ Keakopa (2007), p.iii.

¹⁵ International Records Management Trust (IRMT) (2009). *Fostering Trust and Transparency in Governance: Investigating and Addressing the Requirements for Building Integrity in Public Sector Information Systems in the ICT Environment Final Report*. London: IRMT.

¹⁶ South Africa (2006). *Managing Electronic Records in Governmental Bodies: Policy, Principles and Requirements*, at < <http://www.national.archives.gov.za/>>. Accessed 16 June 2007.

¹⁷ Discussion with a Senior Lecturer, Botswana University at ESARBICA Workshop, Dar as Salaam on 21 June 2007.

¹⁸ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

the UPS. The national policies are also fragmented and uncoordinated without sufficient focus on championing requirements for recordkeeping, let alone DRM.

4.2.2 Availability of ICT Facilities in the UPS

This study was interested in establishing the extent to which the UPS was prepared to use the ICT environment for the management of digital records and archives. As discussed in chapter 1, a study on e-readiness of the Southern African Development Community (SADC) suggested that the extent of the use of ICT is a key issue to address when considering adapting digital systems.¹⁹

ICT infrastructure does not solve the problem of managing DRM but the availability of ICT is the basic underlying factor for DRM services to be utilised at all. ICT opens up the possibility that the creation and management of records may be satisfied in different ways. The ICT tools allow using digital records systems as part of records capture processes.²⁰ In order to establish the extent of the availability of ICT facilities in the UPS, the study considered data collected from each ministry in relation to issues such as the number of computers, Local Area Networks, and number of computers with Internet access. Table 4.2 illustrates a sample of 9 out of 23 (39%) of the UPS ministries with the highest levels of ICT deployment in UPS based on the research findings. Other ministries had lower levels of ICT facilities, down to the lowest reported level in the Ministry of Relief and Disaster Preparedness, which had less than 20 computers and lacked any Internet connections.

¹⁹ Southern African Development Community (SADC) (2002). *SADC E-readiness Review and Strategy*, at <http://www.schoolnet africa.org/english/policy_centre/e-readiness.html>. Accessed 15 March 2007.

²⁰ A. Meijer (2001). 'Electronic Records Management and Public Accountability: Beyond an Instrumental Approach', *The Information Society* 17:4, pp.259-270.

Table 4.2 Sample Data on ICT Facilities Available in the UPS

Ministry	No of Computers	No of computers networked	No of computers with Internet access	INTERNET connectivity
Finance, Planning and Economic Development (MoFPED)	>500	All	310	Wireless
Health (MoH)	>450	3 Floors on LAN, 2 Floors not connected	>200	Wireless
Justice and Constitutional Affairs (MoJCA)	>350	2	20	Wireless
Water and Environment	316	All	All	Leased line
Lands, Housing and Urban Development	220	0	12	Dial-up
Public Service (MoPs)	200, 25% obsolete	20	10	Dial-up
Agriculture, Animal Industry and Fisheries	198	A few, in Accounts	4-5	Dial-up
Local Government	110	20	20	Wireless
Trade, Tourism and Industry	>80	21	8	Wireless

Source: Field Data, 2007

The data in Table 4.2 reveals the presence of ICT facilities in UPS as reported by both the Senior Managers and ICT Managers. Most of the facilities identified by the Senior Managers were similar to those identified by ICT Managers. The major difference was the concern the ICT Managers attached to the networking facility. This was because senior managers were generally not using the networks to share information.

The figures reveal that there are computer installations, network infrastructure and Internet connectivity in some ministries in the UPS. This shows presence of significant ICT technology in the UPS that is required to create digital records. This suggests that at least some of the UPS ministries have the capacity to create and share information electronically.

From Table 4.2, it can also be observed that the ICT infrastructure is not uniform across UPS agencies, since some ministries have far more ICT facilities than others. For example, even among well provided ministries, some have wireless Internet connections while others are limited to a dial up system which is slow. A Middle Manager reported that the MoFPED has the most extensive network, sharing information with other ministries through a WAN although this is still limited to the accounting information system. Other ministries had no connectivity at all or the connectivity was only in the office of the Head of the agency. This concurs with the Uganda e-Readiness Assessment survey which measured physical access to ICT by Government agencies and reported that some departments have no Intranet nor extranet at all and that sharing of information is mostly absent.²¹

In order to determine the extent of the presence the ICT infrastructure to support DRM, it was established by this study that, 14 out of 23 (62%) of the UPS ministries had websites. Analysis of the websites shows that there is some level of information sharing and transfer between the connected ministries but records as such were not specifically addressed. In support of this finding, a Senior Manager reported that: “it is easy to access information, although the range of public services offered on the websites is limited.”²²

The website presence indicates a potentially supportive facility for the generation and sharing of records. Although most sites tend to focus on providing information on the rules and regulations, including functions and activities of individual ministries, this indicated that e-Government is indeed taking root in the country. Websites are a huge enabler for e-Governance arrangements and provide the environment within which digital records are generated and also an environment for shared access.²³ The National Archivist of South Africa indicated that web based services have promoted the generation and sharing of digital records as well as delivering information to citizens in South Africa.²⁴

²¹ Uganda, MoWHC (2004). *E-readiness Assessment Report*. Kampala: TECHNOBRAIN, p.88.

²² Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

²³ A. Dennis and Haley, W. B (2000). *System Analysis and Design: An Applied Approach*. New York, NY: Wiley, p.15.

²⁴ Interview with National Archivist, South Africa, at Dar as Salaam on 22 June 2007.

Eighteen out of the 23 (78%) UPS ministries reported the presence of a functioning ICT department which could support the creation of digital records. It was revealed that the ICT department is meant to encourage extensive use of the Internet to access websites and databases, promote collaborative data communication and transfer, and secure software and equipment.²⁵ Although ICT departments did not exist in each ministry, senior managers saw the need for an ICT budget in every ministry.²⁶ The budgets were however reported as being severely inadequate.²⁷ On the contrary, in some ESARBICA countries, for example in South Africa, networked IT units have been established in all government agencies and digital councils have been set up in the nine provinces of the country.²⁸ This infrastructure is expected to promote the creation and management of digital records.

The other levels of managers interviewed from UPS indicated that although ICT use is limited, its use presents great benefits:

“Using computers makes it easy to process and retrieve information; it is quick and convenient. I have copies of records worked on so I don’t have to go chasing the Records Manager for a copy or dig through the file cabinets”²⁹

“Technology is transforming the workplace. The e-mail has made it faster to access and share information”³⁰

“ICTs have been adopted as critical success factors in the Poverty Eradication Plan (PEAP) so we use and promote their use in whatever we do”³¹

“Although most computers are not yet networked, management has recognised this as a critical area and work is underway to connect all the computers to ensure faster means of sharing information.”³²

The above views suggests that ICT was regarded as the solution that would enable UPS to deliver its services efficiently, but this has not yet translated into building competencies and acquiring tools needed for DRM. For this reason, many middle managers expressed enthusiasm for having DRM systems. They wanted a DRM

²⁵ Interview with Head of Agency, MoICT, Kampala, on 12 March 2007.

²⁶ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

²⁷ Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

²⁸ Keakopa (2007), p.177.

²⁹ Interview with Senior Manager, MoES, Kampala, on 8th Dec 2006.

³⁰ Discussion on ICT Development with ICT Manager, MoFPED, Kampala, on 02 March 2007.

³¹ Interview with Senior Manager, MoFPED, Kampala, on 06 March 2007.

system that differs from other types of information systems.³³ They desired a kind of system that captures and preserves the records that provide evidence of UPS business transactions in the digital environment. In the ESARBICA countries, South Africa has made progress in acquiring systems for the management of records in the digital environment, while Namibia and Botswana are presently working on establishing such systems.³⁴

It was noted that there was a desire for an inter-ministry DRM initiative to promote the generation, capturing, storing and sharing of records electronically among the UPS agencies.³⁵ Networked governance structures using DRM technologies are emerging in other countries with an increase in the use of ICT to execute government business. For example, the public agencies in UK and other countries of Europe are interacting more with the ICT-enabled networks. Liddle and others pointed out that ICT-enabled networks have strengthened the diffusion of ICT within the UK and this is happening even in other countries of Europe.³⁶

However, despite the lack of a DRM network between the ministries, it was clear that senior managers realise the importance of DRM, but they indicated that the ICT facilities in UPS are inadequate to support DRM services. Commenting on the availability of DRM facilities in the UPS, a Head of Agency indicated that GoU is supportive of science and technology but there was a serious lack of resources to boost DRM in the UPS.³⁷ Financial barriers were generally cited as a major obstacle to acquiring desired hardware and software for DRM. Concern was very frequently expressed that the financial resources currently allocated for the acquisition of ICT facilities are inadequate to ensure effective implementation of DRM.

Some UPS ministries have attracted financial support from donor and development agencies to fund their ICT activities in order to supplement GoU funding capacity for

³² Interview with ICT Manager, MoJCA, Kampala, on 17 August 2007.

³³ Interview with Middle Manager, MoICT, Kampala, on 27 July 2007.

³⁴ Keakopa (2007), p. 96.

³⁵ Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

³⁶ J. Liddle, T. Cockerill and A. Southern (2000). 'Changes to the North East Regional-Local Dynamic. New forms of Governance from Traditional Public Sector Structure?' *Public Policy and Administration* 15:2, pp.110-126.

³⁷ Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

ICT which had budgetary constraints.³⁸ The literature indicates that by 1997, the introduction of ICT had begun to pick up at a rapid pace in Uganda due to multi-lateral and bi-lateral development assistance from donor agencies where ICT was emphasised in every development assistance project.³⁹ One manager confirmed that some ministries have acquired ICT facilities using project funds from donor agencies.⁴⁰ The high ICT presence in some ministries is thus explained directly by the donor intervention. This suggested that donor agencies financially support the roll-out of ICT technologies in UPS. For example, ICT implementation in MoFPED is supported by the United States Trade and Development Agency (USTDA) and in the MoICT by the government of China. A Senior Manager reported that 43% of the ministries have ICT funded projects, and it is in these ministries where digital records are increasing created.⁴¹

The donor funding also explains why the use of ICT is limited to certain departments and activities in the UPS. One respondent indicated that donors have mainly facilitated ICT acquisition for specific projects.⁴² Although donor funding has been done with the best intent, it has resulted in fragmented and uncoordinated application of ICTs and the plethora of ICT projects has increased the variations in the way public information is processed and presented. Although these findings imply that UPS is making steps towards being ICT self-reliant, it was the opinion of the senior managers that there is need to build capacity to manage the digital records.⁴³ The senior managers from ministries that had ICT projects expressed the need for DRM as a solution to the problems of floods of records being created by the existing ICT systems and which are currently not being managed electronically. This suggests a lack of DRM infrastructure and skills to empower UPS to manage its digital records.

This section examined the availability of ICTs in the UPS and established that there is increased use of ICT as revealed by the respondents. The ICT facilities are providing the UPS with the opportunity to conduct business electronically. Digital records are

³⁸ Discussion on ICT Development with ICT Manager, MoFPED, Kampala, on 02 March 2007.

³⁹ R. A. Barry (1997). 'Electronic Records Management ... the Way We Were ... the Way We Are: One Man's Opinion', *Records Management Journal* 7:3, p.164.

⁴⁰ Interview with Senior Manager, UCC, Kampala, on 20 August 2007.

⁴¹ Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

⁴² Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

⁴³ Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

generated through ICT applications that run on the ICT platforms. The ICT sector has been characterised by an increased presence of computers, Local Area Networks and some Internet connectivity. However, although ICT appears to be applied in all UPS ministries and departments, the majority of UPS processes are still largely manual due to lack of adequate hardware and software. A great deal of improvement is therefore required in the ICT infrastructure before there can be effective DRM.

4.2.3 ICT and Records Management Human Resource Availability in the UPS

This section discusses the extent of the existence of both the ICT and records management human resource presence in UPS.

The study investigated the availability of human resources in the ICT sector. The aim was to establish whether ministries have enough human resource to manage the emerging ICTs. The aim was to ascertain whether the UPS has designated ICT human resource to use and maintain the available ICTs, as this has implications for the management of digital records. The availability of ICT human resource in ministries is shown in Table 4.3 below.

Table 4.3 ICT Human Resource Presence in the UPS

ICT Human Resource	No of Ministries
In- House ICT Staff only	18
External ICT Consultants only	4
Both in-house and External	1
Total	23

Source: Field Data, 2007

The findings as shown in Table 4.3 indicate that 18 out of the 23 (78%) UPS ministries have ICT-designated staff, while four ministries did not have or the designated officer had died, which was the case in the Ministry of Internal Affairs. However, one ministry had both in-house staff and an ICT consultant. The figures suggest that the majority of the ministries have or use in-house staff for ICT

applications. Typically there is one ICT staff per ministry so the ICT in-house staff is tiny in number.

Overall, most respondents were concerned by the deficiency in ICT skills and expertise, especially to manage the emerging digital records. Although there is a presence of ICT in-house staff, this study found that few had any RM skills, as it is the case in most countries. The presence of ICT in-house staff therefore indicates the potential rather than real presence of human resource capacity to manage the digital records. Presence of ICT in-house staff is just an indication that ICT-mediated activities exist in UPS. There was also evidence to indicate that in many instances, IT managers are not actively working with records professionals in solving the RM problems. This is contrary to the records continuum model of thinking. The continuum model requires integration of responsibilities and accountabilities associated with the management of records⁴⁴ but the evidence from UPS suggests that there is no dedicated system for RM.

The research also investigated the RM skills and knowledge availability in UPS since the records continuum theory suggests ‘a recordkeeping architecture which is not divorced from systems knowledge and skills.’⁴⁵ The availability of RM human resource in the UPS is shown in Table 4.4 below.

Table 4.4 Sources of Skill Acquisition by the Records Managers who Participated in the Study

RM Skills and knowledge Acquired through	No of Staff
Experience	2
Formal training	4
Non-response	1
Total	7

Source: Field Data, 2007

⁴⁴ P. C. Bantin (2008). *Understanding Data and Information Systems for Recordkeeping*. London: Facet, p.20.

⁴⁵ F. Upward (2000). ‘Modelling the Continuum as Paradigm Shift in Recordkeeping and Archiving Processes and Beyond: A Personal Reflection’, *Records Management Journal* 10:3, p.128.

The findings as shown in Table 4.4 indicate that out of the seven Records Managers who participated in this study, two indicated that they acquired RM skills through experience. That means prior to undertaking RM responsibilities they did not have any RM training. However, four had received formal RM training and one did not specify the kind of training attained prior to joining the ministry as a record officer.⁴⁶ Some of the records managers in UPS are familiar with RM principles but when interviewed it was established that they were used to RM in a paper environment and none of them had made serious attempts to come to terms with managing digital records.

The records managers also reported that they needed training in using digital recordkeeping systems. Among their needs, they cited how to identify digital records, the metadata required for effective description of digital records, their storage and disposition arrangements. This therefore implies that the records management staff do not have adequate training in DRM and lack DRM knowledge. The adoption of ICT is not matched by the skills and infrastructure needed to manage the digital records that the ICT systems generate. UPS records managers need to obtain DRM skills in order to be able to efficiently create and manage digital records in their jurisdiction.

In the questionnaire, the senior managers were asked to rank their staff regarding their capacity to manage the RM function. Only two ministries ranked their in-house staff as experts in paper RM, while six ranked their staff at the intermediate level. A large number of ministries (13) reported their staff's RM expertise to be at the novice level, and two indicated no expertise available. A middle manager asserted that the lack of RM skills in the UPS is scary. He stated "when you look at how records are handled and the press reports where records are at the centre of controversies, what the whole episode demonstrates is a need for change. A change in the way records are created, distributed and stored."⁴⁷ There is a need for new reforms in the UPS to completely promote DRM across UPS.

⁴⁶ Interview with Record Managers MoPS, URA, MoJCA and MoFPED, Kampala on 18 January 2007; 10 November 2006; 14 August 2007 and 02 March 2007.

⁴⁷ Interview with Middle Manager, UNBS, Kampala, on 9 February. 2007.

The experience from ESARBICA countries indicated that capacity building has been identified by the ESARBICA Board as a prerequisite to building DRM awareness in the region. In line with this, the 2009 ESARBICA Conference sought to highlight some of the challenges faced by archives in the ESARBICA region in dealing with digital records. The aim was to develop specific skills and competencies to address the generation and preservation of records being generated electronically (digitally).⁴⁸ The lack of human resource capacity within the UPS is of significant concern, particularly in terms of the skills required to implement a DRM programme. The possibility of the loss of valuable digital records is inevitable due to lack of DRM training.

This section indicates that RM training and capacity development are key factors to DRM success. Without specialised training and assistance, it will be a daunting task to manage digital records. Trained RM personnel who are computer literate are required to provide the necessary DRM services. At present they do not exist in UPS.

4.3 ICT Utilisation in the UPS

The study also sought to investigate the utilisation of ICT facilities in the UPS. This is because the application of ICTs is one way of developing the environment needed to promote DRM. Respondents indicated that although ICT application is in its infancy in most cases, it has been put to various and different uses within the UPS. Many UPS agencies are aiming at the digital presentation of corporate information. The existing IT information systems and their functions were identified. Table 4.5 provides a sample of the types of IT information systems which exist in the UPS.

⁴⁸ East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA) (2008). *ESARBICA-xx Conference Windhoek June 2009*, at <<http://www.h-net.org/announce/show.cgi?ID=163912>>. Accessed 09 November 2008.

Table 4.5 Example of ICT Projects/Information Systems in the UPS

Information System/Project	Purpose of System/Project	Ministry
Computerised Personnel Management Information System (CPMIS)	To provide payroll management and processing, Human Resource Management, control and monitoring systems	Public Service (MoPS)
Health Management Information System (HMIS)	To provide an integrated system with comprehensive data/ information on the health sector	Health (MoH)
Information Flow Management and Networking (IFMN)	Internal communication across the various departments of the MoTTI and its affiliated organisations	Ministry of Tourism, Trade and Industry (MoTTI)
DistrictNet	Coordination and knowledge sharing between Headquarters and sub-counties	Local Government
Integrated Financial Management System (IFMS)	To assist GoU entities to initiate, spend and monitor their budgets, process their payments and manage report on their activities	Finance Planning and Economic Development (MoFPED)

Source: Field Data, 2007

As indicated in Table 4.5 above, various ICT projects and initiatives are being implemented as far as ICT utilisation is concerned in the UPS. The Ministry of Public Service (MoPS) launched the Computerised Personnel Management Information System (CPMIS) in 1993. This project was meant to integrate ICTs firmly into the national development planning efforts.⁴⁹ The objective was to enhance internal and external communications and data/information sharing and coordination within GoU offices.

This study established that the experience of the CPMIS project began to change managers' understanding of the issues involved in ICT services. This was part of the GoU's response to reforms instigating the economic recovery programme. However, a Senior Manager indicated that it was problematic to depend on the CPMIS project because data was sometimes not up-to-date and at times tampered with.⁵⁰ The quality

⁴⁹ Uganda, MoPS (1993). *Civil Service Reform Status Report 1, June 1st – October 31st*. Kampala: MoPS, p.1.

⁵⁰ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

of paper records as source data was unreliable, as they were several delays in processing tasks and slowness of RM staff in responding to requests for required records.⁵¹

Since 1993, the number of ministries launching ICT projects has increased. The Ministry of Health (MoH) established a management information database in 2002. This database supports healthcare managers in their decision-making processes especially through provision of higher quality data collection and effective use of information. Another major ICT project was launched in 2004 by the Ministry of Tourism, Trade and Industry (MoTTI). The project called Information Flow Management and Networking (IFMN) targets the improvement of internal communication across the various departments of the MTTI and its affiliated organisations. The aim is to ease management and to monitor and coordinate activities, as well as sharing information with stakeholders. Another initiative that was reported is the launch of DistrictNet in 2002 which aims at strengthening local governance by utilising ICTs. The DistrictNet should provide communication links between districts and lower local governments.

The Ministry of Finance, Planning and Economic Development (MoFPED) initiated the Integrated Financial Management System (IFMS) in 2005. This was implemented to allow disparate departments to share information seamlessly. It supports the sharing of budgeting, financial management and accounting information. The IFMS is the major digital system in Uganda with links to most UPS agencies and local governments.

A middle manager reported that a number of ICT projects have been installed in various UPS ministries in an attempt to make GoU more effective.⁵² This study established that installation of information systems was regarded as beneficial to the UPS, as reported by a Senior Manager who pointed out that “a computerised system like CPMIS had the advantage of, for instance, enabling the generation of statistical reports for management, which would be very time consuming if done manually.”⁵³

⁵¹ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

⁵² Interview with Middle Manager, MoFPED, Kampala, on 05 March 2007.

⁵³ Interview with Head of UPSC, Kampala, on 13 July 2007.

This respondent argued that the use of ICT would address the shortcomings of the existing paper information systems. Another Senior Manager explained that there was intense interest to use ICT across the UPS to overcome problems caused by the paper-based systems, such as space saving, simultaneous access and speed of retrieval.⁵⁴ This suggests that senior managers believed that ICT was the best option for overcoming existing RM problems. There was however no clear strategy to promote the management of the digital records held in the digital systems.

Other projects such as the ongoing e-Governance arrangement embedded in the GoU business processes were highlighted as contributing to the generation of digital records in the UPS.⁵⁵ One ICT Manager reported increased e-Governance services such as ‘Internal Office Communication’ leading to transactions in an electronic format. He noted that transactions, which were originally paper-based, are increasingly in digital form.⁵⁶ An ICT Manager pointed out that for e-Governance to work, the lack of access to ICT in Government departments had to be addressed.⁵⁷ This implies that e-Governance processes could form the basis for the generation and maintenance of digital records.

Studies carried out in ESARBICA countries have indicated that regional governments are under a lot of international and national pressure to use ICT in the delivery of public services.⁵⁸ Internationally, donors and governments in the developed world are urging governments of ESARBICA nations to participate in global digital information sharing. Nationally citizens are asking their governments to provide better, faster services through the application of ICT.⁵⁹ Because of these pressures, governments in the ESARBICA region are challenged to adopt ICT applications.⁶⁰ Mnjama stated that

⁵⁴ Interview with Senior Manager, NPA, Kampala, on 17 July 2007.

⁵⁵ Discussion on ICT Developments with Chairman National Inter Agency ICT Planning Team for Uganda, on 22 January 2007.

⁵⁶ Interview with ICT Manager, MoJCA, Kampala, on 17 August 2007.

⁵⁷ Interview with ICT Manager, MoFPED, Kampala, on 02 March 2007.

⁵⁸ Southern African Development Community (SADC) (2002). *SADC E-readiness Review Strategy*, at <http://www.schoolnet africa.org/english/policy_centre/e-readiness.html>. Accessed 15 March 2007.

⁵⁹ Interview with the ICT Manager, National Archives of Botswana on 22 June 2007.

⁶⁰ R. Makwarela (2003). ‘Taking Archives to the People: the Web-enablement of the National Automated Archival Information Retrieval System (NAAIRS)’, at <<http://www.ahm.uem.mz/eventos/taking.htm>>. Accessed 15 July 2008.

in Kenya, the introduction of various ICT projects in the public sector resulted in large quantities of records being created in digital form.⁶¹

This section shows that business information systems such as human resource and financial systems are used in the UPS. At present, the main digital system is the financial system. The existing ICT systems have been developed on a stand-alone basis and the systems are not integrated.⁶² Despite the GoU effort to promote ICT use, DRM technologies are still missing. There are few centralised systems in the UPS to support DRM and the managing of digital records is not yet a key focus area for the UPS.

4.3.1 ICT Usage by ICT Managers and Senior Managers

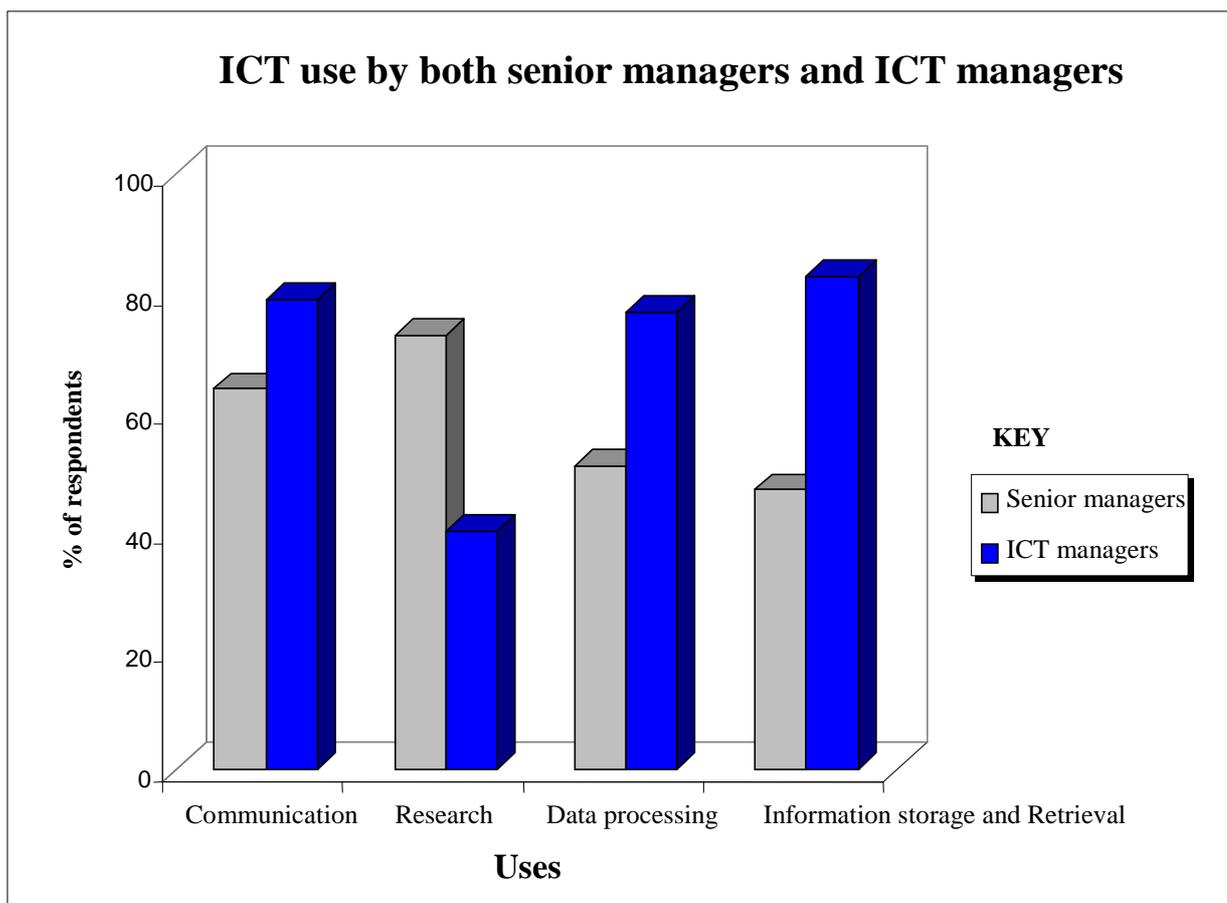
ICT allows a government's internal and external communications to gain speed, precision and networking capacity, which can then be converted into cost reductions and increased effectiveness, two features desirable for all government operations, but especially for public services.⁶³ This study therefore, sought to establish the major use of ICTs within the UPS. Opinions were gathered from the perspective of both the ICT Managers and Senior Managers as a sample of the study respondents. Results are presented in Figure 4.6 below.

Table 4.6 ICT Use by Senior Managers and ICT Managers in the UPS

⁶¹ N. Mnjama (2003). 'Archives and Records Management in Kenya: Problems and Prospects', *Records Management Journal* 13:2, p.98.

⁶² Uganda, MoPS (2005). *Public Service Reform Programme Strategic Framework (2005/6-2009/10)*. Uganda: MoPS, p.8.

⁶³ R. Heeks (2002). 'e-Government in Africa: Promise and Practice', *Information Polity* 7:2/3, p.98.



Source: Field Data, 2007

As illustrated in Table 4.6 above, 83% of the ICT managers use ICT for communication purposes, 43% for research, 80% use it for data processing and 82% use ICT as a mechanism for storing and retrieving information. On the other hand, Senior Managers were using ICT more for research such as Google searches for general information than for any other purpose. Of the 15 Senior Managers who responded to this question, 79% indicated that they use ICT for research, 64% use it for communication, 57% for data processing and 53% for retrieving information.

The figures suggest that most managers have access to and also use ICTs in their offices. The ICT managers interviewed were keen to use ICTs and mentioned that electronic communication was the focus in their respective ministries but the level of involvement in electronic technology differed widely from ministry to ministry, and even within the same ministry.⁶⁴ The senior managers on the other hand were eager to move away from paper-based systems.

⁶⁴ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

However, some managers complained of the unstable power supply as a serious obstacle hindering their use of ICTs. The Senior Managers stated that the risk of power rationing (load-shedding) hinders the use of ICTs. One Senior Manager argued that the demand for power exceeds the supply from time to time which requires power rationing especially during peak hours.⁶⁵ Other managers also raised the problem of interruption in power supply. One Middle Manager stated that from October 2000, the country was hit by repeated power rationing and in January 2007, the crisis reached a new level, with daily power rationing.⁶⁶ The concern of the senior managers was to ensure there was no interruption in service but the mechanism to prevent this was missing. Managers were reluctant to rely upon ICT for RM as they anticipated that the impact of power rationing would disrupt the flow of activities. This brings to question the ability of the UPS to sustain ICT-based services nation-wide especially in upcountry offices where power rationing is common. In this case there were power supply constraints in Uganda, which needed to be addressed if the UPS was to implement sustainable ICT-based services. In some ESARBICA countries, the inadequate power supply problem was being addressed by use of alternative energy sources.⁶⁷

This study established that some countries faced with electricity supply problems had adopted the Wireless Mesh Network (WMN)⁶⁸ which showcased the use of low cost antenna as a solution to the irregular power supply problem. The aim of the Mesh Network project is to guarantee reliable access to electricity which promotes use of ICT services. The Peebles Valley in South Africa⁶⁹ has demonstrated that a community can establish and maintain a wireless mesh network and have access to a range of ICT services. These services include telephony (Voice over Internet Protocol), instant messaging, electronic mail, web access, multimedia services and

⁶⁵ Interview with Senior Manager, UCC, Kampala, on 20 August 2007.

⁶⁶ Interview with Middle Manager, MoPS, Kampala, on 23 January 2007.

⁶⁷ Keakopa (2007), p.99.

⁶⁸ The wireless project was established by the African Advanced Institute for ICT and is funded by the Canadian International Development Research Centre (IDRC). It is a collaborative research and development project to study, validate and enhance business models to achieve economic sustainability of wireless infrastructure in rural area. More information about this project is at <Wireless Africa Team of the Meraka Institute, at <<http://wirelessafrica.meraka.org.za>> Accessed 19 December 2008

⁶⁹ South African Wireless Community Network, at <http://en.wikipedia.org/wiki/South_African_wireless_community_networks>. Accessed 2 March 2009.

service delivery (e.g. telehealth and e-learning) and file sharing applications. The WMN is discussed further in proceeding chapters.

The attitude of ICT managers towards DRM services was quite positive. Even those ICT Managers from ministries that did not have any ongoing ICT projects were of the impression that DRM is both necessary and inevitable. However, a Senior Manager noted that while some ministries are using ICT for high-end value-added applications like Management Information Systems (MIS) and Database Management Systems, in some cases ICTs are being used for basic tasks like word processing.⁷⁰ It was also reported that the maximum use of, for instance, a computer in some ministries in the UPS is for word processing, and ‘advanced usage’ means use of Excel or PowerPoint.⁷¹ This source pointed to a notable resistance to using ICT among the UPS staff. The Public Service Reform Programme released 2005 had also reported evidence of significant resistance to using ICT to align public services with new times and new technologies within the UPS.⁷² The report stated that resistance to the adoption of ICT is a factor that prevents the full integration of digital systems in the UPS. In particular, the report indicated that the appreciation of digital recordkeeping systems is still low in the UPS.

A senior manager pointed out that there is a shift from dependence on paper-based records to digital ones across the UPS and this is as a result of ICT utilisation.⁷³ This source further desired a focal point for DRM coordination within the UPS in the form of a coordinating unit. She wanted a national coordinating unit for DRM with sufficient capacity to plan and regulate both digital records and archives management development in the UPS. The concern was that a structural change was required to give greater emphasis to the management of public digital records and archives in the UPS.

This section has indicated that use of ICT systems in the UPS is changing the way records are created, transmitted and stored. Although not many ICT projects exist in the UPS, indicators show an increased trend to acquire them. This has led to

⁷⁰ Interview with Head of Agency, MoICT, Kampala, on 12 March 2007.

⁷¹ Interview with Senior Manager, UPSC, Kampala, on 8 August 2007.

⁷² Uganda, MoPS (2005). *Public Service Reform Programme Strategic Framework (2005/6-2009/10)*. Kampala: MoPS, p.24.

⁷³ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

continued growth in the number of ICT-based systems, but the RITD in the MoPS has not issued measures to ensure that digital records are managed and made accessible over time to all who need them. Power supply is also irregular in the UPS and yet the creation and access to digital records is dependent on electricity availability. This creates a significant need for power supplies to be stabilised.

4.4 UPS Readiness for DRM

This research investigated how ready the UPS was, regarding the management of digital records. The findings are presented below.

4.4.1 Awareness about Legislative and Regulatory Framework for DRM

A legal framework is an important part of any records management programme.⁷⁴ A successful DRM programme must take account of the legal environments in which records are created and used. In addition, government needs to ensure that the management of records, both hard copy and digital, are properly regulated by legislation. This section therefore examines the UPS legal framework to determine whether the statutes and regulations accommodate DRM requirements.

The Uganda National Records and Archives Act 2001 is one of the several laws that affect the management of records in Uganda.⁷⁵ This requires public agencies to follow good practices in managing records. Other related statutes are the 1995 Constitution of Uganda subsection 10 which lists national monuments, antiquities, archives and public records as a responsibility of the GoU and requires the UPS to be accountable for recordkeeping.⁷⁶ The Access to Information Act 2005 imposes a duty to manage all public records⁷⁷, and the Uganda Communications Commission Act 2000 whose mission is to facilitate sustainable development of communication services that are universally accessible⁷⁸ were identified as pertinent laws to RM. This list is not

⁷⁴ J. McLeod and C. Hare (2006). *How to Manage Records in the e-Environment*. 2nd ed. London: Routledge, p.59.

⁷⁵ Uganda (2001). *The National Records and Archives Act*. Kampala: UPPC.

⁷⁶ Uganda (1995). *The Constitution of the Republic of Uganda*. Kampala: UPPC.

⁷⁷ Uganda (2005). *The Access to Information Act*, no. 6, Part II, Section 14. Kampala: UPPC.

⁷⁸ Uganda (2000). *Uganda Communications Commission Act*. Kampala: UPPC.

exhaustive as a number of other laws⁷⁹ were also mentioned as having an impact on recordkeeping practices in the UPS. However, the question is whether UPS agencies are compliant with the RM requirements in the statutes and whether the legislation is adequate.

The senior manager from the MoPS, which has the mandate to coordinate and promote RM in the UPS, explained that laws are expected to drive RM but there are gaps and inconsistencies in the legislation. For example the Uganda National Records and Archives Act defines ‘records’ in section 1, part 1 (preliminary) broadly to cover all media. This broad definition of records implies the inclusion of digital records but misses an opportunity to focus on them.

The Uganda National Records and Archives Act does not define digital records specifically, but includes them within the broader definition of a record, that is,

“records means recorded information regardless of form or medium created, received and maintained by any institution or individual under its legal obligations or in the transaction of business and providing evidence of the performance of those obligations or that business.”⁸⁰

Although digital records are implied in the above definition, this broad definition makes it difficult for digital records to be given the attention they deserve.⁸¹ With the advent of the information technology age it is crucial that archival legislation is so drafted that its instructions cover the definition of records including digital ones. The definition of a public digital record by the National Archives of South Africa Act ensures that digital records are records.⁸² This definition and other provisions of the Act permit the South Africa National Archives to carry out several functions relating

⁷⁹ Uganda (2002). *National Planning Authority (NPA) Act* at <<http://www.npa.or.ug/>>. Accessed 13 November 2006.

Uganda (1997). *Communications Act*. Kampala: UPPC.

Uganda (1996). *Electronic Media Act*, Cap 104, at <www.ec.or.ug/laws/tema.pdf>. Accessed 12 July 2008.

Uganda (1990). *Uganda National Council for Science and Technology (UNCST) Act*, Cap 209. Kampala: UPPC.

⁸⁰ Uganda (2001). *The National Records and Archives Act*, Section 2: Preliminary. Kampala: UPPC.

⁸¹ Interview with Records Manager, MoPS, Kampala, on 18 January 2007.

⁸² South Africa (1996). *National Archives and Records Service of South Africa (Act no. 43)* as amended 2001, <www.national.archives.gov.za/arch_act.pdf>. Accessed 12 March 2006.

to the management of digital records, including the appraisal and disposition of public digital records and the long-term preservation of those records of archival value.

The senior managers reported that although the Archives Act was passed it has not been fully implemented. For example a National Records and Archives Agency (UNRAA) has not been established as required by Part II of the Uganda National Records and Archives Act.⁸³ This is essential for the holistic management of records and archives in line with the requirements of the records continuum approach guiding this thesis. The Uganda National Records and Archives Act also provides for the appointment of a National Records and Information Management Advisory Committee to advise the minister of MoPS generally on matters relating to the management of public records and archives. However, such an Advisory Committee is not in place.

RM requirements such as the creation and implementation of UPS-wide retention and disposal schedules as required by section 7(c) of the Uganda National Records and Archives Act 2001 has also not been put in place. When set up, disposal activities would be carried out on a regular basis, which is not currently the case in the UPS. While Section 5(b) of the Uganda National Records and Archives Act requires establishing a records centre for the maintenance of semi-current records, a senior manager reported that no centre has been set up eight years after the legislation was enacted, and as such the closed files remain unmoved from the ministries and departments that create them, leading to large quantities of inactive files being held in the ministries within the UPS.⁸⁴ Consequently, the transfer of semi-current records is not carried out since there is no national records centre.

Many managers were not even aware of the provisions of the Uganda National Records and Archives Act, although awareness varied between managers. This was especially the case for the IT managers who lacked understanding of the importance of recordkeeping, a situation which posed a danger of different interpretations of the law. The ICT managers have misconceptions of the Uganda National Records and

⁸³ Uganda (2001). *The National Records and Archives Act*, Part II-Establishment and Functions of a National Records and Archives Agency (UNRAA). Kampala: UPPC.

⁸⁴ Interview with Senior Manager, MoJCA, Kampala, on 31 July 2007.

Archives Act 2001 and the RM requirements in the related laws, which make it difficult for them to address even the paper records as required by the best practices. A Senior Manager indicated that there is lack of clarity about precisely what is required by the legislation and that the law is silent on the requirements for digital records to be recognised as alternatives to paper records. However, in contrast, the National Archives Act of South Africa 1996 includes instructions regarding the management of public digital records including the active and inactive ones.⁸⁵ This gap raised concern as to whether RM compliance requirement could be promoted within the UPS.

Another manager explained that the Uganda National Records and Archives Act just provides a legal avenue for RM without an implementation and monitoring plan and as such the provisions of the Uganda National Records and Archives legislation have not been fulfilled.⁸⁶ No policy for giving full effect to the provisions of the Act has come out to make the legislation operational and so it remains hanging. No relevant DRM standards have been adopted. This means regulations required to implement the records legislation have not been identified in the UPS. RM Regulations should give ‘the how to do’ but these do not exist in the UPS. However, some respondents consoled themselves that:

“The Records Act is applied in what we do since it is an outcome of the Public Service Administrative Procedures (PSAP) and can be seen operating as a supplement to the Public Service Act.”⁸⁷

The above opinion implies that while records-related legislation exists in the UPS, officials had no real understanding of its requirements. A clear understanding of the law and its support of ICT initiatives need to be clarified.

⁸⁵ D. Parer (2001). *Archival Legislation for Commonwealth Countries*. London: Association of Commonwealth Archivist and Records Managers (ACARM), p.32.

⁸⁶ Interview with Middle Manager, UNBS, Kampala, on 9 February 2007.

⁸⁷ Interview with Senior Manager, MoPS, Kampala, on 8 January 2007.

It was however reported that the Uganda Law Reform Commission (ULRC)⁸⁸ was reviewing some of the existing laws with the aim of addressing the electronic environment and legal issues that relate to this. Indicative of this was work on rules that govern the admissibility of evidence in the Uganda court system, as reported by the different senior managers interviewed.⁸⁹ Work was also going on with the Electronic Transactions Bill (2004), the Electronic Signatures Bill (2004), and the Computer Misuse Bill (2004). At the time of data collection in 2006-9, the ULRC, in collaboration with the Parliamentary Committee on ICT, was still working on the above legislation. These laws should provide a conducive legal framework for ICT development in Uganda. It was the hope of the respondents that the planned statutes would contribute significantly to preparing the UPS for DRM. This is in agreement with Wamukoya's argument that advises on the need for updated legislation to cover digital records.⁹⁰

In the case of the ESARBICA region, the National Archives and Records Service Act of South Africa, 1996 as amended in 2001⁹¹ has given a stronger role to the South Africa National Archives to set standards and policies for DRM. The amendment to the legislation incorporated DRM requirements and has promoted the management of digital records in trusted digital systems.⁹² It was reported that the amendments of 2001 made the South Africa records legislation a forward thinking example of a revised legislation that expands its view beyond preservation of archives, to encompass regulation and compliance monitoring of digital records.⁹³

A study of the management of digital records in some ESARBICA countries has also described South Africa as a good model of a country that has updated its legal

⁸⁸ The Uganda Law Reform Commission (ULRC) was established in 1990 by the Uganda Law Reform Commission Act 1990 and is mandated to reform and revise the laws of Uganda. ULRC advises the government on how to improve and modernise the laws of Uganda in line with the sub sectoral policy which puts emphasis on promoting and facilitating effective and efficient machinery capable of providing a legal framework for good governance, delivering advice and services to GoU and the general public. See <http://www.ulrc.go.ug/pages/establishment.htm> for further details on the Uganda Law Reform Commission.

⁸⁹ Interview with Senior Managers MoES (8 Dec. 2006), MoPS (8 and 9 January 2007), MoJCA (25 July and 10 August), UCC 20 August 2007.

⁹⁰ J. Wamukoya (2000). 'Records and Archives as a Basis for Good Government: Implications and Challenges for Records Managers and Archivists in Africa', *Records Management Journal* 10:1, p.29.

⁹¹ South Africa (1996). *National Archives and Records Service of South Africa* (Act no. 43) as amended 2001, at <www.national.archives.gov.za/arch_act.pdf>. Accessed 12 March 2006.

⁹² Mutiti (2002), p.117.

provisions to enable the management of digital records.⁹⁴ Several policies in the ESARBICA region present a review of actions to be taken to amend laws and introduce structures that will enable a secure and trusted legal environment which adequately supports and protects increased levels of electronic interaction. The Botswana ICT Policy recommends revising the legislation to address DRM concerns.⁹⁵ The Archivist of the State Archives of Namibia also held a similar view that the changing legal environment in his country has resulted in increased attention to the digital records.⁹⁶ The primary reason for reviewing and updating archival legislation is to accommodate the digital records brought about by the use of ICT systems. These developments indicate that legal reforms are prerequisites to a favourable DRM framework.

This section confirms that Uganda has legislation relating to records but these have been developed to address the paper-based environment with no clear reference to digital records. In addition, the full implementation of the legislation has not taken place. As a result the legal arrangements needed to ensure the management of accurate and reliable digital records are weak. Therefore there is still uncertainty surrounding the legal settings for digital records in the UPS and as such, revisions and improvements are needed.

4.4.2 ICT Application for RM in the UPS

The application of ICT systems in the UPS office work does not necessarily include DRM. However, ICT plays a key role in providing an infrastructure that supports DRM. Therefore, the research sought to establish how ICTs have been applied in RM activities such as records generation, tracking of file movements, records indexing, and storage and inventory management. Table 4.7 presents some of the software used to manage records in UPS.

⁹³ Interview with National Archivist, South Africa, at Dar as Salaam on 22 June 2007.

⁹⁴ Keakopa (2007), p.iii.

⁹⁵ Botswana, Ministry of Communication, Science and Technology (2007). *Botswana National Information and Communication Technology Policy*. Gabrone, Botswana: Government Printer, p.3.

Table 4.7 Examples of ICT Applications for Records Management in the UPS

Software used for RM Purposes	Number of Ministries	Tasks
CDS/ISIS	12 (52%)	- Registering Records - Inventory maintenance
TRIM	3 (13%)	- File Tracking - Inventory management
Access	5 (22%)	- Registering Records - Stock taking

Source: Field Data

The data in Table 4.7 above indicates that 20 out of 23 (87%) of the ministries make some use of ICT for RM purposes. Although this is at a basic level, the figures above show that the trend is to apply ICT in RM tasks within UPS.

The figures indicate that just over half of the ministries maintain a list of their records with the help of CDS/ISIS⁹⁷ software. Those Records Managers using CDS/ISIS reported that it has made it easier to keep stock of their existing files. While this assists the overall management of corporate information, it is not a substitute for a recordkeeping system. It can be a useful interim measure until a DRM system is acquired or developed but because of the way CDS/ISIS is mainly used, its design and capacity do not readily lend themselves to support RM activities. The CDS/ISIS software mainly supports managing libraries and information centre collections.⁹⁸ The high dependence on the CDS/ISIS package could be because it is a free package available from the UNESCO website. This suggests that specific EDRMS software is lacking in UPS and yet this is a key requirement for effective RM in the digital era. The CDS/ISIS is largely a stand-alone information management system with no records management capabilities, a feature that undermines its ability to assist with the transfer of records between UPS ministries and departments online.

⁹⁶ Interview with National Archivist, National Archives of Namibia, at Dar as Salaam on 21 June 2007.

⁹⁷ CDS/ISIS is non-numerical information storage and retrieval software developed by UNESCO to allow institutions, especially in developing countries, to streamline their information processing activities.

⁹⁸ A. Hopkinson (2008). 'CDS/ISIS Information', *Information Development*, 24:4, p.258.

An ICT manager reported that “the CDS/ISIS software is used to generate a list of the records within the ministry.”⁹⁹ Despite the existence of digital information management systems in the UPS, uncertainty exists about how to manage the digital records. The records managers were concerned about what software to acquire for the purposes of managing records and had varied views, as stated below:

“There is no Government approved records management software to facilitate the proper care and maintenance of public digital records”¹⁰⁰

“We need a powerful records management system to capture, process, store and disseminate records which is lacking.”¹⁰¹

“Use of digital systems is still flimsy, although there are ICTs in most Government departments; computerised RM systems are still minimal”¹⁰²

The above views confirm that measures for effective DRM are lacking in the UPS. Although each of the software packages used has a management module that provides facilities for storing information electronically with advanced retrieval abilities, they do not enable agencies to manage digital records effectively as a corporate resource. EDRM systems do not only create records electronically, but also store, retrieve and track them in computerised form.¹⁰³

As UPS embraces the use of ICT, some records remain on paper while others are in digital form. The ICT systems have not been fully integrated into UPS business and there is no fully developed EDRM system. The existing RM systems do not provide audit trails of who created and used the digital records. Nor do the systems incorporate the essential processes and controls needed for the capture, long-term safeguarding and accessibility of digital records. They fall short of full recordkeeping functionality.

⁹⁹ Interview with ICT Manager, MoPS, Kampala, on 17 January 2007.

¹⁰⁰ Interview with Records Manager, MoJCA, Kampala, on 14 August 2007.

¹⁰¹ Interview with Records Manager, MoPS, Kampala, on 26 January 2007.

¹⁰² Interview with Records Manager, MoES, Kampala, on 13 December 2007.

¹⁰³ International Records Management Trust (IRMT) (1999). *Managing Public Sector Records: A Training Programme*. London: IRMT, p.12.

4.4.3 Digital Records Generated and Maintained in the UPS

The data gathered during field study indicated that the UPS has adopted ICT as a tool in its business operations. The overall effect of this trend is that UPS agencies are able to create an ever-increasing amount of its records in digital format. For example, it was found that MoFPED has substantial databases and some are networked to other ministries resulting in generation of digital transactions and digital records.

This study established that there is increasing prevalence of public digital records in some ESARBICA countries and that DRM is given a high profile in the region by the records professionals. A RM lecturer from the ESARBICA region reported that more digital records have emerged, in part, due to the promise of ICT to enhance information flow.¹⁰⁴ “In the Republic of South Africa, the volume of digital records is increasing for all organisations and many of the records that organisations may have been storing in printed format now are being converted to electronic format as a preservation strategy.”¹⁰⁵ Most respondents from the ESARBICA region indicated that their public offices have established intranets and national databases. For Botswana, it was reported that State business is increasingly conducted over LAN and WAN systems. The LAN and WAN systems are coalescing as many public agencies move to shared IT services.¹⁰⁶ The results of the Benchmarking and e-Readiness Assessment of 2004 in Botswana indicate that the country has good levels of technical infrastructure in place serving as catalysts for digital services, hence the generation of digital records.¹⁰⁷ However, several member states within the ESARBICA region are at different levels of e-governance and utilisation of DRM applications.¹⁰⁸

It was established that some of the UPS business processes have been automated while others remain manual. A few institutions maintain digital records. Although most are modest in size, the quantity of digital records is growing rapidly. The research established that as a way of embracing modernisation, the GoU adopted a programme during the 1990s to computerise information systems in public

¹⁰⁴ Interview with Lecturer from Moi University in Kenya at Dar as Salaam on 19 June 2007.

¹⁰⁵ Interview with National Archivist, South Africa at Dar as Salaam on 22 June 2007.

¹⁰⁶ Interview with Botswana National Archivist at Dar as Salaam on 21 June 2007.

¹⁰⁷ Botswana (2004). *Maitlamo: Benchmarking Report*, at <<http://www.maitlamo.gov.bw/benchmarking-report.asp>>. Accessed on 05 May 2008.

¹⁰⁸ Tafor (2003), p.72.

administration.¹⁰⁹ Table 4.8 highlights the range of digital records generated in the UPS.

Table 4.8 Types of Digital Records in the UPS

ICT System using	Types of Digital Records Generated/ Maintained
Office applications	Word processed documents Spreadsheets
Online and web-based environments	Intranets Websites Extranets
Business information systems	Financial Systems Human Resource systems Health Systems Databases
Communication Systems	Email Video and Audio

Source: Field Data, 2007.

Table 4.8 above shows the records created from the various Information Systems in UPS. These records exist in form of emails, portfolios of office work, digital images, and audio and video recordings. The data in the table shows that digital record formats vary depending on the ICT system used. A Senior Manager in the UPS indicated that the increased use of the Internet, LAN and WAN to ease communication and data sharing leads to generation of records in digital format.¹¹⁰ This finding tends to agree with what was established during fieldwork that most ministries with ICT projects wanted to learn more of what a DRM system could do for them as large volume of records continue to be generated without being managed electronically.

In light of the increasing use of ICT, there are a significant number of UPS departments that maintain digital materials in many different formats. More than one-third of the ministries had digital information in at least one of the following formats: word processing files (55.6%), audio (50.0 %), video (38.9%), and e-mail (38.9%), while less than a third of the ministries maintained digital information in Management

¹⁰⁹ Uganda, MoPS (1997). *Public Service 2002: Service Reform Programme, 1997-2002*. Kampala: MoPS p.39.

¹¹⁰ Interview with Senior Manager, MoFPED, Kampala, on 6 March 2007.

Information Systems (MIS) and databases. And as one records manager pointed out, there is a lack of guidelines for creating and managing digital records.¹¹¹ In this sense, digital records are being handled at individual ministry level with largely unregulated metadata that describes their content, structure and context. The RITD was found not to assist UPS ministries in creating, managing and preserving of public digital records. UPS agencies consistently stated that they were not getting any guidance from the RITD to manage the digital records. The senior managers were not at all bothered about digital archives management, which contradicts the continuum theory which requires management of the records up to the archival level.

The GoU Archivist however reported that use of digital records is still limited in the UPS. According to him, records remain in paper format and their conditions of management are bad.¹¹² Some of the records have been reorganised with the support of the British government (1988-1998)¹¹³ but due to the absence of an archives collection policy, no transfers have been made to the National Archives. The closed files are unweeded and exist in large quantities. The storage areas are congested with large quantities of GoU publications and printed material, including newspapers. It was further mentioned that the current archives repository is too small to accommodate the large volume of records which needs to be transferred from the UPS ministries. His concern was that no clear system has been adopted to manage digital records and the conditions for the paper records are also extremely unsatisfactory. This has led to considerable difficulties in planning for the digital records since the few digital recordkeeping systems are uncoordinated and unorganised.

The GoU Archivist cited that the creation of digital records in the UPS does not follow any set DRM guidelines and that neither the National Archives nor the Current Records Division of the RITD has issued a DRM standard. The Archivist emphasised that digital recordkeeping is still a problem in the UPS. He reported that “As GoU agencies are still despairing at how to manage emails, there is increasing use of skype and instant messenger and this is worrying since there is no system to manage the

¹¹¹ Interview with Records Manager, MoPS, Kampala on 26 January 2007.

¹¹² Interview with Government Archivist, at the Uganda National Archives, Entebbe, on 12 January 2007.

information held in these systems.”¹¹⁴ Consequently, the GoU Archivist had no strategy to manage digital records in the UPS, while in the ESARBICA region, the archivists and records managers are changing their focus from managing only paper records to digital ones, as more records are now generated electronically.¹¹⁵

This study established that the Uganda National Archives has not provided advice and leadership in relation to recordkeeping best practices and the management of public archives as it is the case in other countries. There is a communication gap between the GoU Archivist and UPS agencies. Improving communication between the Archivist and the agencies is central to the sound management of digital records as per the continuum thinking guiding this study. In the literature, it is indicated that it is the role of the national archives agencies to supervise and monitor recordkeeping activities.¹¹⁶ This study found no evidence to suggest that the Uganda National Archives is monitoring this aspect. In South Africa, the National Archives of South Africa (NASA) and the State Information Technology Agency (SITA) are involved in projects to establish standards for DRM in government bodies to give advice on issues of records storage, metadata, security and migration strategies.¹¹⁷

This section confirms that records continue to be generated in both paper-based and digital systems. The types of digital records created across UPS include emails, spreadsheets, word-processed documents and instant messages. The digital records are generated by business information systems such as databases, human resource systems and financial systems. There are also records in online and web-based environments like intranets and official websites. However, the RM systems vary from ministry to ministry reflecting the absence of a comprehensive RM system. No thought or effort was mentioned involving any sort of standards or compatibility across systems even within the same ministry. This implies that there is no uniform system for the management of records across the UPS.

¹¹³ The International Records Management Trust undertook arrangements to provide assistance in the development of records management capacity in support of the Public Service Reform Programme. The project, which was funded by the British Council, included three phases to examine these issues.

¹¹⁴ Interview with Government Archivist, at the Uganda National Archives, Entebbe, on 12 January 2007.

¹¹⁵ Wamukoya (2000), p.29.

¹¹⁶ Bantin (2008), p.30.

¹¹⁷ B. Abbot (2001). ‘The State of Electronic Records Management in South Africa: An Overview’, *ESARBICA Journal* 20:1, p.63.

4.4.4 Digital Records Storage Systems and Security Arrangements

The reviewed literature indicates that the security of digital records needs to be addressed to ensure accuracy, confidentiality and information integrity.¹¹⁸ This study investigated the methods applied for the safe storage and security of the records in UPS. Table 4.9 and Table 4.10 respectively provide a summary of the findings illustrating the records storage arrangements and security measures for digital records in UPS.

Table 4.9 Examples of Storage Facilities for Digital Records in the UPS

Storage Facility	No. of Ministries	% of Ministries
Hard Disks	23	100
Optical Storage Devices	20	87
Microfilm	13	57

Source: Field Data

The figures in Table 4.9 indicate that a variety of electronic data storage media is used in the UPS. It was established that most ministries use hard disk to store their digitally encoded data. The figures in the table indicate that all ministries utilise hard disk storage facilities for their data and records. Off-line storage was also used as a secondary storage device. Optical Storage devices such as Compact Disc (CD) and Digital Versatile Disc (DVD) for video recordings are commonly used to facilitate off-line storage. Microfilms on which printed records are photographed in a reduced size were also being increasingly used as a preservation strategy for paper records in a fragile state. There was, however, no clear consensus about the percentage of records stored in digital media across the UPS.

The GoU Archivist reported that with the introduction of ICT, some records at the National Archives had been scanned as a preservation strategy. The scanned ones are stored on movable media like CDs or backup tapes while others are kept in a database. He described the issue surrounding storage technology from the perspective of a digital repository. This was similar to the practice in the ESARBICA region where

¹¹⁸ Ngulube and V.F.Tafor (2006), p.59.

scanners and image processing software have been applied by archival institutions to convert records originally in paper form into digital format for secure storage. This finding suggests that document image processing software has been applied to manage the preservation of some archives in the UPS.

Regarding the existing security measures to protect digital records in the UPS, the research established that different ministries use different means of security controls such as passwords, back-ups and encryption of data as indicated in Table 4.10.

Table 4.10 Examples of Information Security Measures for Digital Records in the UPS

Security Measures	No. of Ministries	% of Ministries
Passwords	13	57
Encryption	11	48

Source: Field Data

Table 4.10 indicates that 13 ministries (57%) of the UPS use passwords to protect information and information systems from unauthorised access and use. There is also usage of encryption as a means of securing access to information in the databases. It should be noted that the percentages are more than 100% because some ministries used a combination of the two information security measures above. However, there were still unanswered questions about the safety of the digital records. These systems generally lacked the much tighter controls on access and permissions required to maintain authentic and reliable records. The concern of the senior managers was the rampant loss of records in computerised systems leading to accountability failures. Earlier studies indicated that 85% of GoU agencies have no formal arrangements focusing primarily on the protection of their digital information assets against the risks of loss, misuse, disclosure or corruption, posing a risk to the safety of information.¹¹⁹ One respondent emphasised the security issue when he stated:

¹¹⁹ Uganda, UNCST (2002). *Status of ICT in Uganda: SCAN-ICT Preliminary Baseline Study*. Kampala: UNCST, p.3.

“by far, the major threat with ICT is data security. There was an upswing in the incidence of cases involving accessing records inappropriately across UPS agencies and tampering with the information and the ICT systems and processes were promoting this breach.”¹²⁰

The above opinion indicates that there are security concerns across UPS for both paper and digital systems.

During interviews, a senior manager reported breaches of security as a factor blocking trust in the use of digital systems across the UPS.¹²¹ He observed that although IFMS security measures were designed by the MoFPED, they cater only for digital financial information. “They provide a mechanism to ensure that financial information is safe and the likelihood of security incidents is minimised”.¹²² The IFMS Security measures are an attempt to ensure safety of the digital records in the UPS. There was also a planned data conversion strategy where all financial data in printed form would be migrated into the IFMS.¹²³ This suggests a growing concern for the security of digital records in the UPS. The Basic Registry Procedures Manual, 1991¹²⁴ and the File Classification Procedures Manual, 1996¹²⁵ issued by the RITD for use within UPS have not been revised to address storage and security concerns for the digital records. It was reported some guidelines¹²⁶ for managing the closed files and the archives are being drafted by the RITD but these also lack a focus on DRM. One respondent suggested that a records security programme needed to be launched and strengthened in order to ensure a consistent approach to the protection of all information assets, regardless of format.

The IFMS Security measures are also not known to all levels of managers. Some Records managers and the Middle managers that were interviewed had not heard of the IFMS Security measures. It is possible that these measures were not known because the IFMS has direct financial management responsibilities which would have

¹²⁰ Interview with Middle Manager, MoPS, Kampala on 23 January 2007.

¹²¹ Interview with Senior Manager, MoFPED, Kampala, on 6 March 2007.

¹²² Interview with Senior Manager, MoFPED, Kampala, on 6 March 2007.

¹²³ Uganda, MoFPED (2006). *The Integrated Financial Management System (IFMS): Frequently Asked Questions*. Kampala: MoFPED, p.6.

¹²⁴ Uganda, MoPS (1991). *Basic Registry Procedures Manual*. Kampala: MoPS.

¹²⁵ Uganda, MoPS (1996). *File Classification Procedures Manual*. Kampala: MoPS.

¹²⁶ Uganda (2006). *Records Centre Procedures Manual (Draft)*. Uganda: MoPS.

Uganda (2006). *Uganda National Archives Procedures Manual (Draft)*. Uganda: MoPS.

been out of scope for other managers. However, it is worth noting that the IFMS Security measures is a good indication that the UPS has plans to safeguard the security of its information and data in digital format but a comprehensive information security management framework is lacking in the UPS and this is making the sharing of digital information difficult.

Some respondents restricted records security to storage rooms. When asked about the records security programme, one ICT Manager reported that his ministry had storage rooms protected against unauthorised access.¹²⁷ This thesis argues that records security implies more than storage concerns as per the continuum thinking, which refers to a regime of recordkeeping. In other words, security should relate to the whole extent of a record's existence from the time of creation of records through to the preservation and use of records as archives.¹²⁸ This was a reflection of lax concern about an aspect of records security that is frequently neglected.

Several of the records officers interviewed were keen about the security of the digital records. They reported that security checks and controls also need to be strengthened for the paper-based records systems. The issue of security of information was discussed at senior government levels as far back as 1993 where it was mentioned that measures used for information security in the UPS were out-of-date and did not reflect the technological trends of today.¹²⁹ A records manager stated that: "we have no clear guidelines. In the past we could lock file cabinets but now we do have to manage a fragile medium. We have no security nomenclature or architecture."¹³⁰ Records managers indicated that security of the records is a big issue but there was little agreement on what can be done. The middle managers also placed a lot of emphasis on the security of records which was a problem in the UPS.

Similarly, there is increasing concern for the security of digital records within the ESARBICA region. However, National Archives of countries like South Africa have designed and implemented information security controls to prevent potential abuse of

¹²⁷ Interview with ICT Manager, MoFPED, Kampala, on 02 March 2007.

¹²⁸ Australia, Standards Australia (1996). *AS 4390- 1/6:Records Management* .:Sydney: Standards Australia, Clause 4.6.

¹²⁹ Uganda, MoPS (1993). *Report on the Proceedings of the Seminar of Ministers and Permanent Secretaries, at the International Conference Centre, 19-20 August*. Kampala: MoPS, p.56.

digital records and the DRM systems. For instance, South Africa has issued information security policies.¹³¹ The policies recommend compliance with the set standards. They are created to guide public institutions in creating authoritative and reliable digital records. These policies imply the importance of a robust security policy for Uganda as a basis to build an 'info-secure' environment in the UPS.

This section indicates that there are no comprehensive guidelines for records storage and security in the UPS. The research established that records storage and security standards are lacking and the area of ICT and DRM standards development and implementation is grossly neglected in the UPS. Security issues were identified as an ongoing problem for both paper and digital records. The security of digital records indeed remains of utmost importance, and respondents were enthusiastic about having information security measures as a mandatory requirement by all UPS agencies.

4.5 Chapter Conclusion

This chapter established the existing DRM infrastructure in Uganda. It identified the status of ICT and the kinds of digital systems used in UPS business processes. The technological infrastructure within the ministries varies. While some were operating standalone computers, others had Local Area Networks and were linked to Wide Area Networks. However, the development and integration of digital systems within the UPS was uneven.

In spite of the deficiencies, there was a desire to set up concrete strategies for the management of digital records. Almost all respondents expressed a need to implement a DRM regime. However, it is generally hard to draw up strategies relating to improving the management of digital records before stock is taken of the challenges faced. The case was therefore made to study the challenges for managing digital records in the UPS. The question is, what are the factors affecting the creation, utilisation and management of digital records in the UPS? This is discussed in the next chapter.

¹³⁰ Interview with RM Manager, MoPS, Kampala, on 18 January 2007.

¹³¹ South Africa, Department of Public Service and Administration (2001). *Draft Information Security Policies: Securing Information in the Digital Age*, at <<http://www.info.gov.za/otherdocs/2001/infosecure.pdf>>. Accessed 2 June 2007.

CHAPTER FIVE

FACTORS PREVENTING THE EFFECTIVE MANAGEMENT OF DIGITAL RECORDS IN UGANDA

5.1 Introduction

This chapter details the obstacles faced by the UPS in creating and managing digital records. The findings presented here are responses to the second objective of this study, which aimed at revealing factors preventing the effective management of digital records in the Government ministries of Uganda. As established in Chapter 4, which discussed the state of DRM in the UPS, the Uganda ministries have introduced hybrid information systems, with many fundamental concerns raising the question of whether they have the capacity to manage the digital records.

The chapter presents the factors based on the field data collected from the UPS. The chapter also draws on data from the ESARBICA region. The data was captured from different levels of managers across UPS ministries, from chief archivists from the ESARBICA region and from academics (from Moi University Kenya, the University of Botswana and from South Africa). The ESARBICA countries that participated in this study were Kenya, Zanzibar, Botswana, Mozambique, Malawi, Tanzania, Lesotho and South Africa. The chapter begins with a description of how the factors were identified. This is followed by a discussion of the issues arising.

5.2 Source of Data

In order to establish the factors preventing the creation and management of digital records, respondents were asked to indicate the threats they faced and how these affected the realisation of a DRM regime. The data was gathered from all of the 23 ministries that make up the UPS. Different levels of managers were asked what they felt were the problems which impede DRM services in the ministries. The factors they identified are summarised in Table 5.1.

Table 5.1: Factors Preventing the Management of Digital Records in the UPS

Factors/Problems	Frequency by Ministries	% of UPS
Inadequate Legal and Regulatory Framework	19	83
Inadequate RM skills	21	91
Resistance to Change	22	96
Source of Power Supply or Energy Supply	20	87
Information Security and Privacy	17	74
Insufficient DRM Facilities	13	57
Inconsistency in Policies	10	43
Inadequate Procedures and Guidelines	16	65
Inadequate Political Commitment	18	78

Source: Field Data, June 2007

The data collected suggested that there are a number of factors blocking the ministries from creating and managing digital records. The figures in Table 5.1 indicate that resistance to change was the most notable factor, which was reported by 96% of the ministries. This was followed by inadequate RM skills reported by 91%, inadequate power supply 87%, inadequate legal and regulatory framework 83%, inadequate political commitment 78%, security of the digital records 74%, missing DRM procedures and guidelines 65%, insufficient DRM facilities 57%, and inconsistent policies 43%.

The following subsections are a discussion of the factors as presented by these respondents. The factors were reported to be experienced at different stages in the continued management of digital records in the UPS. The issues are presented here in the order of weight accorded to them by the respondents, beginning with the factor most often cited, resistance to change.

5.3 Resistance to Change

One of the compelling problems facing the UPS was resistance to use ICTs, which seemed to derive partly from a lack of trust in the ICT systems and in the media of the

digital records. This has hindered the growth of DRM services in the UPS. It was revealed by senior management that most employees were not comfortable with the technologies. A Senior Manager argued that most officials were uncertain of how to account for the digital records held in ICT systems. “It has been a long and ongoing struggle to integrate ICT in the Uganda public sector. This has traditionally been seen as a threat to the existing Public Service Standing Orders.”¹ According to the Uganda Public Service Standing Orders,² hard copies of records should be generated and kept and yet with digital records this may not be possible or if it is possible, the rule may not be followed.

Another respondent indicated that resistance to using digital systems is a cultural issue where people will only trust what is in hard copy, especially due to the belief that “touching is believing.”³ The same person added, “there is a widely held perception in the UPS that information recorded electronically is not secure forever and that confidentiality is easily breached when records are kept in digital form.” These are negative attitudes which hinder the management of digital records in digital systems. It can therefore be argued that promoting the use of ICT requires better understanding of the cultural perceptions of the end-users.

Many officials were also reported to ignore using ICTs for recordkeeping purposes because of security concerns. It was reported that officials do not always believe that safeguards exist for electronic systems. For some, the requirement for original signatures precludes trusting digital records. The officials were more comfortable with hard copy than digital records. The challenge lies in the fact that there is little awareness of the value and critical role of the RM function in the delivery of public services when using ICT systems. Paper records management has also a low profile and as a result managers do not have the necessary knowledge to understand DRM.

The position of senior managers across UPS was that most of their staff were reluctant or they just resisted using ICT with reasons such as:

¹ Interview with Head of Agency, MoICT, Kampala, on 12 March 2007.

² Uganda, MoPS (1991). *The Public Service of the Government of Uganda: Standing Orders*. Entebbe: Government Printers, p.49.

“Not comfortable with the technology and fear to look inexperienced in front of others if the technology is not used correctly.”⁴

“Nothing to gain from adapting to new technology, this is because crashes and other electronic failures occur more often with ICTs”⁵

“The risks of technology when it becomes obsolete which makes it difficult to use them over the years.”⁶

From the above quotations it can be argued that resistance to change is also caused by unmet training needs and low level of awareness of the role and benefits that ICT can play in RM. This indicates that some of the UPS staff are just not aware of what is possible with the technology. Resistance to using DRM technology is a worrying trend because DRM services will only be implemented if there is sufficient trust in the technology.

The records staff indicated reluctance to rely on digital systems because the media was fragile and it would not be accessible compared with traditional information carriers such as paper. The records staff believed it was difficult for them to access digital systems as the equipment was not readily available in their ministries. They also acknowledged a lack of skills to use the digital systems and argued that digital data are lost in handling for reasons that are not clear. A Records Manager reported:

“Digital records are 'invisible', they are not things you can see and hold and move around in a way that you viscerally know you are managing. We would rather rely on the manual records in order to easily keep custody of repositories.”⁷

Other record managers also had mixed feelings about using ICTs for RM purposes. One stated that “Using the technology means less control of the records and greater risks due to the impersonal nature of the digital systems.”⁸ The same person added, “If

³ Interview with Senior Manager, MoPS, Kampala, on 9 January 2007.

⁴ Discussion on ICT developments with Senior Manager, NPA, Kampala, on 22 January 2007.

⁵ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

⁶ Interview with Senior Manager, MoJCA, Kampala, on 10 August 2007.

⁷ Interview with Records Manager, MoES, Kampala, on 19 December 2006.

⁸ Interview with Records Manager, MoPS, Kampala, on 24 January 2007.

you are not an IT expert, then you cannot rely on digital systems.”⁹ Another indicated that “the ICT systems are slower when you need a file.”¹⁰

This section indicates that attitudes and culture make it difficult to rely on digital systems for RM purposes in Uganda. Resistance to change may be caused by lack of DRM skills, limited DRM facilities and power failures as later discussed in this chapter. It is evident that there is need to emphasise the importance of the records and archives management function in the UPS. This suggests that effective change management interventions might provide the necessary support to encourage use of DRM services.

5.4 Inadequate Records Management Skills

A lack of RM skills continues to be of a major concern in the UPS. Evidence from the study indicates that there is lack of expertise to effectively manage digital records that the ICT systems generate.

The senior managers complained about the shortage of DRM skills across the UPS. One of them was concerned that records managers do not have adequate technical knowledge on how to manage digital systems nor do they possess the understanding of the concepts and vocabulary to communicate RM issues with other staff.¹¹ She further stated that records managers have had little involvement in the planning and implementation of ICT systems in the UPS. Similarly a middle manager stated that few records managers are able to make an informed contribution to an ICT discussion on developing RM solutions.¹² This suggests that even those in charge of recordkeeping do not have adequate RM skills and the challenge is how to use DRM systems and services. The general concern was how the managers should interact with ICT experts for teamwork with the goal of solving DRM problems.

This study argues that ICT strategies are required for DRM to happen and therefore enquired into the ICT training offered to the different levels of managers across the

⁹ Interview with Records Manager, MoPS, Kampala, on 24 January 2007.

¹⁰ Interview with Records Manager, MoPS, Kampala, on 18 January 2007.

¹¹ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

¹² Interview with Middle Manager, MoICT, Kampala, on 27 July 2007.

UPS. It was established that although ICT in-house staff training programmes exist within the UPS, they do not address RM concerns. A senior manager conceded that the ICT in-house staff-training programme has no bearing on RM. To her, the installed digital systems are not being fully utilised in ministries where there are on-going ICT projects and one of the reason for this is lack of trained staff to use the technology.¹³

The ICT Managers also raised concerns that they have not got any training in RM practices and therefore are not familiar with recordkeeping processes. As one ICT Manager reported, there was no RM training programme tailored to ICT staff to promote the creation and preservation of digital records.¹⁴ In light of the above, a Senior Manager proposed an RM training intervention as part of RM capacity building in the UPS.¹⁵ This manager's suggestion is a clear testimony that staff with relevant RM skills and competencies are not readily available in the UPS.

Training of UPS managers in RM skills remains an ongoing requirement. In general, the research noted an acute shortage of the IT skills needed to sustain a DRM service. The difficulty in attracting, recruiting and retaining RM staff with ICT skills was also mentioned as a factor undermining the ability of the UPS to maintain a human resource capacity in DRM related areas.¹⁶ This was partly because of the pay levels and work environment facilities, which remained unattractive.

The problem of lack of trained DRM staff was common both in ministries with a high presence of ICT systems which have created digital records and in those that have not yet. It is not clear from the data, however, whether taking responsibility for ICT encourages ministries to develop the requisite DRM expertise, or whether institutions are reluctant to assume responsibility for DRM until at least a modicum of RM expertise is available in their institutions.

Senior Managers discussed the DRM human resource implications and indicated the need for staff with new and different skills, the challenges of “upskilling” and

¹³ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

¹⁴ Interview with ICT Manager, MoJCA, Kampala, on 10 August 2007.

¹⁵ Interview with Head of Agency, MoICT, Kampala, on 12 March 2007.

retraining, and the need to redefine job descriptions and skill requirements. Several respondents were dissatisfied with the Records and Information Technology Department (RITD) in the MoPS, which is responsible for RM across the UPS. This is because the Department has remained small and understaffed with a lack of technical expertise to undertake monitoring and supervision of RM services across the UPS.¹⁷ All in all, most managers expressed the need for training to equip them to work together to introduce reliable DRM practices.

The archivists from ESARBICA countries, that is, Botswana, Kenya, Tanzania and Namibia also expressed the problem of shortage of DRM expertise and argued that this has hindered expansion of DRM services in their respective countries.¹⁸ It is also indicated in the literature that the lack of human resources is a big challenge to managing digital records in the ESARBICA region. A study conducted by Kemoni, Wamukoya and Kiplang decried the lack of skilled RM professionals as a bottleneck to managing digital records in the ESARBICA countries.¹⁹

One of archives scholars from the ESARBICA region further stated that a possible solution is to form a regional training centre of excellence for records management practices and to offer practical solutions to regional governments in addressing the challenges of managing digital records.²⁰ His concern was to establish a regional training centre as a focal point for training RM and archives professionals so as to build regional capacity to overcome DRM related problems. The major obstacle to the realisation of this desire is a lack of funds to establish the centre.

This section has discussed the absence of core RM competencies to take on the DRM responsibilities in the UPS. The availability of qualified staff to manage records regardless of format was a big problem across the UPS. The shortage of staff with RM skills has been flagged, as a major factor hampering the development of DRM

¹⁶ Interview with Head of Agency, MoICT, Kampala, on 12 March 2007.

¹⁷ Interview with Records Manager, MoJCA, Kampala, on 22 February 2007.

¹⁸ Interview with National Archivist, National Archives of Botswana on 21 June 2007, Kenya on 20 June 2007, Tanzania on 20 June 2007 and Namibia on 21 June 2007, all at ESARBICA workshop, Dar as Salaam.

¹⁹ H. Kemoni, J. Wamukoya and J. Kiplang (2003). 'Obstacles of Utilisation of Information held by Archival Institutions: A Review of Literature', *Records Management Journal* 13:1, p.41.

²⁰ Discussion with a Senior Lecturer, Botswana University at ESARBICA workshop, Dar as Salaam on 21 June 2007.

services in the UPS and it is equally a problem in virtually all of the ESARBICA countries.

5.5 Inadequate Power Supply

The respondents pointed out that the programme of power rationing threatened reliance on digital services in the UPS. “The major obstacle to the development of DRM infrastructure in Uganda is the irregular distribution of electricity.”²¹ This research established that many UPS departments have no guarantee of a reliable electricity supply. The irregular supply of electricity was a threat to the continued functioning of ICT facilities where they have been installed. An ICT manager reported that the presence of electricity is not even and the supply network barely extends to all GoU departments especially the upcountry and rural areas.²² A middle manager also held a similar view that the unstable power supply was making it increasingly difficult to create and share digital records without reliable electricity.²³ The question was how ICTs can be used and digital records created and managed when there is continuous power rationing. The inadequate power supply implies that the creation and access to digital records is at times not possible in the UPS.

One Manager reported:

“Under the present circumstances, continued access to Government records in digital systems cannot be guaranteed since electricity supply is sometimes for only half of the daytime or sometimes only for a few hours a day.”²⁴

The above opinion suggests that inadequate power supply threatens the application of digital services in the UPS. Although it was established that some ministries like MoFPED have a standby generator to overcome power rationing, the situation is not the same across the UPS. Some ministries do not have adequate funds to provide for a standby generator or use a secondary or backup power generator as a safeguard or back up to mains power grid.²⁵

²¹ Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

²² Interview with ICT Manager, URA, Kampala, on 20 November 2006.

²³ Interview with Middle Manager, UNBS, Kampala, on 09 February 2007.

²⁴ Interview with Head of Agency, NITA-U, Kampala, on 08 March 2007.

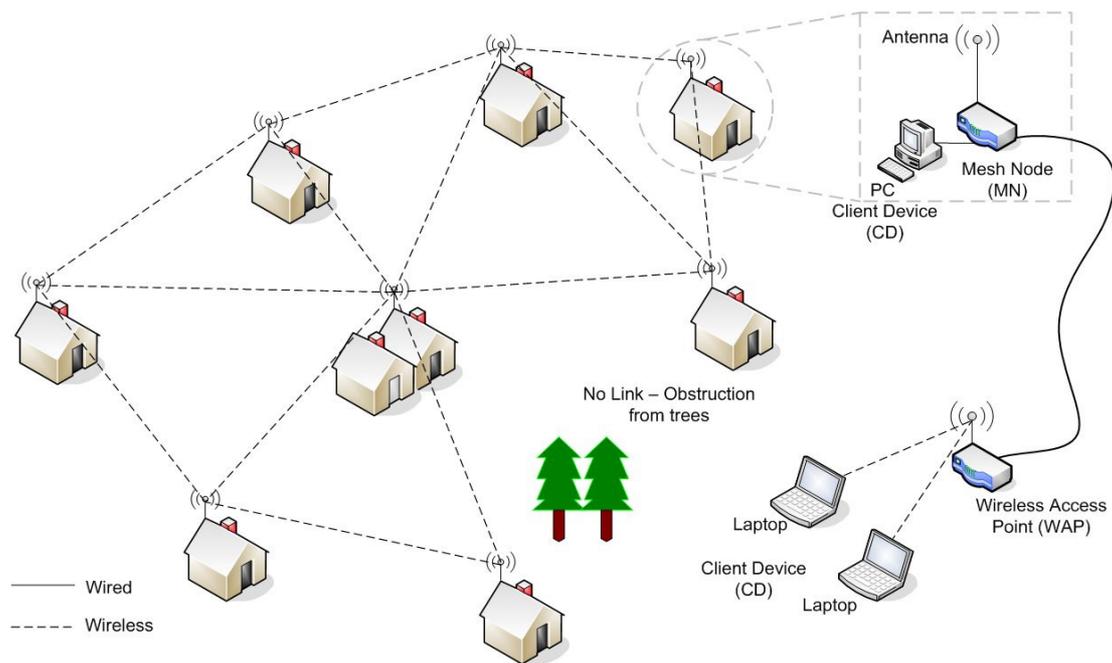
²⁵ Discussion on ICT development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

In a discussion with a Senior Manager, it was raised with concern that the problem of power distribution makes it very difficult, if not impossible, to implement DRM services. His opinion was that constant power supply was required by the UPS to enable proper use of DRM technology. He mentioned the possibility of using solar technology to supplement the irregular power supply but added that it was still a costly option for most ministries.

The inadequate power supply problem was being addressed in the ESARBICA region. The Wireless Mesh Network is becoming a viable alternative to the problem of power supply in rural Africa, as reported in Chapter 4 of this thesis. The wireless mesh project is focused on ways in which electricity barriers can be removed or minimised to enable use of ICT infrastructure. It depends on the geographic landscape and distances between the points to be connected. A combination of point-to-point long distance links (using directional antennas) and local point-to-multipoint links (using omni-directional antennas) between mesh nodes creates a reliable mesh network.

The non-mesh wireless device connects directly to a wireless mesh node. A computer can connect to the mesh network via LAN cables connected to the mesh node or via a wireless connection to a separate access point (hotspot) connected to the LAN side of a mesh node. The experience of implementation of the mesh technology could provide lessons to the delivery of DRM services in areas with no access to power supply like the case is for some ministries in Uganda. Figure 4 on page 154 illustrates the wireless mesh network.

Fig 4: A Wireless Mesh Network



Source: A Community deployed wireless mesh network as adopted from the *Building a Rural Wireless Mesh Network - a DIY Guide*

As illustrated, the mesh node consists of a wireless router and an antenna. The mesh node could be installed indoors or in a weather-proof enclosure outdoors. The antenna could be the standard indoor omni-directional antenna or it could be an externally mounted omni-directional or directional antenna. A mesh node communicates only with other wireless mesh nodes and has a number of advantages in that the nodes can be built at low cost, using common-off-the shelf equipment, forms automatically once the mesh nodes have been configured and activated and the information flow is not interrupted in the rest of the network when one node fails.²⁶ The wireless mesh project therefore indicates possible solutions to the electricity problem and could provide lessons to Uganda.

This section indicates that inadequate electricity supply remains a massive impediment for the UPS to implement DRM services. Respondents believe there is a general shortage of electricity and this needs to be addressed as part of the initiative to improve DRM services in the UPS. While some ministries are able to afford back up

generators, this is very expensive for the majority of the ministries. The mesh project provides an alternative approach to the power supply problem and Uganda could consider picking a leaf from it.

5.6 Inadequate Legal and Regulatory Framework

The legal and regulatory framework reflects how a country intends to manage its records.²⁷ A number of respondents were concerned about the legal and regulatory system in Uganda, as they doubted whether it gives clear controls for recordkeeping. The managers from the regulatory and law enforcement agencies were less categorical in their views. Many felt that the legal status of the digital records was not clear.

Although the Senior Managers considered that the mandate to manage public records in UPS is provided for in the Uganda legal system, none was sure of whether the UPS agencies comply with the RM requirements in the statutes. Legislative awareness was also very limited, although this varied between individual managers. The majority of the ICT managers had no idea of the RM requirements as implied in the statutes. This meant that the legal provision that exists to make sure that the UPS treats its records with the care they deserve has not been interpreted and promulgated to all managers and this makes it difficult to enforce RM requirements.

This study established that the Uganda National Records and Archives Act 2001, which is supposed to provide for managing records in the UPS, does not distinguish clearly between digital and non-digital records. The Uganda National Records and Archives legislation has also no specific provision for the management of digital records and with the increased creation of digital records in the UPS, it is vital to provide for their specific characteristics and requirements in a legislative framework.²⁸ A records manager also stated that “the Uganda National Records and Archives Act says very little about what is required in terms of creating and managing public digital records.”²⁹ The adoption of the DRM function is therefore not properly provided for in the Uganda legislative framework.

²⁶ South Africa (2007). *Building a Rural Wireless Mesh Network*, at <www.citeulike.org/user/hgfernan/article/5101586>. Accessed 17 June 2006.

²⁷ Parer (2001), p.7.

²⁸ Interview with Senior Manager, MoPS, Kampala, on 9 January 2007.

²⁹ Interview with Records Manager, MoPS, Kampala on 18 January 2007.

The Records Managers complained that the RM requirements are not fully integrated in the Uganda legal framework and where they are generally provided for, the means to enforce those requirements was still lacking. One Records Manager stated “the greatest weakness is the Uganda National Records and Archives Act 2001 since most of its sections deal with archives conservation and preservation which obviously needs broadening in order to address RM requirements.”³⁰ That respondent was referring specifically to Section 8 and 12, which deal with managing semi-current records and Section 13 for the preservation of paper-based archives.³¹ The challenge is to focus the Act to address responsibilities for creating and managing both records and archives and to integrate DRM requirements.

A 2002 study on computerisation of records and archives in the ESARBICA region noted that the mandate to manage digital records is derived through each country’s national archives legislation.³² Mutiti cited the National Archives and Records Act of South Africa 1996 which includes instructions regarding the management of public digital records (including active and inactive records).³³ She stated that the South Africa National Archives and Records Act specifies requirements to create authentic digital records that are useable and reliable for as long as they are required for functional, legal and historical purposes.

Section (5) of the South Africa National Archives and Records Act as amended authorises the use of digital systems to manage public records.³⁴ The Act requires public agencies to use EDRMS to create and manage their records. This Act places a great deal of emphasis on the proper management of the digital records. This example shows that legal reforms could support initiatives to enable DRM services. One respondent indicated a legislative environment supportive of e-governance reforms as one of the reasons leading to the generation and managing of digital records in some

³⁰ Interview with Records Manager, MoFPED, Kampala, on 2 March 2007.

³¹ Uganda (2001). *The National Records and Archives Act*, Section 8, 12 and 13. Entebbe: UPPC.

³² Mutiti (2002), p.116.

³³ South Africa (1996). *National Archives and Records Service (Act, no. 43)* as amended 2001, at <<http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwezaf.htm>>. Accessed 12 May 2006.

³⁴ South Africa (1996). *National Archives and Records Service (Act no. 43)* as amended 2001, Section 5, at <<http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwezaf.htm>>. Accessed 12 May 2006.

ESARBICA countries.³⁵ Another respondent reported the development of the e-commerce legislation and regulations, where all forms of commercial transactions are based on the electronic processing of data, as being given priority by the majority of the ESARBICA governments.³⁶ These laws in support of e-commerce will promote the environment required to manage digital records.

The literature indicates that governments should update their legislation to reflect the technological environment if digital records are to be effectively managed. Ketelaar advises that countries make new legislative provisions for records and their management so as to cover digital records and archives³⁷ while Parer suggests that any move towards legislative change should take into account the electronic environment, convergent technologies, the web environment, web portals and gateways, government online initiatives, e-transactions, and e-business.³⁸ The case for new legislation is that administrative and technical environment has changed significantly in many organisations with ICT use.

A senior manager noted that the evidential weight of the digital records is yet to be integrated in Uganda's legal system.³⁹ According to this senior manager, some laws are obsolete and tend to have been developed to address the paper-based environment. His concern was that the laws do not address the survival of reliable and accurate records as evidence in the digital environment. This was the case with the Evidence Act⁴⁰ which defines a record in physical terms and requires proof of primary evidence which is by production of original or certified copies. This law does not favour DRM services. The senior managers were, however, optimistic that the proposed Electronic Transactions Bill, the Electronic Signatures Bill and The Computer Misuse Bill would promote the development of sustainable DRM services, but indicated that the legislation in the offing was taking too long to be implemented.⁴¹

³⁵ Interview with Archival Scholar from Kenya, Dar as Salaam, on 19 June 2007.

³⁶ Interview with National Archivist, National Archives of Botswana on 21 June 2007.

³⁷ E. Ketelaar (1985). *Archival and Records Management Legislation and Regulations: A RAMP Study with Guidelines*. Paris: UNESCO, p.106.

³⁸ Parer (2001), p.7.

³⁹ Interview with Senior Manager, MoJCA, Kampala, on 10 August 2007.

⁴⁰ Uganda (1964). *The Evidence Act*. Entebbe: Government Printers.

⁴¹ Interview with Senior Manager, MoJCA, Kampala, on 31 July and 10 August 2007.

The lack of information security assurance in the Uganda records legislation is another setback to managing digital records in the UPS. The legislation does not refer to information security guides and codes of practice to assist the RITD to develop DRM security standards and requirements. Records security issues were raised as an on-going problem across the UPS. The paper based records system was also reported to be unreliable whereby the records are easily stolen, altered and misfiled. Cases of missing files and those difficult to retrieve were common as reported by the UPS managers.⁴² In the absence of security assurance, several of the senior managers were finding it extremely difficult to prove whether the digital records are held securely whereby they are not altered, manipulated, or damaged after they are created; the reliability of the digital recordkeeping systems where they exist; and to prove that the systems or processes that produce and manage the digital records are trustworthy.

This section suggests that DRM services should be provided in accordance with legal and regulatory requirements. The views expressed by the respondents from the various ministries bring to the fore two fundamental issues. The first is that digital records have not been accorded the status they require in the Uganda legislation and secondly that the existing legislation is not well known to the UPS officials. This suggests the need to ensure that records created in digital formats and subsequently managed using such technology, are records within the meaning of the legislation. DRM services should take account of the legal environment in which records are created and used.

5.7 Insufficient DRM Facilities

The lack of adequate DRM equipment and facilities was reported as also a factor that has hampered the UPS agencies in the generation and management of digital records. This factor was attributed to a number of issues such as lack of awareness of the benefits of DRM services to motivate the purchase of the required DRM equipment. Consequently, promoting the creation and management of digital records was limited by the shortage of required DRM facilities.

⁴² Interview with Senior Manager, Middle Manager, Records Manager and ICT Manager, MoPS, Kampala on 9, 23, 24 and 17 January 2007.

A senior manager was concerned that the rapid changes in technology have made it difficult to determine what the most viable technical solutions are for the UPS to build capacity to manage its records.⁴³ Among the needed DRM facilities was an EDRMS which was reported significantly missing in several ministries. Citing the lack of DRM facilities, a Middle Manager reported that most of the ministries were neither networked nor interconnected with digital systems, and do not have the software to allow DRM.⁴⁴ The result is wide incompatibility of technological systems, even within the same ministry. On the other hand, although the survey⁴⁵ to determine the extent to which ICTs are used in the UPS indicated that the number of computers, GoU websites, LAN connectivity and number of computers with internet services had increased, there is fragmentation of information and lack of coordination between different arms of Government.

ICT managers were concerned about a missing technological base for achieving DRM-enabled structures of governance.⁴⁶ Some were of the view that the “UPS lacks inter-ministry DRM initiatives that would give primacy to the use of DRM systems to create, preserve and share records.”⁴⁷ This implies that the lack of DRM network structures also limits the diffusion of DRM services in the UPS. The desire of the ICT managers was an inter-ministry project to promote use of DRM technology and, as argued in this thesis, this could provide a basis for the application of EDRMS to support the creation and management of records.

The above opinions suggest that inter-linked government departments should enable sharing of records, but this was limited in the case of Uganda. It was also established that there is a missing link between the section for current records, the one for semi-current records and the archives in the RITD in the MoPS and this is undermining any efforts to streamline the RM services in the UPS.⁴⁸ The concern was to provide a networked service, which would be enhanced by the DRM function.

⁴³ Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

⁴⁴ Interview with Middle Manager, MoPS, Kampala, on 23 January 2007.

⁴⁵ Uganda, UNCST (2002). *Status of ICT in Uganda: SCAN-ICT Preliminary Baseline Study*. Kampala: UNCST, p.8

⁴⁶ Discussion with ICT Manager, URA, Kampala, on 20 November 2006.

⁴⁷ Interview with ICT Manager, URA, Kampala, on 27 October, 2006.

⁴⁸ Discussion on RM Developments in UPS with Senior Manager, MoPS, Kampala, on 8 January 2007.

All levels of managers in the UPS expressed concern about the shortage of the needed DRM technologies to continuously create and maintain digital records. A Senior Manager revealed that use of EDRMS software is limited in the UPS.⁴⁹ For example TRIM software, was reported to exist in only two ministries namely, the Ministry of Public Service (MoPS) and the Ministry of Lands, Housing and Urban Development. Records managers reported that there is lack of appropriate software for managing records across the UPS. One records manager pointed out that even facilities to manage paper records were insufficient.⁵⁰ The same person complained of inadequate systems for managing both paper and digital records. This suggests that there is generally a lack of facilities for recordkeeping in the UPS.

In reaction to the challenge of the absence of technological facilities which would promote the creation of digital records, a middle manager observed that:

“A comprehensive ICT implementation strategy cutting across all ministries with a centralised and coordinated organisational structure to ensure the most rational and cost-effective sharing of records within the UPS is missing.”⁵¹

The interviews with senior management provided additional insights into how this problem was perceived. To them, the cost of the ICT infrastructure was a serious impediment to acquiring the necessary technological equipment and, unless tackled on an urgent basis, would prevent the spread and growth of DRM services. The senior managers were highly interested in bringing about ICT-enabled structures of governance in UPS, although most felt that budgets were a serious constraint. A Senior Manager emphasised insufficient funding as a significant stumbling block to the acquisition of DRM technologies in the UPS. He indicated that GoU has insufficient resources for records management and noted that:

“In spite of the fact that there has been a significant increase in the use of ICTs in GoU agencies during the past decade, a lack of financial commitment for accelerated development in the ICT arena has remained. This necessitated foreign financial and technical intervention. This meant that ICT projects rely on foreign funding for their implementation and management. However, when

⁴⁹ Interview with Senior Manager, MoPS, Kampala, on 09 January 2007.

⁵⁰ Interview with Records Manager, URA, Kampala, on 10 November 2006.

⁵¹ Interview with Middle Manager, MoICT, Kampala, on 27 July 2007.

donor agencies withdraw, the public agencies lack the financial resources to sustain the IT-based projects.”⁵²

According to the above opinion, the general lack of funding for DRM facilities was prevalent in the UPS and needed to be addressed urgently. The problem of lack of funds implies that DRM hardware and software was still far too expensive for many UPS ministries and departments.

This study established that the ICT budget was limited across the UPS and this partly explained why DRM services are relatively underdeveloped. The Government Archivist noted that DRM facilities need financial support which was lacking across UPS. According to him, inadequate funding is a limiting factor to the introduction of DRM services. Sixteen out of the 23 ministries (70%) cited the prohibitive cost of DRM systems as a constraint to DRM.

This thesis explored the budget allocation for ICT within UPS and some ministries provided summaries of their expenditure but a few had any allocation for RM activities. Other ministries indicated that spending on RM is on ad hoc basis and are treated as miscellaneous items, which are not reflected in the budgeting process. An earlier study on a framework for an integrated information management system for higher education in Uganda also reported the lack of financial resources for ICT initiatives within the UPS.⁵³ With a lack of adequate funds, the use of DRM technology was limited since the systems require software which needed to be purchased.

Earlier assessments had also identified affordability as the main obstacle to the acquisition of DRM facilities in public institutions in Uganda.⁵⁴ For example, the e-readiness study conducted in 2003 to pave the way for the promotion of e-Government in Uganda identified the high costs of ICT equipment as an impediment to acquiring ICT facilities. Also a report of the Uganda e-Government Strategy Framework 2005 noted that a lack of funds was hindering GoU agencies to acquire

⁵² Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

⁵³ E. Magara (2006). *A Framework for an Integrated Student Information Management System for Higher Education in Uganda* (PhD thesis, University of South Africa), p.197.

⁵⁴ Uganda, MoWHC (2004). *E-Readiness Assessment Report*. Kampala: TECHNOBRAIN, p. 1.

ICT applications.⁵⁵ Although donor projects have provided resources to offset the minimal funding for ICT by the GoU, this seems not to be sufficient to acquire software for DRM.⁵⁶ This study established that donor funded projects are limited to some ministries which together represent only 10% of the UPS.⁵⁷ This explains why the digital divide is increasingly widening within UPS where the ministries with donor projects have more ICTs than those without.

Records Managers in the UPS were of the view that the lack of financial resources may not be the real problem but that prioritisation was.⁵⁸ One Records Manager noted “there is a lack of commitment to promote the DRM services and yet this should not be the case.”⁵⁹ The same person added, “although each ministry has a budget allocation for ICT recurrent development, DRM services are not catered for.” The Records Managers were especially concerned that financial support is not forthcoming to promote DRM.

The ESARBICA region countries were also found to face the problem of budgets dedicated to RM. Respondents from the ESARBICA region reported funding for the RM function was difficult to secure. One respondent reported that inadequate funding was strangling public institutions in their effort to establish DRM services.⁶⁰ Another respondent was of the view that with budgetary constraints, the use of EDRMS technology has been limited to a few ministries.⁶¹ The implementation of DRM services is costly and therefore requires sufficient budget.

This section indicates that shortage of DRM facilities continues to be a limiting factor to the development of DRM services in the UPS. It was established that DRM facilities are prohibitively expensive for the majority of the ministries and it was argued that this is a serious impediment to the creation and management of digital records and archives in the UPS. The absence of an inter-ministry DRM network

⁵⁵ Uganda, National Planning Authority (NPA) (2006). *Uganda E-Government Strategy Framework (Final Report)*. Kampala: NPA.

⁵⁶ Discussion on ICT Development with Permanent Secretary, MoICT, Kampala, on 12 March 2007.

⁵⁷ Uganda, National Planning Authority (NPA) (2006). *Uganda E-Government Strategy Framework (Final Report)*. Kampala: NPA, p.15.

⁵⁸ Interview with Records Manager MoPS and MoJCA, Kampala, on 26 January 2007 and 14 August 2007 respectively.

⁵⁹ Interview with Records Manager, MoFPED, Kampala, on 02 March 2007.

⁶⁰ Interview with Archivist, National Archives of Namibia, at Dar as Salaam on 21 June 2007.

initiative, high performance workstations and local and wider area networks, and of EDRMS software have prevented the creation, sharing and preservation of digital records and the spread and growth in use of DRM services. The concern is how to provide the technological infrastructure that would promote reliance on DRM services.

5.8 Information Security and Privacy

Information security and protection of the confidentiality of digital records was also a major issue in the UPS. There were concerns for security measures to keep the UPS business records accurate, reliable, and trustworthy, when digital recordkeeping systems are used for storage and sharing of records. In other countries, for example in South Africa, the National Archives and Records Service imposes an obligation that public digital records and the information they hold are held securely, used responsibly and kept only for as long as needed.⁶² The International Organisation for Standardisation (ISO) also published security guidelines under ISO 23081-1 Section 9.2.4.1 which cover the metadata to apply to digital records to ensure their safety.⁶³

This study established that the UPS operates in an environment without corporate-wide controls and maintaining security and privacy of both paper and digital records was worrying many ministries. The Senior Managers pointed out that protecting the security and confidentiality of digital records stored on digital information systems such as databases was difficult as the methods used can easily be corrupted. There was concern about manipulating records in the digital recordkeeping systems which generated uncertainty about the use of digital systems for RM purposes, as records could easily be deleted or altered.

The Records Managers stressed that it is difficult to control access to and use of records by unauthorised officers especially for digital records held in EDRMS systems. This was the case of the records managers even from the MoPS, which has installed TRIM software in some of its registries. To them, it was difficult to enforce requirements such as access to only authorised users. One records manager was

⁶¹ Interview with Archivist, National Archives of Kenya, at Dar as Salaam on 20 June 2007.

⁶² South Africa (2006). *Managing Electronic Records in Governmental Bodies: Policy, Principles and Requirements*. 2nd ed. Pretoria, South Africa: National Archives and Records Service of South Africa.

⁶³ International Standards Organisation (ISO) (2006). *ISO 23081-1, Information and Documentation – Records Management Processes – Metadata for Records – Part 1: Principles*. Geneva: International Standards Organisation, p. 12.

worried about intrusion which is common with digital systems and argued that the absence of security controls discourages them from trusting DRM services because digital records can easily be accessed by fraudsters.⁶⁴ Fears of security intrusion deter records managers from trusting digital systems.

The Middle Managers from those ministries with digital information systems⁶⁵ mentioned that digital recordkeeping is not popular because the systems are more vulnerable than the case has been with paper records. To them, the security of the records is not certain within ICT systems. They cited access controls such as log-in passwords as a means of securing access but these were reported to be only partially effective. The issues of security and confidentiality which digital records require have therefore greatly affected management of records in ICT environments within the UPS. With digital systems, the maintenance of records integrity was very much questioned hence the resistance to trust DRM services.⁶⁶ Lack of security measures and confidentiality controls was indeed hindering application of DRM services.

On the contrary, some of the records and archives legislation in the ESARBICA countries have addressed information security and records protection requirements to ensure adequate monitoring, maintenance and management of digital records is possible. For instance, Section 13 of the National Archives and Records Service Act of South Africa, 1996 highlights security measures for both paper and digital records; the South Africa Protection of Information Bill 2008⁶⁷ also provides the manner in which digital records may be protected against alteration, destruction or loss, while the Botswana National Archives and Records Services (BNARS) is embarking on a project to address the security of public digital records where the solution uses TRIM context software.⁶⁸ The region's countries also co-operate in the development of best practices in information security.⁶⁹ These are designed to help minimise security risks associated with using digital information systems. They provide the inherent ability to

⁶⁴ Interview with Senior Manager, MoES, Kampala, on 08 December 2006.

⁶⁵ Interview with Middle Manager, MoJCA (25 July 2007), MoFPED (05 March 2007), and MoICT (25 July 2007).

⁶⁶ Interview with Senior Manager, MoJCA, Kampala on 10 August 2007.

⁶⁷ South Africa (2008). *Protection of Information Bill*, at < www.info.gov.za/view/DownloadFileAction?id=82210>. Accessed 6 July 2009.

⁶⁸ Interview with National Archivist, National Archives of Botswana on 21 June 2007.

⁶⁹ Southern African Development Community (SADC) (2002). *SADC E-readiness Review and Strategy*, at <http://www.schoolnet africa.org/english/policy_centre/e-readiness.html>. Accessed 15 March 2007.

determine security requirements and construct an implementation design that delivers trust in digital records.

This thesis identified also a general lack of security controls over all formats of records in UPS, with 75% of the Senior Managers not confident that their paper records can remain accessible, accurate, and reliable without a clear records security system. This confirms that there is lack of security controls to act as intermediaries for managing both paper and digital records in the UPS. This fortifies the need to develop DRM security requirements. There should be formalised digital records security measures in Uganda.⁷⁰

This section indicates that the security of both paper and digital records is not assured in the UPS, but there is a desire to protect the security and confidentiality of digital records in order to utilise e-government services. Information security measures are therefore required if ministries are to entrust sensitive public records to the DRM systems. Managers want to ensure that public digital records are properly managed, protected and appropriately preserved for as long as they are required.

5.9 Missing DRM Procedures and Guidelines

This study established that procedures and guidelines to ensure in particular the management of digital records are generally missing in the UPS and these are an important element of a digital recordkeeping framework. The RM literature indicates that procedures and guidelines should make it easier to ensure that statutory requirements for DRM are met.⁷¹ There were no clear instructions on DRM in the UPS. It was established that the MoPS has attempted to produce guidelines for handling records in the form of user manuals,⁷² but the documents are silent on the way digital records should be created and managed in the UPS.

The records managers reported that there were no documented agreements containing technical specifications or precise criteria to be used consistently as rules, guidelines,

⁷⁰ Interview with Senior Manager, MoPS, Kampala, on 09 January 2007.

⁷¹ J. Kennedy and C. Schauder (1998). *Records Management: A Guide to Corporate Recordkeeping*. 2nd ed. NSW, Australia: Longman, p.106.

⁷² Uganda, MoPS (2006). *Records Centre Procedures Manual (Draft)*. Uganda: MoPS.

or definitions of characteristics to be followed to manage digital records in UPS. Records managers were specifically concerned about processes for capturing digital records in the existing ICT projects. Many expressed their concern that “in the absence of guidelines for DRM, it was extremely difficult to store, access and preserve the digital records.”⁷³ Without guidance and procedures, the records managers were worried about their ability to classify and retrieve the digital records with consistency and accuracy. Several records managers regarded the problem of missing guidelines as another factor making it difficult for the implementation of DRM services. All records managers were concerned about missing DRM guidelines but there was little agreement on what could be done.

A Senior Manager stated that there are no procedures to ensure the ongoing protection of digital records in the UPS.⁷⁴ This source was specifically concerned with the management of e-mails which was not consistent across the UPS due to lack of guidelines. Another Senior Manager observed that guidelines are a required ingredient for any system implementation but are lacking in the UPS with regard to DRM.⁷⁵ This respondent decried the lack of regulations to support the DRM function at both national and institutional level. Other managers also reported this problem:

“We are facing a potential crisis on the scale of a disaster as we don’t have guidelines for the management of digital records which are electronically shared”⁷⁶

“Many official correspondences are shared through computers and there are no guidelines to follow”⁷⁷

“There are no clear rules of sorting out digital records”⁷⁸

This study established that the Uganda National Archives does not provide advice to the UPS on matters relating to the management of public records. In South Africa the National Archives was found to have written guidelines for DRM.⁷⁹ Keakopa reported that the National Archives of South Africa have developed digital records

Uganda, MoPS (2006). *Uganda National Archives Procedures Manual (Draft)*. Uganda: MoPS.

⁷³ Interview with Records Manager, MoJCA, Kampala, on 14 August 2007.

⁷⁴ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

⁷⁵ Interview with Head of Agency, I-Network Uganda on 01 March 2007.

⁷⁶ Interview with Records Manager, MoPS, Kampala on 26 January 2007.

⁷⁷ Interview with Senior Manager, UCC, Kampala, on 20 August 2007.

⁷⁸ Interview with Middle Manager, MoJCA, Kampala on 25 July 2007.

management guidelines, which require government bodies to manage records in well-structured recordkeeping systems and to put the necessary procedures in place to ensure that recordkeeping and records management practices comply with the requirements. The National Archives of South Africa is also engaged in drafting DRM procedures, designing filing systems and conducting inspections to make sure that RM norms are adhered to in public agencies.⁸⁰

In Uganda, the placement of the Uganda National Archive within the RITD hierarchy has hindered it to do what other national archives do. Due to its position, its role is to emphasise preservation of heritage and it has not been proactive in exploring how to support the RM function across UPS. The consequence is a lack of continuity of any strategic plan for records and archives services in Uganda.⁸¹ According to the GoU Archivist, implementing DRM services poses a big challenge since there are no set procedures to follow. RM procedures and guidelines are recommended by authors like McLeod and Hare as important records in their own right since they are required as part of recordkeeping activities.⁸²

A records manager described the absence of DRM guidelines as frightening. “It is even more terrifying that there are no steps that should be followed to describe digital records and the future is more worrying because of the rapidly changing technological environment making it relatively easy to tamper with a digital record.”⁸³ Among the needs cited was guidance as to the “definition of digital records, legal acceptance, proper storage and disposition.” The above opinion reflects not only problems with the guidance but also the low priority given to RM by the UPS ministries. Neither the MoPS nor the Uganda Bureau of Standards has issued a DRM standard.⁸⁴ Lack of clear guidance for DRM also contributes to the problem of resistance to change since users are not aware of how to use the new systems. This means putting in place a measure or yardstick by which the performance of a RM system would be rated in UPS is a challenge. In the records and information management literature, RM

⁷⁹ Keakopa (2007), p.261.

⁸⁰ Interview with Archival Scholar from South Africa, Dar as Salaam, on 20 June 2007.

⁸¹ Interview with Government Archivist, at the Uganda National Archives, Entebbe, on 12 January 2007.

⁸² J. McLeod and C. Hare (2006). *How to Manage Records in the e-Environment*, 2nd ed. London: Routledge, p.105

⁸³ Interview with Records Manager, MoPS, Kampala on 18 January 2007.

standards are recommended to measure how RM objectives are met.⁸⁵ The challenge was that there was no RM standard to be followed by the managers across the UPS.

Meanwhile in the ESARBICA region, South Africa has set up DRM standards and guidelines through its national archives. The National Archives and Records Service of South Africa⁸⁶ has, for example, set standards for records meta-data description. It has endorsed the SANS (ISO) 15489 Records Management Standard and the SANS (ISO) 23081 Metadata standard as benchmarking tools for sound DRM.⁸⁷ South Africa has endorsed these standards for adoption by the public sector. The South Africa National Archives is responsible for promoting DRM standards across government, and makes decisions on the retention and disposal of digital records⁸⁸ but this was not the case in Uganda. This implies that the UPS can draw lessons from the works of the South Africa National Archives in order to provide advice and guidance on digital recordkeeping requirements.

This section indicates that there were neither agreed standards nor guidelines to ensure that records are created and maintained in digital format in the UPS. Many interviewees and questionnaire respondents were unaware of any guidance about digital records. They did not know of opinions or regulations promulgated or communicated by the RITD in regard to DRM. There was however consensus of the need for DRM guidelines.

5.10 Inadequate Political Commitment

Politicians have a role to play for new initiatives in any government but this was lacking in the case of DRM for Uganda and this affected the capacity of the UPS to create and manage digital records. Politicians are required as lobbyists for budgets for DRM and related ICT projects.

⁸⁴ Interview with Middle Manager, UNBS, Kampala on 12 February 2007.

⁸⁵ Bantin, p.296.

⁸⁶ South Africa, National Archives and Records Service, at <<http://www.national.archives.gov.za/>>. Accessed 13 June 2007.

⁸⁷ South Africa, National Archives and Records Service, *Records Management Best Practices*, at <http://www.national.archives.gov.za/rms/best_practice.htm#managing_electr_recs>. Accessed 2 July 2007.

⁸⁸ Interview with Archival Scholar from South Africa, Dar as Salaam, on 20 June 2007.

A Senior Manager indicated that politicians have an important role to play to promote budgets for DRM technology but that DRM practices are not a priority in the case of Uganda. She added: “The value of records could only be realised when things go wrong and as such records are a ‘by the way’ and this is a barrier to putting in place systems to create and manage digital records.”⁸⁹ According to this source, the commitment of parliament contributes to the success of any public project, but this is lacking in Uganda when it comes to DRM projects. The members of parliament were considered to have great ability to influence DRM management practices at the national level.⁹⁰ This is because where ICT projects have been set up it is largely due to effective lobbying to influence allocation of funds. This lobbying has enabled some ministries to continue receiving allocations for ICT expenditure and in this sense, the financial benefits from the central Government. It was a challenge to ensure that all ministries get an ICT budget allocation that would promote DRM services.

It was also pointed out that the Uganda Parliament Committee on ICT has had little understanding of the issues related to DRM, and has limited access to information on these issues.⁹¹ This source observed that in pursuing ICT reform throughout the 1990s, the GoU did not make significant efforts to implement DRM services which would promote the creation and preservation of digital records.

The GoU was also criticised for not being supportive of using digital systems throughout the UPS, particularly in terms of not being able to increase access to funds for DRM projects. As such, projects to support RM such as the construction of a national records centre have failed to take off due to lack of commitment of funds. The major challenge is to cultivate the commitment and support of the top level political and technical leadership as this would drive implementation of a RM related initiative in the UPS. This challenge concerns obtaining and sustaining commitment and support for the DRM initiatives among the politicians of the country but commitment has remained weak for unknown reasons, although one senior manager indicated prioritisation as the problem.

⁸⁹ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

⁹⁰ Interview with Senior Manager, NPA, Kampala, on 22 January 2007.

⁹¹ Interview with Senior Manager, UCC, Kampala, on 20 August 2007.

Another senior manager indicated that the real benefits of DRM projects are unknown to the politicians and this affects priorities and resource allocation for such projects.⁹² This problem suggests that leadership support; commitment and understanding are required to develop a national vision, which should be the case for DRM services. Considering the ESARBICA region, this study established that political commitment to RM activities was still a big stumbling block in many countries. One scholar pointed out that one of the critical challenges facing the region was political will to promote digital services. He wondered why governments of ESARBICA member countries do not give support to DRM as a strategy to boost digital services despite the role records play in the social and economic development of a country.⁹³ To him, if a DRM function is not the pivot around which efficiency in the public sector is measured then DRM services would not be realised.⁹⁴

The records managers were also concerned that politicians paid 'lip service' to RM issues and were not willing to support serious institutional reforms to address DRM concerns. One records manager observed that most politicians continue to view RM as just another project to support on a short-term basis. This posed a challenge of promoting the use of digital systems across UPS. The challenge, according to him, is to make digital recordkeeping a high priority business initiative that has the full support of the Uganda parliament.⁹⁵ He added that harmonisation of RM activities entails support at the political level which was lacking in Uganda. This has to change if UPS ministries are to be compliant with the RM requirements in the existing Uganda laws and regulations and even the International Standards for RM.

This section identified lack of political will and commitment to the implementation and support of DRM services in the UPS. The problem was that the political will to enhance the use of digital systems for RM purposes was highlighted to be inadequate. This discourages the funding of the DRM activities and makes it difficult for the UPS to rely on digital recordkeeping systems. However, there was a need to bring the

⁹² Interview with Senior Manager, MoES, Kampala, on 08 December 2006.

⁹³ Interview with Archival Scholar from Moi University, Dar as Salaam, on 19 June 2007.

⁹⁴ A. Lipchak (2002). *Information Management to Support Evidence-based Governance in the Electronic Age: A Public Policy Forum Discussion Paper*, at <www.ppforum.ca/ow/ow_p_11_2002B_es.pdf>. Accessed 13 December 2005.

⁹⁵ Interview with Records Manager, URA, Kampala, on 10 November 2006.

political authority on board to support DRM projects and oversee their implementation.

5.11 Inconsistency in Policies

The management of digital records must be addressed within the broader context of the policies that deal with the management of all forms of recorded information, even though specific types of media may be handled differently.⁹⁶ This raised the need to question the UPS about the policy issues around digital records.

This thesis established that there was no policy directly related to the management of digital records in the UPS, nor was there a real awareness of the need for such a policy. An ICT baseline study had earlier established that there was a lack of appropriate policies when it comes to coordinating ICT activities in Uganda.⁹⁷ The report emphasised that in order for Uganda to improve its use of ICTs, the Government should create an enabling policy environment to support ICT for development through instituting policy reforms. In light of the challenge for lack of such a policy, a Senior Manager observed that: “Strategies for managing digital records in support of ICT initiatives have not been developed.”⁹⁸ This source indicated the need to incorporate DRM as part of the national ICT strategies.

In general, the ICT Policy was broadly regarded as the one which should address DRM concerns but this study established that the Uganda ICT policy framework is not supportive of DRM activities. A Senior Manager admitted that the existing Uganda ICT Policy document does not provide a strategic vision for the UPS to offer DRM services. The same person observed that there are gaps and short-comings in the Uganda ICT Policy which block implementation of DRM services and that digital records were in danger of being lost due to benign neglect.⁹⁹ This source indicated that the Uganda ICT Policy did not support DRM activities.

⁹⁶ South Africa (2006). *Managing Electronic Records in Governmental Bodies: Policy, Principles and Requirements*. Pretoria, South Africa: National Archives and Records Service of South Africa, p.4.

⁹⁷ Uganda, UNCST (2002). *Status of ICT in Uganda: SCAN-ICT preliminary Baseline Study*. Kampala: UNCST, p.10.

⁹⁸ Interview with Senior Manager, UPSC, Kampala, on 9 August 2007.

⁹⁹ Interview with Head of Agency, ULRC, Kampala, on 09 March 2007.

Another Senior Manager observed: “the ICT Policy lacks strategies, programmes and statements to explain how DRM tasks should be applied or delivered in practice.”¹⁰⁰ According to this source, the ICT Policy has not been implemented in all UPS activities to ensure interoperability of the various systems and this brings a host of organisational challenges that deter the UPS agencies from using digital systems. Other managers were also concerned that the ICT Policy was not comprehensive and had various views. For example:

“The ICT Policy does not evolve e-strategies”¹⁰¹

“The National ICT Policy lacks coordination between different government departments and agencies with ICT responsibilities”¹⁰²

“I think the ICT Policy has been implemented in an uncoordinated fashion. Monitoring the implementation is desirable”¹⁰³

“ICT Policy is focused on equipment acquisition and lacking in the development of possible services”¹⁰⁴

The above views confirmed that the necessary policies to ensure effective information management of which digital records are a part have not been consistently coordinated and do not address DRM.

The middle managers had a similar view that the ICT Policy has not promoted DRM services utilisation within the UPS. One Manager informed the study that the existing Uganda ICT Policy does not integrate DRM aspects and was concerned that RM systems are failing to keep pace with the technology.¹⁰⁵ However, another manager differed in opinion and blamed the approach to ICT uptake within the UPS. This source remarked that:

“First of all we need to look at how the ICTs have been introduced in the public sector. Some Government agencies have not followed formal methodology while some have been introduced on a functional unit basis. You find that one department brings an application to carry out a certain activity so

¹⁰⁰ Interview with Head of Agency, MoICT, Kampala, on 12 March 2007.

¹⁰¹ Interview with Senior Manager, NPA, Kampala, on 17 July 2007.

¹⁰² Interview with Head of Agency, UPSC, Kampala, on 13 July 2007.

¹⁰³ Interview with Government Archivist, at the Uganda National Archives, Entebbe, on 12 January 2007.

¹⁰⁴ Interview with Senior Manager, MoJCA, Kampala, on 31 July 2007.

¹⁰⁵ Interview with Head of Agency, UPSC, Kampala, on 13 July 2007.

at the end of the day it doesn't really look at Government as a whole and therefore it cannot support the entire UPS.”¹⁰⁶

From the above quote, it can be argued that the Uganda national policies and strategies for ICT have not been harmonised and therefore do not address DRM.

In addition, the Records Managers felt that the ICT Policy did not support the creation and management of digital records. A Records Manager pointed out that the ICT Policy did not readily lend itself to support DRM.¹⁰⁷ According to this source, there is lack of a clause in the ICT Policy to enhance the creation and management of digital records and this continues to hinder the acceptance of DRM services. Meanwhile in other countries like those in the ESARBICA region, it was established that the ICT Policy promoted use of RM software. Some countries have acquired EDRM software as a requirement of the ICT policy and this was reported to be providing a structured RM system.¹⁰⁸

In addition, the guidelines for the compilation of a records management policy developed by the National Archives of South Africa require that each organisation should manage its records in terms of broad policies relating to information management.¹⁰⁹ The question was whether the UPS has a DRM policy. It was established that a DRM Policy was persistently missing in UPS and this made it difficult for the UPS agencies to realise a DRM programme. The lack of DRM policy is a significant barrier to the management of digital records in the UPS. The major problem, in the opinion of many respondents, is lack of awareness of the role that ICTs can play in RM. This existed at all levels in ministries without ICT projects, where staff simply had no experience with ICT and its potential benefits.

The Records Managers indicated that their agencies have no documented RM policy statement but expressed the need to have a national records management policy. While two Records Managers were aware of the international standard for records management, ISO 15489, the other managers had no real understanding of the

¹⁰⁶ Interview with Middle Manager, MoFPED, Kampala, on 05 March 2007.

¹⁰⁷ Interview with Records Manager, MoES, Kampala, on 19 December 2006.

¹⁰⁸ Interview with National Archivist, National Archives of Botswana on 21 June 2007.

internationally accepted DRM practices. This was contrary to what was happening in the ESARBICA region where there was increasing awareness in the national archives and the universities of DRM issues.

This study established that records are managed in terms of broad policy requirements within some of the ESARBICA countries. It was also established that a DRM policy and a DRM programme exists in South Africa and Botswana and they link to other national laws and regulations.¹¹⁰ In Uganda there was however a problem of integrating the policies for the better management of all records across the UPS.

The lack of a DRM policy is a key problem in Uganda but all respondents expressed a need for a functional policy to support effective DRM activities and to meet the expectations of users of ICT systems. The challenges that need to be addressed are policies to govern DRM.

5.12 Chapter Conclusion

This chapter has addressed objective number two of this study which set out to establish the factors preventing the management of digital records in the UPS. It established that DRM is not adequately addressed in UPS due to a number of factors. It was established that the core institutions and instruments for DRM governance are lacking and critical problems arise as the UPS undertakes ICT in the delivery of services. The infrastructure and regulatory arrangements needed to ensure the survival of reliable and accurate records as evidence in the digital environment were weak.

Therefore, there is a need for the UPS to come up with strategies to meet the immediate and future needs of DRM. It is on the basis of the above findings that the next chapter presents strategies proposed for the improved management of digital records.

¹⁰⁹ South Africa (2006). *Managing Electronic Records in Governmental Bodies: Policy, Principles and Requirements*. 2nd ed. Pretoria, South Africa: National Archives and Records Service of South Africa, p.51.

¹¹⁰ Interview with National Archivist, National Archives of Lesotho on 22 June 2007.

CHAPTER SIX

RECOMMENDATIONS FOR IMPROVEMENT

6.1 Introduction

This chapter presents the recommendations for improving the management of digital records in the UPS as presented by the respondents to the study. The main findings are drawn together with reference to relevant literature and the ESARBICA experiences. In light of the status of DRM in the UPS and the identified challenges, there was strong evidence that there is need for a framework to improve the management of digital records in the UPS. The following areas are recommended.

6.2 Framework for Improving the Management of Digital Records in Uganda

This section addresses the third objective of the study, which is “to discover how efficient DRM can be established in the UPS in order to develop a framework for improvement.”

The section discusses the proposed long term perspective and strategic development plans to guide and steer the improvement of the management of digital records in the UPS. It argues that the way the GoU has addressed RM application and processes does not promote actions towards effective DRM. A new and authoritative strategy should be created within the UPS to drive forward strategies for improving the management of digital records.

In order to suggest measures for improving the management of digital records in the UPS, the study surveyed other countries, and studied how other states dealt with the problem of effective management of digital records. A number of authors from the ESARBICA countries (Mutiti, Keakopa, Ngulube, Wamukoya, Mutula) have also discussed strategies for improving the management of digital records and their contributions have been reviewed to mainstream the UPS approach.

The proposed measures are based on the findings of the study in relation to the research questions as well as the conceptual model posed for this study which

suggested four factors: formal legal infrastructure, formal instruments, DRM infrastructure and human resource capacity, on which to base decisions towards effective management of public digital records for the UPS. In other words, there are a number of considerations to take into account to manage digital records. These are therefore presented in the recommendations in this chapter.

6.3 Formal Legal Infrastructure

This section addresses the need for supportive legal and regulatory infrastructure for DRM.

The legal and regulatory measures are components required to foster recordkeeping in the face of challenges of managing digital records.¹ Lipchak argued that laws are an important part of the environment for managing records and the degree to which digital records are captured and used to support good public administration depends on a supportive legal framework.² In this regard, this study established that a number of Uganda regulations and laws support RM. Examples are the National Records and Archives Act³, the Constitution of Uganda⁴, Access to Information Act⁵, the Public Finance and Accountability Act.⁶ However, these laws were not explicit about digital recordkeeping requirements. The literature on DRM indicates that it is vital that a digital recordkeeping framework is established in governments to ensure compliance with all relevant legislative requirements⁷ but the Uganda legal framework did not provide the necessary clarity as to what good digital recordkeeping is. More significantly, the specific legislation that controls recordkeeping and archives services has not been fully implemented. Full implementation of the current Uganda National Records and Archives Act, with amendments to emphasise the management of digital records, is required as a necessary step to streamline DRM in the UPS.

¹ Bantin (2008), p.231.

² Lipchak (2002), p.4

³ Uganda (2001). *The National Records and Archives Act*. Kampala: UPPC.

⁴ Uganda (1995). *The Constitution of the Republic of Uganda*, at <<http://www.trybunal.gov.pl/constit/constitu/constit/uganda/uganda-e.htm>>. Accessed 14 January 2007.

⁵ Uganda (2005). *The Access to Information Act*, Part II, Section 14. Kampala: UPPC.

⁶ Uganda (2002). *The Public Finance and Accountability Act*, Part V, Section 39. Kampala: UPPC.

⁷ Australia, National Archives of Australia (2004). *Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records*, at <<http://www.naa.gov.au/records-management/publications/Digital-recordkeeping-guidelines.aspx>>, p.20 Accessed 12 May 2009.

The need to make the legal and regulatory environment supportive of DRM was a key requirement proposed by the senior managers. They recommended reviewing the existing Ugandan laws in order to provide MoPS with an enhanced regulatory role aimed at ensuring effective creation and management of digital records in the UPS. In the literature there is strong advocacy for records and archives legislation to provide for digital records creation, accessibility and disposal. For example, Parer calls for reviewing and updating archival legislation in order to accommodate the changes brought about by DRM.⁸ Senior managers in Uganda were concerned about how to comply with the recordkeeping provisions in the available laws, and to them digital records are at risk because the means to manage them are not well understood.

The study also highlighted that legal initiatives aimed at improving the management of records do not get the necessary political backing and this affects the implementation of DRM projects. The lack of political commitment is a symptom of the lack of real support from UPS top leadership for DRM. Yet the literature indicates that RM must be a sustainable process that has the ongoing commitment of the organisation's top executives.⁹ Senior management recognition of digital records as corporate assets, and commitment to their effective management, is essential to the success of an organisation's digital recordkeeping framework.¹⁰

Policymakers should advocate DRM-related laws by ensuring that resources are committed, institutional roles clarified and responsibilities assumed. Legislators should consequently support plans intended to promote the management of digital records as part of the country's development effort, since good recordkeeping is an essential component of efficiency and accountability in government which are key targets of Uganda Vision 2025.

A Senior Manager argued for the full implementation of the existing Records and Archives Act such that a Uganda National Records and Archives Agency (UNRAA)

⁸ Parer (2001), p.5.

⁹ Bantin (2008), p.298.

¹⁰ Australia, National Archives of Australia (2004). *Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records*, at < <http://www.naa.gov.au/records-management/publications/Digital-recordkeeping-guidelines.aspx> >, p.20 Accessed 12 May 2009.

is established as a lead agency to promote DRM.¹¹ Similarly, another Senior Manager argued that a UNRAA should be created not only for the preservation of archives but to play an active role in the establishment and monitoring of DRM services. His concern was to outline the detailed requirements for the management of the digital records and give specific consideration to digital recordkeeping audits as part of GoU expectation for accountability.¹² He also proposed that the Uganda public records legislation should address the technological and administrative changes brought by the digital revolution in today's workplace and set requirements to ensure that reliable and authentic records are created and maintained, as a basis for good governance.

Other senior managers further advocated full implementation of the Records and Archives Act to ensure that records are kept in different formats and retained according to a defined record schedule. Their concern was to establish regulations to ensure that all public bodies manage their digital records properly. To them, DRM should be mandatory with penalties for failure to use the recommended systems.¹³ Full implementation should aim to provide a statutory direction to those in Government who are charged with records creation and management to incorporate DRM. At the same time, a Senior Manager noted that although legal reforms are underway to provide a regulated environment for e-Governance development in Uganda, there was a need for a DRM unit to require public agencies to create and manage reliable digital records.¹⁴

This study established that many countries in the ESARBICA region are considering laws and regulations aimed at improving their RM practices. There is strong evidence that reviewing laws and regulations would lead to DRM success in the ESARBICA region.¹⁵ For example, in South Africa, the National Archives and Records Service Act (Act. No. 43 of 1996 as amended in 2001) has led to increased use of DRM systems in the South Africa public sector and research into the special needs of digital records.¹⁶ As a result, government services have increasingly moved online in South

¹¹ Interview with Senior Manager, ULRC, Kampala, on 18 July 2007.

¹² Interview with Head of Agency, UPSC, Kampala, on 13 July 2007.

¹³ Interview with Senior Manager, MoJCA, Kampala, on 10 August 2007.

¹⁴ Interview with Head of Agency, ULRC, Kampala, on 09 March 2007.

¹⁵ Discussion with the National Archivist, Botswana Archives at ESARBICA workshop, Dar as Salaam on 21 June 2007.

¹⁶ Keakopa (2007), p.88.

Africa. The new legal environment is expected to compel public agencies to manage their digital records so that they are readily available and accessible when needed.

The GoU should take advantage of the Access to Information Act¹⁷ to promote the management of its digital records. The Access to Information law suggests all records (including paper and digital) should be kept in an orderly manner and remain accessible.¹⁸ Compliance with the Access to Information Act would support DRM in Uganda as it imposes a duty on public agencies to be able to keep the records and supply information as required under the Act. This has been supported by some authors who pointed out that the Access to Information laws promotes RM. Shepherd¹⁹ and Sebina²⁰ consider that implementing freedom of information legislation places specific RM roles and responsibilities. The legislation should promote the observance of best practices in the management of official digital records.

The study respondents were reluctant to trust digital records due to fear of security breaches. This was partly due to the fact that records security and privacy concerns were not addressed in the Uganda National Records and Archives Act, as has been established by this research. A Senior Manager argued that issues of safety of records needed to be addressed in the revised Records and Archives Act. The same person was of the view that the UPS needs to ensure the security of the digital information and make sure that networked systems are not vulnerable to hackers and fraudsters.²¹ Middle Managers stated that data protection concerns are important to address in the Records Act since there is increased use of privacy-invasive technology in the work place of today. The overall opinion was that the law should promote confidence in the use of digital systems. The Uganda Records and Archives Act should address information security requirements to ensure that digital records are created and shared in a manner that ensures the appropriate protection of the information they contain.²² The RM law should aim to protect records from a wide range of threats in order to:

¹⁷ Uganda (2005). *The Access to Information Act*. Kampala: UPPC.

¹⁸ Uganda (2005). *The Access to Information Act*, Section 6: Access to Information and Records. Kampala: UPPC, p.6.

¹⁹ E. J. Shepherd (2007). 'Freedom of Information and Records Management in the UK: What has been the Impact?', *Journal of Society of Archivists* 28:2, pp.125-138.

²⁰ P. Sebina (2008). *Freedom of Information and Records Management: A Learning Curve for Botswana*, PhD Thesis submitted to University College London.

²¹ Interview with Senior Manager, MoPS, Kampala, on 9 January 2007.

²² Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

- ensure business continuity and minimise damage in the event of any security breach
- safeguard the accuracy and completeness of records and records processing methods
- ensure that information in records is accessible only to those authorised to have access.

The records managers also suggested that the legislation should address the confidentiality and security of digital records, and ensure the long-term management of digital records.

A wide range of other laws and regulations which support the validity of digital records, such as the Computer Misuse Bill;²³ the Electronic Transactions Bill;²⁴ and the Electronic Signatures Bill²⁵ which are being considered by the Uganda Parliamentary ICT committee should be harmonised, implemented and interpreted as far as possible in a manner consistent with the provisions of an amended Records and Archives Act. These would help build confidence in electronic communications and build reliance on digital records. With these Acts in place, a digital record should not be denied legal effect, validity or enforceability solely because a digital system was used in its creation.

The legal and regulatory environment needs to assist the UPS in its efforts to improve the management of both paper and digital records. It is a key factor required to provide the legal basis for DRM in the UPS. The main concern was to have up-to-date legislation fully implemented and well coordinated. The need to fully implement the records legislation was supported by many respondents. There was also a shared need to set rules for using DRM systems in order to establish confidence in them. The legal framework was required to establish consistency in managing digital records across the UPS.

²³ Uganda (2004) *The Computer Misuse Bill*. Kampala: UPPC.

²⁴ Uganda (2004). *The Electronic Transactions Bill*. Kampala: UPPC.

²⁵ Uganda (2004). *The Electronic Signatures Bill*. Kampala: UPPC.

6.4 Formal Instruments

Formal instruments for DRM address the need to create supportive policies, procedures and guidelines for DRM and for establishing the UNRAA with a national coordinating unit for digital records, and to institute an appropriate DRM programme and an inter-ministry DRM network project. Advocacy at the highest political levels will be needed to support the introduction of these changes and secure the funding for them.

6.4.1 Supportive Policies for DRM

Creating policies and strategies is also necessary in creating an overall management strategy for ICT.²⁶ Policies for controlling DRM should be a part of the overall ICT strategy, just as a good ICT programme should include the presence of a DRM policy. The DRM policy should be responsible for creating integrated, coordinated, and well-supported RM and compliance programmes. The policy should develop, maintain and update an audit process by which compliance with the DRM programme directives can be assessed, measured and kept up to date as an ongoing need for a RM support programme.

The study also found that a national policy governing DRM did not exist in the UPS. The respondents confirmed the presence of a national ICT policy but they indicated that it had loopholes and its structure did not support DRM concerns. All levels of managers recommended revision of the Uganda ICT Policy as the UPS considered streamlining the management of its digital records in order to incorporate DRM requirements. An ICT policy has a direct impact on DRM, as Cook argues, ICT policies should drive DRM.²⁷ ICT policies should dictate the infrastructure that delivers DRM processes. While the Uganda ICT Policy set forth the principles of information use and management within the GoU, and while these are reflected in the Government's long term national development programmes like the Poverty Eradication Action Plan (PEAP) and the National Development Planning Framework (NDPF), this study found that the existing Uganda ICT Policy did not address DRM

²⁶ Heeks (2002), p.13.

²⁷ T. Cook (1997). 'The Impact of David Bearman on Modern Archival Thinking: An Essay of Personal Reflection and Critique', *Archives and Museum Informatics* 11:1, p.17.

concerns such as a digital records retention and preservation strategy. As such, 75% of the respondents proposed reviews and amendments to the current ICT Policy in order to set the context for DRM and provide requirements for using Electronic Document and Records Management systems (EDRMS). Advocating for the revision of the ICT Policy, a Senior Manager argued:

“We need to join the industry in a structured way and use clear strategies, we are time barred but we should not just jump into the industry, such a policy will ensure electronic transactions are conducted in a trustworthy electronic environment.”²⁸

The middle managers recommended that the Uganda ICT Policy should address issues like digital records storage, access, security and systems failure as these would promote the management of digital records. The policy should also ensure that ICT is integrated more firmly in the UPS structures so as to facilitate the use of digital systems for recordkeeping purposes. The individual ministry’s isolated ICT initiatives need to be brought together under a national ICT policy coordinated framework.

This study found contradictions and inconsistencies in the Uganda policy framework, which affect the management of digital records. In light of dealing with the challenge of policies, a Senior Manager suggested:

“The GoU, learning from other countries, should develop a policy to ensure that DRM is a core consideration in all its activities and that accountability for digital records is clearly incorporated into the functions of all public agencies.”²⁹

It was for the above reasons that senior managers expressed enthusiasm for having coordinated ICT related policies, where in effect the desire was for a policy that would address DRM.

Governments need to ensure that the right ICT policy is put in place in order to guarantee success of public DRM initiatives. Zarkout argues that effective DRM would be achieved through a supportive ICT policy environment.³⁰ This thinking also

²⁸ Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

²⁹ Interview with Senior Manager, MoFPED Kampala, on 06 March 2007.

³⁰ B. Zarkout (2006). ‘Bringing Records Management to the Enterprise’, *Information Management and Technology*, January -March, pp.28-29.

supports the propositions advanced by the OECD that updating or modifying existing ICT policies would accommodate the challenges posed by using digital systems for information management.³¹ The revised Uganda ICT Policy should describe the best practice function as a benchmark to measure DRM practices. This study established that most countries in the region have ICT policies but do not have a DRM programme. A respondent from one of the ESARBICA region countries argued that a DRM policy provides means of empowering public agencies to manage digital records.³² After discussing the DRM policy-related developments in the ESARBICA region, a Senior Manager in UPS suggested that the ESARBICA initiatives should serve as templates in building a comprehensive DRM implementation strategy for the UPS and that Uganda should learn from countries like South Africa and design a national DRM policy.³³

The idea of introducing a DRM policy as a guiding principle for improving the management of digital records was supported by several respondents as absolutely necessary. Senior managers believed that introducing a DRM policy would enhance standards of business efficiency, service delivery and corporate governance. The inference of this is that a DRM policy provides the basis for effective and accountable administration.

The senior managers recommended that MoPS, the Uganda National Council for Science and Technology (UNCST) and Uganda National Bureau of Standards should together formulate a national DRM policy but these institutions lack the RM professional knowledge. Some managers also proposed that MoPS and UNCST play a proactive role to sensitise UPS managers to integrate DRM as a strategy to manage all their digital records. This was supported because UNCST has a central role in providing guidance and setting standards for the use of IT in the GoU and MoPS is responsible for records and archives management across the GoU. This thesis recommends that the proposed UNRAA should set priorities for DRM in order to harness the potential opportunities offered by ICTs for the management of records.

³¹ The Organisation for Economic Cooperation and Development (OECD) (1996). *OECD Efforts to Address the Measurement and Policy Challenges Posed by the Information Society*, at <<http://projecteuclid.org/euclid.isr/1079557572>>. Accessed 14 December 2008.

³² Discussion with the National Archivist, Botswana Archives at ESARBICA workshop, Dar as Salaam on 21 June 2007.

Another proposition by a Senior Manager was to implement the e-governance policy.³⁴ This recommendation fits in well with this study, as the e-governance policy should promote the creation and management of digital records. E-governance would provide a basis for networked structures of public administration and to use on-line domains as reported in other studies on e-governance in Uganda.³⁵ This would increase DRM readiness and use, and provide the much needed advice to start-up DRM projects. This strategy is required because e-governance provides a backbone to the creation of digital records.³⁶

The literature also gives the relationship between e-governance implementation and attainment of a DRM regime in the way in which ICTs are used in governments as well as in how government activities are organised. Ciborra and Navarra³⁷ as well as Fang³⁸ argued for establishing e-governance arrangements in order to enjoy the benefits of using digital systems in public administration. They also believed that e-governance must be firmly embedded in the existing government processes and that digital recordkeeping is part and parcel of e-governance. According to them, e-governance can restructure administrative functions and processes and lead to better management of digital records, the latter becoming an outcome of the electronic processes.

The records managers in the study were more concerned with policies that relate directly to RM processes such as a RM policy and archives collection policy, which were lacking in UPS. Their concern was the lack of an official charter for performing all RM functions. They were seeking guidelines and procedures for implementing internal controls relating to UPS's recordkeeping requirements. One respondent stated

³³ Discussion on RM Developments in UPS with Senior Manager, MoPS, Kampala, on 8 January 2007.

³⁴ Uganda, NPA (2006). *Uganda E-Government Strategy Framework (Final Report)*. Kampala: NPA.

³⁵ V. V. Reijswoud and J. Arjan de (2008). 'E-governance in Uganda: Experiences and Lessons Learned from the DistrictNet Programme', in K. Rouibah, O. Khalil and A. E. Hassanien (eds.) *Emerging Markets and E-Commerce in Developing Economies*. Hershey, PA: Information Science Reference, p.146.

³⁶ R. Heeks (2001). *Reinventing Government in the Information Age: International Practice in IT-enabled Public Sector Reform*. London: Routledge, p.13.

³⁷ C. Ciborra and Navarra, D. (2005). 'Good Governance, Development Theory, and Aid Policy: Risks and Challenges of E-Government in Jordan', *Information Technology for Development*, 11:2, pp.141-159.

for example that a formal policy on e-mail management was lacking for most of the UPS agencies.³⁹ Another one wanted a policy on records retention and disposal. She argued for a proactive policy advocating for the collection of archives and a strategic approach to secure their availability in the long term.⁴⁰

The GoU Archivist proposed to create a DRM policy since the Section for Current Records in the RITD had not come up with such a policy and to him it is required to address the security requirements for both paper and digital records. His concern was to have measures to ensure that digital records held in ICT systems were secure. He proposed audit controls and authentication procedures to ensure no unauthorised modification or destruction of public records.⁴¹ The UPS should have a consistent policy stating what DRM systems should and should not do. He advocated for a security policy to enforce a recordkeeping culture at the heart of UPS services.

The proposed UNRAA should take on the development of a DRM policy as indicated in Appendix XI. The policy would make every UPS employee accountable for recordkeeping. Full support by all levels of Managers is essential for DRM implementation and this should be backed by a policy. With a DRM policy, UPS agencies should ensure that records and the information they contain are adequately managed. The DRM policy should provide a plan upon which the UPS can design and implement an effective DRM programme. And as the case is in South Africa elements of a sound records management programme for both paper and electronic records should be supported by a records management policy endorsed by the heads of government bodies and their top management teams, as well as by the national archives and records service. It is therefore important for the UPS to have a DRM policy that suits its procedures.

This study established that the MoFPED had a security policy for controlling the use of ICTs but that those rules did not outline the proper usage of digital records. It has been argued that it should be a legislative requirement that public digital records are

³⁸ Z. Fang (2002). 'E-Government in Digital Era: Concept, Practice and Development', *International Journal of the Computer, the Internet and Management*, 10:2, pp.1-22.

³⁹ Interview with Records Manager, MoJCA, Kampala, on 22 February 2007.

⁴⁰ Interview with Records Manager, MoPS, Kampala, on 26 January 2007.

retained in a secure manner. A records security policy should be in place for UPS businesses to derive maximum benefit from technology. This would assist in the provision of better public services. The policy should ensure the security and confidentiality of records, protect against any anticipated threats or hazards to the security or integrity of public records and protect against unauthorised access to or use of public records or information. The role of the security policy is important in helping the UPS to achieve its business objectives and this is a critical area for the UPS to consider.

The lack of political commitment was highlighted as a factor affecting the DRM policy framework and it was argued that the need to improve the management of records was not yet appreciated by the politicians.⁴² This affected the necessary resource allocation to initiate a DRM programme. A senior manager further argued that most politicians continue to view records as a by-the-way and hence do not support projects to improve the RM function, which in turn affects the UPS ability to establish and maintain DRM projects. Without political will, resources required to implement a DRM project will not be realised. High level advocacy will be necessary to persuade politicians of the benefits of effective DRM to GoU services in order to encourage them to give higher priority to funding for a DRM programme.

The danger for all policy statements is that they are soon forgotten once approval has been obtained. As such their actual impact is minimal. The UPS should guard against non-implementation by ensuring that the DRM policy, once written, is widely disseminated and regularly referred to. The DRM policy should be revised when there are changes in the RM legislation. Any subsequent policies which are developed should be informed by and make reference to the earlier DRM policy. All ICT-related policies have to be well coordinated, and they should be the baseline for DRM implementation.

The DRM policy should be developed to support legislation which specifies or implies the requirement to create and retain certain records. This would provide a

⁴¹ Interview with Government Archivist, at the Uganda National Archives, Entebbe, on 12 January 2007.

⁴² Interview with Senior Manager, MoPS, Kampala, on 08 January 2007.

framework needed for interpretation and implementation of statutory requirements for RM. A DRM policy needs to be understood so that DRM tasks are conducted in a consistent way over time. The DRM-related policies need to be linked together in a procedure manual that would be held in each UPS ministry and agency. The e-strategy policy framework for the SADC region countries⁴³ recommends that each country needs to address a unique policy reflected within its infrastructure and ground-level realities. The UPS therefore needs to build a DRM policy as a basis for strategies for managing digital records, in the context of ICT initiatives.

6.4.2 DRM Procedures and Guidelines

The successful management of digital records builds on national and international guidelines.⁴⁴ The DRM literature shows that, world-wide, extensive effort has gone into the creation and implementation of international guidelines for proper care for digital records due to the ease with which they can become quickly inaccessible and lost through media decay or out-of-date technology. Authors like McLeod and Hare recommend that organisations put in place RM procedures and guidelines so that everyone within the organisation who is involved with records understands and executes their RM roles and responsibilities effectively and efficiently.⁴⁵ The procedures provide a step by step approach to managing digital records.

One respondent indicated that the management of digital records calls for procedures, which did not exist in the UPS. The implication of this is that the DRM function in its present state is a potentially serious liability to NPM reforms. The Uganda National Archives did not have a concrete plan regarding procedures and practices to meet the DRM function across the UPS and yet the national archives of other countries are engaged in producing DRM standards and practical guidelines in support of DRM. For example, The National Archives of Australia has endorsed AS ISO 15489 for best practice guidance on digital recordkeeping for Australian Government agencies and

⁴³ Southern African Development Community (SADC) (2002). *SADC E-readiness Review and Strategy*, at <http://www.schoolnet africa.org/english/policy_centre/e-readiness.html>. Accessed 15 March 2007.

⁴⁴ Abbot (2001), p.63.

⁴⁵ McLeod and C. Hare (2006), p.51.

agencies are encouraged to adopt many of the practices set out in the standard by using the DIRKS methodology.⁴⁶

In Uganda, the Records Managers agreed with Senior Managers and proposed that strict records and archives management guidelines be set up with penalties for non-compliance. They specifically advocated that DRM guidelines be formulated and promulgated.⁴⁷ Also in line with the views from the Senior Managers, the records managers wanted the adoption of digital systems that have built-in RM functionality. The aim was for UPS digital records to be maintained in the same way by all the ministries. This would provide, for example, a common DRM meta-data platform for the UPS whereby UPS records could have a uniform identifier. Without meta-tagging operating to a single consistent standard, the UPS would find difficulty in sharing information.

The application of DRM rules or standards would result in similar but not necessarily identical products when applied correctly. According to the National Archives of South Africa Records Management Model 2005,⁴⁸ the elements of a sound RM programme for both paper and digital records should include the presence of RM procedures to back the RM policy and such procedures should be designed by the national archives and records service and taking into account the unique functions, structures and resources of each government body. The National Archives of Australia Digital Recordkeeping Guidelines 2004 also provide DRM procedures and guidelines as a key resource required to manage digital records.⁴⁹ The potential benefit of adopting the Australian and South Africa models as part of the framework for managing records in the UPS is that digital records would be recognised as a corporate asset and be kept in a secure environment.⁵⁰

⁴⁶ Australia, National Archives of Australia (2004). *Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records*, at < <http://www.naa.gov.au/records-management/publications/Digital-recordkeeping-guidelines.aspx> >, p.21 Accessed 12 May 2009.

⁴⁷ Discussion on DRM Developments in UPS with Records Managers in MoPS, Kampala, on 18 January 2007.

⁴⁸ South Africa (2005). *National Archives of South Africa Records Management Model*, at <http://www.national.archives.gov.za/rms/best_practice.htm>. Accessed 17 July 2008.

⁴⁹ Australia, National Archives of Australia (2004). *Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records*, at < <http://www.naa.gov.au/records-management/publications/Digital-recordkeeping-guidelines.aspx> >. Accessed 12 May 2009.

Other authors on the subject of DRM also recommended the need for DRM standards. Hedstrom, writing from the North American perspective, noted that there is a need ‘to ensure that the standards and procedures for describing digital records are established when a digital system is designed.’⁵¹ Cook also proposes that digital recordkeeping requires that records are initially created according to acceptable standards before they are adequately documented as reliable evidence.⁵²

The requirement for a specific Uganda DRM standard is to guide the UPS agencies to efficiently and effectively create and manage digital records. The senior managers advocated DRM procedures and standards be developed and be adequately provided for in the legislative environment. These standards would ensure that the EDRMS used in the UPS have the RM functionality. The DRM standards should be drawn in collaboration with the ISO guidelines as indicated in Appendix XI. The RM standards should also be re-emphasised in the records legislation to specify performance standards so as to ensure accuracy, integrity, and accessibility of public digital records. All managers need to understand the DRM procedures and apply them in their day to day work.

6.4.3 DRM Programme

A records management programme provides a benchmark and a set of milestones for a government to gain formal control of existing digital records that have value as evidence, and to plan for the implementation of DRM strategies.⁵³ This study established that there was no UPS-wide DRM programme and no real awareness of the need for such a programme within the UPS. The lack of a DRM programme has made it difficult for the UPS to control the existing digital records while studies in other countries have indicated that attention has been given to developing a DRM programme as a strategy to manage the records generated by the ICTs.

⁵⁰ J. McLeod (2003). ‘Assessing the Impact of ISO 15489 – A Preliminary Investigation’, *Records Management Journal* 13:2, p.72.

⁵¹ M. Hedstrom (1993). ‘Descriptive Practices for Electronic Records: Deciding What is Essential and Imagining What is Possible’, *Archivaria* 36 Autumn, pp.55-63.

⁵² T. Cook (2001). ‘Archival Science and Postmodernism: New Formulations for Old Concept’, *Archival Science* 1:1, pp.3-24.

⁵³ United Kingdom (2002). *Electronic Records Management: Framework for Information Age Government*, at <[http://archive.cabinetoffice.gov.uk/e-envoy/resources-pdfs/\\$file/erm.pdf](http://archive.cabinetoffice.gov.uk/e-envoy/resources-pdfs/$file/erm.pdf)>. Accessed 04 July 2009.

The concern of senior management was to design and implement a DRM system to support information management and control.⁵⁴ As there are no clearly set responsibilities and realistic benchmarks for DRM, as well as a monitoring mechanism in the UPS, the senior managers desired a coherent DRM programme with a focus on sharing of information within the UPS structures.

The Records Managers indicated that a DRM programme is required so that digital records with ongoing value are safeguarded and institutional resources and investment are not wasted on the retention of unimportant or outdated information. A formally established programme for the systematic management of digital records is needed in the UPS. One author, writing in support of establishing a DRM programme, states that such a programme would provide comprehensive coverage of records from creation through utilisation, destruction or permanent preservation.⁵⁵

The UPS records management programme should have a well-structured DRM programme to ensure that information can be identified and retrieved when required. Specifically, the records management programme should ensure that:

- the UPS recruits staff with the appropriate competencies
- relevant staff are appropriately qualified, trained or experienced
- all staff understand the need for DRM
- the UPS has in place the appropriate network to support DRM

Studies in ESARBICA countries like Botswana, Namibia and South Africa indicate that a DRM programme establishes the framework to ensure that records are designated as such and receive the special treatment and protection they deserve. The National Archive of South Africa has issued a generic model action plan to assist public authorities in compliance with the DRM programme requirements.⁵⁶ This represents the core of existing best practice for starting a DRM programme. This thesis proposes that the DRM implementation projects within the ESARBICA

⁵⁴ Discussion on RM Developments in UPS with Senior Manager, MoPS, Kampala, on 8 January 2007.

⁵⁵ W. Saffady (2002). *Managing Electronic Records*. 3rd ed. Lenexa, Kansas: ARMA International, p.14.

countries provide lessons to the UPS, based on the successful DRM programmes in countries like South Africa.

6.4.4 Establishment of the Uganda National Records and Archives Agency (UNRAA)

The need to establish the UNRAA is recommended by this thesis as a strategy for improving records and archives management in Uganda. This should be a semi-autonomous corporate body that reports to the minister of the MoPS since MoPS is responsible for records and information management across the UPS. The proposed UNRAA should be charged with promoting efficient practices for creating, maintaining, retaining, preserving, and disposing of public records regardless of format. In addition, UNRAA should develop and coordinate RM policies, standards, procedures, and techniques, and provide training to UPS ministries on approved RM practices since the RITD has not been effective, as highlighted in this thesis.

The formation of UNRAA is recommended because the model in Uganda has been to create new independent or related special bodies to lead an initiative. For example, as earlier discussed in this thesis, when the GoU wanted to streamline IT utilisation the Uganda Computer Services (UCS) was transformed into the National Technology Agency (NITA). This was a semi-autonomous body under the MoFPED, which was central to the computerisation efforts in the country. The Government decided to transform the role of UCS through divesting and making reforms to it and in the same way a UNRAA should be established as a national coordinating Agency for records and archives as a strategic initiative to promote the management of all records in the UPS.

Although it was proposed in the Uganda Records and Archives Act 2001 that the UNRAA be established to ensure GoU organs follows good practices in managing public records, the Act has never been fully implemented and the UNRAA does not exist.⁵⁷ Judging from the data and information about the administration and organisation of the RITD, which has the mandate to establish and promote efficient,

⁵⁶ South Africa (2005). *National Archives of South Africa Records Management Model*, at <http://www.national.archives.gov.za/rms/best_practice.htm>. Accessed 17 July 2008.

economic and effective records and information management systems in the UPS, it has not been able to support the development of a well-organised RM service. Particularly significant is the lack of capacity in terms of trained human resource for the implementation and monitoring of a RM programme across the UPS. The RITD has remained small in terms of capacity, lacks resources and autonomy (see Appendix IX). A key section of semi-current records was never established. The Uganda National Archives, a section of the RITD, was also seen as less authoritative than is the case in other countries. The National Archives has experienced many administrative changes over the years leading to the inability to play an active role in RM. From its beginnings it has been placed under different ministries, with inadequate funding and decision/policy-making capacity and was seen to have only a preservation role for the colonial administrative records. It has remained part of the RITD but with no role in establishing and ensuring efficient RM services in the UPS. This has kept the Uganda National Archives as a low status institution since it does not provide professional assistance, advice and guidance in establishing RM in GoU business processes.

To protect its RM interests, the GoU should institute UNRAA with a higher-level authority than the RITD to act as a "watch dog" to monitor the RM function across the UPS. It should provide technical and policy assistance for managing the national records and archives services. The UNRAA should be authorised to initiate and recommend standards and improvements in RM practices. It should monitor and evaluate the RM practices across the UPS as this would boost the effective and efficient management of the current and semi-current records; and for identifying and collecting the national archives for maintenance under the Uganda National Archives, tasks which are not being undertaken appropriately at the moment, as discussed in the first five chapters of this thesis. UNRAA should have an independent budget vote from Government, as is the case for other semi-autonomous bodies like Uganda Revenue Authority, National Social Security Fund and Bank of Uganda under the MoFPED, and Uganda Communications Commission under the MoICT.

⁵⁷ Discussion on RM Developments in UPS with Senior Manager, MoPS, Kampala, on 8 January 2007.

As a result, this thesis further recommends that there should be a functioning RM Officer (RMO) in every Ministry including the Ministry of Public Service, and all RM Offices should have their operations guided and monitored by the UNRAA proposed above, which should be responsible for overseeing RM practices and procedures in the UPS. The Director of UNRAA should promote RM by liaising with the RM Offices in the ministries. The existing RITD in the MoPS should thus be restructured so that it offers RM services at MoPS level. The core functions of the proposed UNRAA should be to establish and maintain an active and continuing programme for the effective and efficient management of records across the UPS. UNRAA should have an extended remit to advise on and regulate DRM services.

6.4.5 National Coordinating Unit for Digital Records

With the increasing use of ICT in the UPS, there is a need for an institutional entity with responsibility for steering the management of the digital records. This thesis also proposes to establish a national DRM coordinating unit under the UNRAA (see Appendix X). Failures in RITD led to a lack of a DRM infrastructure needed to establish EDRM services and monitor how the digital records are created and managed or held by ICT systems across UPS.⁵⁸ The unit's role should be that of advocacy, policy and standards formulation, monitoring and evaluation for DRM initiatives under the bigger umbrella tasks of the UNRAA. The proposed national DRM unit should facilitate and coordinate DRM activities in the UPS. The choice of a special unit as the main vehicle for reaching out to the UPS ministries on matters of DRM and for promoting the holistic management of public digital records would strengthen the DRM function in Uganda.

It should be a separate unit in its own right reporting directly to the Director of the UNRAA. The unit should work hand in hand with the UPS ministries in particular with those units responsible for RM in each ministry. The core functions of the DRM unit would be to develop procedures, and foster implementation of the EDRMS in the UPS. It should develop and monitor use of a standard on full and accurate digital recordkeeping for the UPS. With close monitoring of the DRM function, it would be easier to hold UPS agencies accountable for the digital records under their custody.

The UPS ministries would be encouraged to apply DRM procedures and this would promote a DRM environment. Through the unit, this thesis proposes that the UNRAA launches a DRM implementation strategy. This is more required now especially that records are increasingly being created and kept by ICT systems.

The national DRM coordinating unit should work as an inspectorate body for DRM quality assurance and this would ease direct monitoring and supervision of the DRM functions and activities via the RM offices across the UPS. It should provide practical advice and guidance in support of DRM, as recommended by one of the Senior Managers.⁵⁹ For coordination purposes, the unit should have five regional offices; one in Kampala to cover the central region, another in Mbarara for western Uganda, while Hoima, Mbale and Gulu offices would handle the DRM mandate in mid-western, eastern and northern Uganda, respectively. The regional offices would be responsible for monitoring and supervision of DRM activities in the UPS ministries within the regions.

The DRM unit should coordinate all DRM related activities within the UPS including the procurement and maintenance of DRM related hardware and software. This would promote use of a standard arrangement in the creation and management of digital records in the UPS. In doing all this, this unit would make a contribution to the DRM function in the UPS.

6.4.6 Inter-Ministry DRM Network Project

The findings of this study have demonstrated that digital records are generated in the UPS but are not shared or managed electronically. A senior manager recommended that the UPS sets up an inter-ministry DRM network project to promote the creation and sharing of digital records.⁶⁰ This networked project would be part of the work of the proposed National Coordinating Unit for Digital Records and run by that Unit as a pilot project to promote the creation and keeping of digital records. Its role would be to oversee the most effective rollout plans and monitor DRM network performance.

⁵⁸ Discussion on RM Developments in UPS with Senior Manager, MoPS, Kampala, on 8 January 2007.

⁵⁹ Discussion on RM Developments in UPS with Senior Manager, MoPS, Kampala, on 8 January 2007.

The inter-ministerial DRM network project is suggested to provide guidance about what records to capture, when, where and how to capture them and what metadata are needed for each record.⁶¹ The introduction of a DRM implementation project within this context would be a new approach and an integral step in creating the infrastructure to enable the generation and keeping of digital records in the UPS. This would fit within the Uganda public sector reform programme that advocates increased use of ICTs in the delivery of public services.

The network would provide for information sharing using ICT in the UPS business administration. With a focus and emphasis on DRM, the main “pillar” of this project would be to promote the generation and sharing of digital records in the UPS.

6.5 DRM Infrastructure Development

This study argues that the DRM infrastructure is one of the building blocks on which DRM services can be built. This is because in the DRM environment, it is imperative that businesses be able to respond to the RM requirements. However, this study found out that there was an immediate and pressing need to make DRM facilities more accessible in the UPS. The DRM infrastructure was lacking within the UPS ministries and departments and this affected both the systematic use of ICTs to improve the efficiency and effectiveness of Government and the growth of DRM services. A number of issues were raised relating to required DRM infrastructure.

6.5.1 Technical Requirements

This study found lack of technologies as one of the barriers to the creation and management of digital records in the UPS. Given the fact that there are already various ICT initiatives in the different UPS ministries and departments, several proposals were made relating to technical requirements and these varied with the category of the managers interviewed.

⁶⁰ Discussion on ICT Developments with Senior Manager, NPA, Kampala, on 22 January 2007.

⁶¹ Discussion on ICT Developments with Senior Manager, NPA, Kampala, on 22 January 2007.

The ICT Managers from ministries which already had an ongoing ICT project, suggested that a networked business environment be acquired for Government purposes generally and also for a more rapid rollout of DRM technology in the UPS. For example one ICT manager proposed defined workflow and communication patterns.⁶² In effect, the network would utilise distributed information and communication systems to replace the often-inflexible hierarchical controls. Therefore, significant investment in the ICT infrastructure in a coordinated way was desired in the UPS.

The Senior Managers suggested acquiring ICT equipment in the form of personal computers, DRM software and hardware in the UPS. “UPS should establish an interlinked network to form the ‘UPS Wide Area Network’.”⁶³ This would ensure implementation of a uniform platform for creating and managing digital records across the UPS.⁶⁴ A network of this kind would assist the overall availability of ICT facilities in the UPS and would also provide an infrastructure for the development of DRM services but it is not a substitute for a DRM system for which additional software would be required. Another senior manager proposed expanding Intranet and Extranet facilities across the UPS.⁶⁵ A Wide Area Network with Intranet and Extranet facilities would provide the underpinning technological environment required to support DRM strategies.

The Senior Managers were concerned with acquiring a DRM system. They agreed with the ICT Managers and records managers in regard to the need to provide the ICT infrastructure to support DRM and urged UPS to secure grants to boost the acquisition of DRM equipment. On the other hand, one of the Senior Managers advocated acquiring a good working knowledge of the most commonly used DRM systems in other countries.⁶⁶ His concern was to acquire a specialised software application to manage both paper and digital records across the UPS as the starting point in the quest to manage the digital records. However, as reported in the Digital Recordkeeping Guidelines issued by the Australia National Archives 2004, a DRM system is not just

⁶² Interview with ICT Manager, MoFPED, Kampala, on 02 March 2007.

⁶³ Interview with Senior Manager, UCC, Kampala, on 20 August 2007.

⁶⁴ Interview with ICT Manager, UNBS, Kampala, on 07 February 2007.

⁶⁵ Interview with Senior Manager, MoJCA, Kampala, on 31 August 2007.

⁶⁶ Interview with Head of Agency, NITA-U, Kampala, on 08 March 2007.

a piece of software. It is a framework for the capture, maintenance and accessibility for records over time.⁶⁷ What is important in the UPS is acquiring ICT systems with recordkeeping functionality and capability.

6.5.2 Records Management Software

There is a need to use specialised software to manage digital records in the UPS. The Records Managers mainly suggested acquisition of appropriate RM software. The Records Managers were concerned with acquiring dedicated RM software applications that can be used as the basis for a recordkeeping system.⁶⁸ In the literature, software for electronic document and records management systems (EDRMS) is recommended for managing records in the digital era. For example, McLeod and Hare recommended EDRMS because they provide full recordkeeping function in terms of creation, capture, access, and management over time of records in digital form.⁶⁹ With availability of such systems, the UPS should be better prepared to effectively manage both its paper and digital records.

A EDRMS should assist the UPS to manage its digital records by managing the work flow. Although the UPS has started using the Tower (TRIM) Software, this needs to roll over to other ministries as it is currently used by only 3 ministries (which is only 13% of the UPS ministries). Examples of other records management systems that UPS could adopt include RMS, OmniRIM, Impact Systems, InfoRouter, eManage and Cuadra. Other possibilities include Hummingbird, Filenet and Tower Software Microsoft which are also pushing into the market although some lack the full functionality to qualify as a complete EDRMS but can be upgraded to a EDRMS compliant solution. These integrated systems provide means for the management of both paper and digital records.⁷⁰ The national DRM unit in the proposed UNRAA should be responsible for recommending which of these systems is most appropriate for the UPS.

⁶⁷ Australia, National Archives of Australia (2004). *Digital Recordkeeping: Guidelines for Creating, Managing and Preserving Digital Records*, at < <http://www.naa.gov.au/records-management/publications/Digital-recordkeeping-guidelines.aspx> >, p.14. Accessed 12 May 2009.

⁶⁸ Interview with Records Manager, URA (10 November 2006), MoPS (26 January 2007), MoJCA (14 August 2007)).

⁶⁹ McLeod and Hare (2006), p.100.

⁷⁰ T. Davenport (2000). *Mission Critical: Realising the Promise of Enterprise Systems*. Boston: Harvard Business School Press, p.23.

It is further recommended in the literature that direct involvement of senior management in the implementation process for an EDRMS is critical to the success of such a project. Biagio and Ibiricu argue that the best results are achieved where managers have actively promoted the system in words and actions.⁷¹ This implies that all the UPS managers at all levels should support and promote the use of EDRMS. However, management support should not, result in blocking the experts from doing their job properly, hence the importance of effective collaboration.

The proposed UNRAA should monitor and enforce use of EDRMS so as to ensure the effective management of the digital records. This should be part of the RM quality of service requirement and should be done to boost confidence in the DRM services.⁷²

6.5.3 Records Security Requirements

Security concerns were raised during this study. A security system that enforces checks and controls for both paper and digital records was not evident in the UPS. All managers were worried about controls for inappropriate usage, unauthorised access, and how to prevent users from one business unit accessing or viewing data of another business unit. Some authors have pointed out that it is essential for governments to have records security controls in place to ensure the safety of both hardcopy and digital records.⁷³

There are a number of international security standards, regulations and guidelines that the UPS could learn from in order to improve the security environment of its digital recordkeeping systems. For example the International Standard, ISO/IEC 27001⁷⁴ provides advice to use technical controls such as firewalls and use of intrusion detection technologies. It covers physical aspects of security, including

⁷¹ M. L. D. Biagio and B. Ibiricu (2008). 'A Balancing Act: Learning Lessons and Adapting Approaches Whilst Rolling out An EDRMS', *Records Management Journal* 18:3, p.176.

⁷² H. Mukasa-Mulira (2000). 'Issues of Security and Confidentiality', in *Proceedings of Workshop held at International Conference Centre, Kampala-Uganda 19 – 20 April*, cited in International Telecommunications Union, *The Internet in an African LDC- Uganda Case Study*, January 2001, posted at <<http://www.itu.int/ITU-D/ict/cs/uganda/material/uganda.pdf>> Accessed 5 December 2008.

⁷³ J. Wamukoya and S. M. Mutula (2005). 'E-records Management and Governance in East and Southern Africa', *Malaysian Journal of Library and Information Science* 10:2, p.74.

protection of equipment and information from physical harm, keeping key locations secure as well as physical control of access to information and equipment. This would provide guidance and explanation, which would inform the UPS efforts to establish and maintain an effective RM security system. Compliance to the above control measures would imply quick and effective controls for security breaches.

One author provides a potential solution for the security of records within the functional requirement and the metadata specifications. According to Bantin, questions to consider when reviewing the security of a RM system should include:

1. Does the system control access to the records according to well-defined criteria?
2. Are records linked to citations and references to laws, policies, and best practices that impose a requirement to control access to and use of a record?
3. Are records linked to statements defining the terms under which the record may be accessed and used?
4. Does the system allow only authorised personnel to create, capture, update, or purge records, metadata associated with records, files of records, classes in classification schemes, and retention schedules?
5. Is the audit trail data unalterable?
6. Does the system ensure that any function to delete records on an ad hoc basis (outside of the disposal process) is restricted to only the highest level of administration?
7. Does the system identify who accessed and used the record, and when this occurred?⁷⁵

By undertaking the above measures, the UPS would be able to promote the security of the records and DRM systems within UPS agencies. The measures would enable the UPS to maintain appropriate administrative, technical and physical safeguards for the security of the digital records. The UPS should therefore integrate security systems and measures into its business processes.

⁷⁴ International Standards Organisation *ISO/IEC 27001: Information Security Management Systems - Requirements*, at <<http://www.praxiom.com/27001.htm>>. Accessed 16 January 2009.

⁷⁵ Bantin (2008), p.110.

6.5.4 Reliable Power Supply

This study found the lack of adequate power supply a problem in the UPS. It became clear that sources of power needed to be revitalised if the DRM project was to succeed. With the power supply problem, the emerging consensus was to develop a system from which stable supply could be derived. Expansion of the national electricity grid and utilisation of alternative energy sources was recommended as a means of doing business better.

There was increased demand for constant and reliable supply of electricity for digital systems to be relied on within the UPS. This suggestion was prompted by the fact that power supply is not stable in Uganda, as earlier reported in this study. Without a constant supply of electricity, electronic systems would be difficult to depend on since there would be interruption of services.

It was established that creation and use of digital records presupposes that electricity is available. This is sometimes not the case and results in limited use of ICT in general within the UPS. In response to power deficiencies within the UPS, a Senior Manager suggested using alternative energy sources like solar technology.⁷⁶ Solar energy was proposed because it is a cheap source of power as also reported in the literature.⁷⁷ Alternative power sources were proposed mainly to overcome power interruptions and for places where the national electricity grid has not been extended such as those upcountry offices. The inadequate power supply implies that there is a need for efficient manual operations should the power supply be interrupted and hence a well maintained paper records systems. Paper records need also to be streamlined, just as the IRMT lessons show that digital systems cannot simply be superimposed on dysfunctional or chaotic paper systems, as this has often been a recipe for failure in many countries.⁷⁸

⁷⁶ Interview with Senior Manager, MoFPED, Kampala, on 06 March 2007.

⁷⁷ V. Baryamureeba (2008). 'ICT-enabled Services: A critical Analysis of the Opportunities and Challenges in Uganda', *Journal of Computing and ICT Research* 4, p.222.

⁷⁸ International Records Management Trust (IRMT) (2003). *A Summary Report on the IRMT/World Bank Evidence-based Governance in the Electronic Age Global Forum Electronic Discussion on Information Technology, Electronic Records and Recordkeeping held between 27-31 January*, p.8.

The South Africa Mesh Project discussed in Chapter 5 indicates an alternative to the power supply problem in Uganda. Its goal is to enable the capacity for the ICTs to function with a low level of obstruction. This would definitely boost the creation of records in the ICT environment, sharing of records and use of digital recordkeeping systems provided there is a reliable power supply mechanism.

The planning and building of a mesh network within the UPS would provide a cheap alternative source of power and overcome the problems of power shortage. This option would provide reliable and affordable LAN and WAN services for all UPS agencies. In essence what is sought is to avoid power cuts, a project to ensure power supply would be essential. The UPS could address power supply problems through examining wireless processes in general. This knowledge could then be used to critique existing power supply strategies and suggest ways forward.

6.6 Human Resource Capacity

The requirement for new RM skills was the third factor identified in the conceptual framework that guided this study. The reviewed DRM literature in this thesis also highlights that reforms in work practices resulting from the use of ICTs call for new records management skills, and require records creators and keepers to have a firm grasp of DRM so that they can carry out their responsibilities effectively and in accordance with standard practices. A number of authors such as Johare⁷⁹, McLeod et al⁸⁰, Katuu⁸¹ and Turner⁸² argue that the provision of education and training would build the human resource capacity required to manage digital records in organisations which are a result of the use of ICT in information work. The respondents in relation to the RM human resource presence in the UPS made a number of suggestions.

⁷⁹ R. Johare (2006). 'Education and Training in Electronic Records Management (ERM). The Need for Partnership Building', in C. Khoo, D. Singh and A. S. Chaudhry (eds.). *Proceedings of the Asia-Pacific Conference on Library and Information Education and Practice (A-LIEP 2006), Singapore, 3-6 April*, at <dlist.sir.arizona.edu/1433/01/77.Rusnah_Johare_pp541-549.long.pdf>. p.544. Accessed 15 March 2009.

⁸⁰ J. McLeod, C. Hare and R. Johare (2004). 'Education and Training for Records Management in the Electronic Environment – the Research for An Appropriate Model', *Information Research* 9:3, at <<http://www.informationr.net/ir/9-3/paper179.html>>. Accessed 16 June 2009.

⁸¹ S. Katuu (2003). 'Engaging Orality within the Archival Discipline: its Contents and Discontents', *COMMA: International Journal on Archives* 1, p.85.

6.6.1 Training and Monitoring

A lack of professional records managers was evident in the UPS. This affects the UPS capacity to deliver RM services. The need for recordkeepers to have in-depth knowledge of DRM through training and education is set out in Chapter 2 of this thesis. It reveals a strong pressure in support of multi disciplinary training approaches for administrators, records managers, archivists and IT personnel/ specialists who should work together to create and implement a DRM programme that supports the business process of an organisation. The findings of this thesis are also consistent with the literature in pointing out that the UPS needs a sufficient number of skilled RM personnel with ICT training, including managers with experience in procuring, evaluating and implementing DRM solutions. These are essential for a DRM framework to be realised in the UPS.

Senior Managers were concerned that records professionals lack the skills to contribute to the policies and regulations that would govern the way records are created, used and managed. Lack of adequate DRM knowledge was also a problem among the senior managers. This led to the recommendation that all levels of managers need to learn how to use DRM systems. The Records Managers proposed the need to launch a DRM-related training programme. They suggested training of all levels of managers as part of UPS in-service training for RM. The Senior Managers proposed interdisciplinary training programmes as a measure to enhance RM service at all managerial levels across the UPS. According to one Senior Manager, “all managers need a high-level understanding of the principles of RM, in view of the uniqueness of RM requirements, specific RM skills are required to be addressed in the training programme.”⁸³

Senior Managers recommended the IT staff be involved in the recordkeeping function so as to establish a credible DRM system in the UPS. In particular, one manager from the MoFPED, which has the most extensive ICT framework, recommended that IT managers be more proactive in addressing the RM issues as they are the experts who can advise on how technology could be used to support DRM requirements. The

⁸² M. Turner (2003). ‘Is the Profession Still Attractive?’ *COMMA: International Journal on Archives* 2/3, p.132.

⁸³ Interview with Senior Manager, MoPS, Kampala, on 09 January 2007.

Senior Manager's choice of IT staff was based on the fact that DRM lies on IT and therefore DRM requirements should be integrated into the ICT systems. And as discussed in the literature, an effective DRM programme would only be realised as a result of the contributions of many information professionals and certainly IT managers are critical members of this team.⁸⁴

It was further proposed that the UPS needs all levels of managers with computers and related technology skills to build human capacity for DRM. As noted by one respondent, the UPS should have managers with IT knowledge and skills and the fundamentals of DRM.⁸⁵ The training should include an overview of the issues and challenges regarding the management of public digital records as well as the legal and administrative requirements for managing digital records. The focus should be on electronic government, metadata for public digital records and guidelines for creating and managing digital records all of which form core DRM theory and should be adopted to play a role in the management of digital records.⁸⁶

Another required skill in the UPS is that of the appraisal of digital records. That is, of having an objective methodology for deciding which digital records have continuing value and what can be destroyed.⁸⁷ The training should include digital records appraisal because digital records appraisal require a specific type of management in order to assure their long-term accessibility and physical and intellectual integrity.⁸⁸

The training should address overlaps between IT and RM responsibilities, emphasise how IT practices affect recordkeeping outcomes, and build working relationships with IT staff to ensure that all DRM requirements are met. The focus should also be on substantial knowledge and vision in the technological field to enhance DRM. Adoption of standard RM policies and procedures could also be achieved through training. Ministries should therefore be equipped with DRM training facilities and

⁸⁴ R. Williams and L. Ashley (2005). *2005 Electronic Records Management Survey: A Renewed Call of Action*, at <www.cohasset.com/whitepaper_survey2005.html>. Accessed on 12 January 2009.

⁸⁵ Interview with Senior Manager, UPSC, Kampala, on 09 August 2007.

⁸⁶ S. Bailey (2007). 'Taking the Road less Travelled By: The Future of the Archive and Records Management Profession in the Digital Age', *Journal of the Society of Archivists* 28:2, p.120.

⁸⁷ S. Bailey (2007). 'Taking the Road less Travelled By: The Future of the Archive and Records Management Profession in the Digital Age', *Journal of the Society of Archivists* 28:2, p.120.

⁸⁸ T. Eastwood (2000). *Appraisal of Electronic Records: A Review of the Literature in English*, at <http://www.interpares.org/book/interpares_book_1_app03.pdf>. Accessed 13 January 2009.

training should be an ongoing process so that UPS staff and managers have the competencies and skills required to manage digital records.

Monitoring was also recommended as an activity to assess the quality of DRM services. The senior managers desired monitoring of DRM processes on a continuous basis as an essential component of a sound measure of internal control for an effective DRM system. Monitoring would ensure maintenance of proper records and processes that generate timely, relevant and reliable digital records from within and outside UPS.

6.6.2 Raising DRM Awareness

This study investigated the awareness levels of DRM within the UPS with the aim of creating positive attitudes and significant cultural change as a strategy towards improving the management of digital records. The data from the respondents indicated that an awareness of the need to improve the management of records is certainly growing in the UPS as reported in Chapter 4 of this study, but this has yet to be translated to all levels of managers.

The Senior Managers proposed practical strategies to overcome barriers to using DRM systems. Their concern was to strengthen civil servants' awareness of the dangers of not keeping digital records. As adopted by the Government of South Australia, Records Management Awareness Sessions should inform all staff of the Records Management Programme and their responsibilities to it, give staff an overview of legislative requirements and inform staff of the procedures for creating and capturing digital records and the archiving processes.⁸⁹ DRM should be part of the framework to promote the use of ICT services in UPS. The awareness programme would be to sensitise, train and monitor all levels of managers in their pursuit of the RM activities. This would ensure that all managers understand the vision, the changes that would occur and the tangible benefits from using DRM systems.

The proposed UNRAA should promote the need for and publicise the benefits of utilising DRM systems through various media, for example, articles for inclusion in

⁸⁹ Australia, Government of South Australia. *Records Management Awareness Education*, at <<http://www.archives.sa.gov.au/Training/awareness.html>>. Accessed 12 July 2009.

weekly newsletter, quarterly communication magazine, the annual ministry magazine and intranet for wider coverage and publicity. The different levels of managers should also be made aware of the inherent weaknesses of neglecting to manage the digital records. Techniques should include advocacy mechanisms in activities such as workshops, press releases, seminars and briefings, leaflets, and networking through a RM blog, as well as a mailing list. The benefits of using DRM systems should be made clear. According to the literature, the advocacy activities must be articulated into formal, planned components embedded within the managing structure and mission functions of the recordkeeping regime.⁹⁰

Authors on the topic of raising DRM awareness like Keakopa⁹¹ and Thibodeau⁹² argued that awareness-raising is very critical to the success of any archival activity. Through awareness, the UPS would enlist support in the use of digital systems for RM purposes. This would advance a comprehensive strategy to manage the whole extent of UPS records. The UPS needs to embrace the ethos of DRM enthusiastically.

The Records Managers proposed that awareness be promoted and suggested immediate action: “If we do this, we have a way of making the invisible more visible.”⁹³ One Records Officer proposed emphasising cultural change to promote use of ICT for recordkeeping purposes⁹⁴. The same person added, “A cultural shift is required where all levels of managers will accept using ICT systems and trust the digital records.”⁹⁵ Although there was no suggestion as to what constitutes a DRM awareness strategy, the findings established attitudes towards RM as the problem area.

There is need for the proposed UNRAA to raise DRM awareness through sensitisation. This should have been the role of the existing RITD but it was found to be lacking key facilities like staff with appropriate DRM skills and the required DRM procedures. Raising awareness would provide senior managers with the capacity to identify the

⁹⁰ A. Pederson (2008). ‘Advocacy and Outreach’ in J. Bettington ... [et al] (eds.), *Keeping Archives*. 3rd ed. Canberra: Australian Society of Archivists, p.435.

⁹¹ Keakopa (2007), p.261.

⁹² K. Thibodeau (2002). ‘Knowledge and Action for Digital Preservation: Progress in the U.S. Government’, *Proceedings of DLM-Forum 2002*, pp.175-179.

⁹³ Interview with Government Archivist, at the Uganda National Archives, Entebbe, on 12 January 2007.

⁹⁴ Interview with Records Manager, MoPS, Kampala, on 26 January 2007.

⁹⁵ Interview with Records Manager, MoPS, Kampala, on 26 January 2007.

legal, business and other requirements for creating and managing digital records. The records managers and archivists should assume a more proactive role in promoting awareness of the continuum approaches for managing records.

This study also supports the propositions advanced by authors like Ngulube, that practical training and adult education are effective ways to create an awareness of the benefits of DRM.⁹⁶ The entire UPS staff needs to be exposed to the benefits of DRM services. The DRM awareness campaign should focus on areas where new electronic information systems are to be implemented and outline the expected benefits of managing the digital records electronically. A RM awareness campaign should also be established in each ministry.

This section advances the proposition that a contextually relevant RM awareness campaign can create a change of attitude and promote DRM services. All UPS Managers and staff need to continue to upgrade their knowledge about digital records and current technologies partly through DRM awareness.

⁹⁶ P. Ngulube (2001). 'Strategies for Managing Digital Records and Documents in the Public Sector in Sub-Saharan Africa', *67th IFLA Council and General Conference August 16-25*, Boston, p.2.

6.6.3 Enhancement of Regional and International Collaboration in Skills Improvement

This study established that Uganda does not belong to any regional or international group of the records and archives management profession. However, as noted in Chapter 5, a regional initiative like ESARBICA provides a network of expertise and skills required to improve the management of records. The literature also indicates that the ESARBICA secretariat is responsible for promoting RM awareness in the ESARBICA countries.⁹⁷ As such, respondents from the ESARBICA countries called for a collaborative action in a number of areas including the need to share experiences relating to implementation of DRM projects.⁹⁸

This thesis therefore proposes that the UPS should subscribe to ESARBICA for purposes of sharing knowledge and skills. The partnership should be for finding solutions to RM problems and the solutions should be grounded in the realities of the region. The UPS should support the need for a professional association. Regional cooperation should address skills enhancement by harmonising RM education and training and promoting the establishment of a centre of excellence in RM training in the region. The literature reviewed in Chapter 2 indicated that regional cooperation leads to the exchange of professional expertise. This collaboration promises significant benefits to the UPS since an agreed set of requirements eliminates the confusion caused by varying standards.

The proposed regional centre of excellence to serve as central training centre for DRM skills should be considered.⁹⁹ This would bring together member countries as a collaborative and information sharing effort to address DRM concerns. Authors have also recommended the need for collaborative action among countries in an effort to build capacity for DRM. Hughes calls for a need and indeed a desire to share best practices within the profession and to advance the knowledge, understanding and

⁹⁷ Keakopa (2007), p.ii.

⁹⁸ Discussion with the National Archivist, Botswana Archives at ESARBICA workshop, Dar as Salaam on 21 June 2007.

⁹⁹ Discussion with the National Archivist, Botswana Archives at ESARBICA workshop, Dar as Salaam on 21 June 2007.

profile of RM within a broader community.¹⁰⁰ This study supports collaboration of national archives and records services since it has led to significant improvement in the methodology of managing digital records in some of the ESARBICA countries.

6.7 Chapter Conclusion

This chapter began with questions about whether there were measures for DRM in the UPS and what frameworks are needed in the future. It was established that the UPS needed a range of coordinated activities – some aimed at specifying practices and tools needed to make the best use of what is available within current technological frameworks, others aimed at identifying future frameworks. These activities need to strike an optimal balance between practical and theoretical concerns and be responsive to changes associated with the management of public digital records in a rapidly changing technological environment. Hence the formal legal infrastructure, formal instruments, DRM infrastructure and human resource capacity need to be well coordinated so that they can form part of the network required when implementing DRM in the UPS.

The chapter has identified the need for a framework for effective public digital records management in Uganda. It identified a legislative environment supportive of DRM, revision of the ICT Policy and establishing a national DRM coordinating unit as part of the critical areas required to produce the environment to foster new practices for digital and networked environments, rather than simply introducing DRM procedures and guidelines. The key concern with the existing arrangement is the lack of RM knowledge and facilities to create and manage digital records. However, significant advocacy will be needed in order to secure funds and political backing to implement these proposals.

The cases studied suggest that foundations for DRM require the establishment of an ICT infrastructure with robust DRM software and adequate power supply. The human resource capacity is also inadequate. The aim is to formalise the creation and management of digital records and also be able to incorporate the emerging ICTs. If

¹⁰⁰ C. Hughes (2001). 'Report on A Continuing Professional Development Workshop at the Records Management Society's Annual Conference', *RMS Newsletter*, August, p.2.

these issues are not resolved, then it may have a sizeable impact on DRM uptake, its interpretation and its ability to be implemented. The ESARBICA countries' approach to DRM was shown to have the potential to inform a revised implementation of ICT policy, and of the Records and Archives legislation.

Given the way forward as presented in this chapter, an overview of the conclusions is provided and the implications of the study are highlighted in the final chapter.

CHAPTER SEVEN

SUMMARY OF STUDY AND THE WAY FORWARD

7.1 Introduction

This chapter presents the summary of the study. The research methodology adopted to undertake this study is discussed first, followed by reflections on the status of digital records in the UPS, the factors currently preventing the effective management of digital records and the future measures proposed for the establishment and operation of an efficient programme to manage public digital records in Uganda. The chapter also presents suggestions for further research.

7.2 Reflections on the Research Methodology

The thesis followed a mixed method research approach and attention was paid to quantitative and qualitative data emerging from the research questions. The mixing of quantitative and qualitative approaches happened in every stage of the research.

The quantitative approaches collected quantitative data based on exact measurements from questions and responses. This approach produced statistical reports with correlations. The qualitative component used qualitative information from interviews and open-ended questions and as such a narrative report with context description and quotations was taken from the research material. The quantitative and qualitative results were inductively analysed and the descriptions led the researcher to identify several factors which need to be considered for the integration of ICT in UPS business activities and to promote the management of digital records.

The great advantage of the mixed method was the flexibility to approach this study through diverse ways. Each method provided a unique path and language to evaluate the DRM phenomenon in the UPS. On the contrary, there are challenges for research to deal with mixed methods. One of the challenges is the development of diverging interpretation. However, the emergence of diverging interpretation was a critical learning experience in that it provided an opportunity for the researcher to witness the

intricateness of the DRM phenomenon under inquiry and to develop a richer description and explanation through crosschecking and reflection. The emergence of divergent explanations about DRM in the UPS through the mixed methods revealed multiple layers of views about DRM held by each level of manager and this reflected the respondents's unique experience in the context of DRM.

Such an understanding about DRM through the mixed method research approaches had important implications in proposing an indicative framework for managing digital records in UPS.

7.3 Summary of Major Findings

This study has demonstrated that:

- There is growing ICT usage in the UPS. This has resulted in the use of digital information systems and in the creation of digital records. The growth of digital records was intimately associated with an increase in the use of ICT in UPS business transactions and not just to a natural accumulation over time.
- The common types of digital records created and transmitted electronically in the UPS include documents created using word-processing software, records on websites, on-line transactions (intranets and extranets), and electronic mail (e-mail). However, digital records generated by EDRMS systems are still limited.
- While the level of ICT usage is increasing on the whole, there was uncertainty among respondents about using ICT to support RM activities. Most ministries were using ICT technologies but had not examined its full implications for RM. Though the managers are aware of some of the benefits and limitations of these technologies, their awareness was largely limited to what the technology can or cannot do when applied to a particular and usually circumscribed task.
- There was virtually no consensus among the UPS ministries concerning the management of digital records, that is, how to capture digital records and what

systems to use. In endeavouring to gain control of the digital records, all ministries practised a piecemeal approach.

- The UPS has no clearly laid out legal arrangements to facilitate the management of digital records. Despite the Uganda National Records and Archives Act, the emergent picture indicated that the DRM requirements are not clear.
- Ministries reported not having policies governing the creation and management of digital records, no RM compliance arrangements, like a records storage policy, security policy, disposal arrangements and preservation strategy, exist. The RITD did not have the appropriate level of authority within the UPS to actively govern the RM function, and as such it was not seen as an integral part of the UPS business.
- Whereas ICT policies of some ESARBICA countries like Botswana and South Africa have clearly articulated the need to manage digital records with clear requirements to enable their creation and storage, the Uganda ITC policy and ICT-related policies were quiet about DRM requirements. A general consensus among the UPS managers was that introducing ICT would help alleviate some of the present endemic RM problems on the basis of experiences in the ESARBICA region.
- Failure to trust digital records as records and inadequate political support and commitment for a DRM programme are among the challenges affecting DRM in UPS.
- There were no DRM procedures and guidelines to inform the UPS managers of what to expect when undertaking DRM responsibilities. Different ministries had therefore devised ways and means of managing the outputs of their individual digital information systems.
- Poor power supply adversely affected the use of ICT and the entire e-governance initiatives. The rationing of electricity means that power is not available at all times and this is a crucial input for the success of a DRM programme.

- The costs for installing DRM systems was emphasised by the respondents. Costs such as for the purchase and installation of DRM equipment, supplies including supporting software, variable costs, or recurrent expenditure for maintenance of hardware and software were all reasons for not keeping digital records.
- A general lack of a coordinated records and archives management programme prevails in the UPS. The National Archives holds pre-independence (1962) archives but the post-independence archives have not been identified. The National Archives function was invisible in Uganda and the required institution to promote DRM does not exist.
- A lack of adequate DRM knowledge and skills was a major obstacle to realising effective DRM in the UPS. The need for expertise in managing digital records was identified as a critical success factor for implementing a DRM programme.
- There was a desire to implement a Uganda National Records and Archives Agency (UNRAA) as recommended in the Uganda National Records and Archives Act 2001. The goal is to restructure RM in the UPS.
- Whereas the focus of this thesis is digital records, there were layers of problems with the paper records in the UPS and therefore a lack of building block for the management of the digital records. First and foremost, there are large volumes of paper records with not enough space for their storage. Access to paper-based records is loosely controlled with many reports of stolen, altered, lost or misplaced records. The paper records are not properly maintained. As a result, a reliable RM system does not exist in the UPS.

7.4 Reflections on the Findings of the Study

By way of reflection, I revisit the three central research questions that were posed and examined in this study:

1. What is the status of digital records created and held in ICT systems in the UPS?
2. What are the factors affecting the management of digital records in the UPS?
3. What measures for efficient DRM can be established in the UPS in order to develop a framework for the future?

By exploring the answers to these questions, this thesis has revealed the status of digital records in Uganda, the factors preventing the management of digital records and the strategies for improving the management of digital records in the UPS.

7.4.1 Reflections on the Status of Digital Records

This thesis established that the UPS ministries are adopting ICTs for a variety of purposes. For example, managers generally use ICT to communicate. The continued use of ICTs has resulted in the creation of digital records, but without a strategy to ensure that they remain accessible over time so as to provide reliable and accurate evidence of UPS business transactions.

While there are digital information systems in some ministries in the UPS, there were limited digital links within the ministries and between one ministry and another. Most ministries do not have the ICT facilities required to promote a DRM regime. The existing digital information systems have no DRM functionality and there was uncertainty about using ICT systems to support DRM activities. As a result there was no proper UPS-wide system to account for digital records.

While the UPS managers recognised the role that policies could play in the national development process, a consistent policy integrating DRM and ICT had not emerged. The Uganda ICT Policy forms part of the overall plan for the development of ICT capacity in Uganda but did not outline the way in which digital records would be

monitored. DRM requirements have not been incorporated into the national ICT strategies.

There were gaps and shortcomings in the Uganda legal framework with no clear DRM requirements in related laws. The Uganda Records and Archives Act 2001 had not empowered the National Archives with a role to guide DRM. Various actions for which the Act provides have also not been implemented. Most significantly, these include:

1. Establishment of a National Records and Archives Agency (UNRAA) (Section 4(3))
2. the appointment of the UNRAA Advisory Committee (Section 3(2))
3. the preparation of a range of regulations, manuals, general schedules, policies and procedures (Sections 11, 13 and 18)

Most managers knew very little about the DRM function and none claimed knowledge of digital archives management. A few had theories, but that was all. The overall awareness of DRM within UPS was low.

DRM standards were recognised by a number of respondents as a necessary part of a reliable digital recordkeeping programme but these were lacking in the UPS. An absence of DRM standards meant there were no procedural controls to support the management of digital records and the sharing and exchange of digital records across the ministries. There was a general agreement among all those interviewed that the question of DRM metadata was unresolved.

The number of trained professionals with skills and experience needed to address DRM was inadequate, a situation that resulted in a lack of trust in their ability to be accountable for DRM.

Security of the digital records is a big issue in the UPS. While many ministries use security measures like password protection to prevent unauthorised access to public records in ICT systems, the information stored within the systems is occasionally reported altered or manipulated by users, which creates security threats.

Paper or hard copy records remained the major medium for inter-ministry communication and information sharing and this has led to a desire to have the paper records better managed, especially the closed files. The ministries were holding large quantities of records but faced difficulty identifying and retrieving records which are of no further value, from those which merit continuing maintenance or permanent preservation as archives.

The status of DRM reflects the fact that the UPS is not able to cope with DRM issues. Therefore there was a concern to identify the factors preventing the management of digital records in the UPS.

7. 4. 2 Reflections on the Factors Preventing the Effective Management of Digital Records

A number of factors hinder the creation and management of digital records and archives in the UPS as discussed in this thesis.

The records management function had insufficient support from senior management and did not have the appropriate level of authority within the UPS. It was not seen as an integrated part of UPS business. Digital records continue to be generated with no DRM programme, with little awareness of the value of records in the e-governance process which is a current focus of the UPS.

The RITD did not address the management of digital records and archives as articulated in the records continuum model. The relationship between the RITD and the various ministries was not clearly defined. The challenge was to link the UPS ministries with the RITD. There was also a need to upgrade the RITD infrastructure and services by establishing a UNRAA as a way of fulfilling the Uganda records legislation requirements. All managers desired a controlled environment where digital records could be captured and shared electronically.

The Uganda legal system was found not to promote digital recordkeeping. The existing Uganda laws and specifically the Uganda National Records and Archives Act

2001 did not issue explicit DRM requirements and responsibilities. The legislation did not specifically refer to digital records and digital recordkeeping, which is important in order to focus strategies on DRM.

The general lack of awareness of the benefits of a DRM function was a significant factor blocking DRM. Policymakers are expected to promote DRM requirements but were not even clear about the role played by the records legislation in respect of establishing the management of digital records. The few who seemed to be aware were giving inadequate attention to the issue. This led to inadequate allocation of funds and resources to address DRM. It was observed that the DRM software was not catered for in the budgetary allocations of most ministries.

The lack of consistent policies was one of the barriers to setting a sustainable public DRM programme in the UPS. Inconsistent policies and requirements meant that the UPS could not adopt a joint strategy to create and manage its digital records. The approach towards the introduction of ICT in public administration in Uganda has also been criticised for the lack of coordination between the different ministries, leading to the establishment of incompatible ICT systems in terms of information sharing.

The lack of a comprehensive records and archives management programme for the administration of both paper and digital records, and of DRM standards and guidelines to be used to guide proper documentation of the digital transactions was found to prevail in the Government ministries of Uganda and this has led to unorganised or otherwise poorly managed digital records.

The lack of information security controls to ensure the safety of digital records was blocking trust in digital systems. It was difficult to assure the confidentiality of the records held in digital systems. As such respondents indicated risks of security breach limiting the application of digital services.

The human resources with DRM knowledge and skills needed to enable the UPS manage the digital records in the ICT environment were lacking. Behaviour patterns of the records creators were another factor preventing the use of DRM technology. Many managers were used to paper and still relied on it. This made it difficult for

them to trust and use the digital systems. Besides, the culture of fear of re-organisation created resistance to use DRM systems and hence UPS agencies could not easily use digital systems to keep and share digital records.

The level of utilisation of ICT to support DRM activities and operations was very low. Not many UPS ministries were utilising their ICT systems for digital recordkeeping applications. The ICT infrastructure elements such as hardware and software that can be used to create and manage digital records were missing in UPS. On the whole there was a serious shortage of DRM systems, where only 3 out of 23 ministries (13%) have a EDRMS. As such, the UPS did not possess the software necessary to create and maintain digital records over time. Acquiring a major ICT system like EDRMS and its maintenance was very expensive and no budgetary allocations had been made for EDRMS.

The power rationing system creates a shortage that disrupts the use of ICT systems and the entire e-governance initiative. The lack of electricity or alternative stable power source continues to affect use of ICT and consequently any plans to use EDRMS.

Although UPS managers expressed considerable interest in DRM, they need consistent support and extensive DRM training in order for them, for instance, to integrate the use of EDRMS into their work processes, but the lack of human resources with expertise in DRM partly blocked growth of DRM services in the UPS.

The role of the political leaders in promoting national development programmes is a critical factor in establishing DRM services in the UPS but their support was inadequate. As such, the national structures to support DRM arrangements as a whole were still weak in Uganda. This had obvious implications, as the lack of political will for DRM hindered the implementation of DRM projects, not least in the failure to prioritise financial resources for DRM.

In general, DRM was hampered mostly by absence of formal institutions responsible for RM, inadequate DRM infrastructure and the huge lack of adequate human resources with RM knowledge and skills. These factors considerably weakened the

possibility of maintaining digital records appropriately in the UPS. However, in the light of the many problems, the respondents expressed the need for RM reforms in the UPS and a number of measures were therefore proposed for UPS to achieve a reliable DRM programme.

7.4.3 Reflections on the Measures for Improvement

The management of digital records in the public service of Uganda calls for urgent action. Drawing on ESARBICA examples, but with certain necessary adjustments, this thesis has sought to propose practical measures to point the UPS in the right direction regarding strategies for a DRM function.

First and foremost, the requirements for the creation and management of digital records should be addressed in the Uganda legal framework. The legal framework should emphasise recordkeeping requirements so that transactions that require to be captured are adequately documented. The digital transaction laws in the offing as discussed earlier in Chapter 4, 5 and 6 should be implemented quickly to allow for both paper and digital records to be managed in the UPS.

The full implementation of the Uganda National Records and Archives Act 2001 is required. Records management should be a recognised function in the UPS programmes. It should have clearly defined DRM responsibilities and objectives and have the GoU support to ensure effectiveness and as such the UNRAA should be implemented to oversee the DRM function. The legislature must ensure that laws are updated to recognise digital records and transactions as part of the official records within the UPS. This thesis proposes a structure to enable UNRAA to be effective and this is illustrated in Appendix X. The UNRAA should make it a priority to establish a trusted and secure DRM environment.

Updating the records legislation to cover digital records should be a priority in Uganda. The records and archives legislation needs to provide adequately for digital records and outline how to deal with their creation, accessibility and disposal. The changes should link to the strategic goals for DRM. Revisions to the Uganda National

Records and Archives Act 2001 will be necessary to ensure consistency in the definition and management of digital records.

As the generation of digital records was still in its infancy stage, there is a need to pay attention to the basic infrastructure requirements like setting a DRM policy. UPS should have a formal DRM policy that is endorsed by the Uganda Public Service Commission and made known to all UPS staff. It should be a clear and concise statement. It should make a statement on records management functionality in ICT systems. With the DRM policy, each ministry would be creating and keeping the relevant digital records. A sound DRM policy as a platform for UPS to effectively discharge its role to create and manage digital records is therefore required. The UPS should take proactive steps to ensure that its policies support rather than impede digital records creation and management. New policy directives should be adopted before implementation of DRM.

The proposed National Co-ordinating Unit for Digital Records under the UNRAA should have a clear mandate to coordinate DRM activities within the UPS by establishing and prescribing DRM requirements. It should play a visible role by formulating procedures and guidelines for the creation, maintenance and disposal of digital records. The procedures should back the proposed DRM policy and should take into account the unique functions and structures of each of the ministry. This model of governance will require the National Co-ordinating Unit for Digital Records to advise the head of the Uganda National Archives, the current and semi current records coordinating officers under the UNRAA (see Appendix X) about all matters related to DRM and digital archives administration respectively. This would allow the UPS to set and enforce a single regime of rules for managing its digital records and archives in a consistent manner. It is required to meet the challenges of introducing DRM systems and to support specialised DRM requirements as a key area for the ongoing UPS reform programme.

For DRM services to prevail in the UPS, they must be underpinned by the availability of ICT facilities because digital records are technology-dependent both for creation, preservation and storage. The GoU would need to ensure that the DRM function is sufficiently resourced in order to procure the necessary DRM equipment. Investment

in the ICT sector is an area the GoU should consider critical to development of DRM services. The UPS should have in place an adequate EDRMS for documenting its digital records. An approved EDRMS package should be available for use in all the Government ministries. Use of the EDRMS should be measured against performance indicators, and corrective actions taken to rectify low usage.

Under-funding remained a serious challenge to GoU's efforts to expand the use of DRM facilities. A introduction of ICTs into the public sector invariably involved donor assistance as discussed in Chapter 1, inevitably donor assistance would also have to be sought for a DRM system. However, in addition, GoU funding allocations also need to reflect the higher priority for funding required to implement the proposed DRM programme.

It is also essential that there is a change in the information management culture within the UPS. The success of DRM would depend heavily on the user's trust in the new system. Users should therefore be made aware of the advantages of using DRM. There was no adequate paper recordkeeping system, and as such, there is little reason to believe that UPS staff will make better use of DRM services without training.

The transformation in working practices that the DRM services would impose requires an effective training programme. Staff directly engaged in the DRM function should receive the appropriate training. All other staff should also be aware of their DRM responsibilities. Training in DRM activities would inculcate skills and knowledge to manage the digital records, since training opportunities were highlighted as lacking by several managers while these are the people who create and use the digital records. Training in RM could therefore be carried out by DRM professionals, particularly those in the East African School of Library and Information Science in Makerere University. The Library School's curricula need to include DRM and IT management skills to improve the DRM literacy of their graduates. Focus should also be on sensitisation and training of Government officials and RM staff in digital recordkeeping aspects. While focus is being given to this, the gap could also be filled by well-designed informal UPS in-service training schemes. It is also essential that such training involves the ICT managers because they are in charge of the technology. A good working relationship should also be established between the ICT,

Records and other Managers in order for them to cooperate closely in making the best use of technology.

Information security requirements need to be well defined in the laws and policies as discussed in this thesis. It would be important to ensure consistency of security practice across the UPS by having information security controls, particularly with respect to digital records. The DRM programme must ensure that appropriate protection controls are applied to the records from the moment of creation up to final disposition.

The collaborative RM dialogue within the ESARBICA countries driven by the national archives is a critical dimension for Uganda to consider. It would be important to find out more about what problems they are facing as well as what successes they have had. The UPS needs to have more consultation with the national archives in the ESARBICA region to hear from and speak with archives staff where a DRM system is functioning, such as South Africa. The GoU needs to partner and solicit suggestions to ensure a smooth reform in the DRM services.

This study noted that political will and support was lacking but needed in taking the lead role in promoting DRM services. The provision of an effective DRM service is fundamentally an issue of political will and support in order for it to succeed. Strong leadership can ensure the long-term commitment of resources and expertise and the cooperation of disparate factions. Given the present financial limitations, it may not be feasible, achievable or sustainable to improve the management of digital records but with political support and through prioritising, the scarce resources would be allocated to the provision of DRM services in Uganda. Political will is required to provide adequate laws, policy and resources. Systematic involvement of the Uganda Parliamentary Committee on ICT is important to promote the DRM vision and strategy for the UPS. It should also involve support and commitment from top-level ministers, who in some cases change frequently, in order to ensure broad ownership of a DRM regime within the UPS.

All in all, DRM is a key requirement in a digital era. The UPS must therefore re-position itself to become an engaged and constructive partner in shaping the new

governance patterns that will otherwise render it ineffective. The ESARBICA experiences should provide lessons to Uganda. ESARBICA countries have more developed capacity for DRM than Uganda. Strategies adopted by ESARBICA countries towards DRM contributed to a wider understanding of the required capacities for managing digital records. Therefore focus on the strategies for DRM established in some ESARBICA countries could help the UPS implement effective DRM services and hence the need to cooperate and share information on common problems. What is needed is to reinforce the basic principle that digital records are integral to UPS business processes. This change is necessary in order for the GoU to harness the enormous potential of digital government. Digital records should be managed and maintained electronically in order for the GoU to gain the full benefits of the ongoing ICT initiatives. An indicative framework needed for the management of digital records is in Appendix XI.

7.5 Areas for Further Research

Since research is a process, it has to go on as a way of answering as well as generating questions; the following are issues worth investigating:

1. The findings of this study have shed some light on the training needs of the UPS managers in DRM skills and knowledge. There is therefore a need for more specific research tailored to the information and training needs of the various managers in the public sector of Uganda designed for improving the management of digital records.
2. As hardly any research has been dedicated to DRM in the private sector in Uganda, more extensive research on DRM in the private sector should be undertaken to investigate the status of DRM and how compliance to the records legislation issues are addressed.
3. This study has shed some light on the importance of managing digital records and the political will for improving the management of digital records, which are key challenges to DRM in Uganda. There is therefore a need for further and more specific research on strategies to create awareness and build political will for

improving DRM as a foundation for national development. Although outside the scope of this thesis, strategies to ensure the practical implementation of and funding for the DRM programme proposed in the thesis, will need to be developed.

4. The records continuum theory that informed this study has been a basis to illuminate issues that the study addressed. However, little research has been done in Uganda using this theory where managing records and archives is seen as a continuous process in which one stage passed seamlessly into another. The continuum's integrated approaches provide components of best practices as discussed in this thesis. The continued use of this theoretical approach is therefore something that needs further attention by researchers on RM and archives administration in Uganda.
5. This study focused on digital records but it has established that no records transfers have been made of the paper records to the National Archives at Entebbe since the post-independence period, that is, from the late 1960s. As such, a study of the management of the archives of this period should be given attention to establish the whole system of dealing with paper records in Uganda from 1962 to the present and identify strategies in place or to be put in place to maintain the National Archives as a legitimate business of the GoU. The aim should be to define a strategic way forward for managing both paper and digital records in Uganda.

7.6 Conclusion

This thesis established that the UPS was seeking to introduce systematic measures to manage its digital records since manual systems still dominate. Digital records are poorly managed and inadequate attention is being given to them. It is vital to ensure that the digital records are created, retained and maintained, especially now with the increased use of digital systems for the delivery of services. Strategies are required to manage the digital records across the UPS. There is also a need for an effective interface between paper and the DRM, ensuring that records are efficiently managed regardless of media. The continuum model provides for managing both the paper and digital records as part of a holistic approach to avoid fragmentation. In order to ensure

that effective management of digital records is functional in the UPS, it is critical that the Uganda National ICT Policy incorporates DRM and preservation requirements. The political leadership should press for successful implementation of DRM services by tying the initiative to broader economic development goals such as the anti-corruption strategies and poverty reduction. Training and capacity building should be addressed and Uganda should take advantage of the ESARBICA co-operation in capacity building and research and forge strategic alliances with countries that have made advances in DRM. The developments in other countries should be studied closely. Without a well-structured DRM programme, backed by well thought-out policies and procedures, and trained human resource capacity, any attempt to introduce comprehensive DRM services is likely to compound problems rather than solve them. Installing a DRM programme should be perceived a key strategy to support NPM reform process and to underpin the successful provision of public services to Uganda's citizens in time to come.

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APPENDIX I: SUPPORTING LETTERS

1.1 Introduction Letter

David Luyombya
Doctoral Student
University College London

To -----
Uganda Public Service

Dear Sir/ Madam,

Re: Framework for Efficient Public Digital Records Management in Uganda

I am a postgraduate student at the University College London. I am carrying out a study on Public Digital Records Management in the Uganda Public Service. I have chosen you as a key informant of this study. I would like to ask you some questions regarding your work.

The purpose of this interview is to gather views and opinions about your perception of ICT utilisation in digital records management. The interview will last about one hour. Any information you will give will be used for this purpose only, and will be kept confidential and anonymous.

It is hoped that the results of this study will assist in completing this doctoral study and later used in teaching and research at Makerere University. In addition, the study will assist Government of Uganda and other agencies to develop records management programmes, which will benefit the country.

Your assistance will be highly appreciated.

Yours faithfully,

David Luyombya

1.2 Research Clearance Letter



Uganda National Council For Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

Your Ref:
SS 1915

22-Nov -06

Our Ref:

Date:

Mr. David Luyombya
C/o EASLIS
Makerere University
KAMPALA

Dear Mr. Luyombya,

**RE: RESEARCH PROJECT, "TOWARDS EFFECTIVE DIGITAL RECORDS
MANAGEMENT IN THE UGANDA PUBLIC SECTOR"**

This is to inform you that the Uganda National Council for Science and Technology (UNCST) approved the above research proposal on **November 13, 2006**. The approval will expire on **November 13, 2007**. If it is necessary to continue with the research beyond the expiry date, a request for continuation should be made in writing to the Executive Secretary, UNCST.

Any problems of a serious nature related to the execution of your research project should be brought to the attention of the UNCST, and any changes to the research protocol should not be implemented without UNCST's approval except when necessary to eliminate apparent immediate hazards to the research participant(s).

This letter also serves as proof of UNCST approval and as a reminder for you to submit to UNCST timely progress reports and a final report on completion of the research project.

The Resident District Commissioner(s) of the district(s) in which the study will be conducted are informed by copy of this letter, and are kindly requested to give you the necessary assistance to accomplish the study.

Yours sincerely,

Jane Nabbuto

for: Executive Secretary

UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

cc Resident District Commissioner, Kampala District
cc Resident District Commissioner, Wakiso District

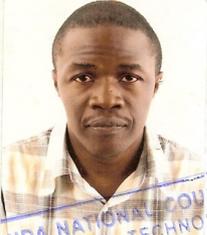
LOCATION/CORRESPONDENCE

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KAMPALA, UGANDA.

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FAX: (256) 41-234579
E-MAIL: unest@starcom.co.ug
WEBSITE: <http://www.unest.go.ug>

1.3 Researcher Identity Card

File No. SS 1915	Holder's Signature 	Renewed until
Name DAVID	 Executive Secretary
Address C/O EACLC MAKERERE UNIVERSITY		Renewed until
Nationality UGANDAN	 <p>Certified Photograph Executive Secretary Uganda National Council for Science and Technology P.O. Box 6884, Kampala</p> Executive Secretary
Title of Research Project TOWARDS EFFECTIVE DIGITAL RECORD MANAGEMENT IN PUBLIC SECTOR		Renewed until
Date of Issue 22 NOV 2006	Executive Secretary	Renewed until
Valid Until 13 NOV 2007	Uganda National Council for Science and Technology P.O. Box 6884, Kampala Executive Secretary

APPENDIX II: RESEARCH INSTRUMENTS: COPIES OF QUESTIONNAIRES

2.1 Questionnaire for Government of Uganda Ministries

Framework for Efficient Public Digital Records Management in Uganda

Instructions:

Please tick against appropriate box(es) that represent your choice(s) for each question and/or complete the entry spaces (where applicable)

Section A: Contact Information

Position held _____

Number of Years/Experience in the position _____

Name of Institution/ Department _____ Website _____

Contact details: [Phone Number, Fax, Email] _____

Section B: State of Digital Records Management

1. Do you have an overall department/ section or unit with responsibility for the management of ICT in your ministry/institution?

Yes No Do not know

2. Who has primary responsibility for the introduction and implementation of ICT in your organisation?

a. In-house Staff
b. Consultant
c. other (please explain)

3. What is the major use of ICT in your organisation?

a. Communication
b. Research
c. Data Storage
d. Data Processing
e. Other (please explain)

4. Has your organisation used ICT in records management?
Yes No Do not know

5. Does the application of ICT lead to the creation and use of digital records in your institution?
a. Yes
b. No
c. Not Sure

6. If yes, what categories of digital records are created and maintained in your ministry?

7. In what format are the digital records stored in your ministry?
a.) Images Files
b.) Data Files
c.) Text files
d.) Databases
e.) Other, (please explain)

8. What software is available for the management of digital records?

Section C: Factors Affecting the Management of Digital Records

9. What is the policy which guides the use of ICT in your organisation?

10. Explain how the ICT policy relates to the management of digital records?

11. Do you have a digital records management programme to guide the management of records in your organisation?

12. What security measures are in place for managing digital records?

13. What are the felt problems relating to ICT utilisation in records management?

Select all that apply:

- a.) Shortage of DRM Skills
- b.) Insufficient ICT Facilities
- c.) Inadequate legal and regulatory system
- d.) Inadequate Power Supply
- e.) Others, (please explain)

Section D: Improving the Management of Digital Records

14. What future plans do your organisation/ department have relating to ICT application to the management of records?

15. What other proposals would you recommend for improving the management of digital records?

16. State any more comments about this questionnaire?

2.2 Questionnaire for Heads of Archival Institutions in the ESARBICA Region

Framework for Efficient Public Digital Records Management in Uganda

Instructions:

Please tick against appropriate box (es) that represent your choice(s) for each question and/or complete the entry spaces (where applicable)

Section A: Contact Information

Name of institution _____

Country _____

Website Address _____

Position held _____

Number of Years/Experience in the position _____

Contact details: [Phone Number, Fax, Email] _____

Section B: State of Digital Records Management

1. How does your country's national archive acquire its collection?

2. Do you hold digital records in your archival institution?

Yes No.

3. In what format are the digital records transferred to the National archives?

4. What storage media does your National archive use for storing digital records?

5. How long are the digital records held in digital format when transferred to the National Archives?

6. How are digital archives accessed in your National Archives? Check all that apply:

- a) Down loading to/from a host machine
- b) Online access
- c) Distribution of printed copies
- d) Via electronic mail
- e) Other (please explain)

7. State the strategy for the management of public digital records and digital archives in your country.

Section C: Factors Affecting the Management of Digital Records

8. Is there a specific legal responsibility for collecting national archives in your country?
Yes No. Do not know

9. If yes, does the legislation cover DRM? Please supply a copy of it.

10. Has the National Archives issued a national records and archives management policy?
Yes No. Do not know
If yes, provide a copy of it _____

11. What does the national records and archives management policy say about the management of digital records?

12. (a.) Has the National Archives issued national records and archives management standards with specifications for the management of digital records?

(b.) What do the standards cover, Please supply a copy of it

13. What support do your National Archives provide to other public agencies regarding records management? Please explain.

14. Do you have a technical team either within or outside the National Archives, whom you regard as experts in DRM?

Yes No.

(If yes, what type of resource people?)

15. What do you see as the major challenge your National Archive is faced with or will face related to managing records and archives in the digital age?

Section D: Improving the Management of Digital Records

16. What preservation and conservation measures/ strategies do the National Archives have to manage the digital records in the public agencies in your country?

17. Has the National Archives established a project to help the public agencies to apply sound strategies for making and maintaining records in the digital environment?

Yes No.

18. What are the key activities of that initiative?

19. What measures would you propose for improving the management of digital records?

20. Any other comments/ suggestions about this study?

I thank you in advance for your valuable time and contribution. Please return this Questionnaire by 31st July 2007.

APPENDIX III: RESEARCH INSTRUMENTS: INTERVIEW QUESTIONS

3.1 Interview Guide for top executives (Head of Institution)

Framework for Efficient Public Digital Records Management in Uganda

Section A: Background Information

Interviewee Number: _____

Designation of Interviewee/ Position Held in the organisation: _____

Place of interview: _____

Date of interview: _____

Section B: State of Digital Records Management

1. Does your organisation (Ministry/Department) use ICT to do its work? Yes No
2. If yes, have you used ICTs in records management? Mention some of the areas where you have used ICTs in records management?
3. Does your organisation generate/maintain digital records? Yes No
4. If yes, what types of digital records are generated/ maintained?
5. What software is used for the management of digital records?
6. What kind of hardware is used for the management of digital records?
7. How do you enable access to the digital records (i.e. via LAN, internet, CDs, etc)?
8. How do you ensure security of the digital records collection?

Section C: Factors Affecting the Management of Digital Records

9. Does your organisation/institution have an ICT Policy Yes No
10. If yes, how is that ICT policy related to the Uganda National ICT Policy (The National Information and Communication Technology Policy 2002)?
11. What are the key features your organisation/institution ICT Policy?
12. Does your organisation/institution have a policy governing DRM? Yes No
13. If yes, what are the key features of the DRM policy?
14. How is the DRM policy coordinated with the National ICT Policy?
15. How is DRM in your institution affected by the National ICT Policy?
16. How does your organisation's DRM policy relate to the various laws of Uganda?
17. What non formal or non legal practices (if any) affect your DRM efforts? Explain the effect.

18. What skills does your staff possess as far as the management of digital records is concerned?
19. What plans are in place for further skills improvement as far as the management of digital records is concerned?
20. Does your Ministry have a training budget/ vote for DRM?
21. What other factors apart from the policy affect the management of digital records in your organisation?

Other Factors
 Inadequate Financial Resources
 Staffing (skills, numbers)
 Electricity (Power failure)
 Security – (Viruses, unwanted access)
 Hardware availability
 Software availability
 Legal issues
 Others

22. The National Records and Archives Act 2001 has a clause on the management of digital records. How do you address that clause in your organisation?
23. Do you feel there are any loopholes in that Act regarding DRM?
24. What improvements would you recommend in order for the current Archives and Records Act 2001 to conform to DRM requirements?
25. The Access to Information Act No.6 2005 specifies the availability of all records regardless of format, how have you addressed the availability of digital records in your organisation?
26. Do you feel there are any loopholes in that Act regarding DRM?
27. What improvements would you recommend in order for the current Access to Information Act to conform to DRM requirements?
28. Which Uganda Public Service Procedures do you apply as you manage records?
29. Do you feel there are weaknesses in those procedures in relation to DRM?
30. What improvements would you recommend in order for the existing Uganda Public Service Procedures to conform to DRM requirements?
31. What other factors have a positive influence on DRM?
32. How do they affect the DRM?
33. What factors have a negative influence on DRM?
34. How do they affect the management of digital records?

Section D: Improving the Management of Digital Records

35. Have you faced any challenges in the management of digital records (i.e., technological, human resource or data security)?
36. How have you addressed those challenges and problems?
37. What measures will you propose for the improvement of the management of digital records?
38. What national policy or laws would you wish changed or introduced in relation to DRM?
39. Do you have any more proposals for improving the management of DRM?
40. Do you have any more comments about this interview?

3.2 Interview Guide for Senior Managers

Framework for Efficient Public Digital Records Management in Uganda

Section A: Background Information

Interviewee Number: _____

Designation of Interviewee/ Position Held in the organisation: _____

Place of interview: _____

Date of interview: _____

Section B: State of Digital Records Management

1. Does your organisation (Ministry/Department) use ICT to do its work?
2. Name or list the ICT applications used in your organisation?
3. Of those ICTs mentioned in (2) above, which one(s) is/are used in records management?
4. Does your organisation generate/maintain digital records? Yes No
5. If yes, what types of digital records are generated?
6. What software is used for the management of digital records?
7. How was the software acquired? E.g. Donor acquired or through the initiative of the organisation?
8. How long ago was the software acquired?
9. What kind of hardware is used for management of digital records?
10. How do you enable access to the digital records (i.e. via LAN, Internet, intranet, etc)?
11. How do you ensure security of the digital records?

Section C: Factors Affecting the Management of Digital Records

12. Does your organisation/institution have an internal ICT policy, which guides the use of ICT?
13. If yes, what are the key features of the internal ICT policy?
14. What challenges does your organisation have in using ICTs for records management?
15. How is your organisation addressing those challenges in 14 above?
16. Does your organisation/institution have the human resource capable of using ICT for records management?
17. If yes, what are the qualifications of the people that use ICTs in records management?
18. Do you have a policy governing digital records management? Yes No
19. If yes, how does the policy affect the management of digital records?

20. What skills does your staff have for the effective management of digital records?

Skill for:
Creation
Storage
Retrieval
Security

21. What other factors apart from policy affect the management of digital records in your organisation?

Factors
Inadequate Financial Resources
Staffing (skills, number, attitudes, etc)
Electricity (Power failures)
Security – (viruses, unwanted access)
Hardware availability
Software availability
Others

22. How do you deal with legal issues in relation to DRM in your organisation?

Section E: Improving the Management of Digital Records

23. Are you satisfied with the way your organisation is managing digital records? Yes No

24. If yes, what shows that your organisation has managed digital records properly?

Creation and implementation of digital filing systems
Storage of digital records
Protection of Vital digital records
Preservation of Digital Records
Others

25. If no, how does your organisation plan to improve the management of digital records?

26. Does your department have a disaster preparedness policy for digital records management?

27. What other plans are in place for further improvement of the management of digital records?

28. Do you have any more comments about this interview?

3.3 Interview Guide for Middle (Supervisor) Managers

Framework for Efficient Public Digital Records Management in Uganda

Section A: Background Information

Interviewee Number: _____

Designation of Interviewee/ Position Held in the organisation: _____

Place of interview: _____

Date of interview: _____

Section B: State of Digital Records Management

1. What types of ICTs are found in your department?
2. For what purpose are ICTs used in your department?
3. What benefits has the usage of ICT brought to your organisation?
4. What resources does your organisation have to ensure effective use of ICT? Like (a.) Hardware (b.) Software (b.) Local Area Network (c.) Intranet (d.) Servers, etc
5. Have you used ICTs in records management?
6. If yes, mention some of the areas where your organisation has used ICT in records management?
7. In your view what are the challenges of using ICTs in records management in your organisation?
8. Does your organisation generate digital records? Yes No
9. If yes, what types of digital records does your organisation have?
10. What software is used for the management of digital records?
11. What kind of hardware is used for the management of digital records?
12. How do you ensure security of your digital records collection?

Section C: Factors Affecting the Management of Digital Records

13. What has been the guiding factor in the adoption of ICT in your institution?
14. On which policy was the adoption of ICT in your institution based?
15. What does the policy say about ICT utilisation?
16. Do you have a policy governing DRM? Yes No
17. If yes, how does the policy affect the management of digital records?
18. Is your staff knowledgeable in the management of digital records? Yes No
19. If yes, what kind of DRM training have they attained?

20. What factors affect the management of digital records in your organisation?

- Factor
- Inadequate Financial Resources
- Human Resource (skills, numbers, etc)
- Electricity (power failure)
- Security (Viruses, unwanted access, etc
- Hardware Availability
- Software Availability
- Policy (Legal issues)
- Others

21. Are you familiar with the National Records and Archives Act 2001?

22. Does the Records and Archives Act 2001 affect the management of digital records in your organisation? Yes No

23. If yes, how does it affect the management of digital records in your organisation?

24. Are you familiar with the Access to Information Act No. 6 2005? Yes No

25. If yes, what is the effect of Access to Information Act No.6, 2005 on the management of digital records?

26. Which Uganda Public Service Procedures do you apply as you manage digital records?

27. Do you feel there are weaknesses in those procedures?

Section D: Improving the Management of Digital Records

28. Are you satisfied with the way your organisation is managing digital records?

29. If yes, what shows that your organisation has managed digital records properly?

- Creation and implementation of digital filing systems
- Storage of digital records
- Protection of Vital digital records
- Preservation of Digital Records
- Others

30. If no, what measures are in place to improve the management of digital records?

31. What other measures would you propose for the improved management of digital records?

32. Do you have any more comments about this interview?

3.4 Interview Guide for ICT Managers

Framework for Efficient Public Digital Records Management in Uganda

Section A: Background Information

Interviewee Number: _____

Position/ Designation of interviewee in the organisation: _____

Place of interview: _____

Date of interview: _____

Section B: State of Digital Records Management

1. What ICTs are used in your Ministry/ institution?
2. Have the ICTs delivered what they were intended to achieve? Yes No
3. If yes, what has been achieved?
4. If no, why, what are the problems?
5. Of those ICTs mentioned in 1 above, which ones are used in records management?
6. Does your organisation generate digital records? Yes No
7. If yes, what digital records are generated in your organisation?
8. How are digital records managed from creation to disposal in your organisation?

 How are digital records generated?
 How are digital records stored?
 How are they indexed?
 How are they retrieved?
 How do you deal with threats of
 (a.) unwanted access to records
 (b.) Viruses
 How are records maintained?
 Others
9. What kind of hardware is used for the management of digital records in your organisation?
10. What software is used for the management of digital records in your organisation?

Section C: Factors Affecting the Management of Digital Records

11. What has been the guiding factor for the adoption of ICT in your organisation?
12. On which policy is the adoption of ICT in your organisation based?
13. If based on any policy, what are the key features of the policy?
14. Do you have a policy governing the management of digital records? Yes No
15. If yes, how does the policy affect DRM?
16. What capacity does your organisation have to use ICT for records management?

- Capacity
- Hardware Availability
- Software Availability
- Staffing (skills, numbers, etc)
- Security Measures
- Others

17. What factors affect the management of digital records in your organisation?

- Factor
- Inadequate Financial Resources
- Skilled Human Resource (knowledge, attitude, etc)
- Electricity (power failures)
- Security – (Viruses)
- Hardware
- Software
- Policy – (legal issues)
- Others

18. What controls are in place to manage digital records?

Section D: Improving the Management of Digital Records

19. Suggest ways of addressing the ever-changing technologies for effective management of digital records.

20. What plans does your department have regarding the effective management of digital records if any?

21. In your view, how better can your organisation enhance the creation and utilisation of digital records?

22. Do you have any more comments about this interview?

3.5 Interview Guide for Records Staff

Framework for Efficient Public Digital Records Management in Uganda

Section A: Background Information

Interviewee Number: _____

Designation of interviewee/ Position in the organisation: _____

Education: Formal: _____ Technical/ Professional: _____

Place of interview: _____

Date of interview: _____

Section B: State of Digital Records Management

1. Does your organisation use ICTs to do its work?
2. Explain how your department utilises ICT in records work.
3. How has the introduction of ICT affected the management of records in your organisation?
4. Does your organisation have digital records? Yes No
5. If yes, what digital records exist in your organisation?
6. How do you manage the digital records in your organisation?

Management tasks	How is it done?
Creation	
Storage	
Retrieval	
Security	
Preservation	
Disposal	
Archiving	

7. How does the management of digital records differ from the management of paper records?
8. What effect has the introduction of digital records had on your work?
9. How are digital records selected for retention and disposal?
10. How do you maintain and preserve the digital records?

Section C: Factors Affecting the Management of Digital Records

11. What competencies for managing digital records do you have? (e.g ICT Skills)
12. Does your organisation have sufficient ICTs to manage digital records? Yes No
13. If yes, what ICTs exist in your organisation?
14. Does your organisation have procedures for managing digital records? Yes No
15. If yes, are the digital records management procedures spelt out in an office manual? Yes No

16. If yes, does the manual specify and define the duties and tasks to be performed in the process of managing digital records?
17. How are your organisation's efforts in DRM, if any, affected by the existing laws in Uganda?

Section D: Improving the Management of Digital Records

18. What challenges has your organisation faced in the management of digital records?
19. What measures has your organisation put in place for the effective management of digital records?
20. In your opinion, what would be the most effective way of improving the management of digital records in your organisation?
21. Do you have any more comments about this interview?

3.6 Interview Schedule for Heads of Archival Institutions in the ESARBICA region

Framework for Efficient Public Digital Records Management in Uganda

Section A: Contact Information

Name of institution _____

Country _____

Website Address _____

Position held _____

Contact details: [Phone Number, Fax, Email] _____

Section B: State of Digital Records Management

1. Do government departments/ministries in your country use ICT in their operations?
2. If yes, what types of ICTs are used in their operations?
3. In your view, does the available ICT support the management of records?
4. What challenges do the ministries face in using ICT for records management?
5. Does the National Archives keep digital records? Yes No
6. If yes, kindly provide an overview of how digital records are managed in the public sector in your country.

Section C: Factors Affecting the Management of Digital Records

7. What capacity do the ministries have to ensure the effective management of records?
Capacity
Specialists in records management
Information management specialists
Others
8. Does the capacity mentioned above necessarily translate into those capacities required for effective DRM?
9. What standards have been adopted to manage and regulate digital records and digital archives in the ministries in your country?
10. Is there a national policy for the management of public records in your country? Yes No
11. If yes, how are the digital archives incorporated in the national records management policy?
12. Kindly explain how adequate and effective the national records management policy is towards digital records management.
13. Kindly explain any initiative that is in place to regulate the management of digital records in your country.

Section D: Improving the Management of Digital Records

14. Have you faced any problems in the management of digital records (i.e., technological, staffing, security)?
15. How have you addressed those challenges and problems?
16. In your opinion, what do you think could be done to ensure effective management of digital records across the public sector in your country?
17. What national policy or laws (if any) would you wish changed or introduced for the improvement of the management of digital records in your country?
18. Do you have any more proposals for improving the management digital records in your country?
19. Do you have any more comments about this interview?

APPENDIX IV: READING LIST GUIDE

Framework for Efficient Public Digital Records Management in Uganda

Section A: Background Information

1. Management of official Information in UPS
2. Paper records management in UPS
3. Synopsis of the problems facing paper records management in Uganda
4. Development of DRM in Uganda over time.
5. The role of the GoU
6. The Role of the Uganda National Archives

Section B: Framework for Digital Records Management

1. Public service reforms as contributors to the use of ICTs to support digital governments
2. Archives and Records Management legislation and standards
3. ICTs as a feature of new public management
4. DRM policies, procedures and guidelines for creating, managing and preserving digital records
5. Developments in the management of digital records in the ESARBICA region
6. Global methods and approaches to DRM
7. Studies specifically on DRM

Section C: Factors Affecting the Management of Digital Records

22. Competencies for managing digital records
23. Procedures for managing digital records
24. DRM systems

Section D: Improving the Management of Digital Records

25. Challenges associated with managing digital records in public service administration
26. Measures for improved management of digital records

APPENDIX V: RESPONDENT CONSENT FORM

Framework for Effective Public Digital Record Management in Uganda

This study is designed to understand the management of digital records in the Uganda Public Service. The study is being conducted by David Luyombya of Makerere University, and it has been approved by the Uganda National Council for Science and Technology. No deception is involved and the study involves no risks to participants.

Participation in the study will typically be one hour and is strictly anonymous.

All responses are treated as confidential and in no case will responses from individual participants be identified.

If you agree to take part in this research study, please sign your name and indicate the date below. You will be given a copy of this signed and dated consent form for your records.

Your Signature:

Date:

APPENDIX VI

GOVERNMENT OF UGANDA INSTITUTIONS THAT PARTICIPATED IN INTERVIEWS

A total of 40 respondents were interviewed from purposively selected institutions as per the details below:

Pilot Study Institutions

Uganda Revenue Authority

Ministry of Education and Sports

Case study Institutions

Ministry of Public Service (MoPS)

Ministry of Justice and Constitutional Affairs (MoJCA)

Ministry of Information and National Guidance (**no response**)

Ministry of Works, Housing and Communications (MoWHC)

Key Government Planning Bodies/ Ministries

National Planning Authority (NPA)

Ministry of Finance, Planning and Economic Development

Uganda National Bureau of Standards

Uganda Communication Commission (UCC)

Uganda Law Reform Commission (ULRC)

Ministry of Information and Communications Technology

National Information Technology Authority – Uganda (NITA-U)

Uganda Public Service Commission

Active ICT civil society

I – Network Uganda -

APPENDIX VII
LIST OF INTERVIEWEE RESPONDENTS – FROM THE PUBLIC SERVICE
OF UGANDA

Designation	Interviewee Level	Interviewee Organisation	Interview Date
ICT Manager, Custom	ICT Manager	URA ¹	27th October 2006
Supervisor, Records and Registries	RM Manager	URA	10th November 2006
ICT Manager, Computer Engineering	ICT Manager	URA	20th November 2006
Asst. Commissioner Personnel	Senior Manager	MoES ²	8th December 2006
Records Officer	RM	MoES	13th December 2006
Principal Records Officer	RM	MoES	19th December 2006
Director Efficiency and Quality Assurance Directorate	Senior Manager	MoPS ³	8th January 2007
Ag. Commissioner Records & Inf. Technology	Senior Manager	MoPS	9th January 2007
Ag. Archivist	Head	Uganda National Archives	12th January 2007
Information Scientist	ICT Manager	MoPS	17th January 2007
Head, Pensions Registry	RM	MoPS	18th January 2007
Principal Personnel Officer	Middle Manager	MoPS	23rd January 2007

¹ Uganda Revenue Authority

² Ministry of Education and Sports

³ Ministry of Public Service

Records Officer	RM	MoPS	24 January 2007
Records Officer, in charge of Records Centres	RM	MoPS	26 January 2007
Personnel Officer	Middle Manager	MoJCA ⁴	7 March 2007
Civil Litigation Officer	Senior Manager	MoJCA	31st July 2007
Head, Legal Advisory Services	Senior Manager	MoJCA	10 August 2007
Court Case Administration System	ICT Manager	MoJCA	17 August 2007
Records Officer	RM	MoJCA	22nd February 2007 14 August 2007
Technical Manager	Senior Manager	UCC ⁵	20 August 2007
Director, Technology and Licensing	Senior Manager	UCC	03 September 2007
NIL	NIL	Ministry of Information and National Guidance	Did not succeed to schedule meetings
Chairman, National inter agency ICT Planning Team for Uganda	Senior Manager	NPA ⁶	22nd January 2007
Director, I-Network Uganda	Head	I-Network Uganda ⁷	01st March 2007

⁴ Ministry of Justice and Constitutional Affairs

⁵ Uganda Communications Commission

⁶ Uganda National Planning Authority

Principal Systems Officer	ICT Manager	MoFPED ⁸	02nd March 2007
Information and Communication Adviser	Middle Manager	MoFPED	05th March 2007
IFMS ⁹ (Project Manager)	Senior Manager	MoFPED	06th March 2007
ICT Manager	ICT Manager	UNBS ¹⁰	7th February 2007
Quality Assurance Manager	Middle Manager	UNBS	9th February 2007
Standards Officer	Middle Manager	UNBS	12th February 2007
Member, Electronic Transactions Law Task Force	Middle Manager	ULRC ¹¹	10th July 2007
Executive Director	Head	NITA-U ¹²	8th March 2007
Chairman - Electronic Transactions Law Task Force	Head	ULRC ¹³	09th March 2007
Permanent Secretary	Head	MoICT ¹⁴	12th March 2007

⁷ I-Network Uganda deals with Knowledge-sharing, Advocacy and Expertise in ICT for development

⁸ Ministry of Finance, Planning and Economic Development

⁹ Integrated Financial Management System

¹⁰ Uganda National Bureau of Standards

¹¹ Uganda Law Reform Commission

¹² National Information Technology Authority – Uganda

¹³ Uganda Law Reform Commission

¹⁴ Ministry of Information and Communications Technology

Personnel Officer	Middle Manager	MoICT	25th July 2007
Principal Communications Officer	Middle Manager	MoICT	14th March 2007 27 July 2007
Member - Electronic Transactions Law Task force	Senior Manager	ULRC ¹⁵	18 July 2007
Chairman, UPSC	Head	UPSC ¹⁶	13 July 2007
Secretary E-governance strategy framework	Senior Manager	NPA	17 July 2007
Director, UPSC	Senior Manager	UPSC	9 August 2007
Chairman, ULRC	Head	ULRC ¹⁷	13th March 2007

¹⁵ Uganda Law Reform Commission

¹⁶ Uganda Public Service Commission

¹⁷ Uganda Law Reform Commission

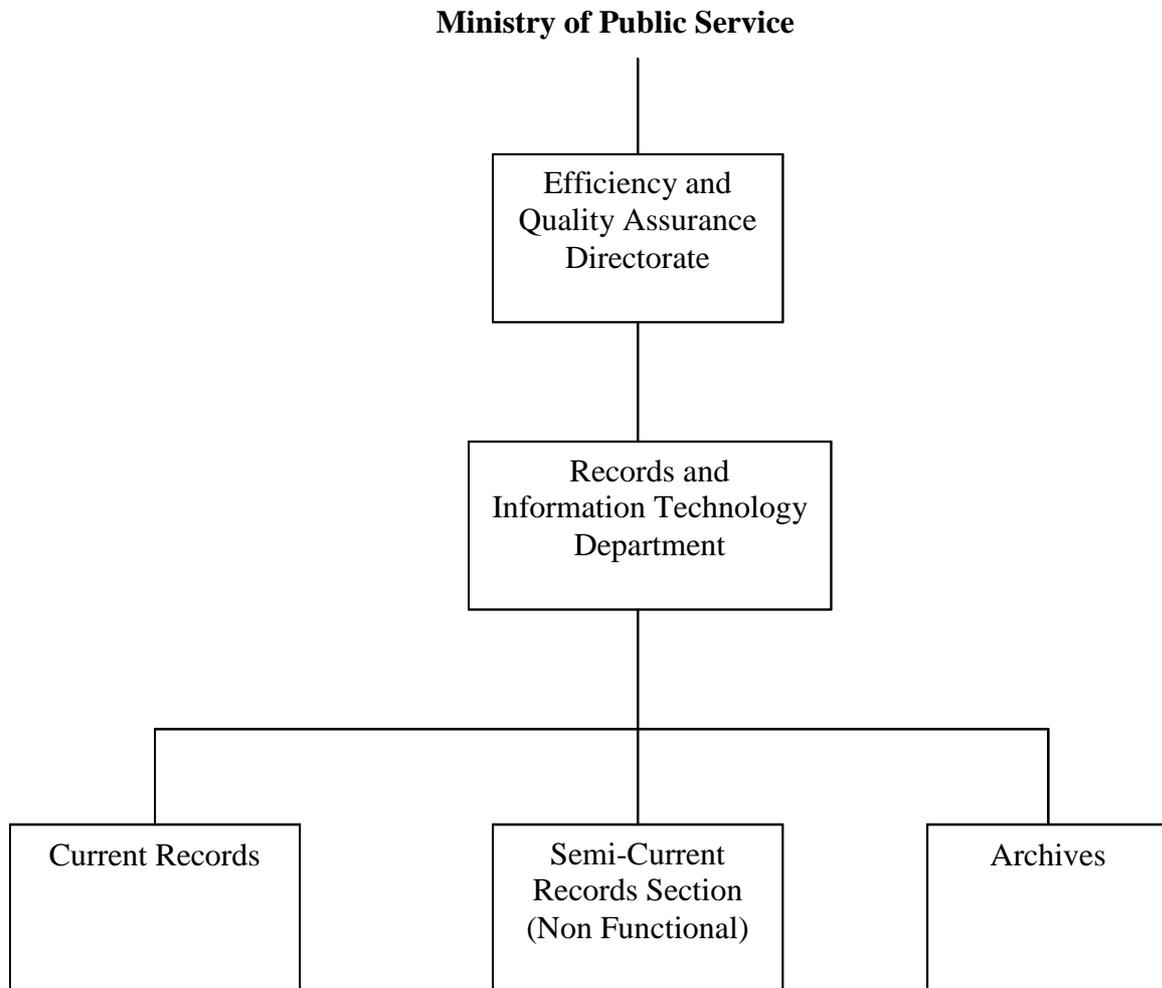
APPENDIX VIII

LIST OF INTERVIEWEE RESPONDENTS – FROM THE ESARBICA REGION

Designation	Interviewee's Organisation	Interview Date
National Archivist	Kenya	20th June 2007
National Archivist	Botswana	21st June 2007
National Archivist	Namibia	21st June 2007
National Archivist	Tanzania	20th June 2007
National Archivist	Lesotho	22nd June 2007
National Archivist	South Africa	22nd June 2007
Lecturer	Moi Uni	19th June 2007
Senior Lecturer	Botswana	21st June 2007
Senior Lecturer	Botswana	19th June 2007
Archival scholar	South Africa	20th June 2007
ICT Manager	Botswana	22nd June 2007

APPENDIX IX

**EXISTING RECORDS AND ARCHIVES MAGAMENT STRUCTURE IN THE
UGANDA PUBLIC SERVICE**

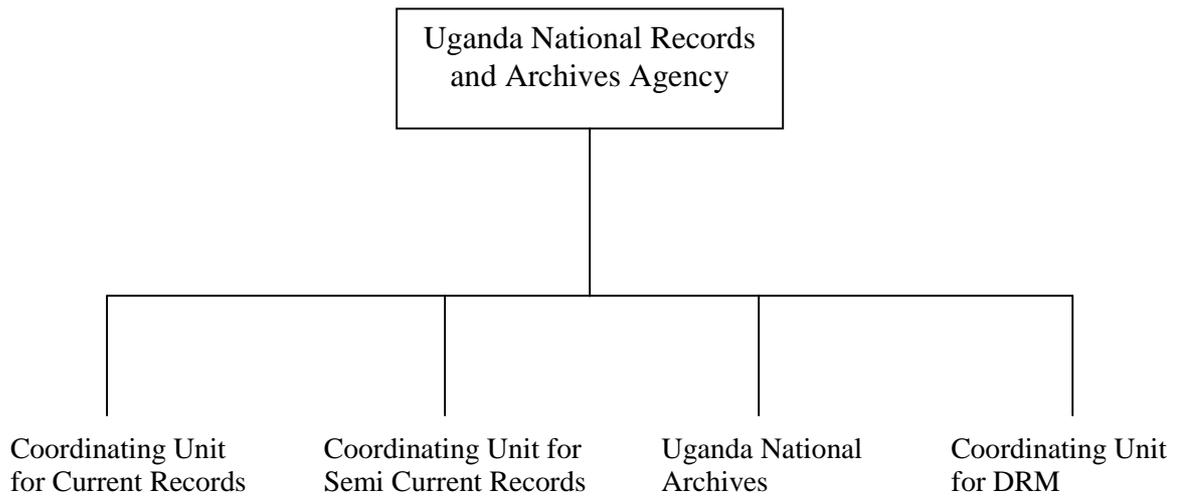


[Adopted from the UPS structure]

APPENDIX X

PROPOSED STRUCTURE OF THE UGANDA NATIONAL RECORDS AND ARCHIVES AGENCY (UNRAA)

Ministry of Public Service



APPENDIX XI

INDICATIVE FRAMEWORK NEEDED TO SUPPORT THE MANAGEMENT OF DIGITAL RECORDS IN UGANDA

Activity	Responsible	Related Standard
1. Policies and Plans		
a. Laws/regulations (the regulatory environment should determine the recordkeeping conditions and require that digital records are created and kept)	Senior Management; Records Mangers, IT staff	ISO 15489-1:Section 5 MoReq Section: 11:5
b. Policy on DRM: digital records to be created according to standards e.g. use of templates	Senior Management; Records Mangers	ISO 15489-1:Section 6 and Subclause 6.1
c. Policy on use of a DRM system	Senior Management; Records Mangers, IT staff	
d. Policy on external distribution of digital records	Senior Management, Records Managers and IT Staff	
e. Policy on acceptable use of ICT facilities	Senior Management; IT staff, Records Managers	
f. Policy on data access and security	Senior Management; Records Managers, IT staff	
Responsibilities DRM responsibilities and authorities should be defined and assigned, and promulgated throughout the UPS so that, where a specific need to create and capture a digital record is identified, it should be clear who is responsible for taking the necessary action	Senior Management; IT staff, Records Managers	ISO 23081 Clause 6; ISO 15489-1, Subclause 6.3

<p>Records Management Requirements UPS should initiate and carry out a comprehensive DRM programme which include determining requirements for creation, retrieving, using and transmitting digital records within and between UPS ministries and how long they need to be kept to satisfy those requirements</p>	<p>Senior Management; IT staff, Records Managers</p>	<p>DIRKS Step C: Identification of recordkeeping Requirements BS ISO 15489-1, Subclause 7.1, 7.2 and 7.3 MoReq Section: 6</p>
<p>Technical Infrastructure Provide the ICT facilities (including required DRM Hardware/software, Information Systems and Newtworks)</p>	<p>Senior Management</p>	<p>BS ISO 15489-1, Section 9</p>
<p>Systems Design and/or Procurement of a DRM System Implementation of a DRM system which meets the operational needs of the UPS and that accord with the regulatory environment</p>	<p>Senior Management; IT staff, Records Managers</p>	<p>ISO 23081 Clause 4 ISO 15489-1 Section 8, Subclause 8.4 DIRKS Step G: Implementation of a recordkeeping system</p>
<p>DRM Guidelines Need to provide DRM processes and controls through:</p> <p>a. Templates to be designed or provided</p> <p>b. Guidelines on digital records filing and storage practice</p>	<p>Senior Management; Records Mangers and IT staff</p> <p>Records Staff; IT Staff</p> <p>Records Staff; IT Staff</p>	<p>ISO 15489-1 Section 9</p>

<p>c. Digital Archives Management</p> <p>Monitoring and Auditing Compliance monitoring should be regularly undertaken to ensure that the DRM procedures and processes are being implemented according to UPS policies and requirements and meet the anticipated outcomes. such reviews should consider the performance and user satisfaction with the DRM system</p>	<p>Senior Management; Records Managers; IT Staff</p> <p>Records Staff; IT Staff</p>	<p>ISO 15489-1 Section 10</p>
<p>Security of the Records Provide security controls to ensure the safety of the digital records. Key elements of security metadata, such as basic access rights or restrictions, should be identified and applied at the point of creation and capture in order to ensure that records can only be accessed by authorised personnel</p>		<p>ISO 15489-1 Section 9, Subclause 9.2.4, 9.2.4.1 and 9.2.4.2 MoReq Section: 4.6</p>
<p>Replacement and Upgrading of DRM System systems</p>	<p>Senior Management, IT staff and Records Staff</p>	