AN INVESTIGATION INTO HOW THE USE OF ELECTRONIC DOCUMENT
MANAGEMENT SYSTEMS IMPROVES FILE MANAGEMENT IN
ORGANIZATIONS
(A CASE STUDY OF KENYA LITERATURE BUREAU)

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DECLARATION

This project is my original work and has not been presented for any award in any other institution or university other than the Management University of Africa (MUA), for academic credit.

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This project has been submitted to the Management University of Africa for examination with my approval as University supervisor

Signature………………………….………………Date……………………………….………….

MR TOM KAWINO

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DEDICATION

I dedicate this project to God for helping me see this project through in time. To my family for their support and love through my schooling and life, my parents James and Rebecca Masita and all my siblings Alex, Stephen, Hellen, Aska, Pauline and Mary and finally to the Management University of Africa for the wonderful academic experience for the five years of my attendance.

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ABREVIATIONS

EDMS – Electronic Document Management System

OS – Operating System

DBMS – Database Management System

KLB – Kenya Literature Bureau

ISO – International Organization for Standardization

MD – Managing Director

KIE – Kenya Institute of Education

KNL – Kenya National Library Service

HOD – Head of Department

API – Application Programming Interface

ODMA - Open Document Management API

LDAP - Lightweight Directory Access Protocol

WebDAV - Web Distributed Authoring and Versioning

SOAP - Same Opposite Always Positive

RESTful - Representational State Transfer

DMS – Database Management System

PDF - Portable Document Format

MS – MicroSoft

ICT - Information and Communications Technology

SPSS – Statistical Package for Social Sciences

ABSTRACT

Technology advances so fast. Constantly evolving, businesses today find themselves in a position of much opportunity with all the benefits that come with such a tech-savvy generation. There is free and enormous exposure through social media, multiple cheap, easy and high-quality forms of communication and devices that can do better and more than ever before at an ever more affordable price. The possibilities are endless and as such it falls on the businesses to take advantage of these opportunities and keep abreast. If a business fails to adapt with these advancements it risks being overtaken by competition.

This project therefore aims at analyzing file management systems and the benefits of a modern filing system especially in this digital era. The project considers the various advantages to be gained by a modern file management system in contrast to the various limitations of a manual filing system. It is a case study of the Kenya Literature Bureau (KLB) and its current filing system which is manual, and aimed at identifying the issues KLB is facing and how they may be counteracted by the adoption of an automated system or rather an Electronic Document Management System (EDMS).

This paper is divided into 5 sections. Section one introduces the topic of EDMS. It also introduces the subject of the case study, Kenya Literature Bureau. It outlines the problem statement and the objectives of the study. This section focuses on the current practices at the registry office at KLB as well as outlining the problem as the drawbacks in manual filing systems and how they affect the effectiveness of functions within the organization. Section 2 gives an in-depth look at the systems theory, EDMS background and history and the advantages to be gained from an automated system. This chapter aims to present the theory of systems and how they work and it shows how the filing system within the organization operates within this very principle showing how the attribute of interdependence chief to systems comes into play and consequently influences the other attributes, systems and the organization as a whole. The researcher used

Descriptive method and a questionnaire as data collection instrument. The target population was the employees of KLB.

The analysis of the data collected showing a largely positive response to the idea of an "automated system" as well as expressing a range of ideas and opinions collected on the subject of the current file management system which is manual versus an automated system. The research concludes that the use of electronic file management system will improve the efficiency and effectiveness of file management in organizations and recommends that companies adopt EDMS.

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CHAPTER ONE

1.1 Introduction

Technological advancement in all fields has advanced exponentially over the years. It only then stands to reason that with such advancements in technology that all other aspects of business and activities of all kinds should evolve proportionately. And indeed, much has; The way business is conducted and its interaction with others has changed and is heavily influenced by technology. And to a big extent, businesses have also adopted these new age ways of doing business albeit at a slower pace. We are living in the age of technology where computers, phones and the internet are inextricably linked to daily life today. To say technology has grown exponentially would be an understatement. Computers have gone from taking up a whole room but only being able to make simple calculations to small enough to fit into a shirt pocket with mind-blowing processing power which is only getting faster and better. By these standards, a cheap smart phone today is a supercomputer in the pocket. Mobile phones, for example, at least in Africa, are barely thirty years old, with the oldest versions being very expensive, big and cumbersome and unable to do little else but make calls to today's cheap smart phones which can do almost everything a proper computer can do, from applications, to games, to up to date news feeds.

What is an automated file management system?

Technopedia.com gives the description of an Automated Filing System or Electronic Document Management System (EDMS) as a type of software that manages data files in a computer system. It has limited capabilities and is designed to manage individual or group files, such as special office documents and records. It may display report details,

like owner, creation date, state of completion and similar features useful in an office environment. It is also known as a file manager. (technopediA, 2018) According to technopedia, it mustn't be confused with a file system that manages all typed of data and files in an Operating System (OS) or a database management system (DBMS) with relational database capabilities including programing language for further data manipulation. A file management system has a tracking component which is key to its creation and management, where documents in various states of processing are shared and interchanged on an ongoing basis. The system may contain features such as Assigning queued document numbers for processing; Owner and process mapping to track various stages of processing; Report generation; Notes; Status; Create, modify, copy, delete and other file operations. (technopediA, 2018)

1.2 Background

Automated Filing System or Electronic Document Management System (EDMS) has its roots in in the 1980s where software was developed to help manage paper-based systems. It dealt with paper documents including, not only printed and published documents, but also photographs, prints, etc... Later a second type of system was developed for managing electronic documents. That is basically documents, or files, created on computers, and often stored on users' local file-systems. The initial versions at first only dealt with proprietary file types or a limited number of file formats. These systems came to be known as 'document imaging systems' as they only handled the capture, storage, indexing and retrieval of image file formats. These systems evolved to the point where they could manage any file format that could be stored on the network and grew to encompass electronic documents, collaboration tools, security, workflow, and auditing capabilities. They enabled the organization to capture faxes and forms and save them as images which would be stored on a repository for security and quick retrieval.

While most EDM systems store the documents in their native formats, i.e. word, excel, pdf, some online web-based systems store documentation in 'html' format. These policy

management-based systems require the content to be imported into the system, at which point the software (ex. Corona document management system) acts like a search engine. (Internet Archive, 2011) Users can find what they are looking for faster as 'html' format allows for better application of search capabilities such as full text searching and stemming. (Internet Archive, 2012). Cloud hosted document management softwares retain huge demand potential for organizations as they help them reduce the complexities of hardware maintenance costs and so go for providers who offer cloud hostage and maintenance options. As demand for EDMS increases, vendors of the service have the opportunity of increasing their customer base by providing such features and facilities along with their software. This would enable them to add value to their product as well as stay ahead of the curve in the market.

1.2.1 The Kenya Literature Bureau

In the case of the Kenya Literature Bureau, which still maintains a manual filing system, changing to an EDMS would be ideal. At present its file management system is handled by the registry office. The KLB registry service is committed to providing support to the Bureaus business and meet customer expectations as per the ISO 9001:2015. Its tasks include:

- Maintain both inward mail and internal registers for records traceability.

- Maintain file circulation/ movement register to help retrievability

- To carry out a monthly file census and maintain records of the same

(Kenya Literature Bureau, 2016)

Specific tasks include:

Opening and maintenance of files

Subject files are opened in liaison with the department concerned with authorization from the Managing director and is assigned a reference number. All correspondences

regarding the particular file will be maintained within it. The same is done with the personal files, but using the employees' personal number in the reference for identification. Book files are only opened after a manuscript is assessed and approved for publication. The publishing department thereafter sends a request to the registry department to open the file. (Kenya Literature Bureau, 2016)

In-coming Mail

All mail collected from the postal office is received by the registry office and sorted into personal and official. Official mail is passed though the MD's office for approval after which it's sent to registry to be recorded, sorted and filed. Personal mail is distributed to the specified recipients. (Kenya Literature Bureau, 2016)

Outgoing Mail

Registry receives and records outgoing mail. Cheques have to be signed for at the cash office. Afterward the mail is franked and posted. (Kenya Literature Bureau, 2016)

Filing

All letters are placed within their relevant files, whether they are subject, personal or book files. They are then marked for action by the relevant officer/ department. Should an officer want to act on a document at a later date, the file shall be recorded in the 'bring up action register' so it may be dealt with on the specified date. (Kenya Literature Bureau, 2016)

File movement

Files are issued to officers when either, a filed document requires the action of the said officer, when the officer requests for the file, when the file is marked for action from one officer to another or finally should due to the 'bring up action register' due date. (Kenya Literature Bureau, 2016)

File circulation

Issued files are recorded in file movement card or file movement registers to later be updated in the cards. The cards, which each has a name and reference number of each specific file, record the date and office to which the file has been issued for action. The files are then recorded in file movement registers in the respective offices by the secretary or officer in charge and should the file move to another office after that it is to be again recorded in the office's file movement register. Registry officers may be called to move these files to other action officers or if action is complete, to retrieve the file and return it to the registry office. Once returned, it is then recorded in the file movement card. All this is to ensure traceability of the files issued. (Kenya Literature Bureau, 2016)

Storage and security of files and data

Current files are kept in cabinets and closed files are kept in the archives. Access to these is restricted to registry staff only. Suitable measures are taken to keep the files from damage by moths, rats, fire, etc. Confidential files, while opened by registry and given reference numbers are kept in the MD's office for controlled access.

Monthly file census is carried out to establish the location files by the registry staff in the various offices and this information will then be updated in the cards. (Kenya Literature Bureau, 2016)

Management of external documents

Unlike internal documents that can be sourced as reliable, external documents need to be scrutinized and verified before use. Government publications, newspapers, reports from government agencies like KIE, KNLS and communication from government ministries. Incoming corporate mail is directed to the MD's office where confidential documents remain and all others go back to registry for sorting and filing. Other communication, depending on its usefulness may be destroyed after vetting by the head of department. The HOD is also responsible for vetting all other unsolicited data from newspapers and other publications that may be retained as useful reference materials. External data may

be stored in various forms, electronic or paper and may be filed normally or stored on CDs, Flash Disks or other electronic storage devices. The mode of storage must, however be secure. (Kenya Literature Bureau, 2016)

Non- current records

Once a file exceeds a manageable size, the file is closed. That means that a new file with the same reference is opened, but with the next volume number. The date this is done is written on the old file, after which it is recorded in the closed files folder moved to the archives. The only persons allowed to carry out this activity are the registry staff. Retention and disposal of files is done according to approved retention and disposal schedules, which is to be preceded by a survey and appraisal exercise by the Kenya National Archives. Approval to dispose of these files, however, comes from the Managing Director. (Kenya Literature Bureau, 2016)

Revision and updates

The records management officer may call upon the updated list of records or documents from the Heads of Department, every end of month for the purpose of updating the schedule at the end of every calendar year. (Kenya Literature Bureau, 2016)

1.3 Statement of the problem

Because of all the advancements in technology in all fields of business and the speed with which these changes are occurring, it has become more and more important for businesses and organizations to keep up with the technological advancements in any way they can. The adoption of an automated file management system or EDMS is one such way. For a market leading organization such as the Kenya Literature Bureau (KLB) this investment would only help strengthen and solidify this lead. The current manual filing system at the KLB, while it's functional, has many disadvantages that would be easily solved by the deployment of an EDMS.

Where manual systems such as the one at the KLB have complications such as inefficiency, taking up too much space, human error, low security, inflexibility, damage and even cost, an EDMS has the advantage of solving each of these issues through its various innate mechanisms. And so, it would greatly benefit the Kenya Literature Bureau and any organization that is still using a manual system, to adopt the more modern electronic document management system. And as such, the problem in this case is to analyze the various inadequacies facing the current manual file management system, and explore how an EDMS could help solve these problems.

1.4 Objectives

1.4.1 General

The main objective of this study was to consider the various issues affecting the current manual filing system at the Kenya Literature Bureau and how the adoption of an Electronic Document Management Systems would help to improve file management in organizations.

1.4.2 Specific objectives

i.   To study the effect of EDMS on efficiency
ii.   To determine how EDMS will improve space consumption
iii. To analyze how an EDMS will help reduce human error
iv.   To analyze the effect of EDMS on low security
v.   To determine how an EDMS will help improve flexibility
vi.   To ascertain how EDMS will help reduce damage to files
vii. To study effect of EDMS will help reduce operational cost

1.4.3 Research Questions

i.   How will an EDMS help improve inefficiency?

ii. How will an EDMS help solve the issue of space consumption?

iii. How will an EDMS help reduce human error?

iv. How will an EDMS help improve low security?

v.   How will an EDMS help solve the issue of inflexibility?

vi. How will an EDMS help reduce damage and misplacement of files?

vii. How will an EDMS help reduce operational cost?

1.5 Significance of the study

The research study will help highlight and understand the complication of the filing system in its manual form and attempt to evaluate the current issues. It will also advocate for automation and try demonstrate the various benefits that could be gained from adopting an automated system. This will serve to help organizations get a good feel of what it stands to gain in the long run.

Automation will save organizations a lot of money being spent in the physical system through paper, ink, files, storage and handling and so on. It will speed up retrieval, processing and information sharing across the organization by making it faster and more secure and uniform across board consequently saving on time as well as cutting down the various complications arising from human error.

1.6 Limitations of the study

As the study was carried out at the main office and the full picture cannot be gained as the various branch offices have not been included and so the results gained will apply most accurately to the main offices.

1.7 Scope of the study

The study covered the population of the Kenya Literature Bureau Main offices and primarily the management and office staff specifically.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter will take an in-depth analysis of the topics mentioned in the first chapter by looking at past studies carried out on the various subjects and will be making a critical review of the findings, and a summary of the whole review and result.

2.2 Theoretical review

2.2.1 Management theory Framework

Management theory, in general is divided into mainly two parts. First is Classical Management Theory which emphasized and was focused on finding the one best way to do everything. And these theories were championed by the, now considered, forefathers of Management theory such as Fredrick Taylors with his Theory of scientific Management (Taylor, 1911); Henry Fayol's Administrative Management Theory (Fayol , 1930); Max Weber's Bureaucratic Theory of Management (Weber, 1978); Elton Mayo's Behavioral Theory of Management (Mayo, 1933)etc. Second, is contemporary management theories which are numerous and mainly amalgamations of more than one classical theory where the best parts of the old are taken and put together to create a better new. And so, classical theory wasn't necessarily wrong or disposed of, but rather they have been revamped in various combinations in order to meet the various needs of different organization.

These theories include contingency theory, systems theory, Chaos theory and even theory X and Y in the case of human resource just to name a few. And there are many more. And so, while considering the issue of file Management, it should be acknowledged that it is a management issue or rather an area of management which contributes directly to the

functioning of the organization. And as such, various management theories could be considered with regards as to how best to carry out this management function. And none fits this subject of file management better than the systems theory.

Systems theory

A solid understanding of the systems theory helps the manager to understand how an employee affects the system and how the system affects the employee. Systems are made up of many different parts which come together to work as a whole. The systems theory offers the manager the ability to observe the organization with a sort of bird's eye view with which he/she may observe events, trends or patterns within the organization by considering the organization as a whole. The manager is then able to coordinate and make decisions that would help the whole system work smoothly together towards the same goal; The organizational goals. (Shethna, 2017)

2.3 Systems theory

A system can be described as an entity which exists through the mutual interaction of its parts. For a long time, scientists operated on the assumption that systems were closed with no interaction with their environments. Ludwig Von Bertalanfy proposed the idea that systems were, instead, open by factoring in the influence of the organization's environment. (Bishop, 2012) General systems theory was proposed by Von Bertalanfy and furthered by Ross Ashby. Other types of systems theory include Biochemical systems theory, Dynamical systems theory, Ecological systems theory and Modern systems theory. (Krishnamoorthy, 2013)

Ludwig von Bertalanfy and J G miller established the foundations of general systems theory and researchers in this field of study imported the systems metaphor of the living biological organisms and key terms to pursue a richer understanding of how organizations worked. (Bertalanfy, 1968) (Miller, 1978) For example, in 1966, Daniel Katz

and Robert Kahn published the social psychology of organizations which applied systems theory concepts to organizational life. It's very helpful to see systems theory as an alternative perspective. At the time of these developments, the classical approach and theory to management was strongly influenced by viewing organizations as machines. For many decades this was the approach and the goal were to find that one right way in which to achieve efficiency, productivity and control. Management researcher Fredrick Taylor was known to have been a strong advocate for this one best way approach. (Lyon, 2017). Systems theory at its inception was a completely different way to look at the subject of management as it mainly focused on looking at the organization as a whole organism. Basically, how all the little bits fit together with the goal of describing and explaining how organizations work, without the classical approach's control mindset. It also aimed to pursue the multiple ways to accomplish various goals. (Lyon, 2017)

To note, some of the defining characteristic of a system include:

- Every system holds a purpose within a larger system and all of a systems parts must be present in order for it to carry out its function optimally.

- All parts of a system need to be arranged in a certain way in order to operate.

- Systems change in response to feedback received and they are able to maintain their stability based on their adjustments according to this feedback.

(Bishop, 2012)

To illustrate; an organization is made up of three parts: Inputs, which are basically the resources and information needed in order to supply the organizations functions; The processes or throughputs which are basically the activities which the organization needs to carry out in order to accomplish its work or mandate; Finally, the outputs which are basically the outcomes, products and services created or delivered by the organization. (Lyon, 2017)
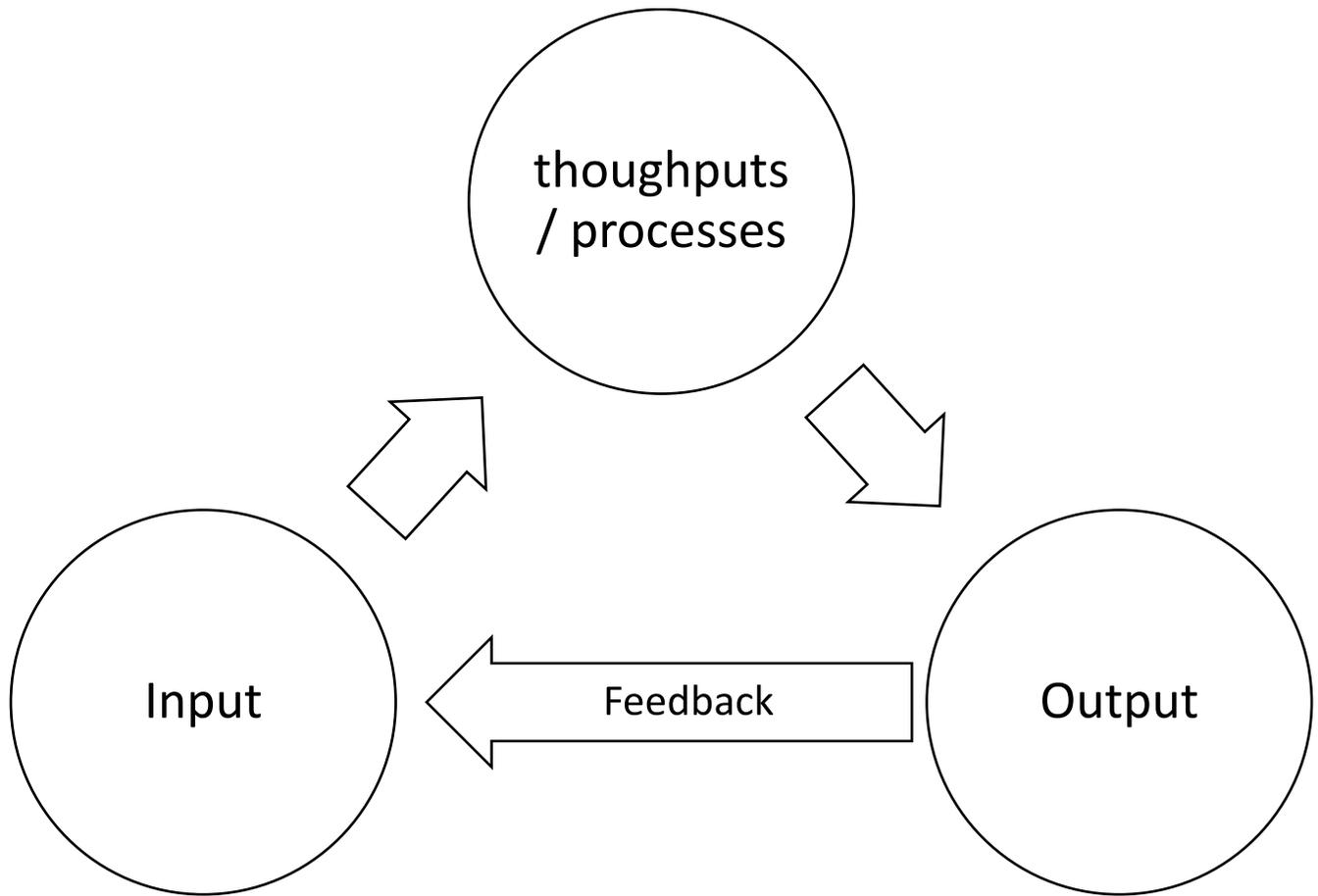
Figure 1 feedback loop   *source: Lyon 2017*

Take a restaurant for instance. The Workforce, the food, equipment and so on are the inputs. The processes would be all the tasks involved in providing the service, the cooking, cleaning, administration and paperwork: and finally, the outputs would include the final products and outcomes such as the food, satisfactory service to customers, profit and even the garbage generated is an outcome. (Lyon, 2017)

2.3.1 Features of the Systems Theory

Permeable.

Systems are open to their environment. That is to say they possess permeable boundaries where information and resources can flow in and out freely in an exchange with the organization's environment, that is essential for the health of the organization. (Lyon, 2017). There exist closed systems such as thermodynamics, which basically states that the only forces contributing to the momentum change of an object are the forces acting between the objects themselves. Isolated systems are almost nonexistent and examples of even closed systems are very few. An example of a closed system would be a toll road where you get a ticket when you get on and pay at the end with the toll calculated according to the distance travelled. (Bishop, 2012)
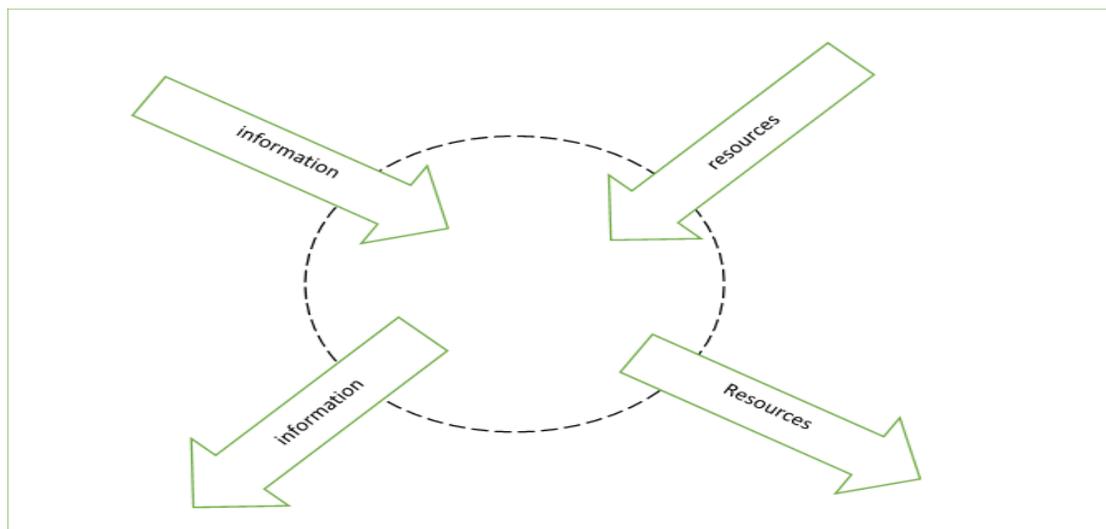
Figure 2 Systems open to their environment   *Source: Lyon 2017*

These environments are unpredictable and as such boundary spanners exist in order to scan the environments scoping out the competition, the customers the suppliers, the economy, keeping an eye on all these factors in order to make better decisions. (Lyon, 2017)

Holism

Next there is the concept of holism in Systems: This is an important part of the systems approach where the system taken into consideration as a whole and not just a collection of pieces. For example, a body is not just a collection of cells but rather it's more than that. A system is greater than the sum pf its parts. One may use the word synergy; The various parts of the systems are interdependent and interact through mutual feedback processes, meaning all these pieces of the network are interconnected. (Lyon, 2017)

Interdependence

Interdependence is another central concept to systems theory. That is, organizations are in dynamic interconnected relationships with their environments. For instance, there are subparts within the system that are also interrelated and not isolated. And so, the whole system comprises of these interconnected subparts. (Lyon, 2017)
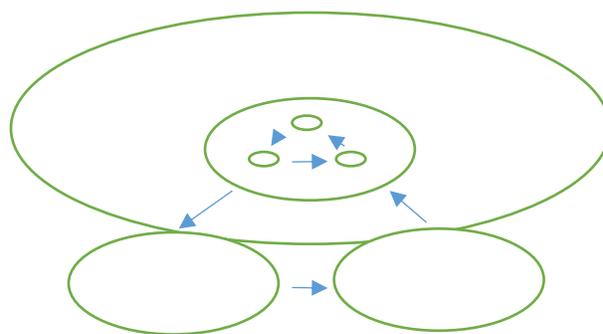
Figure 3 the interdependence of systems   *Source: Lyon 2017*

In such cases we then find that changes to one part of the system directly or indirectly influence other parts of the system. For instance, the absence of a member from a team would directly force the others to pick up the slack and indirectly cause external parties in the same project to, possibly, accept a certain delay in the schedule. (Lyon, 2017)

Goals

Systems also have goals: Unlike in the classical theory of management, the goals in the systems theory are contingent and negotiable. That means that they depend on the organizations position and circumstances at the time and may adapt along the way.

Equifinality

Equifinality can described in two steps: First, that there is no one best way to organize. Second, all ways of organizing are not equally effective. This completely contradicts classical lobbyists like Fredrick Taylor who advocated for the one best way. It stands on the idea that there is no one best way to handle every problem, but rather there are, in every situation, certain methods of organizing that are more effective than others. (Lyon, 2017). While travelling from one point to the another, for example, there will probably no one best way to do it as it all depends on various conditions i.e., weather, traffic, time constraints, availability of transport and etc.

Feedback

Feedback is also an important part of the process. There are two types:

Negative feedback, which seeks to correct or reduce deviations in the systems processes in order to reestablish a steady course back to the direction of the systems goals.

Positive feedback which amplifies the systems current processes and grows it in desired ways.

Communication

A mechanism must be put in put in place to facilitate the exchange and flow of information between the organization environments as well as between the subsystems. (Roxcine, 2013)

Systems, subsystems, super systems

A set of interrelated parts that turn inputs into outputs. Subsystems carry out the role of processing within an organization. Super systems are systems in which the focal system exist and the environment on which the system relies and depends on.

Entropy

Entropy appreciates that systems do tend to break down and wear out, deteriorate and generally move towards disorganization. I.e., a home left unattended will fall into a mess with time. And as such balance is important in helping the system to find/ reach homeostasis/equilibrium. (Lyon, 2017). In other words, maintenance is key in keeping a system running in good condition. Overall, systems theory has not been used in one specific theory as it is but has instead been used as an opening and /or a basis for other more precise theories such as complex adaptive theories (chaos theory), Learning organizations theory, and Loosely coupled systems theory to name a few.

Basic principles of the systems theory include:

- A system is greater than the sum of its parts

- All systems, living and mechanical, are information systems

- Systems are highly interrelated with their environments

- The more whole, or unified the system, the more efficient it is.

- The more systematic the system, the more efficient it is.

- Effectiveness depends on the optimization

- A system may have to be broken down into smaller subsystems in order to be analyzed and understood before being reassembled

- Application of the systems theory can help in the modifying controlling and general understanding of the business/ organization

(Krishnamoorthy, 2013)

2.3.2 Advantages of systems thinking

- Systems theory enables the managers to see how the environment and the changes therein may affect the organization

- Broadens the theoretical perspectives and aspects to enable the understanding of organizational behavior.

- The systems theory makes it easier to deal with complex tasks

(Roxcine, 2013)

- It enables more effective problem solving, leadership, communication, planning, and organization development.

- It helps to avoid founder's syndrome where the founder or founders of the organization maintain disproportionate power within the organization creating a disruption in the balance within the organization's workings.

2.3.3 Disadvantages of systems theory

- Systems theory does not focus on the specific task functions within the organization

- Does not give a detailed outlook

- Theoretical change within the environment directly affect the workings and structure within the organization

- Does not quantify the impact of interpersonal relationships and loyalty to the productivity of the organization

2.3.4 Modern interpretations of the systems theory

- Systems theory helps to measure, control and compute the interactions of the individuals in each department within the organization

- When presented within the organization systems theory aids in growth and development

- Knowledge of the systems theory enables the manager to manage the mechanisms of the products and services leaving the organization.

2.4 Electronic Document Management System (EDMS)

According to edms.net, electronic document management system is a software program that manages the creation, storage and control of documents electronically. The primary function of an EDMS is to manage electronic information within an organization workflow. A basic EDMS should include document management, workflow, text retrieval, and imaging. An EDMS must be capable of providing secure access, maintaining the context, and executing disposition instructions for all records in the system. (EDMS, 2014)

2.4.1 Components of EDMS

A good document management system should have the following basic components:

Metadata

Stored for each document, metadata includes information such as the date the document was saved or modified and the identity of the user who did it. A DMS may extract this information from the document itself or prompt the user to provide it. Some systems use

optical character recognition or perform text extraction which enables users to locate documents through identifying probable key words or enabling full text search. This extracted text may also be stored as a component of the metadata stored with the document or separately as a source for the search function. (Parsons, 2004)

Integration

Many DMS attempt to provide the option of accessing other applications so that a user may be able to retrieve a document from the repository, open it in its respective format, make changes and save it back in the repository all without leaving the DMS application. This type of integration is available for a variety of software tools such as workflow management and content management systems, typically through an application programming interface (API) using open standards such as ODMA, LDAP, WebDAV, and SOAP or RESTful web services. (Shivakumar, 2016) (Pargmann, Brahm, & Fletcher, 2003)

Capture

This involves accepting and processing of images of documents from scanners or multifunction printers. Optical recognition inbuilt or as stand-alone software is used to convert digital images into machine readable text. Optical mark recognition software is sometimes used to extract the values of check boxes or bubbles. The capture function may also include accepting electronic documents and computer-based files. (Webber & Webber, 2016)

Data Validation

The rules of this function check the document for document failures, missing signatures, misspelled names, and other issues, providing real time corrections before importation of the documents into the DMS. Data validation may also include harmonization and data format changes. (Trinchieri, 2003) (Parker & Morley, 2014)

Indexing

This function keeps track of documents using unique document identifiers but may take a more complex form by using the documents metadata or word indexes extracted from the document's contents. Indexing serves to support information query and retrieval and index topography is of vital importance for rapid document retrieval. (Meurant, 2012)

Storage

This is including the storage and management or electronic management as well as where they are stored, for how long, migration of the documents from one storage media to another and finally the eventual document destruction.

Retrieval

This is basically the retrieval of documents from the DMS repository which while simple for the user is a very complex process. The user would search the document using a unique document identifier, whereupon the system may use the basic index or non-indexed query on its data store. (Meurant, 2012) This would enable the user to use partial search terms using the identifier or parts of the metadata to create a list of possible search results of items that may match the query. Some systems may allow the use of a Boolean expression consisting of multiple key words and phrases expected within certain documents. This type of search is supported by inbuilt indexes or may be more time consuming as it searches through the documents to return a list of possible results. (Meurant, 2012)

Distribution

A document ready for distribution has to be in a form that's not easily altered. The original copy is not used but rather an electronic link to the document is often used. If distributed electronically in a regulated environment, additional criteria must be met for the sake of assurances of traceability and version even across other systems. In this case this would apply to both systems: the integrity of the document is imperative. (Craig & Sommerville, 2006)

Security

This vital for document management applications. The requirements for this may vary with certain documents having much more complex depending on the type of document. DMSs may have a rights management module which enables the administrator to access to documents to certain parties based on type. Document marking at the point of printing or PDF creation is essential to preclude alteration of unintended use. (Skipper, 2015)

Workflow

This is a complex process that may be inbuilt (Austerberry, 2012) or be done through integration with workflow management tools. (Pargmann, Brahm, & Fletcher, 2003) There are different types of workflow depending on the environment in which the EDMS is implemented. Manual workflow requires the user to look at the document then decide who to send it to while Rules-based workflow allows the administrator to create parameters to govern the document's flow through the organization. For instance, and invoice would go through all approved departments before going to the accounts payable department. Dynamic rules allow for branches to be created within the workflow process for example an invoice would follow a different route depending on the amount stated. Advanced workflow systems may be able to manipulate content or signal external processes while these rules are in effect.

Collaboration

In its basic form EDMS should allow an authorized user to retrieve and work on a document. Access to all other users should be blocked during this time. Advanced forms of collaboration allow for users to view, modify or markup the document in real time at the same time creating a comprehensive document including all use's additions. Collaboration allows for all users authorized can make markups during the collaboration session which are recorded allowing the document's history to be monitored. (Austerberry, 2012)

Versioning

This is the process by which documents are checked in and out of the system allowing for retrieval earlier versions and to continue work from a certain point. This is useful for documents that continuously change over time and require updating, but which may require revisiting of older versions from time to time. (Austerberry, 2012)

Searching

This allows the retrieval of documents using template attributes or full text search. A document may be searched using various attributes or content.

Federated search

This refers to the capability to draw search results from multiple sources or DMSes within an organization. (White, 2012)

Publishing

This process involves proofreading, peer or public reviewing, authorizing, printing and approving etc. which ensue prudence and logical thinking. Careless handling may lead to inaccuracy which may mislead or upset users and readers. In regulated industries, some of the procedures have to be completed as indicated by the signatures and dates on the document. (International Organization for Standardization, 2011) (International Organization for Standardization, 2011) The document should be in a format which is not easily altered but is read-only and portable. (Bredbenner, 2003)

Hard copy reproduction

Document reproduction is often necessary within a DMS and is supported by output devices and reproduction capabilities should be considered. (Meurant, 2012)

2.4.2 Standardization

Different fields have their own document control standards. The following is a list of relevant ISO documents. (Divisions ICS 01.140.10 and 01.140.20) (International

Organization for Standardization., 2008) (International Organization for Standardization., 2008) ISO has also published standards regarding technical documentation as covered by division of 01.110. (International Organization for Standardization., 2008)

- ISO 2709 Information and documentation – Format for information exchange

- ISO 15836 Information and documentation – The Dublin Core metadata element set

- ISO 15489 Information and documentation – Records management

- ISO 21127 Information and documentation – A reference ontology for the interchange of cultural heritage information

- ISO 23950 Information and documentation – Information retrieval (Z39.50) – Application service definition and protocol specification

- ISO 10244 Document management – Business process baselining and analysis

- ISO 32000 Document management – Portable document format

2.4.3 Integrated Document Managing

This comprises of technologies, tools, and methods used to capture, manage, store, preserve, deliver and dispose of 'documents' across an organization. In this context, documents are all information assets including images, office documents, graphics, and drawings as well as the new electronic objects such as Web pages, email, instant messages, and video.

2.4.4 Disadvantages of Physical Document Management

Organizations produce mountains of documentation in the form of vital documents like contracts, proposals, agreements, letters, images and other information. Physically and manually speaking, this not only takes up massive amounts of space but is prone to numerous complications. Manual filing systems have the disadvantage of being:

Space

Manual filing systems take up a lot of space. It may be small at first but it accumulates not only with time but growth to the point where it may take up whole rooms. Also, having so much bulk and clutter just means that hunting down a file will be a headache every time. (D'Arcy, 2017)

Damage and misplacement

Physical files are prone to damage and/or loss and misplacement not just by the people handling them, whether human error or otherwise, but also natural disasters like fires and floods and/or various accidents. Loss of clients' information as well as important documentation may lead to not only loss of business, but also potential problems with the law. (D'Arcy, 2017)

Hard to make changes

Making changes to physical documents is always more complicated than digital documents because, you always risk damaging the original copy when dealing with physical documents. The editing process is consequently more time consuming and tedious. (D'Arcy, 2017)

Slow

Manual filing systems, by virtue of the fact that there is so much material to go through, the time-consuming nature of hunting down the file then the document, is a major disadvantage that puts off clients as well as taxes the workers mentally and physically. (D'Arcy, 2017)

Lack of Security

Access to information in physical files is much easier than anything saved in a computer. This is because all a person has to do is open the file. Tampering is also a serious possibility if these files are not properly handled. (D'Arcy, 2017)

Cost

The cost of the room, the files, the ink, the paper the storage, the equipment. The overall costs continue to pile up over time. And it just makes more sense to invest in a digitized system. (D'Arcy, 2017)

2.5 Benefits of an Electronic Document Management System

An EDMS would provide electronic cabinets which would then house all the soft copies (emails, MS Office documents, PDFs, CAD drawings, etc.) and scanned images of the paper documentation in the office. And so, what an EDMS does is, it enables folders to be created according to the clients' specifications which helps to systematically organize the organization's digital documentation in such a way that no document will ever be lost and retrieval takes seconds. An effective document management system should enable the client to manage a document's life cycle depending on that particular organization's culture, processes and goals. The EDMS system has many benefits. These include:

- It helps the organization in streamlining the organization's entire document processing cycle so that it's uniform throughout the organization as well as systematic and easy to handle.

- IT replaces paper documentation and can be encrypted and stored securely in a database which eliminates the issue of not being able to control who sees confidential files for example.

- Access to information stored is almost instantaneous and available on demand which removes the issue of processing time. Search retrieval and sharing of files is very fast and secure.

- Compliance to regulatory and legal requirements, necessary for acceptable e-documentation. This is doable without needing a conscious effort from the operating staff.

- Processing time as well as storage space is greatly reduced.

- Reporting and information sharing across the organization is more accurate, faster and easier.

- The EDMS has a central repository which is accessible only to authorized staff for security reasons. This ensures that the information accessible and in use in the organization is uniform as only the authorized personnel can alter it and no other staff.

- The EDMS also creates an up to date log of all the documentation stored within the database.

Ideally, the EDMS should be user friendly as the clients won't all the computer experts. And other than storing away securely the organization's documentation it should create an audit trail for all documentation accessed and meet legal regulatory mandates. Finally, it should be customizable for the client so that they may be able to format in in a way that best suits them and the organization in question. (Movetech Solutions Ltd, 2018)

2.4.6 EDMS providers within Kenya

Within the Kenyan Market, there do exist a number of organizations which provide this service. These include: G4S Kenya- Secure Data solutions, East African Data Handlers, Movetech Solutions Ltd, TechEdge Limited, COSEKE, and i27 DMS.

2.6 Critical and Empirical review

Since its inception, the filing system and file sharing system within the Kenya Literature Bureau (KLB) has undergone very little change. As it stands, at this very moment, the

system is fully manual relying on the energies of the Registry office numbering 8 staff, all of whom have to handle not only the file movement within the entire organization, including maintenance of archive records for the general files, but also all the mail coming in and going out of the organization. That is not to say that this is a problem or that the job is not being properly done. However, the system, as is true for all manual systems in various industries, has its faults. That is separate from just the simple fact that it is fast becoming outdated, especially in today's world. For a company that is already an industry leader in many respects, the automation of its filing system at the very least, should be a given. With technology constantly evolving, the prospect of making the transition should be a serious consideration. Business transactions are growing increasingly fast paced and in order to actively stay ahead of the curve. We have seen other public institutions take up this mantle already with some starting as early as 2006 with automating their service interfaces. Take Kenya National Examination Council (KNEC) for instance with students being able to receive their examination results through text, and even the Kenya Revenue Authority (KRA) which now enables citizens to be able to file tax returns online. Insurance companies have also taken the challenge of automation by making their services available through the internet. For instance, one is able to obtain an insurance cover without having to leave the comfort of your seat for CIC insurance for instance.

According to Business Daily, Global warehousing giants are investing in automation with eyes on lower transportation costs, achieving faster delivery, and expanding by linking up with new suppliers and locations. (MUNYI, 2018). According to a new report, in the US and Canada warehouse executives are investing in barcode scanning, warehouse truck loading automation, tablet computers for inventory, data synchronization, real time location systems and radio-frequency identification (RFIR) to identify and track tags attached to freight, tracking solutions firm Zebra Technologies has found. (MUNYI, 2018)

Munyi writes that early this year, the logistics solutions company, Siginon Global Logistics launched cloud software its warehouses in Nairobi, in order to increase its

operational efficiency by cutting down on the time spent on stocktaking and stacking tome by up to 23 hours, possibly more. (MUNYI, 2018)

KRA's iTax System is another example. iTax system is a computing and accounting system for state revenues (levies, taxes) which stores all relevant (credit and debit) data in individual accounts in a data base, and thus helps monitor and control all tax transactions. (KIPKEMOI, 2015) This system provides an efficient and convenient way to collect revenue. It also offers transparency in fiscal administration and management of local and national tax.

On the ICT Authority website, it outlines the digitization of various ministries registration departments such as the Civil Registration Department which digitized the National Population Register, the Company Registry for Kenyan Businesses, the High Court Registry Records, and even the Kenya News Agency, which specializes in news gathering across the country and news dissemination for local and international news agencies. (ICT Authority, 2018) Of course, we cannot forget the election body also largely digitized the registration of voters and automated a large percentage of the electoral process.

G4S (G4S Kenya, 2018) has also taken the opportunity to digitize and automate their filing systems. They also offer these services. On their website they write G4S Secure Data Management provides a cost effective, secure and simple solution to all aspects to corporate archiving and record management. They offer Storage, Indexing, Retrieval, Tracking, Archiving, Record Management, and Digital Services. (G4S Kenya, 2018)

Examples of other companies that have also automated their filing systems include Airtel, British American Insurance, East African Breweries Limited, Kenya Commercial Bank, NIC Bank, Radio Africa Group, Sankara Nairobi, UNICEF, Wells Fargo, AMREF, Nuvita Biscuits, Oshwal College, Diamond Trust Bank, Fly540, BCD Travel, Chandaria Industries Limited, Jubilee Insurance, Teepee, Subati Flowers, Blowplast Limited, Thermopak, Devki Steel Mills Limited.

The fact that so many organizations have already migrated to automated systems just goes to show how more and more important it's becoming to modernize. There is a real risk of companies that fail to keep up with these technological advancements being left behind by their competition as well as the rest of the business world.

This is especially imperative for the Kenya Literature Bureau because, as the leading publisher within the East African region, servicing multiple countries, a fast and accurate documentation and information database is that much more important.

2.7 Chapter Summary

This chapter has explored the various management theories practiced by organizations generally the conclusion of this is that no one theory addresses all the facets of management for an organization in its entirety and so these theories are often used in various combinations with each other depending on the individual organization. And the specific theories which do seem to be flexible and adaptable tend to be more often than not, an amalgamation of a number of theories.

The systems theory focused on in this paper is one such theory and it presents a framework within which we are able to understand how a modern file and document management system not only fits into the working of an organization. The conclusion of this analysis found that EDM system functions as a sort of medium in which the various official operations can be carried out more efficiently and effectively.

Finally, the chapter considered the benefits of the EDM system which address and resolve the complications of the manual system while offering additional benefits over the long term in terms of time and money saved. In this chapter, various providers for this service were identified as well as other organizations that have already taken the step to do automate giving some context for the advocated transition.

2.8 Conceptual Framework

The diagram below illustrates how the various factors overlap to influence file sharing efficiency at the KLB registry service. Inefficiency, taking up too much space, human error, low security, inflexibility, damage and cost.

Because of the nature of the file movement practices of the KLB registry service many of the problems above tie into each other and directly overlap and directly cause of affect each other. For instance, file misplacements occur because of human error many times while file misplacement is one of the major reasons for delays in file movement and sharing. Another cause for delays may be the slow manual system as it depends on the few staff in the registry service office whose performance and efficiency are directly affected by the above-mentioned explanation.

```
┌─────────────────┐        ┌──────────────┐         ┌──────────────────────┐
│                 │        │              │────────▶│      Efficiency      │
│                 │        │              │         └──────────────────────┘
│                 │        │  Electronic  │         ┌──────────────────────┐
│  Manual File    │───────▶│  Document    │────────▶│      Less Space      │
│  Management      │        │  Management  │         └──────────────────────┘
│  system         │        │  System      │         ┌──────────────────────┐
│                 │        │              │────────▶│   Less Human Error   │
│                 │        │              │         └──────────────────────┘
│                 │        │              │         ┌──────────────────────┐
│                 │        │              │────────▶│    High Security     │
│                 │        │              │         └──────────────────────┘
│                 │        │              │         ┌──────────────────────┐
│                 │        │              │────────▶│     Flexibility      │
└─────────────────┘        └──────────────┘         └──────────────────────┘
                                                     ┌──────────────────────┐
                                             ───────▶│     Less Damage      │
                                                     └──────────────────────┘
                                                     ┌──────────────────────┐
                                             ───────▶│ Lower Operational costs │
                                                     └──────────────────────┘
```
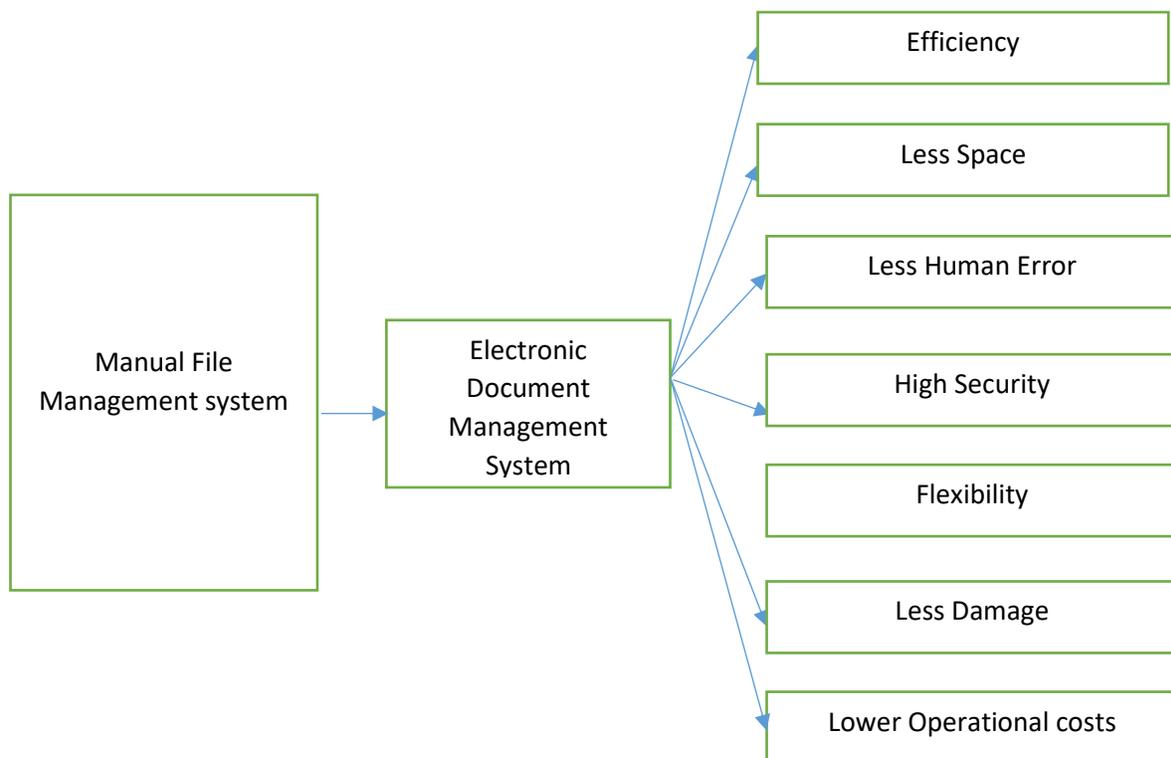
Figure 4 conceptual framework   *Source: Author*

2.8.1 Inefficiency

Inefficiency of the current manual filing system may arise as a result all the other factors directly or indirectly chief of which is human error. For example damage to the file would cause delays to a file's circulation. Inflexibility or the ease with which to make corrections to errors on documents also means that the files circulation and processing of activity will take longer. Also the more space the filing system takes the more time and effort it will take to retrieve and circulate. The documents are then not subject to the time lag that occures as a result of the handling and manual processing of various opreations. There is also much greater ease and speed of access such that the documetation is available for use and reference as soon as it its needed.

2.8.2 Space

A manual filing system eats up more space than an automated system. The space taken up by the storage cabinets and the various material such as paper, boxes, and various office stationary could be greatly reduced and diverted to other uses as the servers required to house the information would only need a fraction of this. This has the advantage of also reducing the complications arising from human error through handling.

2.8.3 Human error

Its impossible to completely remove this occurrence as the system still has to be managed by humans who make mistakes. However the problems of inefficiency, damage, inflexibility,security and even cost are markedly cut down as the files will be handles much less and by fewer people. And so as a result, the speed of operations due to elimination of the backlog, file misplacement, damage and just the ease with which corrections can be made to documents on the software is a big advantage to the organization.

2.8.4 Low security

When handling files manually, there is always the risk of tampering as well as being open to scrutiny by whoever gets access to the files. And as there is often confidential information in an organization privy to only specific parties, it would then be very beneficial to use an EDMS a it contains various mechanisms that may aid in securing this documentation. Through the use of accounts and passwords and encyption of information. Also all activity on the documents saved on the EDMS is recored along with the information of the user who accessed making it harder to tamper with.

2.8.5 Inflexibility

The ease with which corrections can be made to documents can really improve the speed of operations as less time is spent cutting through red tape in an effort to retrace steps or even startng the process over from the start. In an EDMS the document can be easily corrected before being saved in the database for use with the additional security of digital footprints for whoever accesses and makes changes.

2.8.6 Damage

Damage to files, accidental or otherwise is greatly reduced as the number of sanctioned administrators will be a select few who will be in charge of inputting the data and documentation and its management. They will also be the only ones aside from perhaps the technical IT team who will have access to manipulate and handle the data saved on the EDMS. The administrative staff, will be the ones to handle the physical files. This also helps increase accountability.

2.8.7 Operational Cost

The EDMS will hep reduce various oprational costs within the organization. For instance, there will be less use for office stationary. It may also reduce postal costs in the event that the branch offices are also connected to the system. This is also true for other

organizations that may also have the same system. The less time also spent processing and oprating manually will also sva money in the long run due to increased efficiency.

CHAPTER THREE

3.0 RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This section outlines the methods and techniques that are used to collect and analyze data for this paper. The research carried out was on the enhancement of the records management and filing system through automation. This section touched on: research design, target population, types of data, sources of data, tools to be used to collect data and the sampling design to be used.

3.2 Research Design

The research design is descriptive because the study seeks to establish the various issues that arise as a result of the use of a purely manual file management system and so it's to answer why these issues are present. The study is also descriptive as it seeks to establish the degree to which these issues affect the functionality of the file management system and the organization as a whole.

Primary data will be collected at the Kenya Literature Bureau main offices. This is because the majority of the employees are present here as it is also the location of the organization's production and storage functions making the population sufficient for the study.

3.3 Target population

The target of this study was the employees of the Kenya Literature Bureau, including the Managers, supervisors and office staff as this is the population in constant contact with and in constant use of the filing system. The primary data will be collected through the

use of questionnaires administered to this population, while secondary data was used to evaluate the data collected in the field. This data was examined and the results used to compile a report upon completion. The table below shows the population of the study. (Approximate)

Classification	Target population	Percentage
Senior management	15	11%
Lower management	22	17%
Regular Staff	100	72%

Table 1 population estimate

3.4 Sampling design and procedure

The sample of this study included the employees of the Kenya Literature Bureau main office. This sampling was based on convenience due to proximity of the subject to the researcher as well as the benefit of the main office housing the bulk of all KLB employees due to its main functions and operations being situated there. A total of 26 questionnaires were issued to each of the following departments or designations

The respondents were chosen via stratified random sampling so as to ensure that all the classifications chosen are represented. The questionnaires were distributed as follows. (Approximate)

Designation	No. of Questionnaires
Managers	5
Supervisors	7
Employees	13

Table 2 sample population estimate

3.5 Data collection instruments and procedure

Both primary and secondary data were utilized in carrying out this research. Questionnaires were the instruments used. Secondary data was collected from various sources including journals, periodicals, papers, newspapers, books and the internet where required.

3.5.1 Data Collection methods

3.5.1.1 Questionnaires

The most efficient and effective method of collecting the data is though questionnaires as the population is fairly large. The questionnaire will consist of both open ended and closed ended questions.

3.5.2 Data collecting procedure

Once administered, the respondents have the freedom to answer the questions and express their views, especially with the open-ended questions. The questionnaire was administered to the selected population. The questionnaires were delivered personally from office to office and interviews may be carried out where possible.

3.6 Data Analysis

The data was collected then analyzed and finally grouped and tabulated. It was then be presented in the simplified form of charts and tables. The data was processed through the use of SPSS. (Statistical Package for Social Sciences)

CHAPTER FOUR

4.0 PRESENTATION, INTERPRETATION AND DATA ANALYSIS

4.1   Introduction

This chapter focus on presenting the data collected though the methods outlined in chapter three, mainly the questionnaires administered. The data collected is presented in the form of charts and graphs in order to make interpretation easier and more understandable. This information analyzed in relation to the objectives of this study and presented systematically in order of the questions in the questionnaires.

4.1.1 Response Rate

Out of the 26 questionnaires administered, 2 were not returned. Making this a 92.31 % response rate with 7.69 not responding.
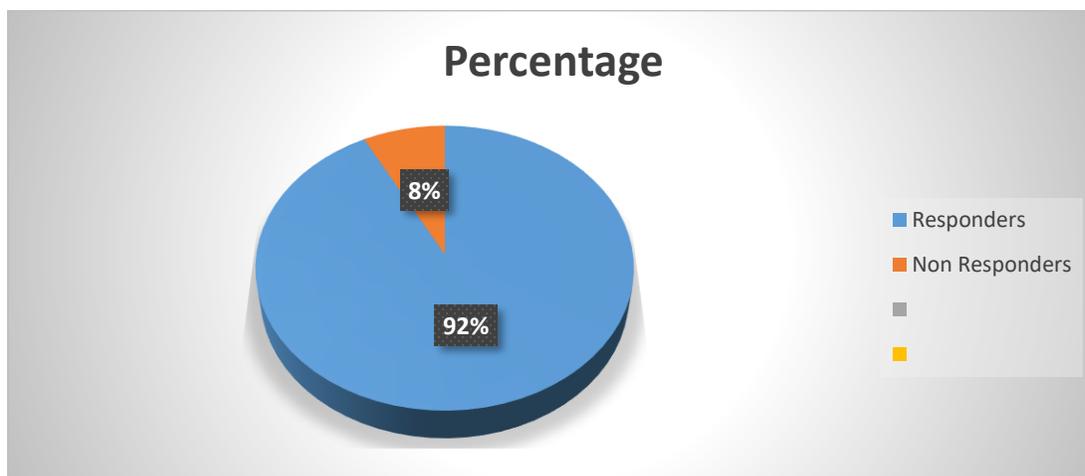
Figure 5 Response rate

4.1.2 Population sample gender demographics

Within the population sample that received the questionnaires, 15 were male while 9 were female. 57.7 % were male, 34.6% were female while 7.7 were no respondents.

Gender		Frequency	Percent
Missing	Male	15	57.7
	Female	9	34.6
	No respondent	2	7.7
	Total	26	100.0

Table 3 Gender table
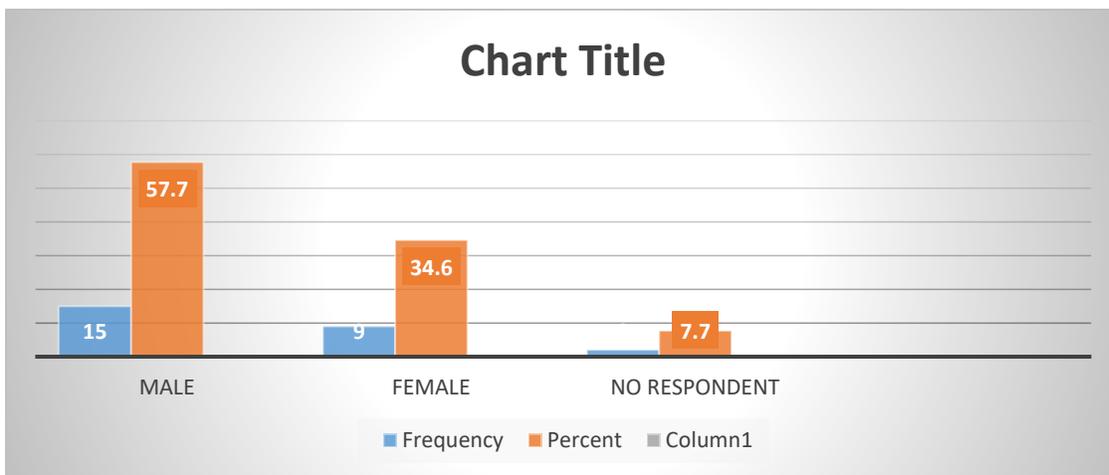
Figure 6 Gender Bar graph

4.1.3 Age distribution of the respondent

Age Bracket

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-35	18	69.2	69.2	69.2
	36-50	5	19.2	19.2	88.5
	51-70	1	3.8	3.8	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 4 Age distribution table
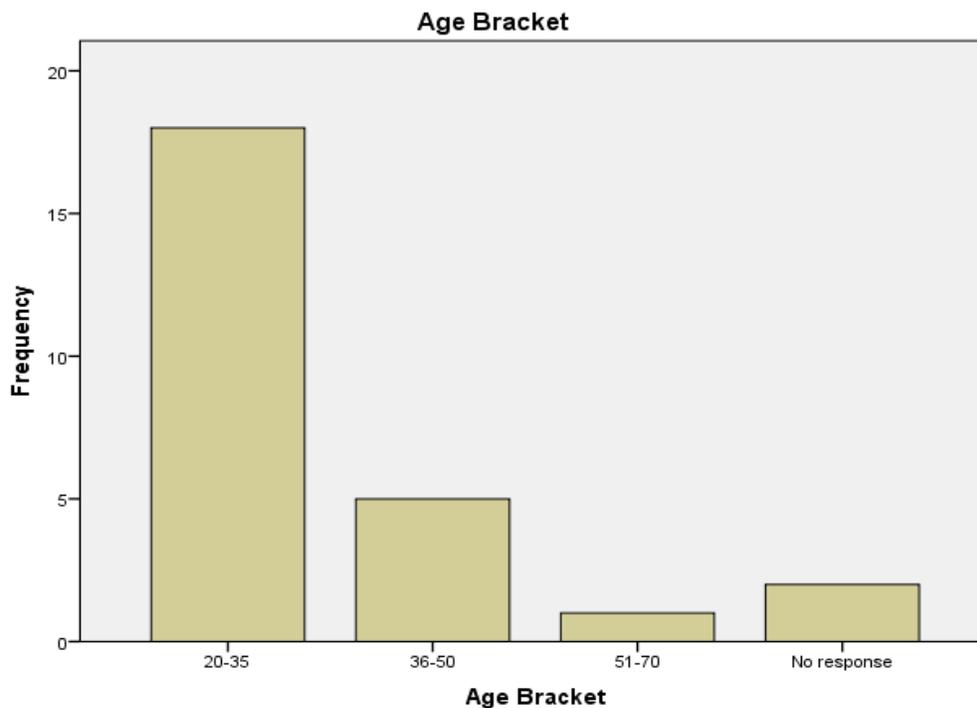
Figure 7 Age distribution Graph

According to the data collected, majority of the respondent population are the youth aged between 20 to 35 years of age. The following age brackets of 36-50 years and 51-70 years combined make up less than half of the young population. This may consequently, have

an effect on the type of response received in general from the data collected by questionnaires, as the youth tend to have more progressive views.

Occupational Position

Position					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Management	4	15.4	15.4	15.4
	Supervisor	7	26.9	26.9	42.3
	Regular Staff	5	19.2	19.2	61.5
	Temporary/ Contract	5	19.2	19.2	80.8
	Intern/ Attachee	3	11.5	11.5	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 5 occupational position graph
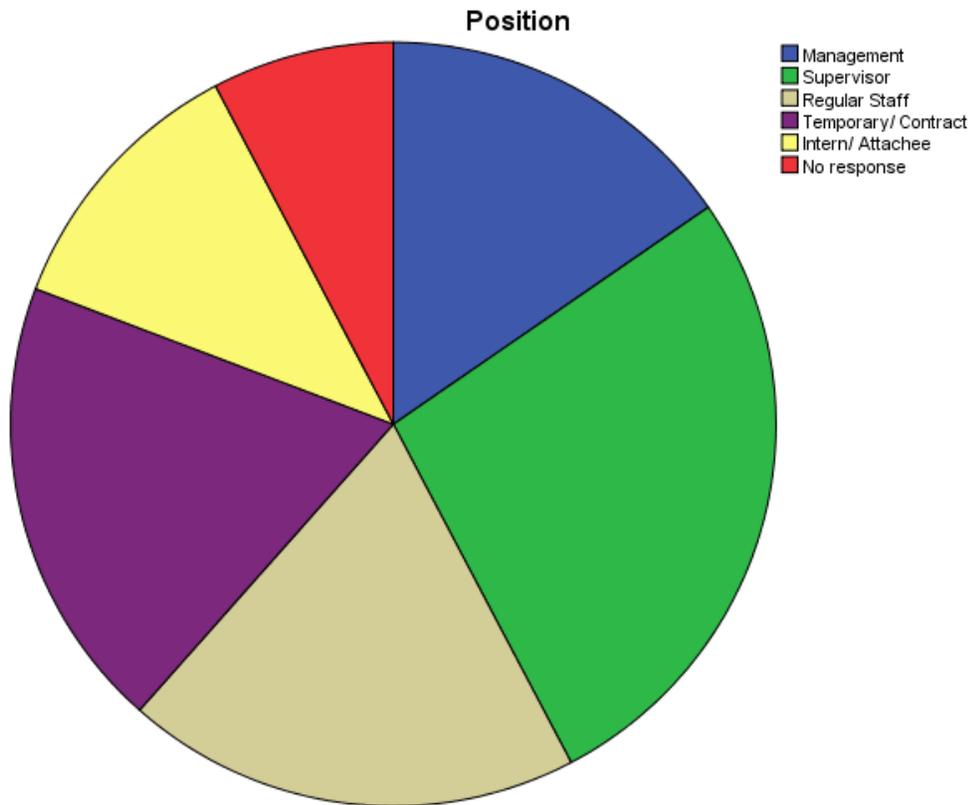
Figure 8 Occupational position chart

From the diagram above, it shows that the population distribution is fairly evenly distributed with no population completely overwhelming any other. It may then be inferred that the information collected should show a fairly balanced cross section picture and outlook of the filing system situation across the various positions.

4.1.4 Qualification

Qualification					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certificate	1	3.8	3.8	3.8
	Diploma	2	7.7	7.7	11.5
	Degree	16	61.5	61.5	73.1
	Masters	5	19.2	19.2	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 6 Qualifications table

55
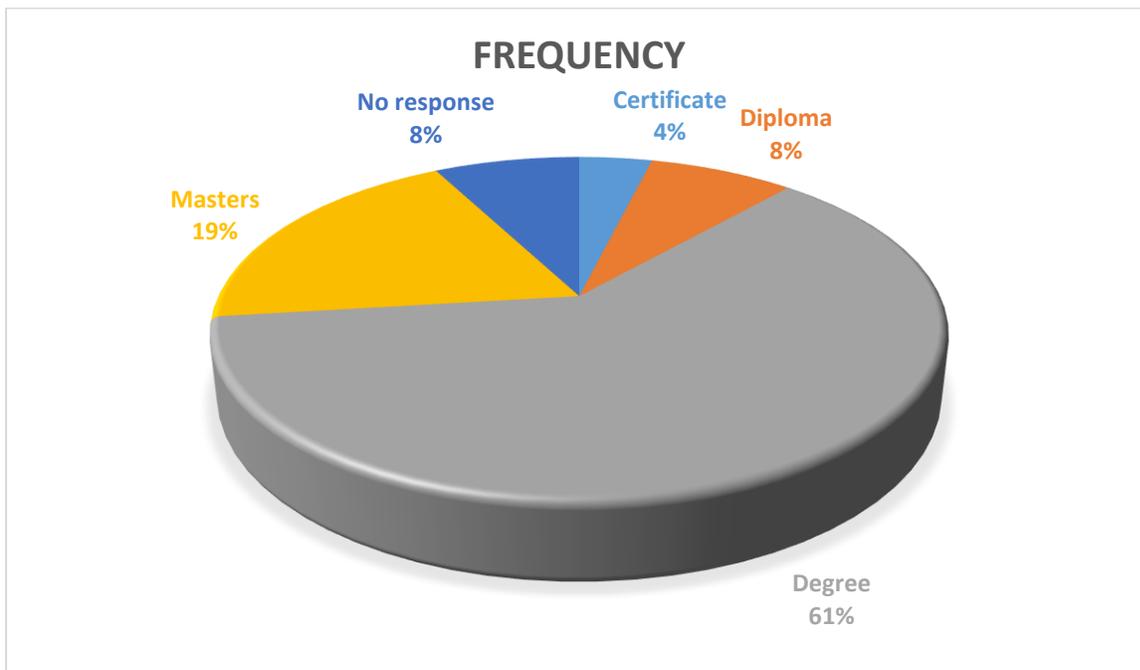
Figure 9 Qualifications Graph

The pie chart above shows that a vast majority of the respondents were degree holders. This may also be a factor in the kind of response received as degree holders and above may be more receptive to adopting a new system that could be considered technical and complex.

4.1.5 Length of Service

Length of Service					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 5 years	12	46.2	46.2	46.2
	< 10 years	8	30.8	30.8	76.9
	< 15 years	1	3.8	3.8	80.8
	< 20 years	1	3.8	3.8	84.6
	20 years +	2	7.7	7.7	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 7 Length of service table
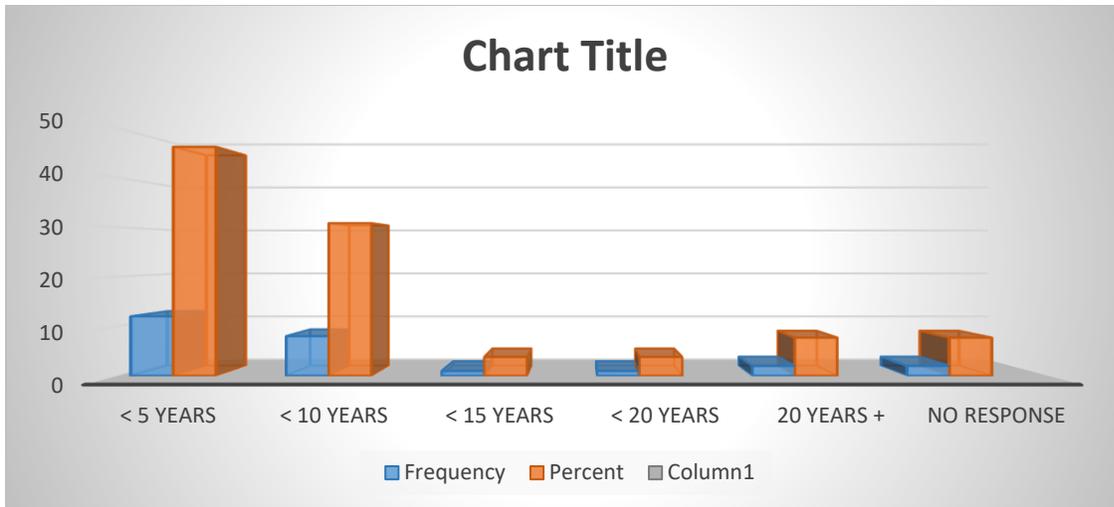
Figure 10 Length of service graph

As depicted in the graph above, a large percentage of the respondents have been in service in the Bureau for 5 years or less followed closely behind by respondents who had served for less than 10 years. This may influence the tone of response in that they may adapt quickly to a different system than what is currently in place for the former and a willingness to try newer, more advanced and possibly better system for the respondents that have had a longer experience with the current system as they would be more converse with its pros and cons. This, however, may not apply for those who have served much longer than 10 years as they may find the change cumbersome or complicated, especially since the current system is still fairly functional such that organizational activities are not suffering. They may opt to maintain the status quo.

4.2 Is the Current System Adequate?

Adequacy of the current system					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	19.2	19.2	19.2
	No	19	73.1	73.1	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 8 adequacy of the current system table
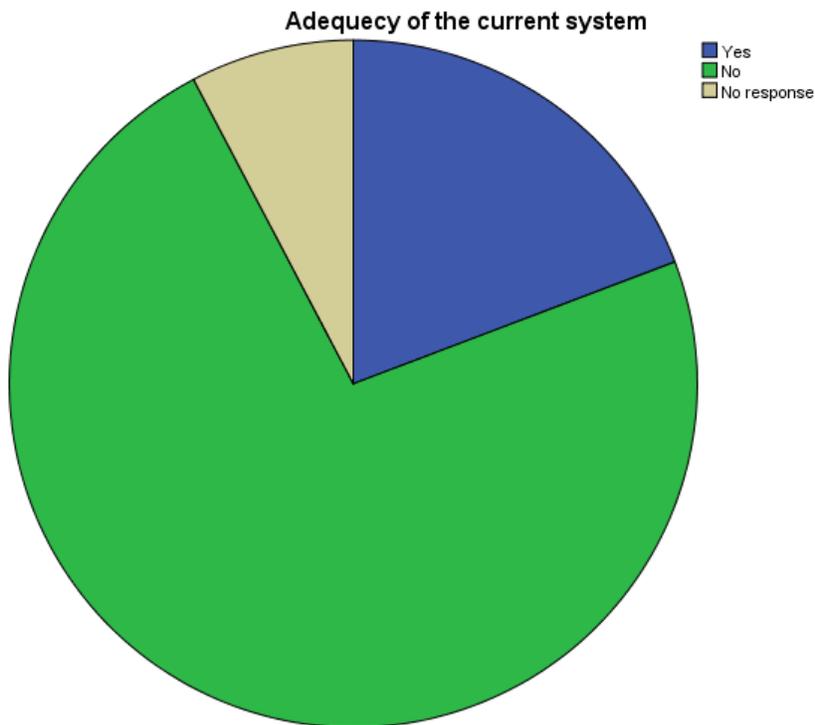
Figure 11 Adequacy of the current system chart

As shown above, an overwhelming majority of the response answered that the current system was not adequate with 73.1%, with 19.2% answering yes, the system is adequate. This presents the understanding that a majority of the sample population have identified issues within the current system that they feel are affecting the activity of business within the organization while a lesser percentage of the population find the current system sufficient. This portion of the questionnaire then offers the opportunity for the respondents to present their own opinions briefly. The responses greatly overlapped with a large number of the population on both sides said more or less the same things. This is presented in the tables below.

If Yes		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		20	76.9	76.9	76.9
	No response	2	7.7	7.7	84.6
	It helps all people who should be able to access information to etc. so easily	1	3.8	3.8	88.5
	Need to improve to an automated system/ computerized	1	3.8	3.8	92.3
	Relatively accurate because its efficient and accommodates everyone including those who are not tech savvy	1	3.8	3.8	96.2
	So far hasn't had any issue with it	1	3.8	3.8	100.0
	Total	26	100.0	100.0	

Table 9 If Yes Table

As presented above, those that answered yes, felt that it helps all people to access information easily and that it is efficient and it accommodates everyone including those who are not tech savvy and some simply had no issue with it. However, some were still open to acquiring an automated/ computerized system. Majority of the population were of the opinion that the system was not sufficient suggesting that they found issues within the system which make it dissatisfactory. The responses received are presented in the following table.

If No		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	19.2	19.2	19.2
	No response	2	7.7	7.7	26.9
	Automate to cut costs and improve efficiency	1	3.8	3.8	30.8
	Cumbersome when retrieving files	1	3.8	3.8	34.6
	Difficult to retrieve documents on time its time-consuming during file approvals due to movements	1	3.8	3.8	38.5
	Difficulty in retrieval of documents	1	3.8	3.8	42.3
	File misplacement makes it hard. an electronic system will make it easy to track and retrieve	1	3.8	3.8	46.2
	It is cumbersome, Slow,	1	3.8	3.8	50.0

The world is moving to digitize filing systems, as such it is not adequate				
It requires so many staff and also Takes a lot of time to get documents required	1	3.8	3.8	53.8
It takes long to track files	1	3.8	3.8	57.7
Its old-school and slow compared to the digital system	1	3.8	3.8	61.5
Its space consuming	1	3.8	3.8	65.4
Paper storage is bulky and tracing files can be a challenge	1	3.8	3.8	69.2
Retrieval of documents is a challenge High chance of losing critical documents without duplicates and backups	1	3.8	3.8	73.1
Slow, complicated and therefore inefficient	1	3.8	3.8	76.9
Takes long in some instances to trace files Possibility of misplacement and filing memos Possibility of having critical information destroyed	1	3.8	3.8	80.8
Tedious	1	3.8	3.8	84.6
Tedious and time consuming and very bulky	1	3.8	3.8	88.5

		1	3.8	3.8	92.3
	Time and space consuming and files can easily be lost	1	3.8	3.8	92.3
	Time consuming, loss of information, security issues and safety	1	3.8	3.8	96.2
	Time consuming and files may be misplaced or damaged in in the long run	1	3.8	3.8	100.0
	Total	26	100.0	100.0	

Table 10 If No table

The answered received mostly cited efficiency and high time consumption as major issues. File misplacement and difficulty in retrieval as some of the issues that contribute to this. Other reasons for this include file misplacement and the old-school manual nature of this system as a reason for the slump in efficiency. Loss of documents and damage in various forms both due to human error and otherwise are also noted issues.

Other noted problems include cost, security and safety and the bulkiness of the system due to the amount of space the files themselves take up and also viewed through the aspect of the labor required in handling them. And so, all these issues; time and space consuming, inefficiency, damage and misplacement, the loss of information, low safety and security all come together to make it tedious, as stated by some respondents.

The next question was for the respondents to rate the current manual system.

Rate the Current Filing System		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	6	23.1	23.1	23.1
	Fair	17	65.4	65.4	88.5
	Bad	1	3.8	3.8	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 11 Rate the current filing system table
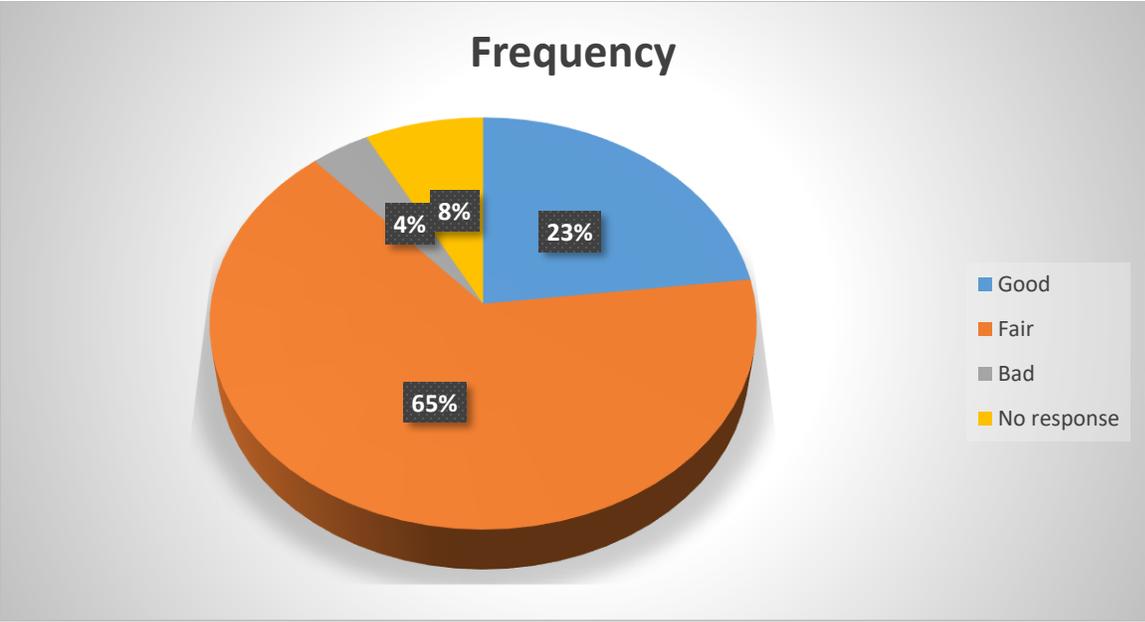
Figure 12 Rate the current filing system

The overall response was that the current system is fair with a 65.4% rating, which once again shows that while it has flaws it's still very functional and it does not hinder work. A much smaller percentage, 23.1% rated it as good, while a much smaller proportion rated it as bad, at 3.8%.

4.2.1 Rate the following issues

On a scale of Very good to very bad, the questionnaire asks for a rating of the various issues identified in chapter one. The rates are presented in the table below. These include efficiency, space, damage and misplacement, security, flexibility and changeability, cost and human error.

Efficiency

Efficiency					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	9	34.6	34.6	34.6
	Fair	11	42.3	42.3	76.9
	Bad	4	15.4	15.4	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 12 Manual system Efficiency rating table

Frequency

Legend:
- Good
- Fair
- Bad
- No response

8%
15%
35%
42%
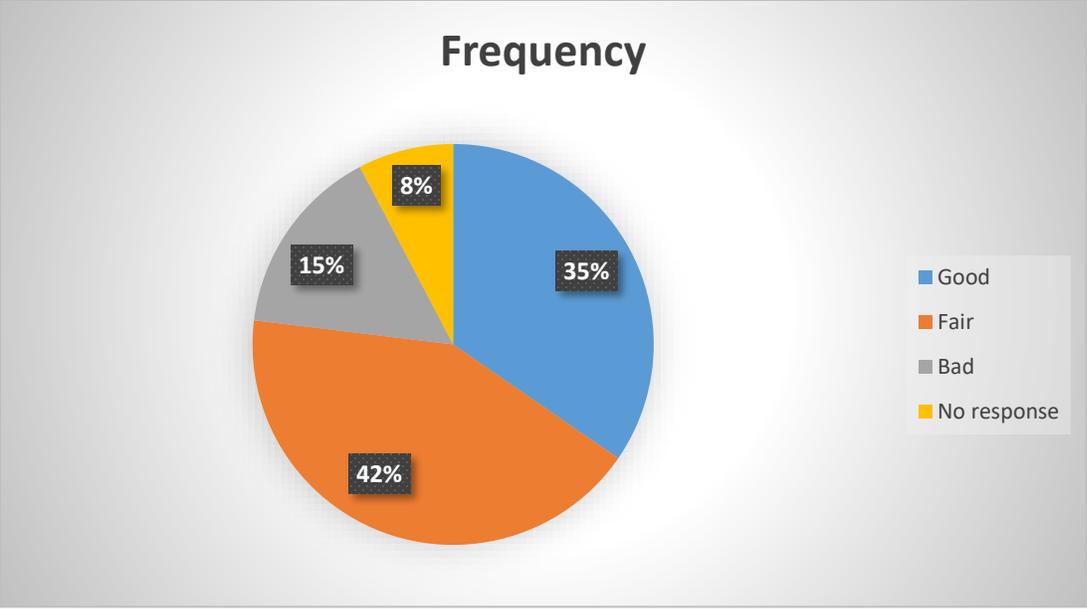
Figure 13 efficiency of the current system chart

According to the above, diagram a large 42% of the population rated efficiency to be fair with 35% rated Good. 15% gave the current system a rating of bad while 8% gave no response. Comparing the positive rating of Good, 35%, versus the negative, 15%, rating of Bad, suggests that far more people find the current manual filing system efficient than those that don't within the sample population. However, the biggest percentage of 42% that chose fair shows that the majority of the sample population, is of the opinion that while the system is not completely insufficient, it is still not completely satisfactory and can still be further improved.

Space

Space					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	7	26.9	26.9	26.9
	Fair	10	38.5	38.5	65.4
	Bad	6	23.1	23.1	88.5
	Very Bad	1	3.8	3.8	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 13 Current space consumption table
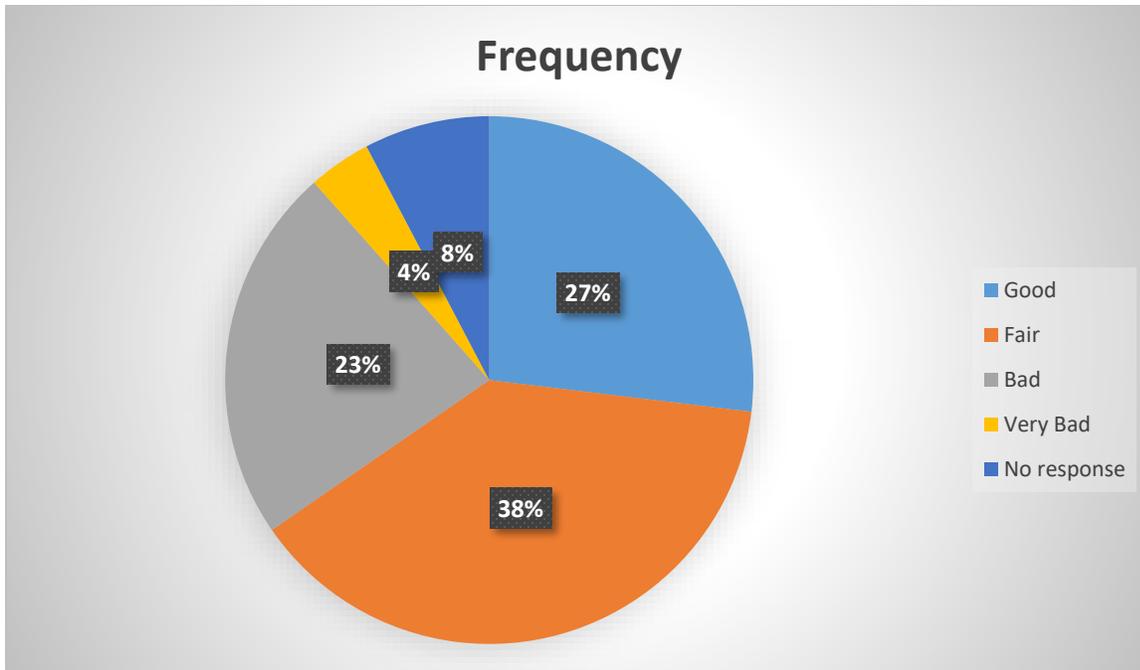
Figure 14 current consumption chart

As shown in the above chart, a large 38% gave the current system a rating of fair, followed by the 27% rating of Good while 23% gave it a rating of bad. There was a 4% of the population that rated it Very Bad while 8% of the population gave no response. Overall, the 27% positive response versus the 27% negative response. This suggests that there is just as many people with a positive outlook of the current manual system's space management as there are with those who do not think it's good or sufficient. A much larger percentage of the sample population, 38%, gave a fair rating suggesting that while the system is not bad it's also not particularly sufficient and so there is room for improvement.

Damage and Misplacement

Damage, Misplacement		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	1	3.8	4.2	4.2
	Good	3	11.5	12.5	16.7
	Fair	10	38.5	41.7	58.3
	Bad	6	23.1	25.0	83.3
	Very Bad	2	7.7	8.3	91.7
	No response	2	7.7	8.3	100.0
	Total	24	92.3	100.0	
Missing	System	2	7.7		
Total		26	100.0		

Table 14 Current damage and misplacement rating table
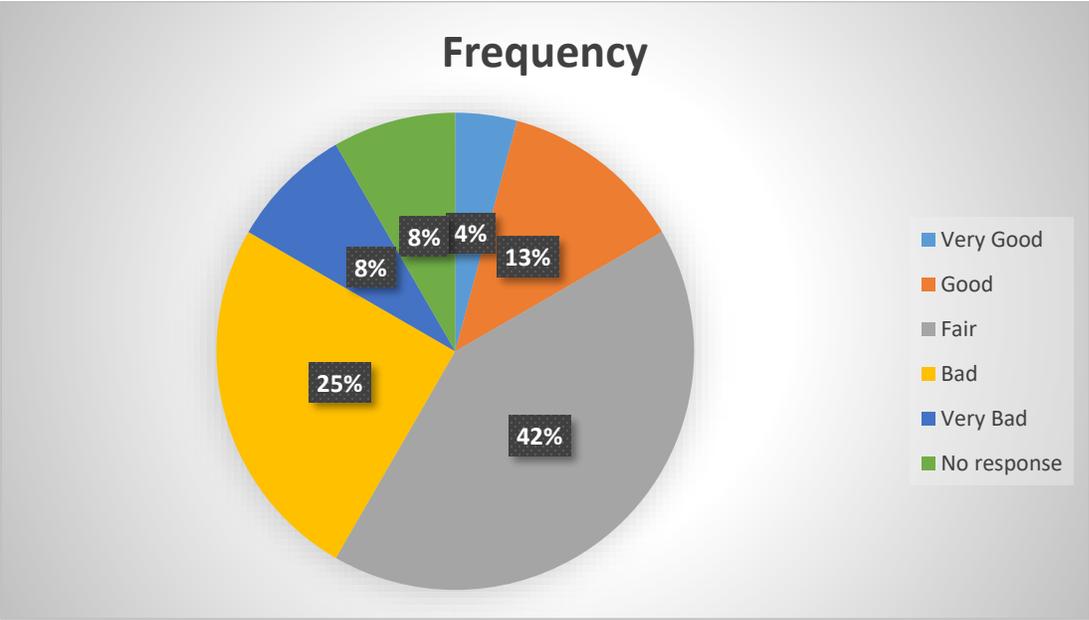
Figure 15 Current damage and misplacement rating chart

According to the above, 4% of the population gave a rating of Very Good while 13% gave a rating of Good, making a combined 17% positive. 42%, the largest portion, gave a rating of Fair. 25% of the sample population gave a rating of Bad, and 8% gave a rating of very bad. Combined, this was 33%. There was an 8% no response rate.

In comparison, the 17% positive feedback versus the 33% negative rating, shows that more people felt that the damage and misplacement issue was significant than the 17% who gave a positive feedback suggesting it was good. The largest percentage, 42%, however, on the fence with the fair rating suggest that the system is still functional, but it's not completely adequate.

Security

Security					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	1	3.8	3.8	3.8
	Good	6	23.1	23.1	26.9
	Fair	10	38.5	38.5	65.4
	Bad	5	19.2	19.2	84.6
	Very Bad	2	7.7	7.7	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 15 Current security rating table
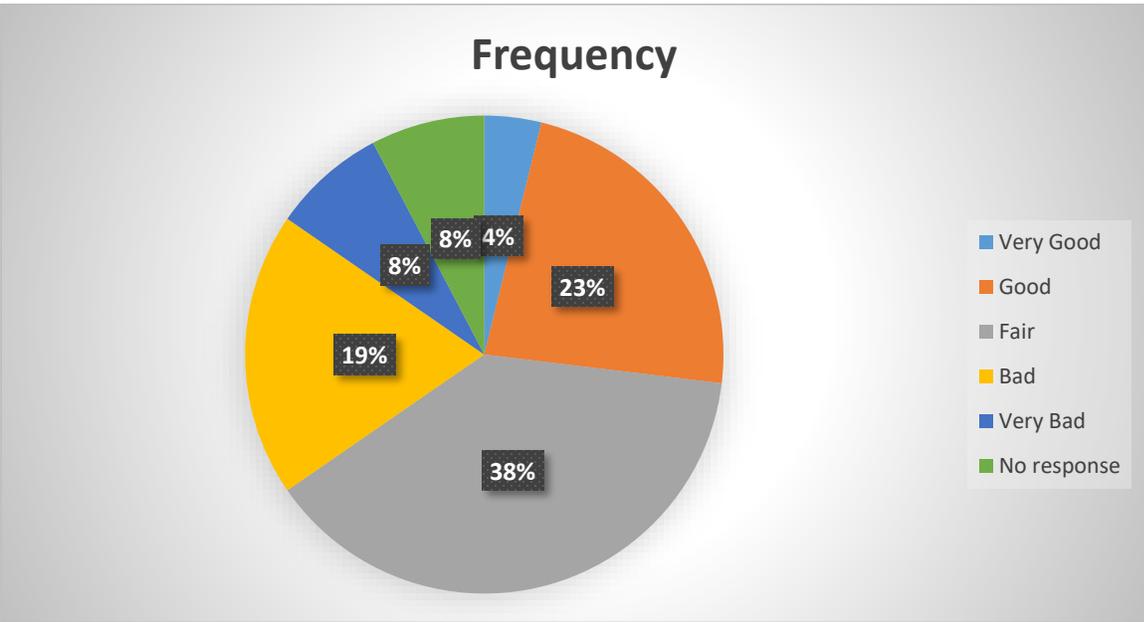
Figure 16 Current Security rating chart

4% of the population gave a Very Good rating with 23% giving a Good rating, a combined 27%. 38% rated the security of the current manual system fair. Finally, 19% gave a rating of Bad, and 8% gave a Very Bad rating, 27% combined. There was an 8% no response rating.

Comparing the positive, 27% and the negative 27% suggests that views on the security of the current filing system are balanced with just as many being positive and those being negative. However, 38%, with the Fair rating, shows that the majority of the sample population, while not completely dissatisfied, are of the opinion that it is still deficient.

Flexibility and Changeability

Flexibility and Changeability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	1	3.8	3.8	3.8
	Good	10	38.5	38.5	42.3
	Fair	7	26.9	26.9	69.2
	Bad	3	11.5	11.5	80.8
	Very Bad	3	11.5	11.5	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 16 Current flexibility and changeability chart
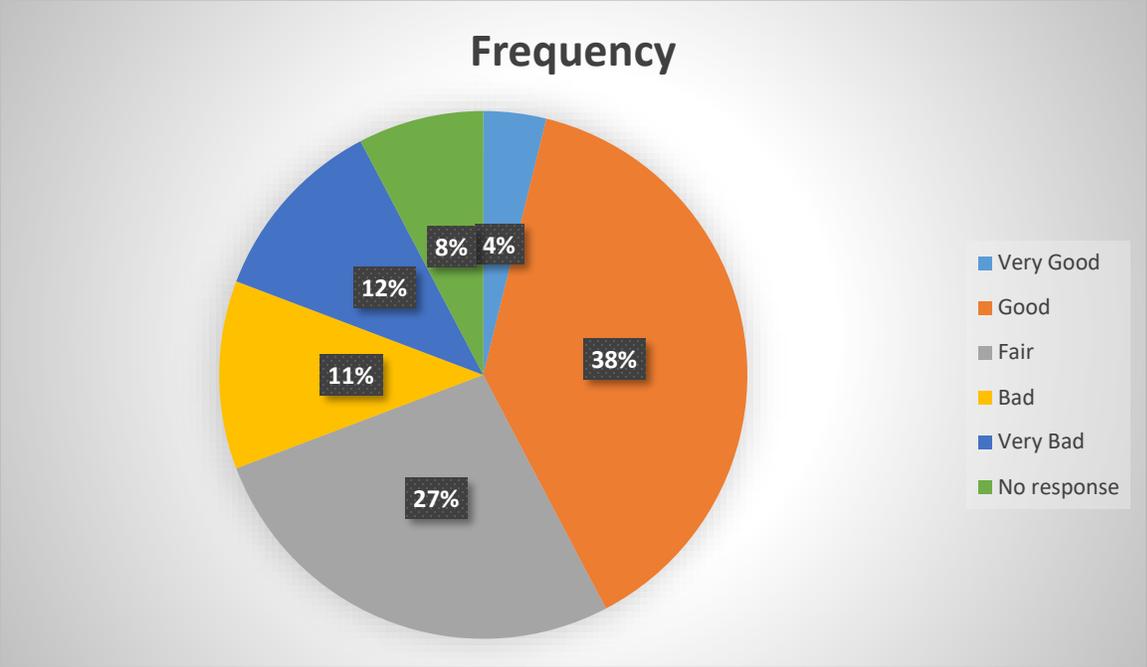
Figure 17 Current flexibility and changeability rating chart

Once again, a large majority of the population gave a positive feedback with 27% and 38% and 4% gave fair, Good and Very Good rating. Good and Very Good combined gave a 42%, while a comparatively much smaller population, 11% and 12% of Bad and Very Bad, give a cumulative 23%. There is an 8% remainder as the no response rating.

In comparison, the 42% positive rating versus the 23% negative ratio shows that more people are comfortable with the level of flexibility and changeability level of the current manual filing system than are dissatisfied. 27% Fair, however, who suggest that the flexibility and changeability of the current system is neither good nor bad shows that there is room for improvement.

Cost

Cost					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	1	3.8	4.0	4.0
	Good	6	23.1	24.0	28.0
	Fair	15	57.7	60.0	88.0
	Very Bad	1	3.8	4.0	92.0
	No response	2	7.7	8.0	100.0
	Total	25	96.2	100.0	
Missing	System	1	3.8		
Total		26	100.0		

Table 17 Current Cost consumption rating table
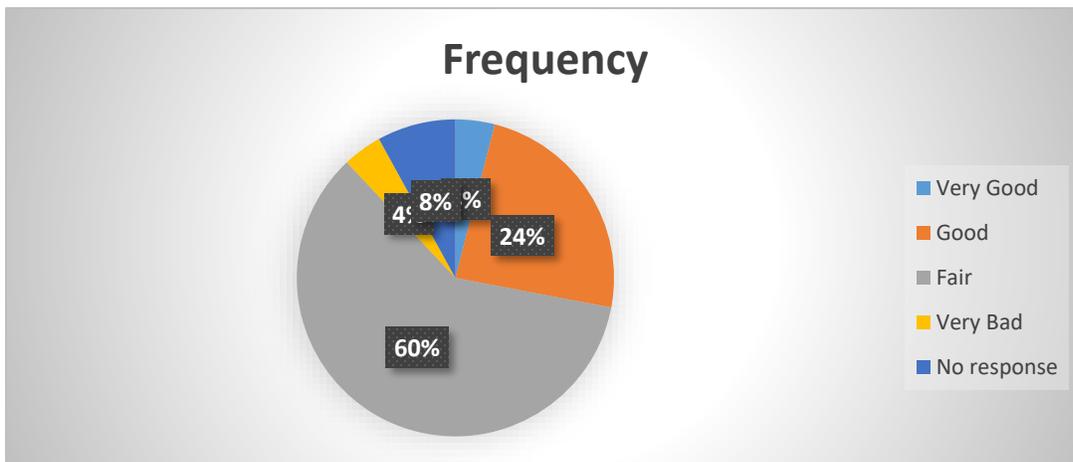
Figure 18 Current cost consumption rating chart

An overwhelming 60% of the population gave a fair rating, followed by a much lower 24% rating of Good and 4% gave a Very Good rating. This gives a massive 28% percent favorable rating. A comparatively negligent 4% gave a very bad rating, showing an, with only 8% non-response rate.

Comparing the positive and negative ratings of 28% and 4%, respectively. This strongly suggests that majority of the population do not consider the cost of the current manual system an issue. However, a massive 60% remain of the fence with Fair meaning it neither Good nor Bad, which suggests that it could be better and be improved.

Human Error

Human Error		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	5	19.2	19.2	19.2
	Fair	9	34.6	34.6	53.8
	Bad	8	30.8	30.8	84.6
	Very Bad	2	7.7	7.7	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 18 Current human error rating table
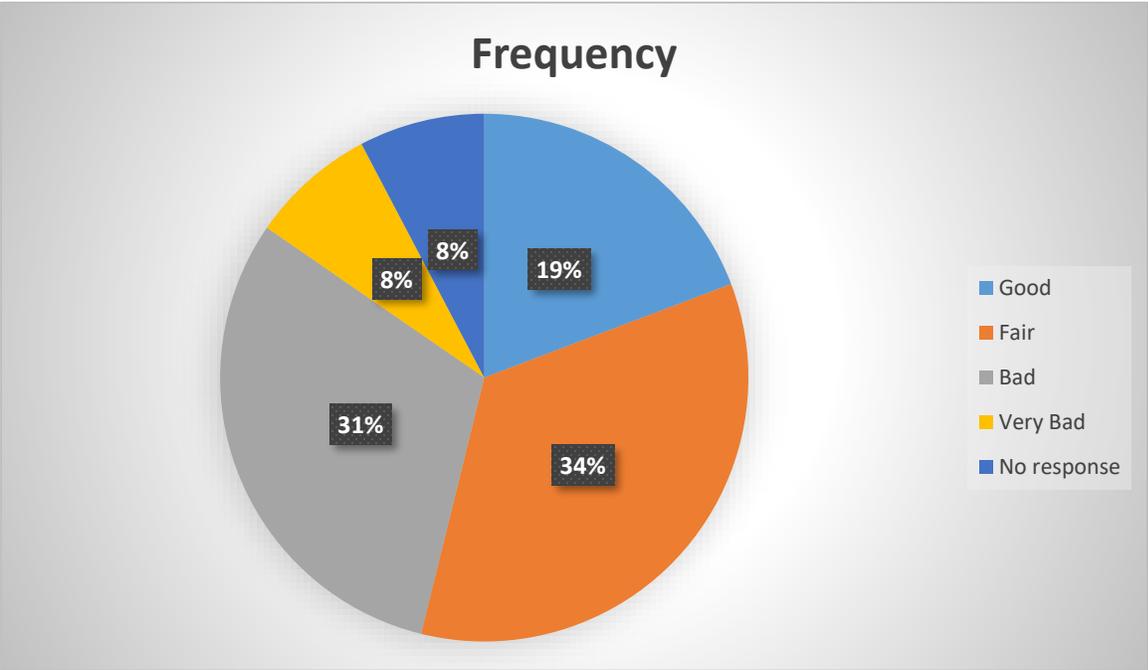
Figure 19 Current Human error rating chart

According to the above chart, 19% constitute the positive rating, with a 34% Fair rating. Followed by a close 39% negative rating with a 31% and 8% Bad and Very Bad rating, again with 8% no response rate.

In comparison, the 19% positive versus the negative 39% rating suggests that majority of the population find human error to be a big issue affecting the current manual filing system. The 34% fair rating, suggesting neither Good nor Bad shows that the system, while functional, still needs improvement.

Overall Rating of the current issues facing the current system

All these ratings of these various issues expressed in a table are as shown below

Issue	Positive	Fair	Negative	No response
Efficiency	35%	42%	15%	8%
Space	27%	38%	27%	8%
Damage and Misplacement	17%	42%	33%	8%
Security	27%	38%	27%	8%
Flexibility and Changeability	42%	27%	23%	8%
Cost	28%	60%	4%	8%
Human Error	19%	34%	39%	8%

Table 19 Overall rating of the Current system table
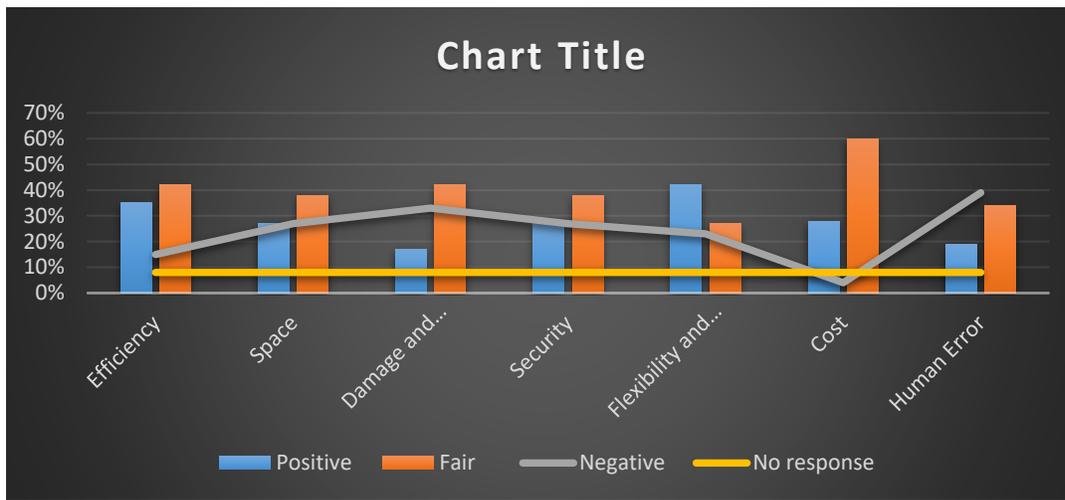
Figure 20 Overall rating of the Current system chart

The above graph shows an overwhelming positive versus negative response to the various issues affecting the current manual system.

4.2.2 Other Issues Identified

Asked if there were any other issues identified, very few respondents suggested any more. The few suggestions that were given are in the table below.

Other issues Identified					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	N/A	21	80.8	80.8	80.8
	No response	2	7.7	7.7	88.5
	Misfiling	1	3.8	3.8	92.3

no privacy/ confidentiality	1	3.8	3.8	96.2
Staffing and equipment	1	3.8	3.8	100.0
Total	26	100.0	100.0	

Table 20 Other issues identified table
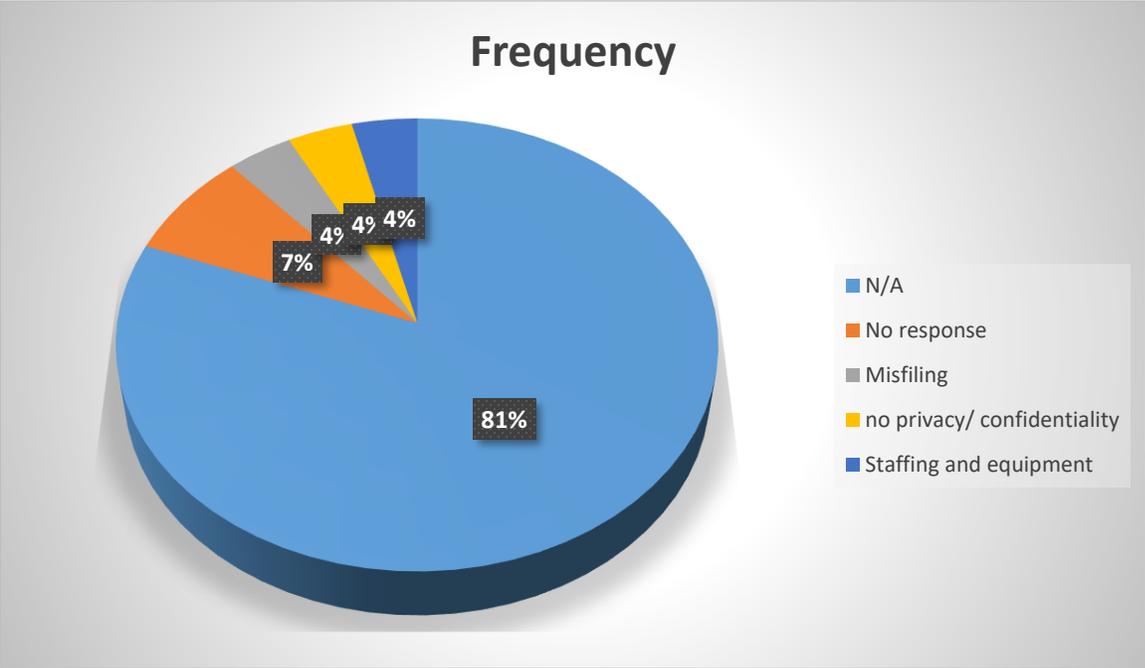
Figure 21 Other issues identified Chart

Out of the issues given, it should be noted that they are already covered in the issues rated above.

4.3 Have you ever used another automated system?

Previous Experience with Automated System					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	50.0	50.0	50.0
	No	11	42.3	42.3	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 21 any previous experience table
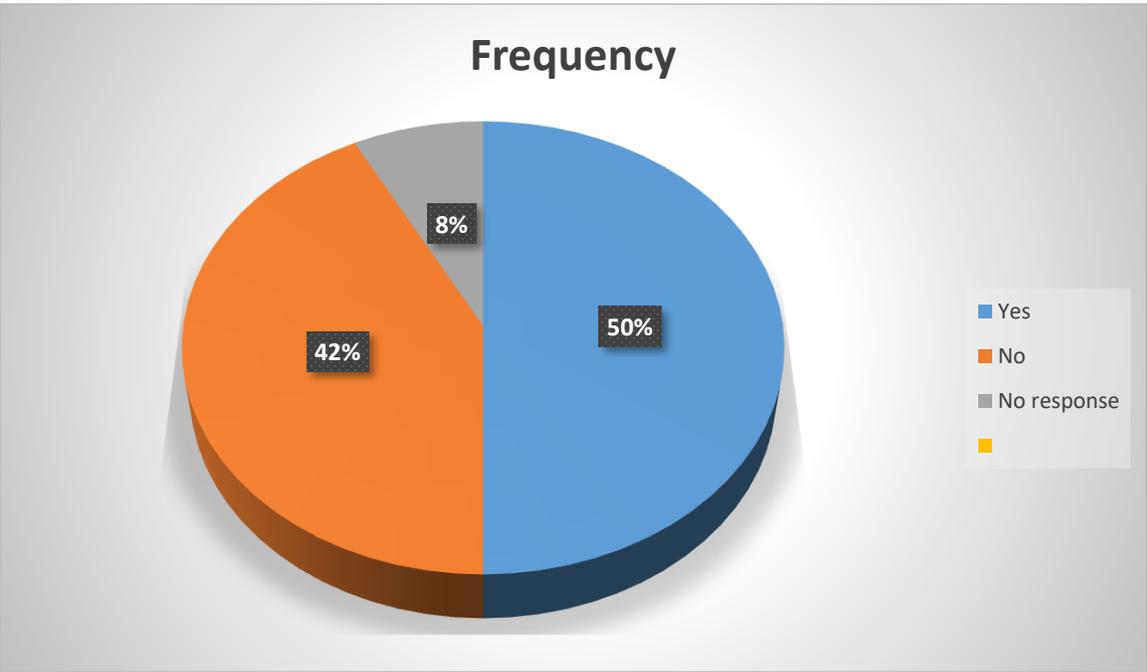
Figure 22 Any previous experience Chart

50% of the population affirmed that they have had previous experience with an automated system with 42% confirming that they had not. There was an 8% non-response rate. This shows that a majority of the population would then have a good grasp on what an automated system is and what benefits it may have in comparison to the current manual system.

Asked to rate their experience, the chart below displays the response rates:

Rate Experience with Automated Experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	10	38.5	71.4	71.4
	Good	1	3.8	7.1	78.6
	Bad	1	3.8	7.1	85.7
	No response	2	7.7	14.3	100.0
	Total	14	53.8	100.0	
Missing	System	12	46.2		
Total		26	100.0		

Table 22 rate previous experience with an automated system table
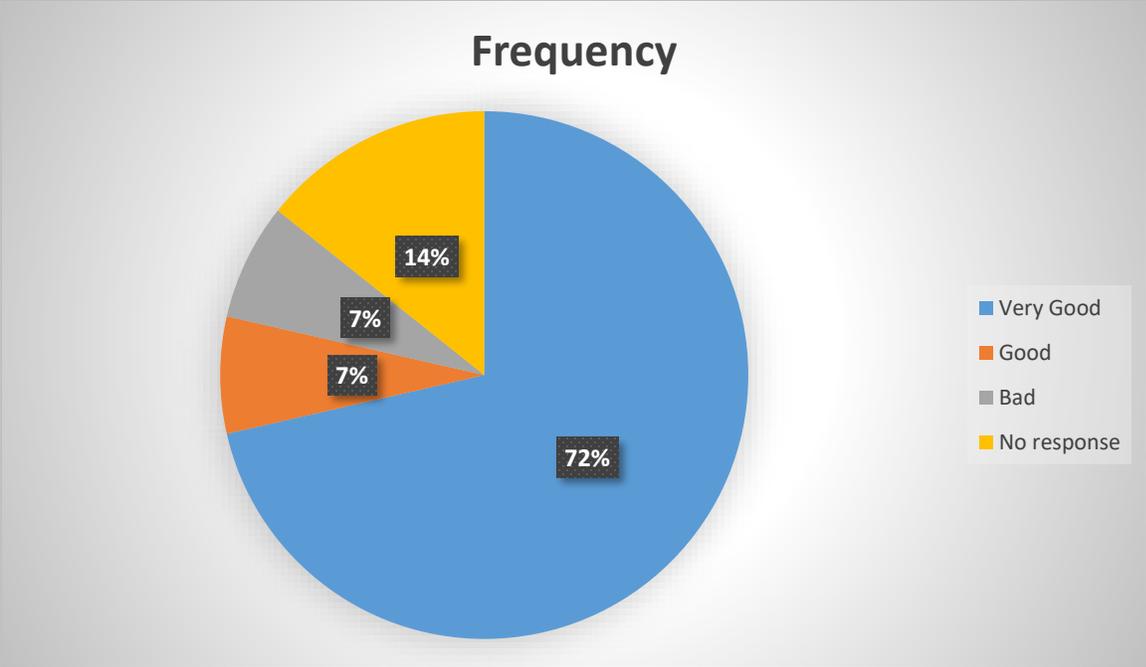
Figure 23 rate previous experience with an automated system chart

The diagram above shows that majority of the population that has had previous experience with automated systems, 72%, had a very positive experience with a rating of very good with an additional 7% giving a Good rating. Of the remainder, only 7% had a bad experience with an overall 14% no response rate.

Asked if they would consider acquiring an automated system, the following table shows the response rate.

Would consider Acquiring Automated System					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	88.5	88.5	88.5

	No	1	3.8	3.8	92.3
	No response	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

Table 23 Would consider Acquiring Automated System table
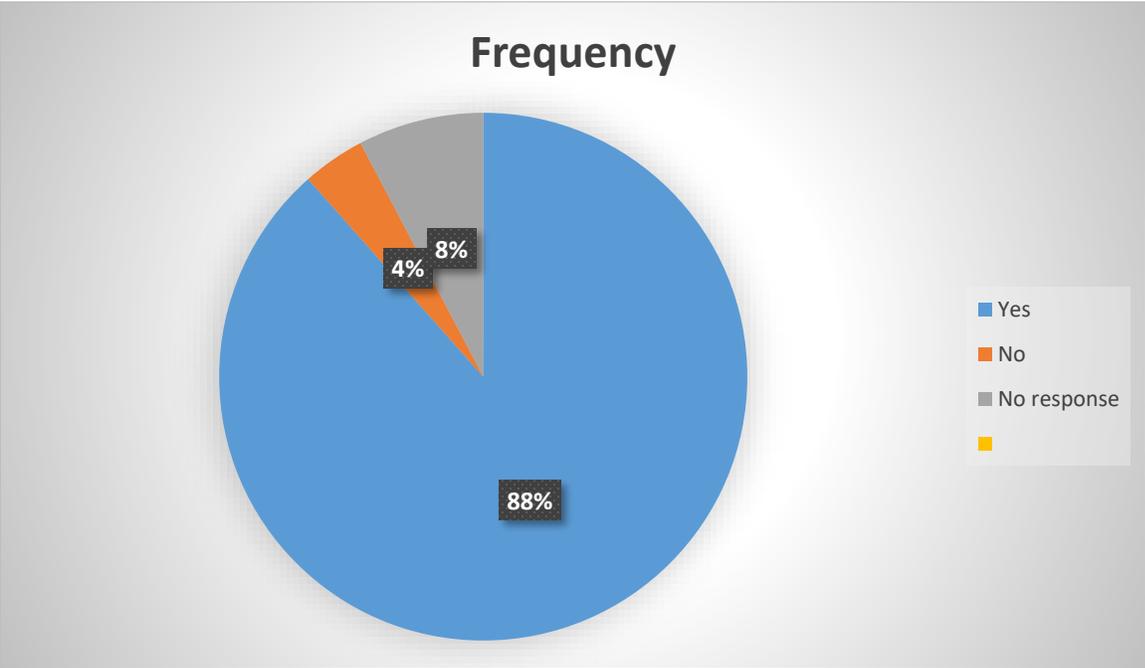
Figure 24 Would consider Acquiring Automated System chart

In response to the question whether they would acquire an automated system, 88% of the sample population replied with Yes, while only 4% replied with a no. There was an 8% non-response rate. The reasons presented for the Yes answer are in the following table.

If Yes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	3.8	3.8	3.8
	No response	2	7.7	7.7	11.5
	Accountability, security	1	3.8	3.8	15.4
	Advanced, Efficient	1	3.8	3.8	19.2
	Change is inevitable. If an automated system can ease tracking and better management of records then yes	1	3.8	3.8	23.1
	Ease of storage and retrieval	1	3.8	3.8	26.9
	Efficient, Effective	1	3.8	3.8	30.8
	Eliminate manipulation of paper document	1	3.8	3.8	34.6
	Fast and easier to locate files since especially stored in devices like flash disks and cd drives	1	3.8	3.8	38.5
	For efficiency purposes	1	3.8	3.8	42.3
	For quick work done and also security purposes	1	3.8	3.8	46.2
	Improve efficiency and ensure accountability	1	3.8	3.8	50.0
	Improves efficiency in searching and retrieving and easy storage	1	3.8	3.8	53.8
	It would be good and efficient	1	3.8	3.8	57.7

		1	3.8	3.8	61.5
	It would be more efficient	1	3.8	3.8	61.5
	its efficient and also flexible	1	3.8	3.8	65.4
	It's the best and easy retrieval. it saves time and energy	1	3.8	3.8	69.2
	Less cumbersome with less labor work	1	3.8	3.8	73.1
	Makes retrieval of information easier It's easy to backup information, and Information can be shared simultaneously	1	3.8	3.8	76.9
	More efficient, easy retrieval and time saving	1	3.8	3.8	80.8
	More secure and faster in terms of records tracing and management	1	3.8	3.8	84.6
	Saves Cost, Time	1	3.8	3.8	88.5
	Saves time	1	3.8	3.8	92.3
	To make accessibility easier and faster	1	3.8	3.8	96.2
	To move things faster	1	3.8	3.8	100.0
	Total	26	100.0	100.0	

Table 24 If yes table

One of the main reasons stated in the above responses is for efficiency. An automated system would drastically reduce the time spent in accessing the files as there would be

no lag time due to human error and multiple user constraints during physical file movement.

Security and accountability are also suggested as it is easier to put restrictions on access and keep track of user activity on computers due to features such as digital footprints and encryptions.

Ease of storage and retrieval is also suggested as documentation takes up less space in soft copy form and access and retrieval is almost instantaneous. Automated systems also enable multiple users to access the same files simultaneously, which is highly convenient as it saves time.

It also reduces physical handling, which reduces human error resulting from physical movement and handling of documentation. And so, it needs less labor, and it is also very flexible. This flexibility enables, again, multiple users at the same time, is of correction in documents, and faster communication across the organization. It also enables the backup of information in cases of damage and loss. And finally, because it is advanced and the way forward in modern times.

The respondents who chose No as their response answered:

If No					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	N/A	23	88.5	88.5	88.5
	No response	2	7.7	7.7	96.2
	too hard to learn	1	3.8	3.8	100.0
	Total	26	100.0	100.0	
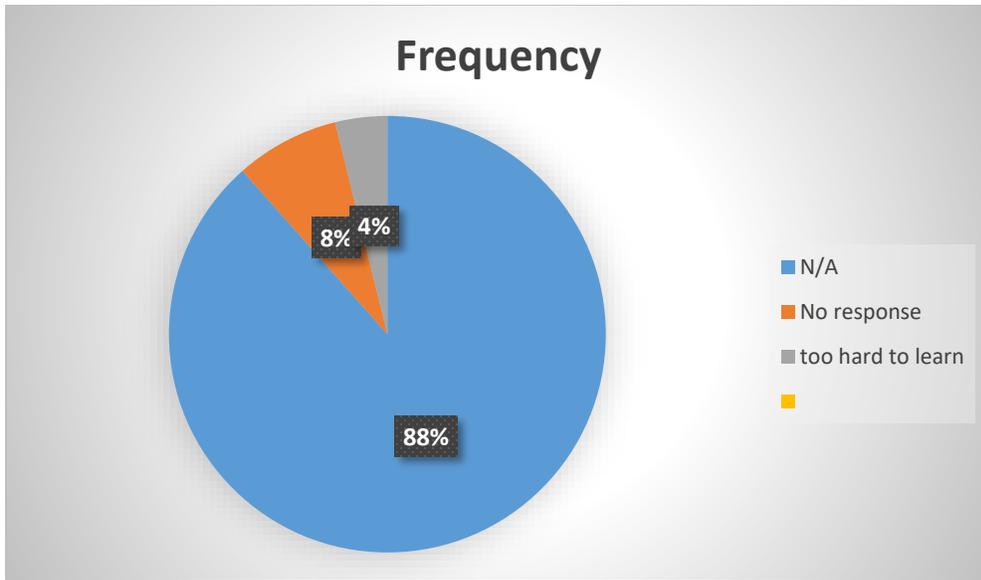
Figure 25 If No chart

As shown in the above diagram, 8% did not respond to this question while 88% were missing (they skipped the question). Finally, only 4% responded with the answer that it's too hard to learn.

In response to what solutions they would suggest for the issues above, the respondents answered:

Other suggestions for Solutions				
	Frequency	Percent	Valid Percent	Cumulative Percent

		6	23.1	23.1	23.1
Valid	No response	2	7.7	7.7	30.8
	Acquire an automated filing system	1	3.8	3.8	34.6
	Acquiring an automated system	1	3.8	3.8	38.5
	An occasional training of current or new and available filing system solutions	1	3.8	3.8	42.3
	Automated system to make retrieval faster	1	3.8	3.8	46.2
	Automation	2	7.7	7.7	53.8
	Automation of the system	1	3.8	3.8	57.7
	Change manual filing system to EDMS	1	3.8	3.8	61.5
	Conversion of manual to electronic system it would ensure security of files and documents	1	3.8	3.8	65.4
	Creation of more space to allow for proper storage and management of records	1	3.8	3.8	69.2

		1	3.8	3.8	73.1
	Embrace new technology by going digital in ordering order to save time and improve confidentiality	1	3.8	3.8	73.1
	Installation of Management Software	1	3.8	3.8	76.9
	Its time consuming and loss of documents is also prevalent	1	3.8	3.8	80.8
	Provision of an automated system	1	3.8	3.8	84.6
	Sourcing for an automated filing system	1	3.8	3.8	88.5
	To allocate a budget for acquisition of a filing system	1	3.8	3.8	92.3
	Try to automate	1	3.8	3.8	96.2
	Upgrade to automated system	1	3.8	3.8	100.0
	Total	26	100.0	100.0	

Table 26 suggestions for solutions

In the above document, the vast majority of respondents suggested that the best solution for the noted problems to be the acquisition of an automated with 14 out of26 respondents suggesting this. 8 respondents did not respond to this question while 4 gave various

answers including an occasional training of current or new and available filing system solutions, creation of more space to allow for proper storage and management of records.

4.3.1 Rate how an automated system could improve the following issues in the file management.

Efficiency

Efficiency		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	20	76.9	80.0	80.0
	Good	3	11.5	12.0	92.0
	No response	2	7.7	8.0	100.0
	Total	25	96.2	100.0	
Missing	System	1	3.8		
Total		26	100.0		

Table 27 Automated system efficiency table
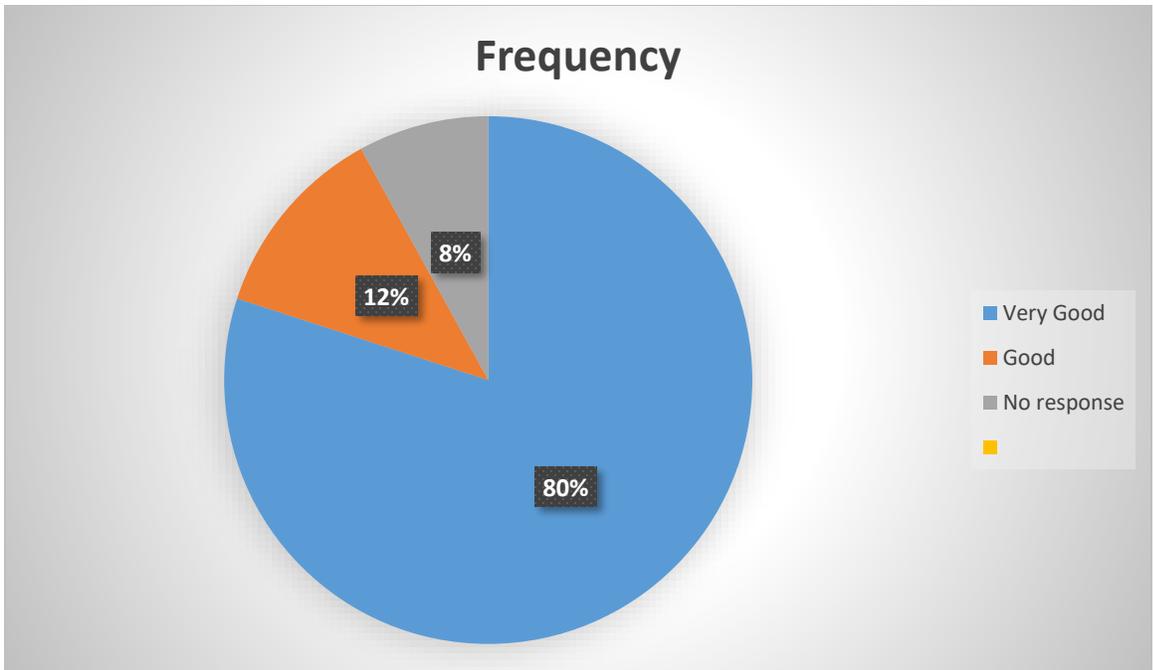
Figure 26 Automated system efficiency chart

As shown above, a vast majority gave it a Very Good rating at 80%. Further, an additional 12% gave it a rating of Good at 12%, making this an overall 92% positive rating. There was an 8% no response rate. This shows that just shy of 100% of the population believe that an automated system will without a doubt greatly improve efficiency. Note also that the 8% difference, rather than a negative response, is more neutral, as it is a no response. It becomes clear, then, that there is no negative feedback and ALL of the responses that were received were positive.

Space

Space

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	14	53.8	66.7	66.7
	Good	4	15.4	19.0	85.7
	Fair	1	3.8	4.8	90.5
	No response	2	7.7	9.5	100.0
	Total	21	80.8	100.0	
Missing	System	5	19.2		
Total		26	100.0		

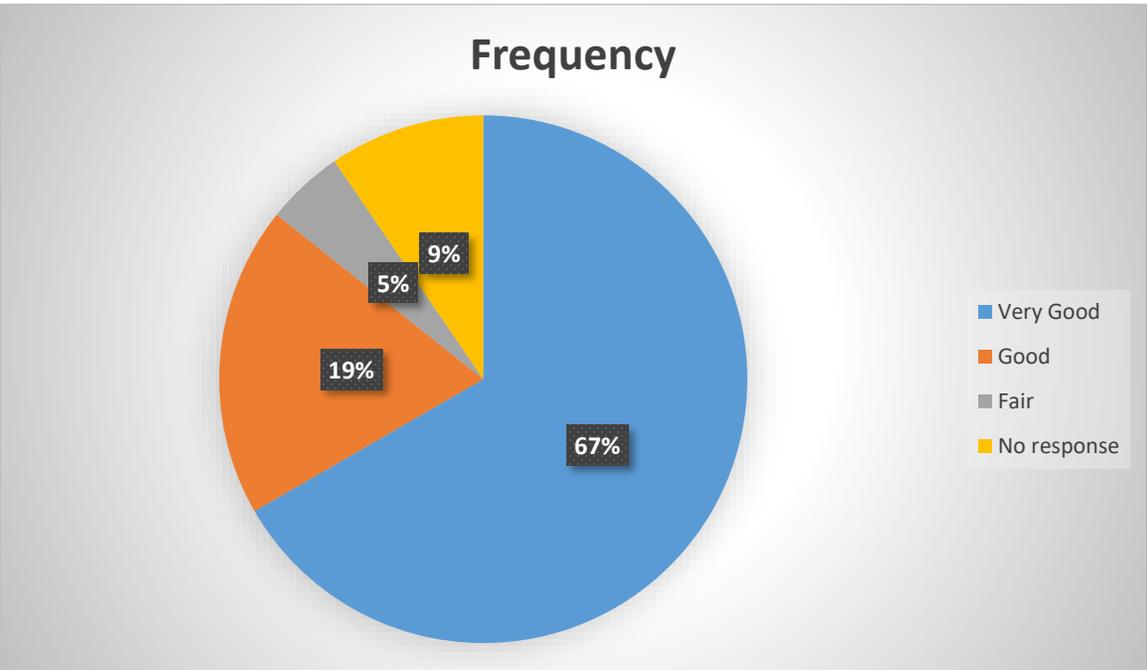*Table 28 Automated system space consumption table*

Figure 27 Automated system space consumption chart

A big chunk of the population, at 67%, gave a Very good rating, followed in by a big margin with 19% Good rating, making an overall 86% positive rating. 5% of the population gave a fair rating and a 9% no response rating. This shows that a massive majority also are of the opinion that an automated system will greatly improve space consumption by the filing system within the Bureau with the 86%, while the 5% fair rating shows that some of the sample population don't believe it would make that much of a difference. There was a non-response rating of 9%.

Damage and Misplacement

Damage, Misplacement					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	12	46.2	48.0	48.0
	Good	8	30.8	32.0	80.0
	Fair	3	11.5	12.0	92.0
	No response	2	7.7	8.0	100.0
	Total	25	96.2	100.0	
Missing	System	1	3.8		
Total		26	100.0		

Table 29 Automated system Damage and Misplacement table
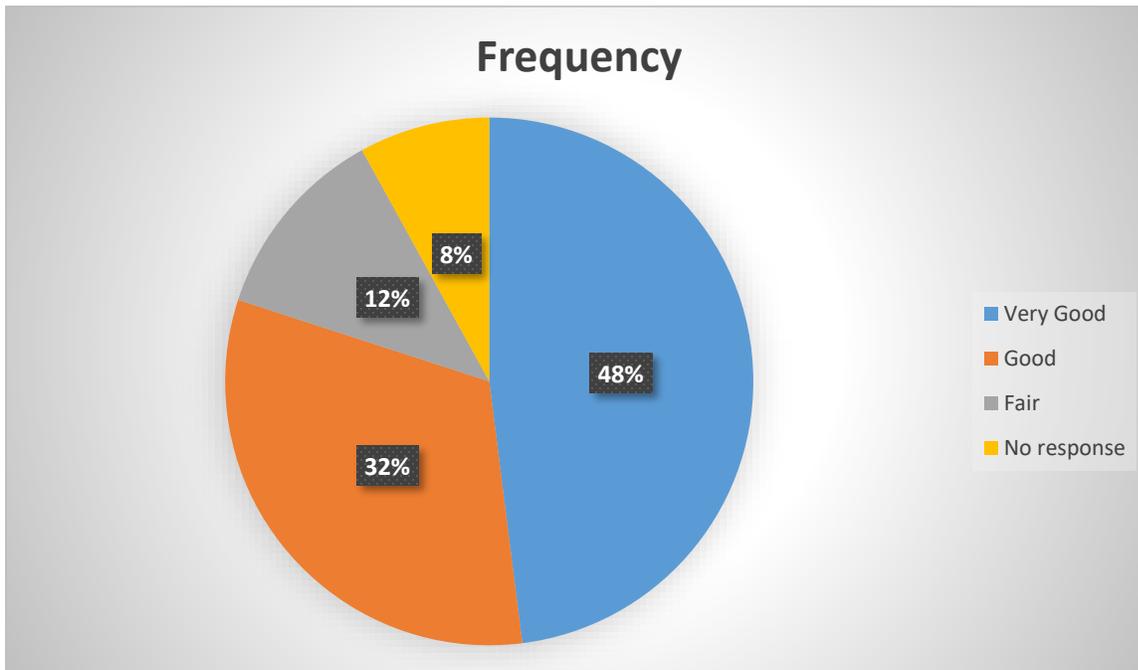
Figure 28 Automated system Damage and Misplacement chart

A big majority of the population gave a positive rating of 48%, followed closely by a 32% positive rating of Good. Combined, this makes 80% of the population. It shows that 80% of the sample population strongly believe that an automated system will greatly improve the issue of damage and misplacement plaguing the current manual filing system. A small 12% of the population gave a neutral rating of Fair while there was an 8% non-response rating.

This suggests that 80% of the sample population holds the opinion that an automated system will greatly improve the issue of damage and misplacement in the Bureau, with 12% fair rating that believe it will not make much of a difference. There was an 8% non-response rating.

Security

Security		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	12	46.2	48.0	48.0
	Good	10	38.5	40.0	88.0
	Fair	1	3.8	4.0	92.0
	No response	2	7.7	8.0	100.0
	Total	25	96.2	100.0	
Missing	System	1	3.8		
Total		26	100.0		

Table 30 Automated system security table
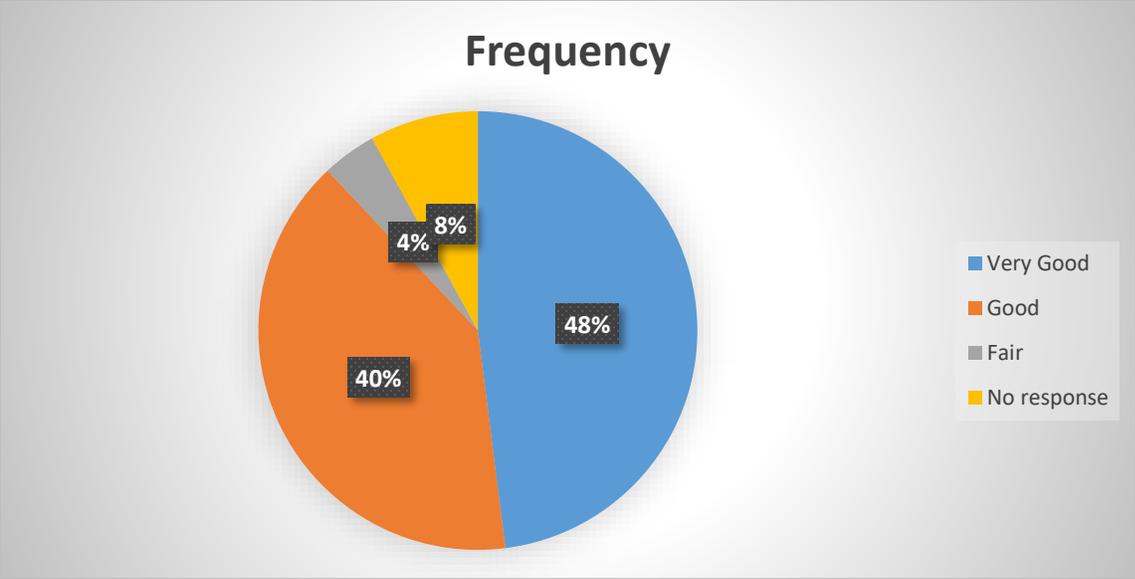
Figure 29 Automated system security chart

A 48% of the sample population gave a rating of Very Good, followed closely by 40% Good rating. 4% of the population gave neutral rating of Fair while 8% gave no response. This suggests that a major combined 88% of the sample population strongly believe that an automated system will greatly improve the issue of security in the filing system, while 4% of the population believe it will not make a big difference.

Flexibility and changeability

Flexibility and Changeability					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	14	53.8	58.3	58.3

	Good	7	26.9	29.2	87.5
	Fair	1	3.8	4.2	91.7
	No response	2	7.7	8.3	100.0
	Total	24	92.3	100.0	
Missing	System	2	7.7		
Total		26	100.0		

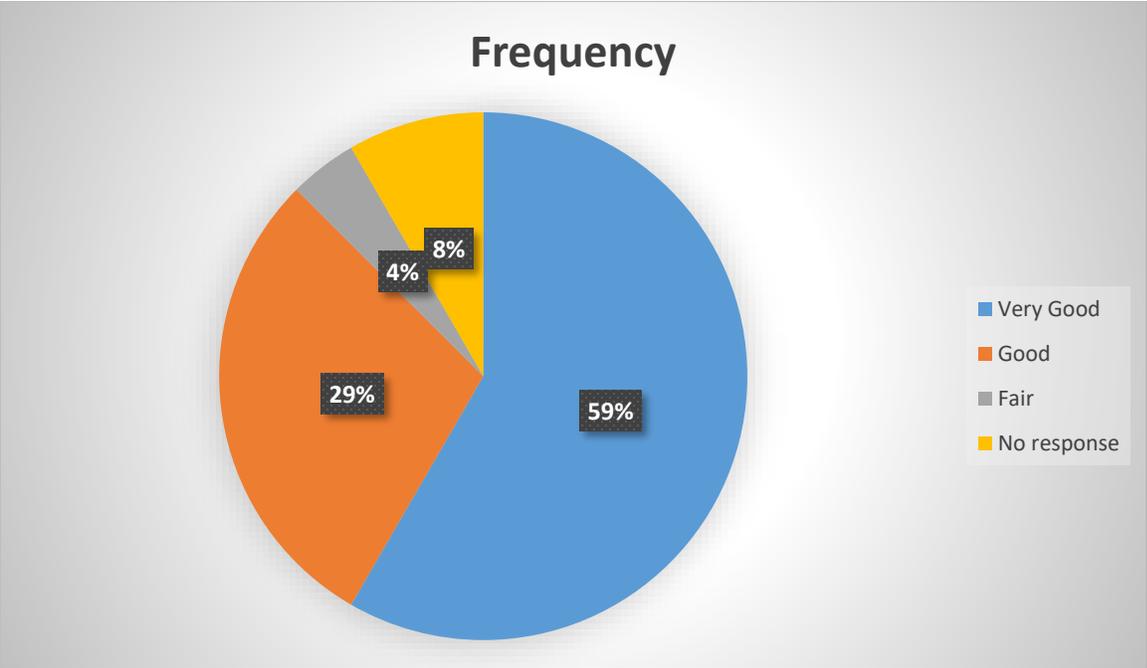*Table 31 Automated system Flexibility and changeability table*

Figure 30 Automated system Flexibility and changeability table

A massive 59% of the sample population gave a Very Good, and 29% gave a Good rating. Only 4% gave a neutral rating of fair while 8% gave no response. This shows that an overall 88% of the whole population are of the position that an automated system will

improve the issue of flexibility and changeability. 4% feel it will make no big change. There were no negative ratings.

Cost

Cost		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	8	30.8	33.3	33.3
	Good	8	30.8	33.3	66.7
	Fair	3	11.5	12.5	79.2
	Bad	2	7.7	8.3	87.5
	Very Bad	1	3.8	4.2	91.7
	No response	2	7.7	8.3	100.0
	Total	24	92.3	100.0	
Missing	System	2	7.7		
Total		26	100.0		

Table 32 Automated system cost table
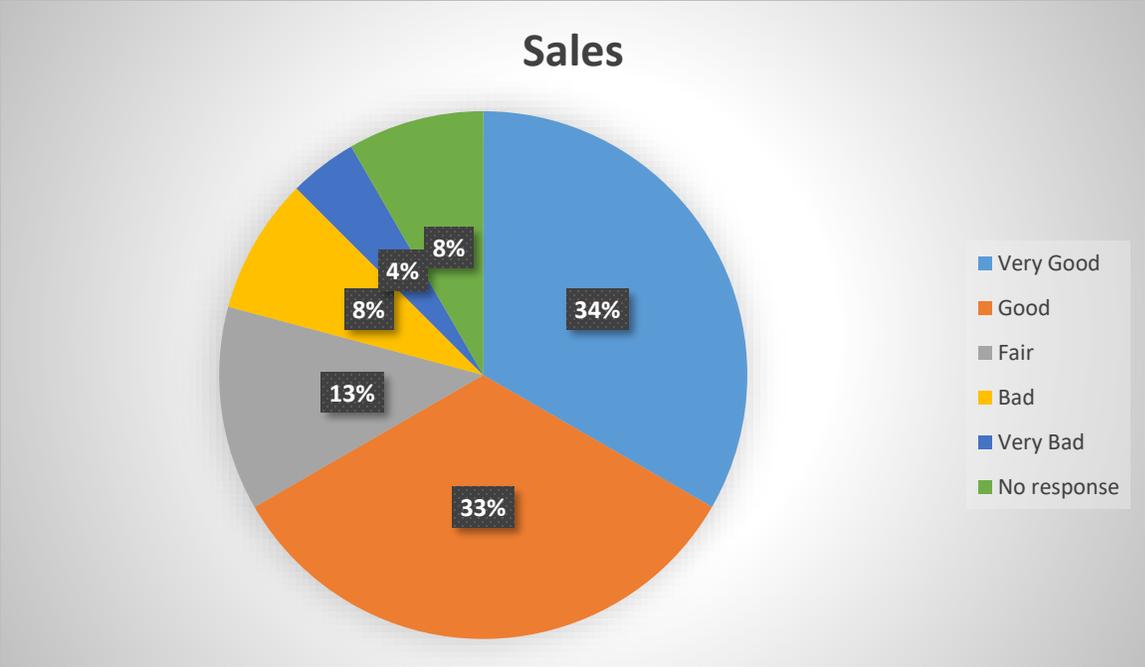
Figure 31 Automated system cost chart

On this, 34% of the sample population gave a very good, 33% gave a good rating with 13% gave a neutral rating of Fair. 8% gave a negative rating of Bad, while 4% gave a rating of Very Bad. 8% gave no response. This shows that will a great majority, 67%, were of the positive opinion that an automated system will improve the cost consumption of the filing system, a smaller percentage, 12% combined, gave negative ratings of Bad and Very Bad suggesting that they feel it would be too expensive either to acquire or operate. 13% gave a neutral fair rating, suggesting that they feel it will not change very much.

Human error

Human Error

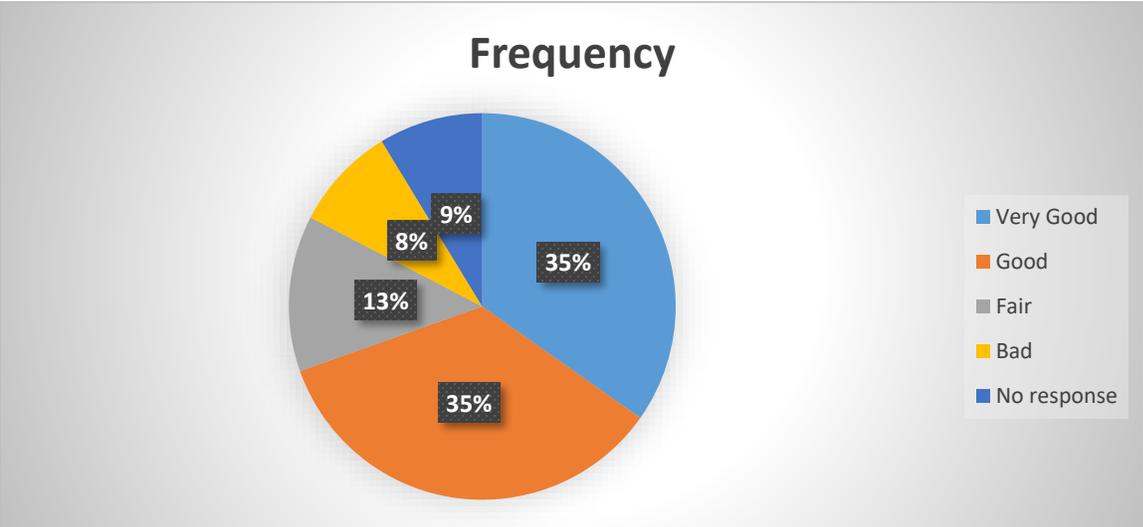|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	8	30.8	34.8	34.8
	Good	8	30.8	34.8	69.6
	Fair	3	11.5	13.0	82.6
	Bad	2	7.7	8.7	91.3
	No response	2	7.7	8.7	100.0
	Total	23	88.5	100.0	
Missing	System	3	11.5		
Total		26	100.0		

Table 33 Automated system human error table

Figure 32 Automated system human error chart

The Good and Very Good ratings each had a 35% of the sample population making a combined 70% of the population. There was a 13% Fair rating and negative ratings of bad, 8%. There was a 9% non-response rate. This shows that 70% of the sample population believe that an automated system will improve the issues of human error in the current filing system, while 8% feel that it may do otherwise possibly due to it being too complicated and so also have or increase human error. 8% gave a neutral fair rating, believing it will not change very much.

Overall it can be said that the responses received have revealed a very positive perception of automated filing systems, with big majorities of the sample population showing that they believe that an automated system will greatly improve each of the issues facing the current manual filing system as shown below in the table and diagram.

Overall rating

Issue	Positive	Fair	Negative	No response
Efficiency	80%		12%	8%
Space	86%	5%		9%
Damage and Misplacement	80%	12%		8%
Security	88%	4%		8%
Flexibility and Changeability	88%	4%		8%
Cost	67%	13%	12%	8%

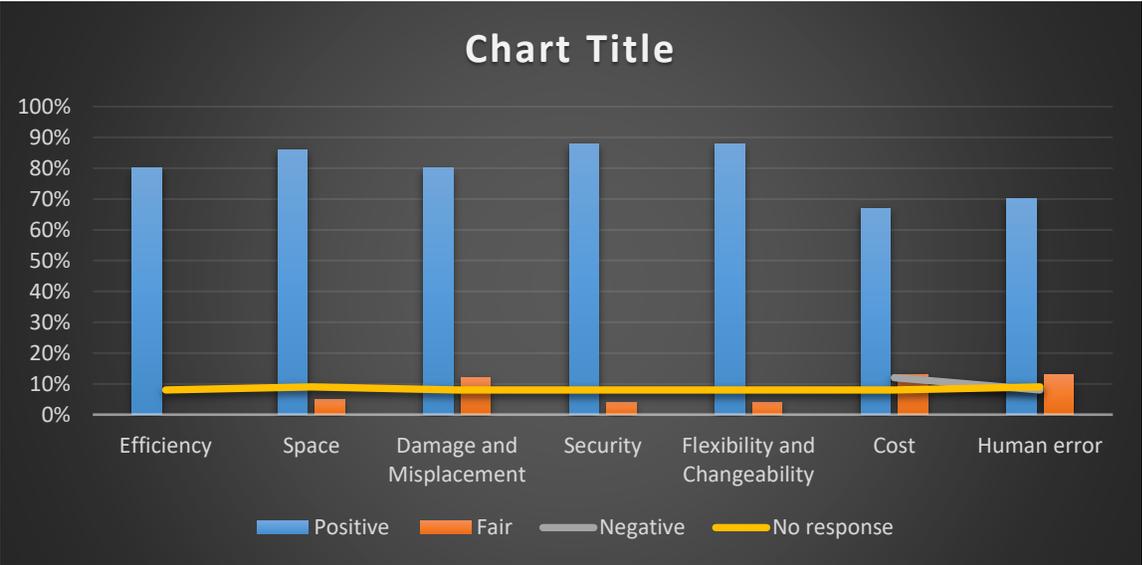| Human error	70%	13%	8%	9%

Table 34 Overall Rating

Figure 33 Overall Rating

According to the diagram above, the overall response is overwhelmingly positive in response to the idea of an automated system while a much smaller percentage held a fair outlook. A very small percentage had any negative responses and so the negative feedback is basically negligible. The response rate remains more or less stagnant.

CHAPTER FIVE

5.0 Summary of Findings, Conclusions and Recommendations

5.1 Introduction

The purpose of this study was to analyze modern filing systems, specifically automated filing systems (EDMS). The aim was to study the short comings of a purely manual system and how an automated system could remedy them. This was a case study of the Kenya Literature Bureau and its, currently, manual system.

The research entailed establishing, through the sample population, the general standing of the current manual filing system through rating the various issues identified in the questionnaire, whether the sample population had any previous experience with automated systems, and if, whether or not they did, in their opinion, an automated system could remedy these identified shortcomings.

The study specifically set out to answer the following questions:

   i.   Can an EDMS help improve inefficiency?

  ii.   Can an EDMS help solve the issue of space consumption?

 iii.   Can an EDMS help reduce human error?

 iv.   Can an EDMS help improve low security?

  v.   Can an EDMS help solve the issue of inflexibility?

 vi.   Can an EDMS help reduce damage and misplacement of files?

 vii.   Can an EDMS help reduce operational cost?

5.2 Findings of this study

5.2.1 Efficiency

It was noted through the study that inefficiency is one of the biggest, if not the biggest, shortcoming of a manual system. This is due to human error and logistical complications in the file movement. The human error aspect including things like file or document misplacement and logistical complications being how long it takes a file to move from person to person and office to office.

In the survey, many of the responses named inefficiency as a major factor. Background research, established that automated systems eliminated these snare ups in the manual system as, unlike the latter, an automated system allowed for instant and simultaneous access to documents stored within. And in the survey, 35% gave the current system a positive rating compared to the 15% negative. This shows that more people were satisfied with the efficiency of the current system than were dissatisfied. 42% remained neutral. However, when asked how they feel an automated system could improve on the issue of efficiency, it was established that a vast majority of the sample population, 80%, felt that an automated system would remedy this situation compared to the 12% that felt otherwise.

5.2.2 Space consumption

Another highly sited issue was the bulkiness of the current manual system. Within KLB, the current manual system is bases on paper and files. Both the current active files and those files that are full and retired to the archive. This takes up an immense amount of space, as also noted through first-hand experience as an attachee. The archive is choke

full of multiple older volumes of current files while the current files have completely filled up the filing cabinets in the registry so that there is hardly any space left over.

This space consumption becomes an issue due to firstly the amount of labor and handling it requires. This is through maintenance or both the archived files, which from time to time are also retrieved and circulated as well as the constantly circulating current files. They are heavy and take up a lot of space on the counters and desks and due to their bulky and physical nature are also prone to damage and misplacement. Secondly, these physical files can take up whole rooms as housing, which could otherwise be redirected to other purposes.

In the questionnaire, a large number of respondents stated this as a major issue. The background research of this study revealed that an automated system could easily solve this issue as digital and software copies of documents take up very little space within the storage devices. This means that much more information can be stored within say, a Terabyte, of space on a hard drive small enough to fit in a pocket, than can be stored physically in a single room packed to the maximum with files. And so, instead of multiple rooms dedicated to storage and maintenance of files, the organization may only need to set aside only a single room for the server that houses all the information.

While an organization can never completely do away with physical documents, automation means that the movement of these files and documents and storage will become highly localized only staying and being handled by the registry staff which will also greatly reduce the risks of damage and misplacement. In the field research, a huge 86% were of the opinion that an automated system will greatly improve the issue of space consumption with 5% giving a rating of fair.

5.2.3 Damage and misplacement

Comparing the positive 17% response to the negative 33% on the rating on the current manual filing system revealed that a larger number of the sample population were dissatisfied than were satisfied. There was a 42% that were neutral. And later when asked if an automated system could fix this issue, 80% gave a positive rating, with a small 12%.

The background of this study revealed, the issue of damage and misplacement comes about in the process of handling of these physical files and documents. That is, while filing documents, tearing and staining, misfiling and misplacement of these documents. And as for the files as a whole, the mishandling of these files that leads to damage to the documents therein and the file itself, and misplacement, which is the biggest problem in the process of moving a file from office to office. The biggest setback of damage to these files and documents comes about as a result of how hard it is to back up an original document, especially when it is from outside of the organization. It's hard to backup physical documents, and creating duplicates for all the documents handled would just create double the already enormous bulk. Not forgetting that even in storage there exists the risk of damage by fire, and water and other disasters so that it's apparent that physical handling no matter how minimal still runs a risk of damage.

Also, as each officer tends to need some time with a file before it can be taken to the next officer, often these files may become misplaced if, before a registry staff member comes to retrieve the file, another officer from another office takes it and the officer originally in possession forgets about this. It becomes hard to keep track of files when they are moved from office to office outside the knowledge of the registry staff in charge of this task. And so, the registry office is not able to produce these files to officers on demand. This issue so far has been remedied by registry officers taking a periodic file census, but even this action is very time consuming and it takes a lot of registry staff out of circulation for the duration of the exercise. This usually then means that on top of the misplaced files slowing down business, there are less staff available to keep up the daily activity. And this overall affects progress and productivity of the whole organization.

All things considered, a solution for all of these issues would be to reduce handling of the physical files to a little as possible. This would be very possible with the adoption of a software-based approach. An automated system would reduce the number of people in contact with the physical documents and files down to only the registry staff. It would be impossible to completely eliminate physical documents, especially because it's the most convenient mode of communication with the environment outside the bureau and the general public, and so any documents and communication they send in would often be in this form. But, even then, the documents received will only be handled by the registry staff and only briefly as they are scanned into the system then put into storage. And this could be further reduced if the bureau creates a platform where, rather than sending physical documents, the public can send scanned copies of these documents instead to an official email, which would reduce the work for the registry office. And should ever a need arise for the physical document, it can be printed out.

Management of this content on the server will be done only by the registry staff, as they would be the only ones with the authority to alter the information. The IT department will only handle the maintenance of the systems hardware and connectivity and functionality. And because all of this content will be stored in a central server, it will allow for instant and simultaneous access of the documents needed for reference, reducing the lag in efficiency. And any damage, misplacement or misfiling of documents could always quickly be traced back to its source in the registry office. Also, because of digital footprints and the inherent feature of computers that allows them to keep track of who accesses the information and when, it's easy to track the activity on all the documents as to even access them, one would need an authorized account as a staff member. This provides the added feature and benefit of security and accountability.

The data collected by the questionnaire also strongly suggests that majority of the sample population, 80%, feel that an automated system would greatly improve the issue of damage and misplacement.

5.2.4 Security

The background study of this issue revealed that the security of a manual system is very low. This sis security in the sense that there is no way to filter who sees the information and documentation within especially when it's confidential. A physical file can be opened and perused by anyone who comes into contact with it. This is not ideal as certain documents should only be accessed and seen certain officers.

And so, the only way to increase security is to restrict access which is comparatively much harder in with a physical file than a software copy on an automated system. This is because, in order to access any information at all to begin with one would need to be a member of staff with an authorized account. On top of this, the amount of the information one would be able to access would also be restricted by clearance level, such that the higher the level in the organization, the higher the clearance level, and the more information available. And certain types of information which may be more sensitive than others can be further restricted through encryption keys and passwords so that only the appropriate authorized personnel can access it.

On top of this, digital footprints and the macro data constantly being collected by the computers, which includes things such as who accessed a file and when, also mean that it would be easy for an administrator to keep constant track of the activity on and around the documents within the system. Also, the backup feature may be considered a security feature as it would be very easy to make and keep a backup of all the data in the system, in case of loss or corruption. Several backups may be created and accessed only by authorized parties. It's convenient because these backups can be easily updated and created and can be stored outside on a cloud or a separate server.

As such the security of an automated system is easily better than a manual system, though not perfect as risk cannot be fully eliminated. There is a risk of damage and loss through a system malfunction, physical damage to the server, hacking and the need for constant electricity as the system is computer based. However, these can be solved through

backups of the system, up to date firewalls and anti-malware software, which are often one-off expenses, while the power issue is already taken care of as the Bureau already has a generator.

In the survey, 88% of the respondents gave a positive rating to the question of whether an automated system could improve the issue of security. A further 4% gave a fair rating, and there was no negative rating. This shows that almost all of the sample population recognize the need for higher security.

5.2.5 Flexibility and changeability

This was the issue of how easy it was to make changes to documents and make corrections. The background of the study revealed that unlike automated systems, it is very difficult to make changes to documents and corrections. This is because, when formulating official documents, often times multiple officers have to sign off on them before they get the final stamp in order to be executed. And sometimes these have a time limit. If, when in the process of formulating this document, a problem is encountered, the time limit is reached or there is a new development that needs to be accounted for, the whole process can be set back very far. This is as a result of the often tedious and painstaking process of moving the file with the document from one officer to the next. Keeping in mind that even while these relevant officers are working on this document, the file itself is still in circulation for use and reference by the rest of the organization. This then means that, to make progress with the document, much time is needed, especially if authorization or input relies on information from other files and / or older volumes. The process then takes too much time to begin with, but in the event that the process needs to be redone over again or corrections need to be made, it becomes too cumbersome and tedious to start over.

What an automated system does is it allows for this flexibility and back and forth movement and communication of the document. Because the copy is in soft copy, reviews

and changes can be made easily and quickly. Movement and time lags cease to be an issue as multiple officers may be able to work on a document simultaneously. This speeds up the process of authenticating documents. And finally, after the final stamp of approval is received the document is then turned over to the registry office where it is inputted into the system. The survey revealed that while a surprising 42% majority of the sample population gave a positive rating to the current system on the issue of flexibility and changeability, compared to the 23% that felt otherwise, when presented with the question of whether they believed an automated system would improve on this issue, 88% gave a positive response while a further 4% gave a fair rating. This shows that a majority of the sample population are of the opinion that an automated system would greatly improve the issue of flexibility and changeability.

5.2.6 Cost

According to the study, issue of cost, basically comes up as a question of how much it costs to run the current manual system. Because it leans on paper and stationary that is in constant use and needs to be continuously catered for. There is also the cost of storage space and handling and maintenance. These files have to be archived and regularly inventoried. Rearrangement and improvement of storage conditions takes labor and manpower, additional items such as storage boxes are required, for cleaning purposes one would need detergent and the storage room itself is an expense.

Comparatively, and fairly, an automated system would also come with its own costs and expenses. The initial cost of purchase and installation, the cost of the equipment and training of the staff. All of these would, of course be one off expenses, mostly, but they would still be quite a sizable investment. The system would need much time and manpower when inputting the data already existing in the current and archived files into the system through scanning, also a sizeable one-off expense. There would also be the potential cost of the transition turbulence as the organization moves from one system to

another as business and traffic would be greatly affected in that period and finally the system would need additional, heavier maintenance from the current IT department.

However, again, much of these costs would be the initial one-off investments needed to get the system running, some of which would not be incurred again even in the event of an upgrade to the system. And of course, because it is a system that would be big and significant enough to change the way the organization does business, it would be quite costly at first, but the investment would be recovered over time with the improved performance and productivity that the system would bring.

The survey shows that 28% of the sample population gave a positive rating to the issue of cost of the current manual system, compared to the 4% negative rating, showing that a more people were okay with the cost consumption of the current system to those that aren't. However, 60% gave a fair rating, suggesting that a majority of the sample population, while not completely dissatisfied with the current cost issue of the manual system, are not completely satisfied either. And when rating how they perceive an automated system would improve the issue of cost within the Bureau, 67% gave a positive rating with 12% giving a negative rating. 13% gave a neutral rating of fair. This suggests that quite a large number of the population is still of the opinion that an automated system would help improve the issue of cost.

5.2.7 Human error

Through much analysis it could be considered that the main fault of the current manual system is human error. This is not to mean that the manpower is incompetent. Rather, it stands to reason that if one has a system based on manpower, then much of the problems arising would be as result of human error. And so, the answer is not to eliminate the human aspect of the equation, but rather to find ways to lower or limit it. All the issues covered above all come in here and there as a result of human error and interaction with the system in place, which is manual in nature. And to be fair, the acquisition of an automated system will not necessarily eliminate the issue of human error, as even with

the computers doing the heavy lifting, maintenance and management of content, software and hardware of the system will still be done by humans.

However, as noted before, because those who will be able to manage and alter the content within the system would be limited to the registry office, the errors would also be localized to just the staff in this office. And various measures can be taken, effectively to remedy these issues. More and better and more specialized training could be given to these staff, better equipment could be afforded them as they would be the ones to input data. This would ensure the higher quality of this data inserted into the system. Extra and better training may also be given to the IT staff where needed so that they may also be able to provide quality support. Other than this, strict guidelines concerning the handling of the information entrusted to them may be given so as to ensure proper conduct.

The survey reveals that 19% gave the current manual system a positive review while 39% gave it a negative review. 34% gave it a fair rating suggesting that a larger number of people within the sample population were dissatisfies with the current system than those that weren't, with a fair amount of them on the fence at 34%. Alternatively, when asked how they feel an automated system would improve the issue of human error, 70% gave a positive feedback, compared to the 8% negative, while 13% gave a neutral, fair, response. This shows that a large majority of the sample population feel that an automated system will greatly improve the issue of human error.

5.3 Summary and Conclusion

In summary, many of the complications and shortcomings of the current manual system at the Kenya Literature Bureau are not overwhelming. This is in the sense that they do not affect its ability to do business at all in any way. In fact, the Literature Bureau as it is now is, still, so successful that it is considered the "3rd best run and most consistent State Corporation" as of December 2014. (Ndegwa, 2014). Even with the system in place, it remains a market leader, which speaks very highly of the staff of the Bureau and the

registry office specifically. However, the aim of this study was not to discredit the current manual filing system at the Kenya Literature Bureau, but rather to examine it to identify the areas in which it could be improved, through the lens of technology today, and try to reason how this system could further benefit from upgrading to a more modern, advanced system. As shown in this report there the benefits of an automated system, or rather electronic document management system, (EDMS), far outweigh the disadvantages. And while the current system is still good, in this day and age, those who adapt faster get better market shares and greater rewards than their slower counterparts and nothing evolves faster than technology. As such, it comes down to the various individual organizations to adapt with it or get stuck trying to catch up.

5.4 Recommendations

After all the information gathered and presented in this paper is considered, the main and only recommendation to be made in order to improve the system any further would be to invest in an electronic document management system (EDMS). This is because, while all the issues listed above are ongoing or recurring problems, the measures put in place by the Bureau and registry office, are already working to reduce the complications that have been noted. And considering the performance of the Bureau, it is clear that they are working. The system in place is not perfect, but it works. The only way to get better results, then would be to upgrade to an automated system. This would be the only way to completely remedy the issues of efficiency, space consumption, damage and misplacement, security, flexibility and changeability, cost and human error.

5.5 Areas for further research

As this study was done from the perspective of a layman, much of the study was done from the perspective of the effects of an automated system to the workings of an organization. Much of the technical aspects of what this would entail have not been

covered in detail and so, there would be a need for the Bureau, should the option of automation be considered, to look into the technical aspect much more deeply before deciding.

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Annexes

Annex (I)

7.0 Questionnaire

MANAGEMENT UNIVERSITY OF AFRICA

BACHELOR OF MANAGEMENT AND LEADERSHIP

Note: The information collected here will be used for strictly academic purposes. Your participation will be greatly appreciated.

Instructions

  a) Kindly check within the appropriate brackets where required

  b) Please check within the appropriate corresponding box in the tables

SECTION A

1] Name (Optional)

2] Gender   Male [ ]   Female [   ]

3] Age Bracket   20-35 [   ]   36-50 [   ]   51-70 [   ]   Over [   ]

4] Position

Management [   ]   Supervisor [   ]   Regular Staff [   ]   Temporary/

Contract [   ]   Intern/ Attaché [   ]

5] Level of qualification

Certificate [   ]   Diploma [   ]   Degree [   ]   Masters [   ] Over [   ]   Other
[   ]

6] Length of service

Less than 5 years [   ]   Less than 10 years [   ]   Less than 15 years [   ]   less
than 20 years [   ]   Over [   ]

SECTION B

A] Do you feel the current manual filing system is adequate?

Yes [   ]   No [   ]

If Yes Why? (Briefly)

If No Why? (Briefly)

A] (I) Overall, how would you rate the current filing system?

Very Good	Good	Fair	Bad	Very Bad

B] How would you rate the following issues facing the filing system?

Issue	V. Good	Good	Fair	Bad	V. Bad
Efficiency					
Space					
Damage, Misplacement					
Security					
Flexibility and Changeability					
Cost					
Human Error					

B] (I) Have you identified any other issues?

C] Have you ever used an automated system?

Yes [   ]   No [   ]

(I)   If Yes what was your experience?

Very Good	Good	Fair	Bad	Very Bad

D] Would you consider acquiring an automated system?

Yes [   ]   No [   ]

I] If Yes why? (Briefly)

II] If No why? (Briefly)

E] What solutions would you propose for the above issues facing the current manual filing system?

F] How do you think acquiring an EDMS could improve the file management system?

Issue	V. Good	Good	Fair	Bad	V. Bad
Efficiency					
Space					
Damage, Misplacement					
Security					
Flexibility and Changeability					
Cost					
Human Error					

Annex (II): INTRODUCTION LETTER

TO: THE HUMAN RESOURCE MANAGER

THRO': CORPORATE SERVICES MANAGER

CHRISTINE MORAA MASITA

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REF: PERMISSION TO CONDUCT RESEARCH AT THE KENYA LITERATURE BUREAU

I am a student currently on attachment at the Kenya Literature Bureau registry office. As a student at the Management University of Kenya doing a bachelor's degree in administration, I have completed most of my course work with the exception of my project now that the required period of attachment for my course is almost complete. I do not have any classes remaining and I also feel like I still have much more to learn.

I would like to request the opportunity to carry out my research for my project report here at the Kenya Literature Bureau. My paper will be on the subject of file management systems and will be focused on the registry office of KLB. I will also be conducting a

survey on the idea of an electronic document management system. I would appreciate the opportunity.

I look forward to a favorable response.

Regards

Christine Masita