COMBATING THE CORPORATE PAPER WAR:
OPTIMISING ELECTRONIC MAIL AND ELECTRONIC
FILING

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Submitted in fulfilment of the requirements for the degree of
Magister Technologiæ: Office Management & Technology
in the Faculty of Management Sciences,
Department Office and Sport Management.

Vaal University of Technology

November 2006

Supervisor: Prof. E.C. Hoffmann
DECLARATION

DECLARATION
This work has not previously been accepted in any substance for any degree and is not being concurrently submitted in candidature for any degree.
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The dissertation is the result of my own independent investigation, except where otherwise stated. Other sources are acknowledged by giving explicit references. A list of References is appended.
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DEDICATION

I dedicate this treatise to my Heavenly Father for wisdom, talent, opportunities, courage and the strength to persevere.

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ABSTRACT

The primary objective of this research project was primarily to investigate filing methods and mailing practices in the computer support or administrative environment with specific focus on the abuse of paper.

The research design consisted of an exploratory investigation in selected Higher Education Institutions in the Province of Gauteng whereby a structured questionnaire was used as a measuring instrument. The investigation was sub-divided into two categories, namely, paper-based filing systems and mailing systems as opposed to electronic filing and mailing systems.

In the empirical findings, analysis and interpretations, correlation and cross-tabulation were done on all sets of variables in order to determine whether any meaningful associations could be found.

With reference to the title of this study “Combating the corporate paper war: optimising electronic mail and electronic filing”, it has been proven that the war against paper abuse is far from over. Perceptions regarding a future paperless office and assumptions that technology such as the electronic mail facility and electronic filing could assist organisations to combat paper abuse were unfounded, due to a lack of guidance and control measures in the corporate environment.

Consequently, it is recommended that an e-filing and e-mailing model be created and followed in conjunction with specified computer software features in order to counteract the abuse of paper.

Follow-up research could focus on electronic filing methods versus scanning of documents for filing purposes.
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<th>Full Form</th>
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CHAPTER 1
INTRODUCTION

1.1 SYNOPSIS
Huge amounts of information are constantly in circulation in the corporate environment and managing these mountains of paper can become extremely time consuming and jumbled unless filed in an appropriate manner. For that purpose, filing cabinets have traditionally been used as the acceptable manner to file or store records.

This chapter introduces current issues with regard to managing information and combating the perceived paper war by means of optimising electronic mail (e-mail) and electronic filing (e-filing). The motivation for the research project is presented in this chapter. The problem to be investigated is clearly presented and keywords and phrases relevant to the topic are defined. The scope of the study is demarcated and the objectives of the research are outlined. A broad outline of the research methodology used is discussed and a classification of the chapters in the remainder of the dissertation is also included.

1.2 MOTIVATION OF RESEARCH PROJECT
This research project was brought about due to the current need for improved filing and mailing systems and the shortage of relevant space at the Vaal University of Technology (VUT) (Naudé, 2000). Integrear (Integrear Systemflo) had previously presented a proposal as an option that could solve this problem at VUT. Unfortunately, the proposal was declined – presumably because of the costly nature of electronic systems (Wessels, 1998).

It would seem that the significant cost implications of e-filing and e-mailing systems are currently causing organisations to become reluctant to implement it. Therefore, it may be conceded that the cost implications for implementation of e-filing systems appear to be greater than that required for
existing paper filing systems. However, it is expected that the situation will be reversed in the long term, due to the fact that maintenance costs of electronic systems (e-systems) are significantly lower than that of paper-based systems.

A streamlined operation is capable of functioning in a paperless office, which is a dream of most workers. This poses the question of why organisations have not yet converted paperwork into something more useful or less bulky. This would yield obvious rewards in the areas of profit, competitive advantages and knowledge (Streamline, 2000:3).

Companies using electronic documentation (e-documentation) facilities provide a variety of services including registration, postal services, answering services, bar-coding application forms and timetables. Companies and institutions are currently using different methods for filing, ranging from paper-based to e-filing systems or a hybrid of both. The most common systems in use are either alphabetical or numerical.

VUT has implemented the Integrated Tertiary Solutions (ITS) for all institutional applications. ITS provides a filing system that allows for the capturing, saving, recording and scanning of documents. Document types need to be defined in order to allow for access control by the owner, department, faculty or institution. Keyword searches can also be conducted in order to retrieve information (Christowitz, 2001).

1.3 PROBLEM STATEMENT

The problem to be investigated focuses on the uninformed use of e-mail and e-filing at Higher Education Institutions (HEIs), which can lead to paper abuse. Administrators tend to print copies of e-mail messages and documents unnecessarily, rather than use soft facilities and e-filing.
1.4 DESCRIPTION OF TITLE (KEYWORDS AND PHRASES)

In order to understand the purpose of the dissertation, it is necessary to have a
core analysis of each of the keywords and phrases encompassed in the theme:

"COMBATING THE CORPORATE PAPER WAR: OPTIMISING
ELECTRONIC MAIL AND ELECTRONIC FILING".

1.4.1 Combat

According to the Concise Oxford English Dictionary (COED, 2002:283),
combating is explained as taking “action to reduce or prevent something bad
or undesirable”. The latter in this case is the uncontrolled abuse of paper in
the corporate environment due to developments in information and
communication technology (ICT).

1.4.2 Corporate

Corporate relates “to a large company or group [a]uthorized to act as a single
entity and recognized as such in law. Corporat-; corporare: ’form into a
body’ from corpus corpor” – ’body’ referring to business organisations in the

1.4.3 Paper war

Paper is described as being “material manufactured in thin sheets from the
pulp of wood or other fibrous substances, used for writing or printing on”
(COED, 2002:1031). In ICT terms, the printed paper copies of information
are referred to as hard copies. War is described as a “sustained campaign
against something undesirable” (COED, 2002:1323) such as a war on the
abuse of paper or hard copies in the corporate environment.

1.4.4 Optimising

To optimise involves making “the best or most effective use of (a situation or
resource) whereby paper (or hard copies) could be used more effectively with
the aid of ICT features” (COED, 2002:1031). According to the Longman
Advanced American Dictionary (LAAD, 2000:313) optimise means “to make
the way that something operates as effective and successful as possible: a software package that optimises data storage on your hard disk”.

1.4.5 E-mail
The *Glossary of records and information management terms* (2000:8), describes e-mail as “a system that enables users to compose, transmit, receive, and manage electronic messages and images across networks and through gateways connecting to other local area networks” (LAN). According to the *South African Concise Oxford Dictionary* (SACOD) (2002:374), “e-mail is simply another term for mail”.

According to Evans (1989:26), e-mail is an important term that describes the messages captured into a computer workstation that is linked to a LAN and then are ‘posted’ to an intended recipient. A single message may be sent simultaneously to groups of ‘tagged’ (designated) users, thereby saving much time and effort in producing and distributing paper memoranda. The LAN system provides each user with an IN and OUT tray for sending and receiving e-mail. Keeling and Kallaus (1996:663) describe e-mail as “the process of delivering mail by electronic signals over telecommunication lines, thereby eliminating the need for the physical delivery of paper documents”.

1.4.6 E-filing
The *Glossary of records and information management terms* (2000:8), describes e-filing as the capturing and storing of document images on an electronic system by identifying or indexing key words and elements whereby the documents can then be retrieved electronically.

1.5 OBJECTIVES OF THE STUDY

1.5.1 Main objective
The main objective of the study is to investigate filing and mailing practices in a computer support or administrative environment.
1.5.2 Specific objectives

Specific objectives are subdivided into a theoretical study, an empirical study and the design of an e-filing and e-mailing model.

1.5.2.1 Theoretical study

- Provides an overview of different systems.
- Explains the effectiveness of different systems.
- Draws comparisons of the advantages and disadvantages of e-filing and paper-based systems, as well as traditional mailing and e-mail systems.
- Outlines the cost-effectiveness of different systems.

1.5.2.2 Empirical study

- To identify different types of filing systems implemented.
- To explore the time and cost effectiveness of systems and equipment used.
- To investigate the abuse of paper, printing facilities and e-mail.
- To investigate the effectiveness of the system implemented.
- To investigate the duplication of filing, in both paper-based and e-filing systems.

1.5.2.3 E-filing and e-mailing models

To design e-filing and e-mailing models for marketing and implementation purposes based on the findings of the research.

1.6 DEMARCATION AND SCOPE OF STUDY

Administrative departments in HEIs in Gauteng Province were investigated. The region was chosen due to the close proximity of the institutions and ease of access to contacts. Due to time constraints, this study will not conduct research in corporate organisations or in government bodies.

1.7 RESEARCH METHODOLOGY

An exploratory investigation, using non-experimental research and descriptive
statistics was conducted. Both primary and secondary sources were drawn
upon for the literature study including textbooks, journals, articles,
newspapers, dictionaries and the Internet.

1.7.1 Research design

1.7.1.1 Measuring instrument: questionnaire design
The design of the questionnaire was structured according to the specific
objectives and a pre-test consisting of three sections, namely:
• Paper-based systems;
• e-filing system; and
• e-mailing system.

1.7.1.2 Population and sampling
The population consisted of administration staff members of seven HEIs in
Gauteng. Purposive sampling, based on convenience and proximity was
conducted. The sampling method used may also be described as non-
advantage of non-probability samples are that they are less complicated and
more economical (in terms of time and financial expenses) than probability
samples. Non-probability samples may be especially useful in pilot studies
in which a preliminary form of questionnaire has to be tested."

Convenience and judgement/purposive sampling are described by Welman
and Kruger (2001:63) as follows: "Researchers rely on their experience,
ingenuity and/or previous research findings to deliberately obtain units of
analysis in such a manner that the sample they obtain may be regarded as
being representative of the relevant population".

1.7.1.3 Data processing and procedure
The software that was used for data capturing and processing was MSExcel.
The application Statistical Products and Service Solutions (SPSS) was used
for data analysis and interpretation.
1.8 CHAPTER CLASSIFICATION

1.8.1 Chapter 2: Literature Review

Chapter 2 presents a detailed review and discussion of literature available regarding the historical context of paper and the evolution of the art of documenting and archiving the written word. It was found that a limited number of sources are available on paper-based filing and mailing systems, while the books that are available tend to be dated. For this reason, supplementary information was obtained from the Internet with regard to e-filing and e-mailing systems and the current war against paper abuse. The literature study includes an investigation of traditional paper-based filing and mailing systems and these findings are then compared to the characteristics of e-filing and e-mailing systems.

1.8.2 Chapter 3: Research methodology

Chapter 3 presents the research methodology that outlines the research framework, the population and sampling methods employed and the questionnaire design.

1.8.3 Chapter 4: Findings, analysis and interpretation

Chapter 4 contains a synopsis of filing systems with a comparison between advantages and disadvantages of paper based and e-filing and e-mailing systems. The findings of the empirical study are presented in Chapter 4 followed by the analysis and interpretation by relating the results to the theory presented in Chapter 2.

1.8.4 Chapter 5: Conclusions and recommendations

The objective of Chapter 5 is to provide a synopsis of the dissertation and to draw conclusions on the research. The answer to the primary research question, namely how to combat the corporate paper war, is presented in the final chapter. Proposed solutions to this problem are presented in the form of an optimally functional e-filing and e-mailing model. Important findings are emphasised and recommendations are made for winning the daily battle against paper abuse. Guidelines are provided for the progression towards the
ideal of a practical and efficient paperless office. Additionally, recommendations are made with regard to future research opportunities relevant to this field.

1.9 SUMMARY
This chapter has introduced the central theme of this dissertation namely combating the corporate paper war. Chapter 1 provides motivation for this research because an investigation into the extent of current paper abuse is vital for formulating viable options to combat the costly and time consuming paper war. The central research problem, namely how to combat the paper war and optimise e-mail and e-filing has been described. Key words and phrases relevant to the topic have also been defined in this chapter.

The primary objective of this research is to analyse filing and mailing practices so that the nature, productivity and cost efficiency of traditional systems can be compared with e-systems. The methodology applied in this dissertation, in terms of a theoretical study and an empirical investigation, has been outlined. The research design has been described and an overview of the chapters in the remainder of this dissertation has been provided.

The historical and theoretical background concerning paper-based filing and mailing systems is presented in Chapter 2. The theoretical framework provides a context for the empirical investigation of this dissertation.
CHAPTER 2
HISTORICAL FRAMEWORK

2.1 INTRODUCTION
The literature study starts with a historic synopsis of the development of paper
and how paper enhanced mankind's endeavours to document its activities and
achievements. Subsequently, this chapter explores different classifications of
record-keeping formats and presents an analysis of conventional or traditional
filing systems. A discussion of the handling and storage of documentation is
presented as well as methods of paper-based filing. Also included in this
chapter, is a discussion of e-mailing and e-filing methods as opposed to
conventional methods also emphasising the fact that conventional archives
often face the risk of paper deteriorating as a result of inferior quality of the
paper and print.

A central part of this chapter focuses on the investigation of different traditional
filing and mailing systems in order to obtain clarification on the complexities of
conventional filing and related use of paper, as opposed to e-filing. The
efficiency, cost effectiveness and space allocation of paper-based systems will
also be discussed.

It is imperative for every organisation to have an effective filing system in place
in order to operate cost effectively, create stability and improve growth.
According to Kahn, Yerian and Steward (1969:viii) "every record has a
purpose, and it is up to the office worker to see that these records are properly
organised, protected, and controlled." For the purpose of this study, the
organisation, protection and control of business records are referred to as filing.

Historically, filing and the administration of filing systems were considered to
be the least significant business priorities and were often neglected. However,
quality customer service has become a core concern for modern organisations
and this has resulted in filing and administrative functions becoming very important to management. An organised and well-planned filing system is viewed as an essential and important part of organisations in order to ensure that the history of the company is kept intact and so that accurate records of customer and company information can be maintained.

There are many different filing systems that have become as diverse as the people who use them. Organisations face the challenge of maintaining a balance between efficient time management and accurate record keeping, documentation and filing. According to Syracuse (2005) “the key to successful record keeping is a commitment to a good accounting system that grows out of an understanding of its value. Sometimes it is best to start with a modest system that can be improved over time”.

An important issue to be explored is the scope of documentation and the need to store historical facts in a sustainable manner. Computer technology has advanced to allow for quick, accurate and massive record keeping. Paper-based information systems were dominant for centuries prior to the dawn of the information age. A synopsis of the development of paper offers insight into humanity’s relentless imagination, creativity and persistence.

2.2 STONE CARVINGS INSTEAD OF PAPER

The advent of paper has allowed for many descriptions of our world to be stored so that we may share and learn from them. Pre-dating paper was the use of carvings into stone. One of the earliest references to this form of record keeping is found in Deuteronomy 5 where God spoke to Moses and made the Ten Commandments available to Israel’s people by carving the commandments on two stone tablets (The Holy Bible, 2001:198).

Stone carvings were used for communication purposes via messengers who had to run from one city to another, delivering important information. These stone carved messages were often placed in a safe place for storage. This form of written communication had several drawbacks associated with the weight and
size of the stone tablets. Portability was hampered due to the bulk of the stone tablets and storage of these stones required large space. Figure 2.1 depicts the Rosetta Stone (carved in approximately 196 BC) which was a vital clue for translating ancient hieroglyphs into modern languages. The Rosetta Stone contained three sections of writing in three different languages namely, Egyptian, Greek and Roman.

FIGURE 2.1: The Rosetta Stone

The standardisation of the methods and symbols used for recording purposes allows information to be clearly expressed and transferred. The link between ancient stone carvings and writing on paper forms (such as papyrus and parchment) was established by means of the carvings on the Rosetta Stone by depicting standard symbols used in ancient carvings, and the Roman or Greek equivalent of these symbols. The Rosetta Stone allowed standardised translation between these languages to take place. A deeper understanding of early civilisations was obtained and described in modern writing. Information and events described in stone carvings were kept as evidence of actions and decisions taken. By means of the Rosetta Stone, carvings could be translated into modern languages and their content understood (Overview of records and recordkeeping, 2005a).

2.3 THE HISTORY OF PAPER

Paper originated in Egypt in approximately 3000 years in the Nile River Valley. Paper was manufactured from the marsh grass called “Cyperous Papyrus” that grew next to the Nile River. Egyptians used to cut the grass and then split the
steams into thin strips. These strips were then laid into the muddy water of the Nile River to soften. Then they were removed and layered at right angles to form a mat and, whilst still wet, this mat was pounded into a thin sheet and then left in the sun to dry. Once dry, the sheets became a highly useful writing pad. The sheets were light and portable and became the writing medium for Egyptian, Greek and Roman spiritual texts, works of art and records. The word “paper” originated from papyrus as these sheets were similar to modern paper. The papyrus mats were pasted and cut into sheets up to 130 inches long and were used to record information. After completion, the sheets were rolled and sewed together forming scrolls called “Codex” and stored on shelves for safekeeping (HQ paper maker, 2004).

The paper we know today originated in China in 105 AD during the reign of Han Emperor Ho-Ti. The emperor’s chief eunuch T sai Lun refined the process of macerating the fibre of plants until each filament was completely separated and mixed with water in a large vat. A screen was submerged in the vat which lifted up through the water catching the fibres on the surface. This thin layer of intertwined fibre was then dried and formed a thin sheet that was called “paper”. T sai Lun became the patron saint of papermaking and his paper became known as “T sai Ko-Shi” which means “Distinguished T sai’s paper” (HQ paper maker, 2004).

The secret of paper making emerged slowly from China in the third century and reached Vietnam, Tibet and Korea. By the sixth century, paper making was known in Japan and during the eighth century, the Japanese Empress undertook a massive project and printed a million prayers (dharam) on individual sheets of paper, each mounted on a pagoda. The fine art of paper making still flourishes in present-day Japan (HQ paper maker, 2004).

The art of paper making steadily spread across the globe and was perceived as the ideal medium for record keeping and documentation. The popularity of paper making reached its zenith during the Tang Dynasty’s war with the Islamic world, when it moved westward in 751 AD. During hostilities on the banks of
the Tarus river, Islamic warriors captured a Chinese caravan with several paper makers. The captives were taken to Samarkand which soon became an important centre for the production of paper in Muslim parts of the world. In Europe, the method of using papyrus sheets for writing and illustrating was completely phased out by the ninth century. Artists and literati preferred the smooth and lustrous parchment manufactured from animal skin, which was extremely expensive. It is estimated that a single bible, hand-written on parchment, required the skins of at least 300 sheep (HQ paper maker, 2004).

When the Moors from North Africa invaded Spain and Portugal in the twelfth century, the technology of paper making entered Europe. Paper being used daily, on a widespread scale, did not occur until the invention of the printing press at the end of the fifteenth century. In 1456, Johann Gutenberg perfected the movable type of printing press and was able to print copies of the Bible on a large scale. The effect of this invention was enormous, and marked the birth of the modern paper and printing industry and the origin of mass communication (HQ paper maker, 2004).

2.4 DEVELOPMENT OF INFORMATION STORAGE SYSTEMS

2.4.1 Spikes

The ability to manufacture paper, combined with the mass production of printed documents, created the need to develop suitable methods to store printed and hand-written information. "In offices in the 19th Century, it was quite common to see a piece of wood with a spike sticking from it and letters and documents impaled on the spike" (Leafe, 1974:1). This filing system, known as spiking, was neither effective nor successful due to the clumsiness of the system.

2.4.2 Spindles

The first modern storing method for records was a spindle. When no more space was available on the spindle, the sheets were hung on a wire suspended between two walls. The next development was the use of wooden drawers that were tall and wide enough to insert all sizes of documents. The use of wooden
drawers was seen as a huge improvement on the spindle method of filing (Singh, 2004).

2.4.3 Filing cabinets

Since the beginning of the twentieth century, vertical two, three and four drawer wooden cabinets have been built for filing purposes (filing cabinets are still used today in offices and remain a reliable storage facility). As business improved and companies grew larger, more floor space was required as many more records had to be kept. To minimise the use of floor space, more wooden drawers were fitted to the existing wooden cabinets.

Filing cabinets currently remain in use and may be considered to be a traditional filing method in the computer age. Filing cabinets provide a sensible method for storing papers in a retrievable order, often alphabetically, numerically and hierarchically. These filing cabinets created a major revolution in the handling and storing of information when they were introduced in the early twentieth century. Filing cabinets offer a solution for storing large amounts of material in an organised, structured and efficient manner.

The basic cabinet-based filing system continued until 1963 when administrative staff at “Haba Corporation” realised that this method was inadequate. Haba Corporation designed and built a lateral filing system which represented a huge improvement on the cabinet system. In a lateral filing system plastic separations with indexes on moveable mounts, are used. The plastic separations form individual compartments for the files created that are easily accessible by means of the index (Singh, 2004).

The invention of the typewriter heralded the onset of the “Fat Paper” war. The effect was the design of more than one kind of machinery to sort and/or file documents. It became imperative to establish an easy recovery method for specific documents. Without a viable document retrieval system, it would be pointless to store any documents for future purposes.
2.5 REQUIREMENTS OF AN EFFECTIVE FILING SYSTEM

The core requisite of a good filing system is the ability to retrieve information accurately with minimal effort and within record time. To facilitate the retrieval and consistency of the filing of documents, it is essential to have specific guidelines. Due to the need for accurate and rapid document retrieval, a simple alphabetical sequence may be inadequate for storage purposes. It is advisable to establish adequate rules for the filing process in terms of classifying, arranging and storing records so that they can be obtained quickly when needed (Johnson & Savage, 1968:348).

Mills and Standingford (1978:57) state that “the maintenance of an efficient filing system is one of the perennial problems of the office”. The authors further argue that there is no single ideal system and that there is neither one ideal type of equipment that will meet the requirements of every record in every office. It is important to have relevant rules and procedures which must be adapted to suit the unique requirements of a specific business or organisation.

Within a large organisation, such as a HEI, the filing system must be adapted to suit its specific needs; however, departments and sections within the HEI must use a standardised and uniform filing system to ensure consistency and continuity. Consistency in the filing system of a HEI is especially important if internal restructuring occurs and functions or duties are shifted across departments. Continuity is important with regard to staff turnover, so that new personnel can be trained to apply the same standardised rules and procedures for record keeping and retrieval.

Personnel who work with a filing system, must possess general knowledge regarding the basic principles of filing and accurate information regarding specific procedures for the company (Johnson & Savage, 1968:348). Consistency and continuity of standardised record keeping procedures will ensure that the HEI’s database remains accurate over the long term.
2.6 **ALPHABETIC FILING SYSTEMS**

In the following section, different types of filing systems are investigated in order to understand filing principles and processes comprehensively.

2.6.1 **Synopsis of alphabetic filing systems**

Alphabetic filing is the most commonly used and understood filing system. It is a direct system and there is no single set of alphabetical filing rules used by all offices (Cooperman, 2002:118; Whitehead, 1976:145). Certain offices make use of the filing rules provided by the Association of Record Management (ARMA). However, the rules of alphabetical filing may differ widely from office to office. With any form of alphabetical filing, the starting point is to index the names. Indexing refers to the process of separating the names of individuals into separate units. The rules for alphabetical order must be used, for example “a” is before “b” therefore, “Alex” will be filed before “Belinda” (Cooperman, 2002:118).

All the files will be given names that indicate who or what the file relates to. The name of the person or organisation that is assigned to a file indicates the order in which it will be filed. Should the first letter of more than one filename be the same, the second letter determines the order.

All the filing cabinet drawers or shelves must be labelled as follows: A-E F-H etc., in order to indicate the content. Primary guide cards must be divided into major sections, for example: one for each letter of the alphabet. Should there be more than one name that begins with “A”, the primary guide card must be divided into secondary guide cards, for example: Aa-Ad, Ae-Ah, Ai-Al, Am-Ap, and Aq-Az. Accordingly, if a file is marked “Abigail” it will be filed in the first subsection, “Ahmed” will be filed in the second section, “Ajax” will be filed in the third section and “Anderson” in the fourth section.

According to Watcham (1972:77), the “alphabetical arrangement of names is fundamental to all filing systems; this includes numerical filing which must have an alphabetical index to the numbers”. The alphabetical filing system can
be used in many different manners which include filing according to initials and surname, according to subject and according to geographical classification (Lee & Brower, 1976:99). These main forms of alphabetical filing will be discussed in the following section.

2.6.2 **Alphabetic filing according to initials and surname**

Figure 2.2 depicts an alphabetic filing system in which documents are filed according to initials and surname.

![Filing cabinet drawer used for alphabetic filing from A-H](image)

**FIGURE 2.2: Filing cabinet drawer used for alphabetic filing from A-H**

Files should be strictly alphabetical to prevent confusion. A separate guide card is used for every letter of the alphabet, i.e., the guide marked with letter “A” will contain all files with names starting with “A”. The guide card is much larger than the file in order to stand out above the file in order to improve visibility and recognition of the specific letter of the alphabet. The guides may also have different colours for easy identification. At the back of the filing cabinet, directly behind the last guide (Z) a general file should be created for irregular and general correspondence not specifically relating to any of the entities for which files have been created.

Each filing cabinet normally consists of four to five drawers. Depending on the amount of files that are involved, the letters of the alphabet are generally divided so that one drawer provides sufficient space for the files indicated on
the drawer label. The front of each drawer should be clearly marked to indicate which files it contains. When filing is completed, all files starting with the same letter, for example "A", should be sorted in order of the second, then third letter to ensure that it remains strictly alphabetical (Korf, 1995:103-104).

2.6.3 Alphabetic filing according to subject

Figure 2.3 depicts a filing cabinet drawer in a Finance Department where documents are filed alphabetically according to subject.

![FIGURE 2.3: Cabinet drawer for alphabetic filing according to subject](image)

Alphabetic filing according to subject is a very popular system especially for businesses with different departments such as sales, marketing and administration. Files can be opened for each department (subject) and then subdivided according to names in alphabetical order. These subject files can then provide individual files for each person involved. The sales team may consist of 15 different individuals for whom sub-files will be opened alphabetically as per their name, in order to file documents relating to each person specifically. The various files for each department could be kept separately in different drawers, or in separate cabinets, depending on the size and volume involved (Korf, 1995:104-105).

It is essential to plan the filing system before subject headings are selected. The subject heading needs to be kept as brief as possible yet remain descriptive. A letter or a document may be filed according to a subject instead of being filed under a name. The master list or guide is the most essential part
of any alphabetic filing system. The main headings of the master list become the subdivisions in an alphabetic or numeric order (Korf, 1995:104-105). When using a numeric subject, an index is required for an alphabetic system. The alphabetic main headings and subdivisions must be alphabetically arranged and need to cross reference other subject classifications. It is essential that one can refer back to all subjects from the master list.

According to the same principle, the Finance Department of a HEI could make use of subject sub-divisions such as Asset Control, Budget Transfers and Bursaries. Lists and documents relating to each division could be kept separately. Primary and secondary filing guides will assist staff through the intricacies of the system. Subject filing necessitates an appropriate card index showing the division and sub-sections of the system. The subject index should also indicate where the various files with the relevant information are physically located (Carsyforth & Rawlinson, 1992:89; Korf, 1995:104-105; Lee & Brower, 1976:100).

2.6.4 Alphabetic filing according to geographic classification

Figure 2.4 depicts the filing cabinet drawer of an alphabetic filing system where documents are filed according to geographic classification.

![Filing cabinet drawer used for geographic classification](image)

**FIGURE 2.4: Filing cabinet drawer used for geographic classification**

The alphabetic arrangement of files according to geographic classification is a filing system where documents are first sorted according to location. According to Figure 2.4 the first level of classification is the province or...
region. The cities form subdivisions of the provinces and are placed behind the provinces alphabetically. A primary guide card is vital for the geographic classification filing system.

With a geographic filing system, it is common practice to first file according to country, then according to province and finally in terms of city or town. Variations of the order of classification may occur such as papers being filed either by town or city, ignoring state lines entirely. Alternatively, classification may be made by state (province) and then by country. Another option is filing by state and then by name of the person or firm.

The geographic method of filing is based on differentiation between regions or locations. Each region may be further subdivided to provide a different file for each customer within a specific region, either alphabetically (by name) or numerically (according to account number).

Files that relate to particular people may be arranged alphabetically, subject to the normal procedure for alphabetical filing, after geographic classification has taken place. After the geographic classification is completed, papers are ordered according to name or subject. Alternatively, all the correspondence will be arranged from the latest date to the front of the folder (Carsyforth & Rawlinson, 1992:90; Korf, 1995:105; Lee & Brower, 1976:99-100).

2.7 NUMERIC CLASSIFICATION

2.7.1 Synopsis of numeric filing

ARMA International (1989b:1), referred to numerical filing as an "indirect access system because an index must be referred to before filing and retrieval can take place". Like a pre-printed invoice number, the filing number can be part of the record or be assigned to the record when it is coded.

Names or subject files can be combined with names or subject files which consist of numeric primary guides and alphabetic captions indicating the
number, name or subject. Due to the fact that other staff may not be aware of the numbers allocated to a certain file or record, an alphabetic index is required except in the case of a chronological filing system.

Figure 2.5 illustrates a numeric classification system, where numeric index cards are used.

![Cabinet drawer indicating file numbers](image)

**FIGURE 2.5: Numeric classification system**

All the information such as names, addresses and telephone numbers may be contained in an alphabetic index of a numeric file. In numeric filing, subdivisions of subjects that may be cross-referenced, are often required. In the numeric system, cross-referencing to the alphabetic system will appear. This saves an enormous amount of time and does not cause congestion in the numeric files. There are three methods of numbering namely: natural numbers, random numbers and number languages (Johnson & Savage, 1968:350; Korf, 1995:106; Place & Hyslop, 1982:118).

There are certain numbers that can be used in everyday language, such as vehicle registration numbers (MLV 072 GP). In this example, the 072 can be used as a file heading. Groups of records are allocated random numbers in sequence as they are created or added to the filing system. Should the last allocated number to a client's file be 1552, the following number will be 1553. The client’s name will have no influence on the allocated number. In computer systems, the language system approach is used. Where numbers are used for date identification, they are sorted into chronological sequence (Mills & Standingford, 1978:61-62).
Numeric filing systems consist of three parts, namely:

- The main numeric file containing guides.
- The folders with numeric captions and alphabetic card index listing the numbers that have been assigned to each active correspondent or subject.
- The miscellaneous alphabetic file containing alphabetic guides and folders for inactive correspondents or subjects (Gregg, Fries, Rowe & Travis, 1968:170).

### 2.7.2 Consecutive filing

Consecutive numeric filing systems may be referred to as serial, sequential or straight numeric systems. In a sequential filing system, records are consecutively numbered and arranged in ascending number order from the lowest to the highest number. In the case of numerous numbers, the first digit is compared to determine the proper filing sequence. Should the digits be identical, the second digit determines the sequence in which numbers should be arranged (ARMA International, 1989b:4; Place & Hyslop, 1982:120).

### 2.7.3 Coded numeric filing

Code numbers may be obtained from the documentation or files that need to be stored, whereby both numbers and letters may be used. Codes are sometimes called 'mnemonic systems' due to the meaning of the numbers. This method may be used in a license number whereby the first digit represents a city and the second digit the country. In organisations, the code may be based on the location or functions such as accounting, marketing or production. The originator of the document and the purpose of the document can also be established by means of the code (Place & Hyslop, 1982:120).

### 2.7.4 Terminal-digit filing

In this filing system, all numbers are read in groups from right to left. All digits are divided into two or three groups. These groups are seen as primary, secondary, and tertiary. The right group is primary, the middle group is secondary, and the left group is tertiary (Carsyforth & Rawlinson, 1992:88; Diamond, 1995:123; Littlefield, Rachel, Caruth & Holmes, 1978:176).
range of the series of numbers the system will accommodate, determines all the numbers that are used in the primary, secondary and tertiary groups.

To create three groups of three digits each, a zero may be added to the left of the number, for example 15517 will become 015517. The number 115577 is read 11 55 17. The shelf will be labelled 17, the file guide will be labelled 55 17, and the folder 11 will be filed after folder 10. The folders after the file guide 55 17 will be numbered 00 55 17 through 99 55 15. The next file guide will be labelled 56 17. When filing 11 55 17, it will be read from right to left.

The primary numbers are numbers of the file section or shelf. These secondary numbers are guides to locate files within the filing system. These tertiary numbers insures the order of files located behind the guides (ARMA International, 1989b:5; Bhatia, 1998:59; Place & Hyslop, 1982:123).

2.7.5 Middle-digit filing

Middle-digit filing is a variation of the terminal-digit system. In this system, the numbers are divided into groups of two or three digits. All records are filed according to the middle digit, then according to the left digit (secondary digit). For a number such as 115517, 55 will be read first, 11 second and 17 last. The shelf is labelled 55. The file guide is 11 55 and the folder 17 which is filed behind folder 16. All files after folder 11 55 are numbered 11 55 00 through 11 55 99 and are arranged in consecutive order. The following guide in this section will be 12 55. Should filing be done by the middle-digit method, the number is read from middle to left to right. Middle digits are always considered first in filing (ARMA International, 1989b:4; Diamond, 1995:124; Place & Hyslop, 1982:125).

2.7.6 Chronological filing

Chronological filing is commonly used for follow-up purposes. In this system, guides are used to arrange the month and day so that all matters that require attention appear automatically. With the chronological method, records are placed in reverse date order within a folder. This implies that the oldest records are placed at the rear and the most recent files are at the front of the
file. Before files are retrieved, the employee will first confirm the date of the record. When a journal is established, it often contains filing invoices and other vouchers associated with accounts. Regardless of the size of the organisation, this system cannot be used by itself and must be augmented by another form of classification (ARMA International, 1989b:5; Hackett, 1988:99).

2.7.7 Alphanumeric filing

The alphanumeric filing system is a modification of the decimal filing system. This filing system is a combination of personal or business names and numbers, and typically subject names and numbers. The primary subjects are normally arranged alphabetically with the subdivisions assigned to a number. After determining the subject headings and subdivisions, the number categories can then be assigned beginning with groups of 10 or 100. The decimal-numeric assignment numbers could be used in the alphanumeric arrangement. By using the alphabetic order, an alphanumeric system could be designed by arranging all the subjects in alphabetical order. All the numbers that were assigned may not correspond in the numeric order of the letters which are in the 26-letter alphabet. The subdivisions may be indicated by means of a dash, period or diagonal. The alphanumeric system may use both letters, numbers and numerous divisions should it be required (ARMA International, 1989b:6; Bhatia, 1998:60; Korf, 1995:107; Steenekamp & Bekker, 1983:100).

2.7.8 Duplex-numeric filing

Place and Hyslop (1982:147) state that the “duplex-numeric is a hybrid of the decimal-numeric and the alpha-numeric systems”. The duplex-numeric filing system is characterised by numbers which are separated into two or more parts by means of the following: a dash, a space, a period and a comma. An example is: 343-08; 400 11 1980; 2.2.5; and 312,390. All the combinations of numbers and alphabetic characters may be used. Classified records are sometimes filed in a duplex method to provide additional security. In the duplex-numeric system, the records are arranged in consecutive order by
means of the first part of the number followed by the remaining parts of the number (ARMA International, 1989b:6).

2.7.9 Dewey-decimal system

Numbers are assigned first by general classification and then the topic with the author’s name. Libraries are the most common users of this system (Lee & Brower, 1976:99). This filing system is a modified duplex-numeric system. This process of classification is putting the library books into the related subject groupings which correspond to main subjects of the books. The system contains nine main classes with an extra one for general works (Denyer, 1969:377; Place & Hyslop, 1982:148-149).

2.7.10 Block-numeric filing

Block-numeric systems are usually based on the functions of the organisation. All the operational areas are assigned to numbers in a block which is used for records in that area. This system consists of blocks of primary numbers which are allocated for each function carried out by the organisation. The main subject headings are allocated to each of the major sections or departments. This subject is normally arranged in a logical alphabetical sequence. The primary subjects are then subdivided into secondary subjects and numbers. This will present specific files in the system. The secondary subjects and numbers could be subdivided into tertiary subjects and numbers which represent specific files (Whatcham, 1972:85).

Block numbers may contain different levels of primary and secondary headings. All the records are broken down into smaller subject units or primary subject headings, and are then assigned to a specific number from the range. Within every primary subject a secondary number can further be subdivided. In the block-numeric coding system, a complete file number usually consists of a primary and secondary number. Should it be necessary, a tertiary number can be added for expansion (ARMA International, 1989b:7; Place & Hyslop, 1982:121).
2.8 SOUNDEX SYSTEM

The Soundex system for manual files converts names to a 4-character code: one alphabetic character and three numbers for example, L821. The objective of coding is to condense the words and titles of files by substituting numbers or letters. In the Soundex system, the substitution is based on phonetics. Johnson and Savage (1968:356) state that “most file names are filed as written and spoken by the persons seeking information from a file. The situation presents difficulties because every name may be spelled differently without affecting the pronunciation materially”.

The Soundex system is especially useful when names or words which sound alike, are spelled differently, for example, Nickels, Nickeles and Nickollas. By using Soundex, the names could be grouped under one common spelling and cross-referenced, or the names could be filed by phonetic spelling rather than unit-by-unit and letter-by-letter (Johnson & Savage, 1968:356; Place & Hyslop, 1982:122).

2.9 MICROFILM FILING

Microfilming, also called microphotography, is a special filing technique that reduces images to such a small size that they cannot be read without optical assistance. Microfilming encompasses the storage of documents as images on photographic rolls or strips. All records can be viewed on a projector that enlarges the image to its original size.

In order to save space, it becomes cost effective to store records on microfilm, especially in the case of large quantities or inactive or semi-active records. Relative to the vast storage space required for documents, microfilm requires very little storage space. It is not always possible to re-arrange the information on the microfilm and this is a limitation on the use of microfilm. Banks and stores use microfilms to check client balances or to seek information pertaining to a certain client (Bhatia, 1998:84; Diamond, 1995:140; Harding, 1990:122).
2.10 FILING BY COLOUR CODE

De Vries (1983:57) states that “colour coding, as used in both folders/tabs and containers, can be applied to any filing system, and it can be as simple or as intricate as you like”. According to Terry and Stallard (1980:184), “applications of colour have been developed to a degree that permits the use of quite sophisticated colour filing plans”. Colour-coded files are easily traced and recognised. If filed incorrectly, the colour will stand out immediately, indicating that it was put in the wrong space or file. Colour-coded filing can be applied to any filing method and will enhance the effective retrieval of the files (Terry & Stallard, 1980:183-184).

Some offices use different colours to distinguish between different criteria or evaluated clients. Using colours for the purpose of filing and retrieving relieves the monotony and improves learning and recall (Stallard & Terry, 1984:241). According to Diamond (1995:136), colour-coding expedites the retrieval of records while reducing misfiling. Most filing cabinets do not have the necessary space to provide for a complex colour-coded system. However, colour-coding of files per category or group may simplify filing and save time due to the different categories or groups being easily identifiable. Colour-coding can be applied in various ways to distinguish the files from one another. The colours on hanging files can easily be coordinated with the tables of manila folders.

Manufacturers and suppliers of filing cabinets and filing stationery normally provide pre-designed colour-coding systems that can be adopted. They also supply sales literature that is self-explanatory and free of charge. According to Diamond (1995:137), “colour does not eliminate the need for a logical filing system, but it does support and enhance the system”.

2.11 AUTOMATED AND MOTORISED SHELF FILING SYSTEMS

Motorised files provide effective work stations with access to a large quantity of data. This method of filing describes a filing process that is done on shelves inside a metal unit or “box”. The operator manages the unit by sitting
or standing in front of the unit. The operator presses the appropriate button in order to retrieve a certain file. The corresponding shelve is activated and will automatically move into position for the operator to access the file. Files are mechanised for improved time efficiency and more effective retrieval. Any card can be brought into view instantaneously by means of an electrical control or rotary wheel (Kallaus & Keeling, 1992:437). Motorised files provide fast and effective access with a minimum of operator effort. It is time saving and ultimately more cost effective than “traditional paper filing”.

A significant amount of files can be stored in a relatively small space (Diamond, 1995:135). According to Terry and Stallard (1980:175), every record is made available at the level at which maximum labour efficiency is attainable. Significant savings are possible since research indicates that, with non-motorised files, 73 percent of the total storing and retrieval costs are for labour (Littlefield et al., 1978:178).

The system called Kardek-kard-veyor 380 is the latest automated file storage and retrieval system and is equipped with an electronic keypad for easy access to files. The person operating the system enters the appropriate carrier number and the carrier comes into position. The system includes a digital read out in clear half inch numbers whereby the carrier displays the number entered for immediate and accurate verification.

The above-mentioned system operates on standard power points and is cost effective. The employee operating the system is always in a sitting position, which minimises mistakes or slowdowns caused by filing fatigue. The other feature of the Kard-veyor 380 is the limited space of 20 square feet that it requires (Stallard & Terry, 1984:233-234).

The Kard-veyor system can save office space by up to 50 percent and it is capable of storing double the amount of files compared to a conventional system. It can accommodate the following: letters, legal documents, books, computer tapes, x-ray files and bulk materials. The system has shelves that
can be removed and is a modular system that is easy to install. Kard-veyer is user friendly and can be used almost anywhere. The rails can be installed according to the structure of the venue or facility for optimum mass distribution (Stallard & Terry, 1984:234-235).

2.12 INDEXING

According to Littlefield et al., (1978:174), indexing refers to the process of classifying items. In filing, the indexing scheme must be built into the original design of the system and then applied when deciding where to file documents.

An index may be described as a “finding tool”. It furnishes a key as to the manner in which information or materials are arranged. For any given system, a choice is made from several possible indexes. In some instances, the subject name is used as an index name, whilst the name of the customer or the point of destination might be found more useful.

An indexing system should be flexible in order to permit changes when needed. In most manual applications, and to a lesser degree in automated operations, the collection of information keeps growing or changing, resulting in a corresponding growth and/or change of the index (Mills & Standingford, 1978:74; Stallard & Terry, 1984:241; Worall, 1971:38-39).

According to Denyer (1969:385), confusion may occur between the meanings of “classification” and “indexing”. Classification refers to the method of filing whereas indexing is the method used for making reference to the record filed. According to Whitehead (1976:158), an index is a device for finding the position of records in a system quickly and easily.

Cross-indexing is used when more than one subject is covered and where several indicators are used to find a specific file or folder. A report dealing with marketing and sales could cover a broad spectrum of related subjects such as segmented clients, future prospects, sales budgets and geographic
areas. Cross-indexing provides a method for filing and retrieval of such reports. In most offices, a basic classification index is essential and provides a categorical grouping of subjects with appropriate and relevant detailed sub-headings.

It is important that such a system be kept updated with new/additional information for new entries as and when they occur. The main purpose of cross-indexing is to show where all documents are stored and how they are indexed, serving as an inventory of all relevant files as well as a control to reduce duplication of filed material (Stallard & Terry, 1984:243).

Visible indexing is used with both cards and loose leaf systems in trays, panels and drawers. Cards or sheets are attached to a holder in such a way that the edge of each card or sheet projects the width of one line beyond the edge of the next one. In this way, the index line on every card or sheet is distinguished without having to be removed from the holder (Denyer, 1969:387).

Blind indexing refers to non-visible indexing. Records are filed behind guide cards with each guide housing a certain amount of cards. Searching for the record in the appropriate location as per the relevant guide card is the only way to find records. Non-visible card records should have a reasonable amount of guide cards in order to facilitate rapid handling of the work. The norm is one guide to every 10 – 15 cards.
2.12.1 Different types of card index systems

- Card index

Figure 2.6 illustrates a card index system with colour coded guide cards.

![Card index system](image)

**FIGURE 2.6: Card index system**

The card index consists of a drawer containing post-card size cards in an upright position. These cards are filed in alphabetic order and each letter of the alphabet is separated from the other by means of a colour-coded guide card. This is a popular index system and can be used in any organisation. Clients’ or creditors’ names with their addresses and contact details appear on the cards in alphabetic order (Mills & Standingford, 1978:74-75; Steenekamp & Bekker, 1987:309; Worall, 1971:40).

- Automatic card index

Figure 2.7 illustrates a desk which contains an automatic card index system.

![Automatic card index](image)

**FIGURE 2.7: Automatic card index**
The automatic card index is a revolving mechanism holding trays of cards that can be operated by push button control. This gives the clerk quick access to up to 1000 cards (Mills & Standingford, 1978:75).

- **Wheel index**
  Figure 2.8 illustrates a wheel index system whereby the cards can be rotated to the relevant letter that needs to be located.

![Wheel Index](image1)

**FIGURE 2.8: Two types of wheel indexes**

The cards are kept together with metal needle pins in a circle, forming a rotating wheel that enhances the visibility of each card. The wheel index is usually portable (Denyer, 1969:390; Mills & Standingford, 1978:78-79; Steenekamp & Bekker, 1987:310).

- **Visible book index**
  Figure 2.9 illustrates a visible book index, where letters of the alphabet are available on the right side of the page.

![Visible Book Index](image2)

**FIGURE 2.9: Visible book index**
Visible index cards can also be kept in the form of a book. It consists of a loose-leaf binder in which paper pages are arranged in a corresponding manner to the cards in the visible card index. Every few pages are marked with a letter of the alphabet (Mills & Standingford, 1978:78).

- Page index
  When using a page index, loose pages are put together in a book format in alphabetical order.

- Strip index
  Figure 2.10 illustrates a strip index system in a book form.

  ![Strip index](image)

  **FIGURE 2.10: Strip index**

Strips of stout paper or card are fitted in any preferable order into a frame. It can be withdrawn and re-arranged without complications, if necessary. Each strip is allocated to one item of two or three lines. Frames can vary in form to suit different purposes, i.e. fixed to a wall, made up in book form or arranged on a rotary stand, which can rotate for ease of reference to the required portion of the index.

The strip index is very flexible and can be modelled to the card index system, with the use of colour codes and can be a rapid source of basic information such as addresses and telephone numbers (Denyer, 1969:389; Mills & Standingford, 1978:76; Worall, 1971:40).
Visible-edge card index

Figure 2.11 illustrates a visible-edge card index system. The numbers 1 to 3 indicate the following: 1 Record card, 2 Visible edge and 3 Signals.

![Visible-edge card index system](image)

**FIGURE 2.11: Visible-edge card index system**

The strip at the edge of each card remains visible and is used for the relevant reference heading whilst the remainder of the card is left blank for record purposes. These cards can be kept in trays or cabinets and can be arranged in alphabetical, numerical or any other chosen order (Hackett, 1984:91).

Edge-punched cards or slotted cards

![Edge-punched index cards](image)

**FIGURE 2.12: Edge punched index cards**

Figure 2.12 illustrates the round holes that are punched at the edges of cards and then converted into open-ended slots to indicate key features of or characteristics of the person or company to whom it relates. Metal rods can be used to separate cards that have to be located from the rest, lifting it from the container. The rest of the cards will automatically be
left behind. The holes can alternatively be punched in the centre of the cards, and elongated when a code position is necessary. The cards are then held in a frame and the specific cards that need to be located will be revealed but will not fall free from the pack.

This method can be used for a variety of subjects such as sales, marketing, staff or budgets and each segmented into required headings. Staff records can be defined according to age, gender, grade, experience, etc. and then cards can be coded with the relevant staff/employee number as reference (Hackett, 1988:92-94; Mills & Standingford, 1978:80-81).

- Staggered card index

Figure 2.13 illustrates a staggered card system.

![Staggered card index](image)

**FIGURE 2.13: Staggered card index**

This method refers to an arrangement of vertical index cards arranged in groups so that the reference headings on the corner of a group can be seen at once. This system is popular for use with ledger cards to facilitate extraction of accounts for posting of entries (Mills & Standingford, 1978:80).
2.13 FOLLOW-UP SYSTEMS

All offices use a form of follow-up system. Some offices refer to this system as a reminder or tickler system. The purpose of this system is to remind staff that something needs attention and must not be forgotten. Follow-up systems are not only used for sending of documents or requested files but also for the returning of “out files”. One of the main problems experienced in offices is the tendency for staff to keep files and documents longer than necessary or even misplacing it. This causes serious difficulties for the filing clerks, since correspondence arrives constantly and files not returned quickly become out of date. Letters awaiting a file’s return must be stored in a temporary file (Hackett, 1988:104, Kahn et al., 1969:48; Lee & Brower, 1968:101; Whitehead, 1976:151).

A “file requested” day book is a follow-up method employing a register. The register must be completed on file removal and contains all relevant information regarding the location of files removed and their return dates (Whitehead, 1976:150).

2.13.1 File request book

The File Request Book is used mostly for small filing systems. The clerk or secretary will scan the request book on that specific day. She/he will follow up on files that need to be distributed and files that have been distributed must be returned on a given date. Any overdue files that have not been returned on the due date are also listed. All staff concerned are contacted and requested to return the overdue file or new instructions are made on the staff member’s behalf (Whitehead, 1976:151).

2.13.2 Requisition slip/card

With the requisition slip system a requisition card is placed in the pocket where the record or documentation is removed. A duplicate copy of the requisition card may be placed in the tickler file where the return date for the record is revealed (Kahn et al., 1969:48).

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2.13.3 Diary
A diary can be quite sufficient as a follow up system for small offices. A diarised note will remind filing staff on a specific date that documentation requires feedback or another action. The diary should contain a record of the name of the person and the file that requires an action on a specific day. A daily inspection of the diary will ensure that all files are distributed to the correct people as required. The same procedure can be followed for the returning of the files (Hackett, 1984:104).

2.13.4 The tickler system
The tickler system is used in most offices to provide a method of securing the return of files and other regular check-up procedures. For example, the financial director might wish to review the reconciliation accounts on a monthly basis and might therefore request that the files on the reconciliation accounts be sent to him as a matter of routine on the third day of each month. This request would be recorded in the tickler system and is supposed to “tickle” the filing clerk’s memory on the appropriate day (Hackett, 1988:104; Leffingwell & Robinson, 1950:197; Whitehead, 1976:151).

Figure 2.14 illustrates a tickler file with February as the active month.

![Tickler System Diagram]

**FIGURE 2.14: Tickler system**
A tickler system consists of 12 guide cards labelled with the name of the month. In addition to these 12 guide cards, 31 secondary guide cards, numbered 1 to 31 are employed for notes or actions of the current month. These are written on the secondary guide cards and dated with the day on which the action must be taken. These secondary guide cards are then filed behind the appropriate guide card. On the specified day, all the cards will be drawn from the tickler file and be acted upon. The tickler file only works if it is checked on a daily basis (Whitehead, 1976:152).

In a daily follow up system, there is a file requisition slip that is placed in the space where the file must be retrieved. This means that a file that was removed on the 20th for five days must be returned on the 25th. Should a file become overdue, the request slip will be put into the “tickler” system on the 26th indicating that it is overdue. Should the file be returned in advance, the request slip would be removed and destroyed. Should it occur that the file is not returned at all, the employee who removed the file will be contacted to return the file and notes of actions taken will be made (Whitehead, 1976:152).

Certain procedures are done at regular intervals so that, for example, “dead” files can be removed or destroyed. The monthly card system allows such routine work to be evenly distributed throughout the entire year. For the sake of convenience, routine matters are moved to months when office work is not as demanding as other months (Whitehead, 1976:153).

A card file may also be utilised as a tickler file on which notations are made; alternatively, memorandums could be placed loose behind the numbered date cards (Place & Hyslop, 1982:127). Transaction files may be required on the date of the transaction. In offices where certain activities occur on specific times or days, transaction files are used. Individual files are maintained in order to keep the individual records in an accessible location in a file folder. Indexes are not required for these types of files (Bhatia, 1998:61-62; Johnson & Savage, 1968:355; Littlefield et al., 1978:176).
2.13.5 Out markers or absent folders

When one administrative staff member has to manage a filing system that is used by more than one person, it becomes problematic to keep track of files that have been removed. Employees who are in charge of a filing system in a private office normally do not use "out markers" every time they remove a file. Out markers will only be used under the following circumstances:

- An employee from another department.
- An employee who needs to take a certain file out of the office area, or to an external meeting.
- An employee needs to keep a certain file for a long period of time to initiate a report.

Should a file be removed as mentioned above, or a document is removed out of a file, it must be marked with an "out marker" (Atkins, 1980:60; Bhatia, 1998:67-68; Denyer, 1969:381; Diamond, 1995:137; Johnson & Savage, 1968:361; Leafe, 1974:18; Steenekamp & Bekker, 1987:313-314; Watcham, 1972:78; Whitehead, 1976:150). According to Kahn et al., (1969:46) "substitution cards are used when individual papers are borrowed; out-folders and out-guides are used when an entire folder is removed".

Figure 2.15 illustrates an out-card or substitution card for files that have been removed from the system.

![Figure 2.15: Out-card or substitution card](image-url)
Lines can be drawn on the out-card which will indicate one of the following:

- The destination of the file.
- The initials and surname or department of the borrower.
- The date and time when the file was removed.
- The date and time on which the responsible person followed up on the file.

Out-markers make it possible to retrieve or find files that have not been returned. When a file is returned or retrieved the “out-card” will be removed and the information on the card pertaining to the previous file can be removed. This out-card can then be re-used (Johnson & Savage, 1968:361; Terry & Stallard, 1980:197).

Out-cards with a pocket for request slips can be effective in terms of time saving. The person requesting the file must complete a form that contains all relevant information. This form is then inserted in the pocket where the original file is removed and saves time. When the file is returned, the out-card is removed and the form destroyed (Diamond, 1995:137; Whitehead, 1976:150).

Figure 2.16 illustrates an out-folder that is used when a file is removed by a staff member.
This out-folder is printed on one side to record the information regarding the removed file. A pressboard guide with a tab printed "OUT" is placed in a pocket to hold up the single charge-out slip. This method serves as a record and a marker for the files or documents that were removed (Johnson & Savage, 1968:361; Terry & Stallard, 1980:197).

2.13.6 Out-guide

Figure 2.17 illustrates an out-guide for the transfer of records from one person to another. This method is used when files need to be transferred from one person to another. All relevant information pertaining to the file or documentation is attached to the out-guide (Terry & Stallard, 1980:197).

2.13.7 Multiple charge-out forms

Figure 2.18 illustrates a multiple charge-out form, which is used when documents and files are routed through more than one department or staff member.
When files or documents are re-routed for the second time, all the information will be recorded on a multiple charge-out form. A copy will be filed in a tickler file for follow-up purposes. A copy will be attached to the material that allows every individual to delete his/her name after completion and then forward it to the next person on the route list. The top copy is then sent back to the issuer and retrieving department and the other copies are forwarded to the next person on the list. When the copies are retrieved, they are added to the tickler file copy. There will be a record of who received the material without clearance through the storing and retrieving department (Terry & Stallard, 1980:197-198).

2.14 METHODS OF FILING

Different methods of filing are used; the choice of which depends on requirements and the filing equipment at hand. The five most commonly used filing methods are discussed below.

2.14.1 Horizontal filing

Horizontal filing is the most common method for storing documents and files. The files or documentation are physically placed on top of each other. These documents or files could also be stacked into a pigeon hole filing system as shown in Figure 2.19. The pigeon hole filing system consists of 24 compartments. On each compartment a slip is added that indicates a letter of the alphabet, for example, ABC. The letters X, Y, and Z are combined on one folder because not many names begin with these letters. The letters which is received is normally folded into the applicable size of the compartment and then inserted.

FIGURE 2.19: Horizontal filing system
When a document is received from an employee, it is filed in the compartment that bears the individual’s initials. This system is suitable for internal posting by using departmental names, for example, Creditors, Debtors, etc. (Mills & Standingford, 1978:60; Steenekamp & Bekker, 1987:295-296; Terry & Stallard, 1980:178). There are numerous other methods of horizontal filing such as the spike file or wire file, whereby documents are pushed into a sharp pin and pushed down to the bottom of the base plate. All the documents that were received first will be at the bottom, and the documents received last will be at the top end of the pin (Bhatia, 1998:69).

2.14.2 Lateral filing

Figure 2.20 illustrates a lateral filing system in a closable wooden cabinet.

![Figure 2.20: Lateral filing system](image)

Lateral filing normally takes place when files are bound together and filed in a hanging file. The files that are bound together are never separated. A second removable file will be put into the hanging file. Should the need arise to remove a document, it will be removed out of the second file within the original hanging file. All filing occurs from the top end of the filing cabinet or the front side. On each file a slip is attached which displays the heading of the file (Korf, 1995:98).

When an organisation has a problem with space, this filing method is appropriate. No space is wasted for the opening of doors or employees
needing to kneel down to retrieve a file. The tracks where the files are hanging can be installed right to the roof, necessitating the use of step ladders and which means that more files could be added or kept in less space. All the files must be classified properly, in order to ease the process of retrieving files. This method is also cost effective. This system is so simple that a shelf can also be used for the purpose of hanging files (Keeling & Kallaus, 1996:523; Terry & Stallard, 1980:176).

These files could be placed in an upright position in any corner by just adding or fixing iron rods. Lateral filing is not time consuming in terms of retrieving or filing. It is a user-friendly system because no drawers are opened or closed regularly that could cause unwelcome noise. Methods that are suitable for the lateral filing system are alphabetic, alpha-numeric and numeric. The term lateral is used to describe files that are arranged side by side, usually on shelves (Terry & Stallard, 1980:176).

2.14.3 Tube method

Figure 2.21 illustrates the tube method, which is used for the filing of building plans used by architects.

![FIGURE 2.21: Tube method](image)

In certain cases, documents are too large to fit into a normal filing system. For this, the tube method was developed whereby large documents are rolled up and stored in a tube. These tubes were made from hard cardboard, metal or plastic. To identify the document in the tube, the name of the document is
written on the lid of the tube (Korf, 1995:99). The tubes are placed into a specially designed space that is deep enough for the tube to fit in. The tubes may be placed and stored in an upright position or on its sides. Businesses such as builders, architects or municipal offices could use the tube filing method (Steenekamp & Bekker, 1987:296-297).

2.14.4 Vertical filing
In a vertical filing system, the files are suspended by hooks and folders are stored vertically in cupboards or shelves appearing end to end. Less floor space is used with vertical filing than with lateral cabinets of the same capacity. All documents are placed in files or folders and then placed vertically, upright or hanging in a cabinet or drawer. The folders or files can be arranged alphabetically, alphanumerically or numerically (Bhatia, 1998:77; Korf, 1995:99; Mills & Standingford, 1978:69; Steenekamp & Bekker, 1987:296; Worrall, 1971:43).

2.14.5 Circular or rotary filing
The files used with circular filing are in most cases lever arch files or folders that are arranged on tiers of circular shelves which rotate independently on an axis. Rotary filing enables the filing clerk to turn the tier until the required file is at hand. Circular filing units are often referred to as carousels (Harding, 1990:113, 116).

Figure 2.22 depicts a rotary filing system.

![Rotary filing system](image)

**FIGURE 2.22: Rotary filing system**
2.15 FILING EQUIPMENT

2.15.1 Folders

According to Gregg et al., (1968:160) “a piece of heavy paper, generally manila, folded so that the back part extends about one-half inch above the front is called a folder”. It is essential to use folders to hold papers upright as loose pages will not remain straight between the guides. Folders and guides are made with tabs and cuts in different positions. These folders are normally scored at the bottom edge to allow for expansion as the number of papers to be filed increases. Some folders only have one score while others have several scores that provide a flat surface at the bottom of the folder as it fills (Gregg et al., 1968:160).

Folders often have fasteners to prevent papers from falling out. Tabs are added to folders for easy identification and to subdivide different sections. The tab could extend across the entire top of the folder (full cut), across a third of the folder (third cut), or across a fifth of the folder (fifth cut). According to Bhatia (1998:78), “the folder is the foundation of the vertical filing system”.

Folders are manufactured from different types of material such as manila, kraft, jute or pressboard. In certain cases, plastic folders are used which increases the durability of the folder. Certain folders contain inner pockets or clasps to fasten the documents and prevent it from falling out (Place & Hyslop, 1982:202). An example of a clasp to fasten papers in a folder is the “shanno clip”. Two types of folders may be used, namely individual and miscellaneous folders as illustrated in Figure 2.23.
As soon as five or more letters have accumulated relating to a single
correspondent or subject, an individual folder can be opened. The name of
the correspondent or subject is usually typed on a gummed label and fixed to
the tab or back projection of the folder. Labels are available in perforated
rolls or strips and a variety of colours. Individual folders are placed in
alphabetic order after each guide in the same order used in filing cards for a
card index (Gregg et al., 1968:160-161).

Miscellaneous folders are mostly used to keep correspondence that is not
very active. Miscellaneous folders are used until the individual folders are
needed. All the documentation in each folder is arranged alphabetically.
Should more than one document relate to the same correspondent or subject,
they are arranged according to the date. The folders are then filed in their
respective alphabetical subdivisions (Gregg et al., 1968:161).

According to Place and Hyslop (1982:129), “there should be one
miscellaneous folder for each primary guide; when there are five or more
papers for a number, an individual folder should be made”.

2.15.2 Suspension folders

Figure 2.24 depicts suspension folders.

FIGURE 2.24: Suspension folders

Suspension folders are also referred to as hanging folders and are fitted with
hooks that clip onto rails fixed onto the sides of a drawer to prevent folders
from falling through. This method uses a lot of space but is relatively safe,
because chances of a folder falling through under other folders are limited. All correspondence and documents are filed vertically in these file folders and the index strips of suspension folders are usually visible (Bhatia, 1998:80; Denyer, 1969:396; Hackett, 1988:83; Whitehead, 1976:155). According to De Vries (1983:52), “since two hanging folders take up ½ inch of space, a dozen of these folders would take up 3 inches of space, robbing you of more drawer space than you save by removing the follow block”.

2.15.3 Manila folders
Manila folders are used for many purposes but mainly for the filing of documentation. These folders are manufactured from a hard type of cardboard or paper, which cannot easily fold. On the rear side of the folder a protruding strip is used for writing the name or number of the client. It is always kept straight up so that the number or name is always visible (Steenekamp & Bekker, 1983:103).

2.15.4 Folder or cardboard files
Folders are usually manufactured from hard paper or cardboard material. A red tape in the middle of the file, used to tie documents to the cardboard, is commonly used with folding files. There are numerous types of folders and some contain tabs for the file names on the top end of the file. Folders with two metal strips at the top end of the file and support hooks on both sides, are also commonly used. The metal strips prevent paper from falling out and are usually used with hanging files in metal or wooden drawers.

Plastic top end slides can be used to slide into the metal strip of the file. These slides provide additional space for easy retrieval of information. Folders are available in a wide variety of styles and materials in different positions: triple-scoring at the bottom for expansion, adjustable signals attached to tabs for spotlighting significant information and suspension on metal frames to keep papers neat (Bhatia, 1998:73-74; Korf, 1995:102).
2.15.5 Customised hard copy folders (3 folds)

Figure 2.25 illustrates a customised hard copy folder opened and folded.

![Customised hard copy folder](image)

**FIGURE 2.25: Customised hard copy folder**

At the Vaal University of Technology, customised hard copy folders are used. These folders are made off 200 grams tokai blue board and consist of two scores. The left hand of the folder is 24 cm wide and the centre of the folder is also 24 cm wide, while the right side of the folder is only 16 cm wide (O'Grady, 2006). These folders are also used in conjunction with suspension folders (refer to Figure 2.24) and plastic pockets, which in this case, safeguard the files/documents from tearing.

2.15.6 Spike files or wire files

Figure 2.26 illustrates a spike file whereby papers are pressed through a spike.

![Spike file](image)

**FIGURE 2.26: Spike file**
The spike file is made of a sharpened steel pin approximately 15 cm long and mounted onto a piece of wood, plastic or metal as part of the base. Documents are gathered together on this steel pin. This method is very untidy and documents are often damaged, to the extent that it becomes impossible to read certain words. When a certain document is needed, the whole stack of documents must first be removed to find it (Bhatia, 1998:69; Eksteen, 1994:15-1; Hackett, 1988:83; Korf, 1995:102; Steenekamp & Bekker, 1987:306).

2.15.7 Box files

Figure 2.27 illustrates a box file that is used to safely store documents.

![Box file](image)

**FIGURE 2.27: Box file**

The box file is essentially a wide file that can accommodate A4 and A5 size documents. A variety of these box files are available and prevent files from falling over and gathering dust. Box files normally contain a clip mechanism to hold the documents. The box also has a hard cover which opens on the broader side of the file (Bhatia, 1998:72; Hackett, 1988:84; Korf, 1995:103; Whitehead, 1976:154).
2.15.8 Concertina files

Figure 2.28 illustrates a concertina file. As indicated, the file is divided into sections: one side indicates a letter of the alphabet and the other side the day of the month.

![FIGURE 2.28: Concertina file](image)

The concertina file is in the form of a school bag with numerous compartments (separate pockets) that are flexible. These compartments are numbered alphabetically or numerically. Concertina files are also divided into months or years and are, in most cases, bound with a strap or ribbon. This method of filing is mostly used for correspondents or accounts. Concertina files are also useful for a temporary filing system (Atkins, 1980:59; Denyer, 1969:395; Korf, 1995:103; Steenkamp & Bekker, 1987:306; Whitehead, 1976:154).

2.15.9 Wall files or clipboard files

Figure 2.29 illustrates a clipboard file that is mostly used outside the office by staff such as site managers.

![FIGURE 2.29: Clipboard file](image)
These files are used when notes are made or documents need to be kept together without being blown away by the wind. The paper notes or documents are clipped together with a steel clip which is attached to the wooden, plastic or metal board and this serves as a file. These files can be attached to a wall or panel hanging from a nail (Hackett, 1988:83; Korf, 1995:103; Steenekamp & Bekker, 1987:307).

2.15.10 **Lever arch files**

Figure 2.30 illustrates a lever arch file which is one of the most common file types used in HEIs.

![Lever arch file illustration](image)

**FIGURE 2.30: Lever arch files**

According to Denyer (1969:395), lever arch files are the most common files in general use in offices and can be described as stout cardboard folders in which metal arches operated by levers are used to hold pages securely in place. Lever arch files are available in different sizes and colours, although grey files are the most cost effective. It is also available in plastic, although these are considerably more expensive than its cardboard counterparts. When a page is inserted into the file, the lever is moved upwards which opens the springs or metal arches and after inserting the paper, the lever is pressed down. Documents are filed by punching two holes in the centre of the document using a punch. The lever arch file is spring loaded and also contains a stainless steel flat bar to ensure that the hooks do not become loose and documents are filed alphabetically or numerically (Atkins, 1980:59; Bhatia, 1998:75; Denyer, 1969:395; Hackett, 1988:83; Whitehead, 1976:154).
2.15.11 Visible-index files

Figure 2.31 illustrates an index file with visible strips.

![Visible-index file](image)

FIGURE 2.31: Visible-index file

These files consist of visible strips or tabs with small signals attached to it. It is manufactured out of plastic or celluloid and can display large amounts of information. Records can be located speedily and signals are made to represent classification, dates and other significant information through both colour and position (Littlefield et al., 1970:320; Whitehead, 1976:154).

2.15.12 Vista fan files

Figure 2.32 illustrates a vista fan file with colour tabs on the right side.

![Vista fan file](image)

FIGURE 2.32: Vista fan file

The Vista fan file is an extremely compact system and can easily be inserted into a commercial traveller’s jacket pocket. It can open and reveal the names and records of fifty customers in a particular area. This system can
store 2,000 records in a small tray which can be placed on the seat of a traveler's car. It is possible to update records after each call before driving off (Whitehead, 1976:155).

2.15.13 Shannon files

Figure 2.33 illustrates a shannon file whereby new documents are added on top.

![FIGURE 2.33: Shannon file](image)

A shannon file can accommodate approximately 400 to 500 documents. The documents are safe from falling out because they are nailed to the Shannon file. The documents are also well protected from dust, soil, air and sunlight by the strong cover. This method also requires less space and files can be separated by means of dividers (Bhatia, 1998:76-77).

2.15.14 Letter sorter

Figure 2.34 illustrates a letter sorter that is used to sort papers before it is filed.

![FIGURE 2.34: Letter sorter](image)
The letter sorter is a handy tool that enables the fast and effective sorting of documents or letters. The sorter is marked from A to Z and by numbers from 1 to 31 for the days of the month. The sorter is also marked from January to December and Monday to Friday (Korf, 1995:108).

2.15.15 The tray system

Figure 2.35 illustrates the tray system.

![Figure 2.35: The tray system](image)

The purpose of using trays is to organise workflow and prioritise work in order to be more effective and to optimise available time. The use of different trays provides for the sorting of documentation in various categories, for example from most important to least important. The use of trays creates more work space on the employee’s desk. The tray system prevents the random piling up of documents and other paperwork set aside for filing. The different types of trays that can simplify the identification of documentation for specific attention, are as follows:

- The “in” tray
  This should be used for incoming mail and internal correspondence. Urgent or important mail should be marked or placed in separate folders for immediate attention. Different folders can be used, for example, for signature, authorisation or special attention.

- The “pending” tray
  The pending tray contains work in progress that cannot be dealt with immediately due to some problem such as signatures required or incomplete documentation. This tray should receive continuous attention.
in order to avoid the unnecessary piling up of paperwork. Documentation in the pending tray should be dealt with within 48 hours.

- The “out” tray
  It contains documents that have been completed and signed off and are ready for distribution or mailing. A separate folder marked “mail”, should be placed in the out tray and contains all items ready for mailing. The mail department should empty the tray and distribute documents that are ready for distribution regularly.

- The “reading” tray
  The reading tray is mostly used by senior staff members, managers and directors. It contains magazines, financial gazettes, newspapers and internal circulars and memorandums. Distribution of memorandums normally takes place in a predetermined manner according to company policy (Gleeson, 1994:40-41).

### 2.16 TRADITIONAL MAILING SYSTEMS

According to Bhatia (1998:131) “every organisation receives and sends out written communication through messengers and post offices that is known as mail”. According to Denyer (1982:173), “incoming mail is normally the major input into the office system, generating and maintaining its activities”.

Offices within smaller companies employ a clerk or secretary to open post and distribute mail to the various sections. Large companies use a central mailing department to conduct this task. Post for large companies is delivered directly to the central mailing department where it is sorted. All collected mail from the Post Office, as well as internal mail, is delivered to the central mail department which is responsible for the receipt and dispatch of all mail and post received (Hackett, 1984:133; Steenekamp & Bekker, 1983:39; Worall, 1971:26).
The mail department normally consists of three sections, namely incoming mail, interdepartmental mail and outgoing mail.

2.16.1 Incoming mail

All mail received must be dealt with as soon as possible for prompt distribution purposes. Companies normally use messengers to deliver internal mail. Very large organisations use mail boxes or bags which are supplied by local post offices. An employee of the internal mail department will collect the mail on a regular basis.

Any person may rent a mail box at their local post office. The mail box has two keys; one is given to the person hiring the box and the post office keeps the other key. Any person that has a key may collect the mail in the box at any time. In the case of large organisations, special arrangements are made with the post office so that the mail bags are locked with padlocks and only authorised persons may collect the incoming mail at the post office.

The post office is often in possession of duplicate keys to the bag. In case of a large organisation, the bags, keys and padlocks are usually supplied by the organisation (Hackett, 1998: 133). At the post office, employees place all the envelopes and packages addressed to the organisation into the bags which are then locked before company representatives collect it. This ensures that no mail is removed from the bags before the destination is reached. When the mail is actually received in the mail department, the bags are unlocked and the contents thrown out on a table.

The mail is sorted according to department and could be classified into four categories, namely personal mail, routine mail, sealed envelopes and unsealed envelopes (Campbell, 1992:5; Denyer, 1969:449-450; Steenekamp & Bekker, 1987:218-219).
2.16.2 Distribution of mail

After the sorting process, all letters or documents are forwarded to their respective departments. Trays are used to deliver mail to the various departments. If one letter is meant for more than one recipient, an envelope with all the relevant names on it is used to circulate the letter. When one recipient is finished with the letter, he/she will draw a line through his/her name and send it on to the next recipient on the envelope. In this manner all the relevant employees will receive the letter (Terry & Stallard, 1980:215).

Routing slips may be used for mail that is for the attention of more than one employee or department. A routing slip is compiled containing the sequence of employee names that should receive a single letter. When each employee is done with the letter, he/she will initial the route slip in line with his/her name and then send it off to the next employee on the route list. If the letter is urgent, copies will be made and sent off to the various employees in order to reach them all simultaneously (Watcham, 1972:68).

Individual mail may be sorted in the following categories: express mail, certified mail and registered mail; newspapers, magazines, advertising material, catalogues and packages. When important documentation or mail is received, it is recorded in a special register.

2.16.3 Interdepartmental mail

Interdepartmental mail refers to all correspondence moving internally from one department to another. Internal post is normally identified by means of the company logo on all memoranda. Some large companies have specially designed interdepartmental envelopes that are used repeatedly.

In smaller companies, less important internal memorandums are folded double and stapled in the middle. The employee's name and department is written on the folded side before the memorandum is distributed. This method saves costs because no envelopes are required.
2.16.3.1 Using the “chain” envelope

Figure 2.36 depicts the front and back sides of an internal chain envelope used to distribute internal mail. A chain envelope can accommodate an A4 size document, is usually brown of colour and can endure repeated usage.

![Internal Office Mail]

FIGURE 2.36: The chain envelope

The exterior of the envelope contains boxes for the employee’s name, department and signature. After an employee has taken cognisance of the contents of the envelope, the same envelope is used to send the internal mail to the next employee. Each employee will draw a line through his/her name after he/she has finished with the contents of the envelope. Should the chain envelope not be in circulation, it can be kept in a drawer.

If the contents of the envelope are confidential, employees can seal the envelope with the string attached, with a gummed label affixed over the flap or with an elongated flap that is tucked inside. The envelope can then be sent on its way via internal mail (Watcham, 1972:69).

2.16.3.2 Messenger services

Large organisations often make use of messengers to distribute their internal mail between departments or sections. Interdepartmental mail can vary from memorandums and files to reports and instructions. The mail department makes use of mail messengers that collect and deliver internal mail at random or at specified intervals. Every department has an in- and
out mail tray that is placed in an office area suitable for mail collection and
delivery. A central mail collection point is useful to allow the messenger to
continue with his/her duties without delay (Steenekamp & Bekker,
1987:227-228).

2.16.4 Outgoing mail

Every item of mail that leaves the organisation reflects the image of the
organisation. Employees compose rough drafts of correspondence
including replies to incoming letters and independent letters. Statements
for creditors at each month end also require a cover letter reflective of the
corporate image. Once draft letters have been composed they should be
sent to management for scrutiny, approval and signature. In certain cases,
more than one line manager will scrutinise a letter or document before it is
finally approved and signed (Eksteen, 1984:10-4; Hackett, 1984:134;

In very large organisations, a central control mechanism is used for
incoming and outgoing mail. All mail should ideally be collected or
delivered at regular and pre-determined intervals in order to prevent
congestion. The mail collection schedules are normally well known by all
departments within the organisation. The deadline should not exceed 15:00
so that the mail department has adequate time to sort out all post on the
same day (Denyer, 1969:458).

2.16.5 Equipment used in the mail department

A franking machine can be hired from the post office for the purpose of
stamping letters. It can print any design on the letters that suits the
organisation. This machine simplifies the stamping operation and saves a
tremendous amount of time and labour. A franking machine must be paid
for in advance at the local post office (Steenekamp & Bekker, 1987:226).

Two types of franking machines are found, namely manually operated
franking machines whereby the envelope must be pushed into a running
wheel and electric franking machines whereby the envelopes are put on a running belt and automatically stamped (Hackett, 1984:137).

Postage stamp fixing machines are used by various organisations in order to prevent staff from having to moisten and stick stamps manually onto envelopes. Stamp fixing machines are similar to hand numbering machines and use rolls that are filled with stamps by the post office. A record of the stamps used is kept by a counter on the machine. When the machine is positioned over the envelope the handle must be pressed so that the stamp is ejected, moistened and stuck in place.

Modern franking machines can hold up to seven rolls of stamps of different values. These machines can also calculate the value that was used for each envelope. In order to prevent theft, the post office can reload the machine with stamps that are perforated with symbols unique to the organisation for identification purposes. This discourages employees to use company stamps for personal mail. As a further preventative measure, the machine can be locked when not in use (Watcham, 1972:70).

In very large organisations, it often becomes time consuming and costly to open envelopes manually and an electrical envelope opener can then be used to expedite the opening process. The electrical opener cuts off a very narrow strip from the edge of the envelope to ensure that the envelope can be preserved for future reference. The machine is designed to open any size of envelope (Denyer, 1982:174; Steenekamp & Bekker, 1987:222; Watcham, 1972:67).

Letter and parcel scales could be used to ensure that the fee for letters or parcels was charged according to its actual mass, as required by the local post office (Steenekamp & Bekker, 1987:229). Letter folding machines were commonly found in organisations where huge quantities of mail such as letters, invoices, accounts and price lists were regularly sent out. Letter folding machines were electrical and could fold pages and feed envelopes
automatically. The place where the page had to be folded could be set to suit a specific envelope sizes (Steenekamp & Bekker, 1987:225).

Date and time-recording machines capture the time and date of outgoing mail and provide a receipt with the dispatch of the mail (Steenekamp & Bekker, 1987:223). Addressing machines were very effective for printing of addresses on envelopes for local businesses or clients. An addressing machine could save the organisation tremendous amounts of time and manpower especially when invoices or statements were sent out. The Elliott Address Machine and the Addressograph were available on the market to be used for large quantities of mail (Gregg et al., 1968:112; Steenekamp & Bekker, 1987:225).

2.16.6 The mail room

An important factor in mail management is the layout of the mail room. It should be designed so that the proper equipment is used and positioned correctly to enable the proper sequence of operations. Too often the mail room is crowded and the flow of mail is disorderly. Separate routing should be provided for incoming and outgoing mail to allow mail to be processed in an orderly sequence.

2.17 E-FILING

In order to be able to obtain a clear scenario as to the contemporary methods of filing and the extent to which paper, processes and procedures were involved, a brief synopsis is necessary as opposed to the conventional methods discussed above.

2.17.1 Synopsis of e-filing

Computerised filing allows the user to instruct the computer to locate and display any data that was stored in memory. Computers are capable of storing large quantities of information, retrievable in printed form or on a display screen or computer monitor. E-files may appear in graphic form and also in alphabetic and numeric characters. The retrieval time for files
2.17.2

varies depending on whether the computer file is available online and the
delay to display it on the screen might be only a matter of seconds. It is
possible to automatically index every significant word in text format and
store it in a computer file.

The first step in e-filing is to create main folders containing related files or
documents. These folder names identify the divisions of work recorded.
The second step in e-filing is to create sub-folders under each main folder.
This will help to sort and store all related documents. These documents or
files can be saved alphabetically, numerically or chronologically.

According to Evans (1989:13-14), the electronic file – whether stored on a
diskette or within the hard disk of the computer – is replacing paper-based
systems of record keeping. All information on a word processor is written
onto an electronic storage medium accessible by the computer workstation
or server. This information can at any given time be recalled and edited
according to user requirements.

2.17.2  Electronic storage media

Electronic storage media that are used to store data entered into the
computer by a user will now be discussed. However, it is necessary to
understand the concepts of data and information. Data is the raw facts that
are captured on a computer system and which is then processed into
information (Wikipedia, 2006c).

2.17.2.1 Magnetic and digital tape drives

not well suited for interactive storage applications, magnetic tape is by far
the most popular backup and archive storage medium in use. Magnetic
tape represents a stable technology at low cost per byte”. A byte is
described as a “group of binary digits or bits (usually eight) operated on as
a unit” (SACOD, 2002:156). The information is transported and stored on
the magnetic strip in the form of tiny dots. All information can then be
transported to the main frame or the data processor via a magnetic strip (Korf, 1995:101). Tape files are commonly used with electronic data processing systems. Magnetic tape must be protected against dust and scratches. It is possible to store the tapes in normal filing systems. It is essential for all tapes that are classified as maximum-security tapes to be stored in a safe or a specially designed magnetic media record facility (Place & Hyslop, 1982: 197-198).

The current standards for personal computer (PC) tape systems are Quarter Inch Cartridge (QIC), Digital Audio Tape (DAT), Digital Data Storage (DDS), Digital Linear Tape (DLT) and Iomega Jaz as discussed below. The QIC is a magnetic backup medium that has been in use for many years. The tapes are made of polyester (plastic) that makes the tapes durable but prone to stretch. Standard data cartridges are capable of storing up to 13 gigabytes (gb) per cassette (PC Technologies, 1988-1999:162-163). A gb is described as a “unit of information equal to one thousand million (10^9 or strictly 2^{30}) bytes” (SACOD, 2000:486).

DAT can be described as a “digital format for magnetic tape that corresponds with digital recording on compact discs. DAT uses a “helical scan” format. Helical scan drives contain two tape heads for reading and writing data to tape. This minimises the time required for backups to be completed” (PC Technologies, 1988-1999:162). DATs are available in 4 mm or 8 mm widths and can accommodate between 2 gb and 12 gb of data.

DAT provides high storage capacity in a small package at a relatively low cost per byte. The current industry standard for DDS-3 can store up to 24 gb of data on a single small cartridge and can also offers massive advantages in terms of increased backup speed with a data transfer rate of more than 7.2 gb per hour by using read-after-write technology. This method allows the drive to record information and validate the written data.
on the fly (this means validation is immediate), therefore eliminating the need for a second validation pass (PC Technologies, 1988-1999:162).

DLT drives use a magnetic tape technology for backing up data on medium to large scale Local Area Networks (LANs). This is a very popular backup method for large organisations such as HEIs that make use of a well established LAN. The DLT tape is half an inch wide and provides backup rates faster than most other tape technologies; the cartridges provide storage facilities for up to 35 gb of data. The Iomega Jaz drive as a backup device is becoming more popular for end-user systems. Iomega Jaz drives provide a maximum of 2 gb of off-line storage space for those who need a less expensive solution for data archival (PC Technologies, 1988-1999:162-163).

2.17.2.2 Diskette drives

A diskette is a good example of long term storage where the medium is magnetic. The floppy disk was the first method of storage before the hard drive and can still be used as a convenient method of transporting, exchanging and storing information, although other media is fast replacing it (discussed later in this chapter).

The diskette rotates at several hundred revolutions per minute (RPM). Floppy drives include 5.25 inch floppy diskettes, 3.5 inch floppy diskettes and micro discs that are used in computers to safeguard information. Older 5.25 inch diskettes and drives are now considered obsolete and many distributors no longer provide software to support 5.25 inch drives. Floppy disc technology allows files to be written electronically in concentric tracks and to be ‘read’ or retrieved for a soft copy display on the computer monitor (Korf, 1995:101).

2.17.2.3 Hard disk drives (HDDs)

A HDD is a fixed disk drive that houses the recording media inside a fully enclosed unit inside the computer container, also referred to as the Central
Processing Unit (CPU). Because the media cannot be removed by the user the drive is said to be fixed, or the opposite of floppy. The HDD is the primary mass storage device and can permanently store significant amounts of information. Millions of characters can be stored on a HDD and the information can be recalled quickly and edited if required. All HDDs use the same method to magnetically encode information on an aluminium platter that is coated with a magnetic medium. Technology has improved to the extent that portable HDDs, enclosed in a caddy that can be slotted into the computer frame, are now available (Korf, 1995:101).

2.17.2.4 Flash Random Access Memory (RAM) hard disks
Modern computers that operate on Windows operating software (OS), are able to make use of flash RAM disks that are extremely fast, robust and can withstand shock. Despite a much higher cost per megabyte (mb) than conventional hard disks, flash drives have gained enormous popularity, not only in the mobile computing market, but also for full-size desktop machines (PC Technologies, 1988-1999:164). Flash RAM is non-volatile memory: when the PC is powered off the contents of the memory are maintained. Flash RAMs are referred to as electronically erasable programmable read only memory (EEPROM memory) (PC Technologies, 1988-1999:95). A mb is described as “a unit of information equal to one million or strictly 1 048 576 bytes” (SACOD, 2000:724).

2.18 E-MAIL
It has become standard practice with organisations to adopt modern technology such as e-mail as opposed to manual mail systems as discussed earlier. E-mail is aimed at reducing the use of paper and expediting cost effective communication processes. Stroman, Wilson and Wauson (2004:184) state that “in many offices e-mail has replaced written memos, drop-by office visits, and even phone calls”.

2.18.1 Background
The origin of e-mail is rooted in the Compatible Time Sharing System
(CTSS) that originated in 1961. With this system, multiple users could log onto the system at a pre-determined time. This was done with remote dial-up terminals that allowed users to store files on disks. This system allowed information to be shared in a new effective way that saved enormous time, resources and effort. This system became so user-friendly that the recipient could log into CTSS from any other terminal and find or print a required file. In January 1965, CTSS mail was introduced by Tom van Vleck and Noel Morris. Morris envisaged the future of e-mailing and Van Vleck improvised the actual code that interfaced with the user. Since then, the progress and developments were unstoppable (Van Vleck, 2005).

2.18.2 The influence of e-mail on corporate paper abuse
According to a spokesperson from Printacom, representing “OKI Drukkers” in South Africa, the volume of paper used in offices has not decreased in spite of the introduction and implementation of e-mail and e-filing. However, this sentiment is not necessarily a fact, since this company’s primary business resides in the selling of printing apparatus. Employees usually print important e-mail documents only once. Documents are printed as draft copies for scrutiny and then reprinted as a final copy. Referring to a survey conducted by Printacom, it was reported that companies spend as much as 3 percent of their turnover on printing costs (Rom, 2003:9).

Van Niekerk (2002) notes that paper consumption continues to increase, despite the promises of new technologies to ensure a paperless office. A consequence of the internet, e-mail and electronic calendars has been a major increase in paper usage. Van Niekerk (2002) reports that e-mail has resulted in a 40 percent increase in the printing of documents.

Horn (2002:2) reported that the findings of a survey conducted in South Africa by Lexmark show that printing costs have increased as a result of internet and e-mail technology. In 2001, Internet cost organisations and users US$75 billion only in printing costs (Horn, 2002:2).
Lexmark predicted that 55 trillion pages would be printed in 1995. The total has increased to 60 trillion pages printed in the year 2002 (Horn, 2002:2). Lexmark expects an increase in printing manufacturing and sales due to the volume of e-mails received and hard copies printed. Horn (2002:2) recommends that organisations should carefully monitor printing costs, equipment life span and maintenance costs. Research has shown that 30 - 50 percent of all printers are not used to their full capacity, whilst almost 30 percent of other printers are over used (Horn 2002:2).

What also adds to this problem is the uninformed use of the “To”, “Carbon Copy (CC)” and “Blind Carbon Copy (BCC)” boxes where recipients of the specific e-mail could alternatively be specified. Quite often the sender of e-mail sends it to global address lists and if these recipients are placed in the “To” or “CC” boxes, it could take several pages to only print out all the names, let alone the message.

Du Pré (2005), stated in a general e-mail to employees that “some employees then print out this header information for their line managers or other staff. The print-out then contains two pages of names, followed by the message or announcement which very often is only one line. This is a tremendous waste of paper. Imagine if such a notice is sent to 800 staff members and everyone prints it out, the notice will consume 1 600 pages which is more than 3 reams of paper. Such a notice, if printed at least once a week for a year equals around 100 reams, which is 20 boxes of copy paper. This costs the institution more than R4 000-00 and finishes off a little forest every year” (The complete e-mail is appended as Appendix C).

2.18.3 Problems associated with e-mail
Management faced the unforeseen concern of employees abusing e-mail for their private use. The statistics over a period of five working days with a total number of 800 employees linked to e-mail show that 231 777 external e-mails were sent and received, indicating 289.7 e-mails per employee per five working days. It must be born in mind that this figure
does not include internal e-mails. In the scanning process of all incoming and outgoing e-mails, 10 000 e-mails were rejected in one working day. The reasons for these rejections include that the e-mails were not work related, files were too large or there were virus related problems (Naude, 2005). These statistics leave one with the notion that appropriate guidance and management processes may not contribute to the effective use of these new technologies.

2.18.3.1 Spam

Spam (also called junk mail phishing or pharming) refers to network abuse and unsolicited e-mails that are sent to numerous contacts resulting in much annoyance and system overloading (Templeton, 2005). Research conducted by Templeton (2005) on the term “spam”, traced the origin to two lawyers from Phoenix who posted a message advertising their services in an upcoming US “green card” lottery. This was the first deliberate mass posting. On 12 April 1994, Canter and Siegel hired a mercenary programmer to write a script to post their advertisement to every single newsgroup on USENET (the world’s largest online conferencing system). This advertisement went to thousands of similar newsgroups and was identified as “spam”.

A company by the name of MessageLabs, who safeguards all Internet users against junk mail and viruses monitored 12.6 billion e-mail messages in 2004 for junk mail (spam). They noted that, although some companies safeguard internet users against viruses and junk mail, 73.2 percent of e-mails received were junk mail. This figure declined from 94.5 percent in July 2004 to 65.1 percent in June 2005. The Gartner research group reported in 2002 that employees spent 49 minutes per day on their e-mail, representing 10 percent of work time spent on e-mail (Von Keyserlingk, 2005:4).

It is essential for modern organisations to have policies in place that will minimise the spam received. One of the most effective methods to reduce
or combat spam is to install a consolidated e-mail filtering solution at the e-mail gateway. Incoming mail is captured and processed through the filtering system by the IT department before it is forwarded to the intended recipients.

### 2.18.3.2 Viruses

According to PC Technologies (1988-1999:215), a virus is “a software program that has the ability to reproduce or expand by modifying other programs or duplicating itself. A virus is also a parasitic program written intentionally to enter a computer without the user’s permission or knowledge”.

Once the virus has found its way unbidden onto the computer’s hard drive, it will then perform an action that may be harmful to the computer’s memory such as duplicating itself to the extent that the memory becomes full or program files are deleted. Viruses are classified by the ways they infect computer systems. A program virus infects executable program files in order to render it useless or even destructive to records. A boot sector virus infects the boot record, the master boot record, the File Allocation Table (FAT) and the partition table of the computer and can seriously damage the functionality of the system. Multipartite viruses have characteristics of both a program and a boot infector (PC Technologies, 1988-1999:216-217). A boot can be described as “the first sector of a data storage device” (Wikipedia, 2006a).

Viruses enter a computer system because of unsafe computer practices such as running programs from unknown sources and allowing unlimited access that invite infection. A virus may disguise itself as something else in order to gain access to a system. Viruses are sometimes referred to as “spyware” and include the following: keyloggers, backdoor Trojans, password stealers, and botnet worms, which can cause corporate data theft, financial loss and network damage. “Spyware installs itself onto a user’s computer by stealth or subterfuge and sends information from the
computer to a third party without the user’s permission or knowledge” (Sophos, 1997-2006b). A particularly damaging virus known as “Melissa”, was notorious for its ability to reproduce by sending itself to every recipient in the e-mail programme’s address book and special anti-virus software had to be designed in order to stop the spread of Melissa (Wikipedia, 2006e).

Sophos is one of many programmes available on the Internet to assist people with viruses and spyware (Sophos, 1997-2006a). One of the most commonly used anti-virus software packages is Norton, which is updated on a regular basis in order to expedite and counteract the spreading of viruses. Licensed owners of Norton can feel secure that the software will vigilantly scan all incoming and outgoing data and any threats that are detected will be quarantined and deleted. The software will prompt the user to perform full system scans at regular intervals to ensure that the computer is free of any viruses. Norton allows the user to regularly obtain live updates on the internet at no extra charge in order to ensure that new viruses can be identified and removed (Sophos, 1997-2006b-c; Wikipedia, 2006g).

### 2.18.4 The effectiveness of e-mail delivery versus the delivery of written records

The use of e-mail delivery has dramatically changed the way businesses communicate and exchange information. The most obvious advantages are the ability to transfer ideas, conduct transactions and convey facts and proposals to a vast number of people easily and instantaneously. Electronic communication is faster, cheaper and adaptable and in many instances, safer and more reliable than printed and written communication. Another major advantage is that electronic messaging can be kept strictly confidential between two parties. Once forgotten, words verbally spoken cannot be retrieved in the same easy manner than an electronic message. Notwithstanding the above-mentioned disadvantages, there is no doubt that electronic communication provides highly beneficial opportunities for
fast, reliable and effective business communication (Effectiveness of electronic mail delivery versus the delivery of written records, 2006a).

Computers and the Internet have become an integral part of the corporate environment although it is common that employees use e-mail during working hours to communicate privately with friends and family. According to Patterson (2004:9), private use of the company e-mail facilities is a serious problem and unauthorised persons often obtain indirect access to employees’ personal in- and outgoing e-mail. This could be seen as an invasion into the employee’s right to privacy according to Act 14 of the Constitution of South Africa. Employers should establish well-drafted policies to regulate the use of the Internet and e-mail and make sure that all their employees adhere to it. The policy should stipulate and reflect the rights of the employer and at the same time respect the employee’s right to privacy. It must be made clear to all employees that the company’s e-mail system will be inspected from time to time to ensure that only legitimate and lawful communication is taking place (Patterson, 2004:9).

### 2.19 SUMMARY

This chapter has presented a comprehensive background of paper based and electronic systems. The history of paper, with its roots in ancient Egypt, was presented, in order to conceptualise modern filing systems. The historic development of information storage systems was discussed as a precursor to the requirements of an effective contemporary filing system.

The second part of the literature study comprised a discussion of the two primary types of classification employed in conventional paper based filing systems namely alphabetic and numeric classification. Alternative or supplementary filing classification systems, such as the Soundex system and filing by colour code were also outlined. The system of microfilm filing was discussed as a solution for archiving large volumes of paperwork together with the history of microfilm and microfilm
equipment. Follow-up filing systems required in many offices and the major forms of such systems in use were explained. Methods of filing and filing equipment in common usage were explored and summarised. Graphic presentations of these systems and equipment were presented wherever possible. Moving on from traditional filing systems, the subsequent part of the chapter contains a discussion of the primary components of traditional mailing systems. The penultimate section of the literature study explored the concept of e-filing. A discussion of the various electronic storage media available was presented. The advantages and disadvantages of e-filing were also presented. In the final section of this chapter e-mail was discussed. The background to e-mail and the influence of e-mail on corporate paper abuse was presented.

Two major problems associated with e-mail namely spam and viruses were explored in this chapter. The literature review has presented a comprehensive discussion of traditional filing and mailing systems as opposed to e-filing and mailing systems. The primary features of each system were detailed and the major benefits and drawbacks were discussed.

The following chapter contains a discussion of the research methodology used to investigate filing and mailing practices in HEIs in Gauteng.
CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION
In this chapter, the research methodology and design will be discussed in terms of the population and sampling method. The use of a quantitative research method is motivated. An outline of the measuring instrument used in the empirical study is provided as well as the variables covering the investigation. The chapter also includes a discussion of the pilot study that was conducted in order to fine-tune the measuring instrument. Saunders, Lewis and Thomhill (2003:5) describe the term “applied research” as having direct and immediate relevance to managers, addressing issues that they see as important. Applied research is presented in ways that managers understand and can act on. According to Wegner (2000:27), “exploratory research is intended to generate ideas and hypotheses as well as to provide insights into aspects of the research study, which can be investigated further in the descriptive (or more formal) research component”.

This study makes use of descriptive research, also referred to as observational, due to the fact that in descriptive research no attempt is made to change any behaviour or any conditions. Things are measured as they are, by direct observation of the subjects without intervening (Hopkins, 2000). A descriptive study may be used to develop theory, identify problems with current practice, justify current practice, make judgements or identify what others in similar situations may be doing (Ways of approaching research, 2006b).

3.2 RESEARCH DESIGN AND METHODOLOGY
According to Welman and Kruger (2001:46), “[a] research design is the plan according to which we obtain research participants (subjects) and collect information from them. In it we describe what we are going to do with the participants, with a view to reaching conclusions about the research problem”.
3.2.1 Selected population and sampling method

This study makes use of a non-probability sampling method that applies purposive sampling concomitant with judgement and convenience sampling methods. According to Trochim (2005) “[m]ost sampling methods are purposive in nature because we usually approach the sampling problem with a specific plan in mind.”

According to Ryerson University (2006a), “[i]n judgement sampling, the researcher or some other “expert” uses his/her judgement in selecting the units from the population for study based on the population’s parameters”. According to Ryerson University (2006a), “relying on the judgement of some knowledgeable experts may be far more productive in identifying potential interviewees than trying to develop a list of the population in order to randomly select a small number”. Wikipedia (2006f) explains that judgement or purposive sampling is used because “the researcher chooses the sample based on who they think would be appropriate for this study”. Ryerson University (2006b), explains that in convenience sampling, “the selection of units from the population is based on easy availability and/or accessibility”. Wegner (2000:112) explains that “convenience sampling is the least expensive and least time-consuming of all sampling techniques. Also, respondents are easily accessible and generally cooperative”.

Therefore, the sample consists of 161 administrative staff members at seven HEIs in the province of Gauteng, namely:

Vaal University of Technology (VUT) (n=23),
North-West University (NWU) (n=23),
University of South Africa (UNISA) (n=23),
Tshwane University of Technology (TUT) (n=23),
University of Johannesburg (UJ) (n=23),
University of Pretoria (UP) (n=23), and
Medical University of South Africa (University of Limpopo) (MEDUNSA) (n=23).
The selected population – as displayed in Figure 3.1 – are employees from the following departments and faculties: administration, examination, human resources, finance and different faculties at each institution.

FIGURE 3.1: Population: Universities in SA (N=7)

3.2.2 Quantitative research

Quantitative research is “a formal, objective, systematic process in which numerical data are utilised to obtain information about the world” (Ways of
approaching research, 2006b). Hopkins (2000) explains that “in quantitative research your aim is to determine the relationship between one thing (an independent variable) and another (a dependent or outcome variable) in a population. Quantitative research designs are either descriptive (subjects usually measured once) or experimental (subjects measured before and after a treatment)”. In this case, non-experimental research and descriptive statistics will be applied.

3.2.3 Measuring instrument – questionnaire design

The research design consists of an exploratory investigation involving purposive sampling. According to Welman and Kruger (2001:63), “researchers rely on their experience, ingenuity and/or previous research findings to deliberately obtain units of analysis in such a manner that the sample they obtain may be regarded as being representative of the relevant population”. According to Welman and Kruger (2001:47), “non-probability sampling is frequently used for reasons of convenience and economy”.

Saunders, Lewis and Thornhill (2003:175) state that, “purposive or judgemental sampling enables you to use your judgement to select cases that will best enable you to answer your research question(s) and to meet your objectives”.

The design of the questionnaire (Wegner, 2000:94) is structured according to specific objectives (refer to page 4 and 5) and will consists of three sections, namely:

- paper-based filing and mailing systems;
- e-filing systems; and
- e-mail systems.

3.2.4 Research questions

A structured questionnaire (Appendix B) was used to collect primary data on paper filing and electronic filing systems. Wegner (2000:90) states that “from a data analysis perspective, structured questionnaires are simple to administer and easy to tabulate and analyse statistically”.

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A covering letter (Appendix A) accompanied the questionnaire whereby information such as the time of the investigation, the researchers address and a brief background of the study is provided. It also includes written instructions on how to complete the questionnaire, while requesting co-operation and providing the final date for submission of completed questionnaires. There is no section for demographical information since it is not applicable to this study.

The “delivery and collection” questionnaire method was used with two types of questions, namely “list” and “category” types according to the three categories mentioned earlier.

The questionnaire consists of 16 questions in total. Section A has six questions and B and C have five questions respectively. There are 14 questions in a multiple selection format, whereby participants mark correct answers with 'X' in the block of his/her choice. Only two questions provide for non-numeric responses, whereby participants mark the correct answer with 'X' in the ‘No’ or ‘Yes’ block. Wegner (2000:40) explains, “Qualitative random variables produce categorical (non-numeric) data. Such data consists of a code value assigned to each response category of the random variable. These coded values are arbitrarily assigned. Normal arithmetic operations can therefore not be performed on these coded values as they have no numerical meaning”.

The three different categories of the questionnaire will now be discussed.

- Category A: Paper-based filing system

  Category A encompasses a range of different questions designed to elicit information relevant to paper-based systems. These questions include the efficient management of documentary material on a PC, the type of paper files in use and the most suitable or appropriate filing system. Also included in the above, is the question of time management, with direct bearing on the paper-based systems used. Time management refers to the amount of time spent on filing; whether or not it is necessary to leave the
office when filing documents; the time limit placed on finding a document; the number of files used during these procedures; and conclusively, the amount of paper used during the procedures (refer to Appendix B).

- **Category B: E-filing system**
  Category B has direct bearing on the use of electronic filing, inclusive of the back-up system used, retrieval of documents, problems encountered during retrieval and regular emptying of the electronic system. Included in Category B, is the question as to which filing system had been chosen or was in use while working for one or more line managers, in addition to whether or not appropriate training was received in the use of e-filing (refer to Appendix B).

- **Category C: E-mail system**
  Category C is designated to elicit information concerning the regular and appropriate use of e-mail. These questions include procedures that are followed when receiving e-mail and a distinction between e-mails that are work-related as opposed to non-work related. Respondents are asked how much time is spent in reading these e-mails. Additionally to these, the question of whether e-mail facilities have ever been blocked because of abuse, was included (refer to Appendix B).

### 3.3 PILOT STUDY (PRE-TESTING MEASURING INSTRUMENT)

Wegner (2000:95) avers that “pilot testing identifies shortcomings which can be resolved before the full study”. Saunders *et al.*, (2003:308) explain that “the purpose of the pilot test is to refine the questionnaire so that respondents will have no problems in answering the questions and there will be no problems in recording the data”. A pilot study was conducted at the VUT, whereby members of staff were selected from the IT, Finance, Examinations and Administration Departments. In total, 15 questionnaires were distributed of which 12 were returned within the required time limit.
The following are the outcomes and findings concerning the staff members' perception of the questionnaire.

- Respondents sometimes marked more than one answer per question.
- Some respondents answered the questions with a 'Yes' or 'No' instead of 'X'.
- Some questions did not provide appropriate combinations in order that respondents could reply coherently.
- Respondents in senior positions were unsure whether the questionnaire was related to his/her work or for the whole section reporting to him/her.

The necessary changes were made to the questionnaire according to the abovementioned shortcomings. A wider variety of combinations was given in order to ensure that responses could be marked more effectively. Specific questions were indicated for which more than one answer could be marked.

3.4 DATA PROCESSING, FINDINGS, INTERPRETATION AND ANALYSIS

The answers to the questionnaires were collated and the frequencies were presented in table format. Statistical support was provided by a VUT statistician and Microsoft Excel was used for data processing and analysis. The answers to the questionnaires were captured and the frequencies thereof were presented in table format. Due to the exploratory nature of the research, frequency tables are an appropriate statistical technique in that they refine the data and reduce it to a manageable form. According to Kerr, Hall and Kozub (2002:9), "descriptive statistics aim to provide a shorthand description of large amounts of data".

In order to explore the relationships between hard copy filing and mailing as opposed to electronic practices, a number of variables were compared by means of cross tabulation. Chi-square tests and directional measures, namely the Goodman and Kruskal tau, were conducted in order to establish the strength and direction of the relationships. The purpose of the aforementioned comparison was to determine whether a meaningful association between filing
and mailing practices and paper abuse could be established.

3.5 SUMMARY

This chapter has provided a complete discussion of the research design and methods followed in the empirical research. Motivation for the use of a quantitative technique has been given and details about the population, sampling and measuring instrument provided.

Chapter 4 presents the findings, interpretation and analysis of the empirical study outlined against the answers to the questionnaires in summarised form. These findings are based on the literature study so that meaningful conclusions may be drawn.
CHAPTER 4
FINDINGS, ANALYSIS AND INTERPRETATIONS

4.1 SYNOPSIS
This chapter provides the findings, analysis and interpretation of the investigation. From the literature study as point of departure, an evaluation of traditional filing and mailing systems as opposed to e-filing and e-mailing methods with regard to combating the corporate paper war is provided. The advantages and disadvantages of traditional filing systems and methods are compared with those of e-filing and e-mailing systems and methods. The most significant findings are emphasised.

The response rate and the frequencies of each question are provided. Correlation and cross-tabulation was also done. E-filing and e-mailing models are provided for new employees to whom the electronic systems are not well-known. Lastly, a cost analysis is given on paper-based filing costs and electronic costs.
Figure 4.1 illustrates a comparison of advantages and disadvantages of paper-based and e-filing systems as well as traditional mailing and e-mailing systems.

<table>
<thead>
<tr>
<th>TIME EFFECTIVENESS</th>
<th>EFFICIENCY OF SYSTEM</th>
<th>COST EFFECTIVENESS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Productivity</strong></td>
<td><strong>The use of paper</strong></td>
<td><strong>Cost of paper</strong></td>
</tr>
<tr>
<td>Paper-based filing</td>
<td>Traditional filing methods increase the use of paper due to the fact that a copy of the original is filed and the original is sent to the recipient, for example a memorandum.</td>
<td>Traditional filing methods increase the cost of paper on an annual basis.</td>
</tr>
<tr>
<td>E-filing</td>
<td>E-filing reduces paper storage in filing cabinets by saving all files on the PC and sending the document via e-mail.</td>
<td>E-filing reduces the cost of paper, because all work is done electronically. Little paper is required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Back-up systems</th>
<th>Paperless office</th>
<th>Storage space</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Filing equipment</strong></td>
<td><strong>E-filing</strong></td>
<td>A huge cost implication for paper-based filing is the storage space needed to house the cabinets and shelves. Space requirements increase proportionally as the organisation grows.</td>
</tr>
<tr>
<td></td>
<td><strong>E-filing saves enormous space because it is not necessary to open or create a paper file that necessitates storage space.</strong></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Destroying of files</th>
<th>Printing of hard copy</th>
<th>Filing space</th>
</tr>
</thead>
<tbody>
<tr>
<td>This involves finding the targeted file or folder in its drawer in the allocated cabinet, removing targeted documents and destroying it by tearing, burning or shredding. In cases of tearing or shredding, physical assertion and waste are involved, whilst in the case of burning, fire and smoke hazards are imminent. Clearing out of soft copies (files and folders) is done by selecting the name of the targeted file or folder and then pressing the delete key on the keyboard.</td>
<td>Hard copy is printed and a duplicate copy is made for filing. It substantially reduces the need to print hard copies as documents may be transferred to other workstations electronically.</td>
<td>Filing equipment takes up a huge amount of floor space, especially when documents are kept for a period of 5 to 10 years. A records retention policy needs to be implemented for all inactive records, which all employees should follow.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Little floor space is needed. No huge volumes of papers and files. Record retention is done individually.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Response time</th>
<th>Accuracy of filing</th>
<th>Training of personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responding to queries by telephone takes time, as you need to locate the file first. In most filing systems, the staff member needs to stand up and go to the drawer or cabinet or needs to leave the office if the cabinet is located in another office.</td>
<td>Misfiling can easily take place if filing classification is not properly maintained. This could also include the misspelling of names, for example, when alphabetical classification is used.</td>
<td>Training could be more intensive or less intensive depending on the system being used (numeric classification systems, for example, require intensive staff training).</td>
</tr>
</tbody>
</table>

FIGURE 4.1: Comparison of advantages and disadvantages of paper-based and e-filing systems
<table>
<thead>
<tr>
<th>TIME EFFECTIVENESS</th>
<th>EFFICIENCY OF SYSTEM</th>
<th>COST EFFECTIVENESS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response time</strong></td>
<td><strong>Accuracy of filing</strong></td>
<td><strong>Training of personnel</strong></td>
</tr>
<tr>
<td>Information is available within seconds and at the press of a button. This is more convenient due to the fact that the staff member does not have to stand up to locate a file.</td>
<td>Documents are rarely misfiled because of automatic filing procedures and electronic search methods facilitated by the computer.</td>
<td>No intensive training is needed. An electronic program guide could be an advantage for the use of different icons in a graphic user interface. A basic course in Microsoft Windows and Office (± 6 weeks) could provide any staff member with sufficient computer skills.</td>
</tr>
<tr>
<td><strong>Access and record retrieval time</strong></td>
<td><strong>User and environmental friendliness</strong></td>
<td><strong>Filing equipment and accessories</strong></td>
</tr>
<tr>
<td>All information is easily accessible should the filing classification system be effectively maintained. Time consuming. One needs to go to a cabinet or shelf to locate a file. Most filing systems need indexes. In most systems an index has to be consulted in order to locate a file. Not accessible to all staff should the computer be protected with a password. However, the administrator should be able to over-write the password. During a power failure, no records can be accessed unless the organisation has invested in an un-interruptible power supply (UPS), which will negate the effect of a power failure. Easy access to all information in seconds. No separate index needed. Main and sub-folders make retrieval easier.</td>
<td>Not all classification systems are user friendly. Some systems are very complicated, for example middle-digit and alpha-numeric filing systems. Pollution occurs when destroying records by means of burning. This system is user friendly. A help function key is available at all times, should the need occur. No environmental damage. Destroying by pressing of a button.</td>
<td>The equipment will depend on which filing method is used, for example lateral, horizontal or vertical. This might include shelves, movable or non-movable cabinets, etc. Filing accessories could include files, folders, labels, numerical or alphabetical dividers, etc. and these are costly. A PC is needed. No filing accessories are needed. Folders and files on the computer system will be used. Most organisations have standard PCs, which will have limited implications, but due to rapidly developing technology, it is expensive to keep e-filing equipment up to date.</td>
</tr>
<tr>
<td><strong>Convenience</strong></td>
<td><strong>Security</strong></td>
<td><strong>Preparation for filing</strong></td>
</tr>
<tr>
<td>In most instances the user needs to stand up and go to a cabinet to locate a file. E-filing is convenient since it is not necessary to move around physically in order to locate a file.</td>
<td>Confidential documents need to be locked away. This might lead to the purchasing of additional equipment. The security is effective and allows graded levels of access to a specific file or record and documents can also be password or firewall protected. It is prudent for companies to purchase licensed antivirus software to protect information.</td>
<td>Papers need to be sorted according to filing classification, for example, alphabetical, numerical etc. This is time consuming. The computer program used (for example MsWord) sorts automatically after the folder name has been selected.</td>
</tr>
<tr>
<td><strong>Expansion of files</strong></td>
<td></td>
<td><strong>Not all paper-based filing methods allow for the expansion of files for example, decimal filing. In alphabetical classification (mostly used) the files must be rearranged when the system is enlarged. This system has no limitations or restrictions on the expansion of files.</strong></td>
</tr>
</tbody>
</table>

**FIGURE 4.1**: Comparison of advantages and disadvantages of paper-based and e-filing systems
Synopsis of comparison variables

1. **Time effectiveness**

   It is clear from the above that the paper-based system is much more time consuming than e-filing, not only in terms of handling the files or folders physically, but also in terms of other activities such as:
   - moving around physically between cabinets and supplementary tools;
   - opening of drawers;
   - retrieval of targeted folders;
   - retrieval of targeted files from the folders;
   - tearing up or shredding using waste paper baskets and shredding machines that have to be emptied and in case of burning, the lighting of hazardous fires in appropriately allocated areas that could also cause other hazards such as smoke and warm ashes.

   E-filing, on the other hand, does not involve moving around physically or using any other supplementary tools, except for the keyboard and monitor. It is clear therefore, that a highly significant time saving result is affected when using e-filing.

2. **Efficiency of system**

   According to the above, the efficiency of traditional filing methods is much less than those of e-filing systems. No matter how one might look at traditional filing systems, the abuse of paper remains evident and the so-called "paperless office" will be a myth as long as traditional filing systems are mainly used. The e-filing system, on the other hand, promotes the idea of a paperless office and ensures the decrease of the abuse of paper. This is also a more environmentally friendly system than the traditional filing system.

3. **Cost effectiveness**

   According to the above, the traditional filing system is the most expensive system, whereby cabinets need to be purchased and maintenance, filing equipment and accessories costs are involved, as opposed to e-filing whereby no additional costs are needed. Floor space is a major cost implication when inactive records need to be stored. E-filing systems on the other hand, do not need a separate room or building for inactive files. Documents are filed on PC and back-ups can be made on tapes or on the network.
Figure 4.2 provides a comparison of the advantages and disadvantages of traditional mailing and e-mailing systems.

<table>
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<tr>
<td>No influence on work.</td>
<td>Standard or registered mail can be sent to any place around the world. This however, will have a cost implication.</td>
<td>A mail container is required to deliver mail from point A to B.</td>
</tr>
<tr>
<td>Decrease in productivity if effective policies are not enforced within the organisation. If policies are not enforced and the use of e-mail controlled, more time could be spent on sending and receiving of personal mail.</td>
<td>E-mail can be sent to any place around the world and can be received in minutes. Recipients can respond immediately.</td>
<td>A computer with an e-mail program is needed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Delivery time</strong></th>
<th><strong>Confidentiality and security</strong></th>
<th><strong>Equipment external</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal or departmental post/mail can take one to two days for delivery. Confidential mail needs to be placed in an envelope, with cost implications. Not all organisations use chain envelopes. Mail can be sent and delivered in less than two minutes. The e-mail function allows one to check if mail was sent successfully and if it had been read.</td>
<td>Privacy is guaranteed, but not when letters are lost or misplaced. Safety of mail sent can never be guaranteed. Registered mail will be the best solution.</td>
<td>Equipment required includes a franking machine, addressing machine with company logo, postage stamp fixing machine, date and time recording machine, letter and parcel scales and an electric envelope opener.</td>
</tr>
<tr>
<td>No privacy on e-mail. The IT department can scan and read any e-mails even those that have been deleted. It is convenient and one can be assured that mail will not get lost or fall into the wrong hands.</td>
<td></td>
<td>A computer with an e-mail program is needed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Abuse</strong></th>
<th><strong>Delivery cost internal</strong></th>
<th><strong>Delivery cost external</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse of traditional mail is unlikely. Each letter is sealed and checked by the mail department before stamps are placed on the envelope. Employees may abuse e-mail by sending and receiving personal e-mails during work hours. This includes paper abuse by printing and unnecessary filing.</td>
<td>Mail delivered by hand requires manpower.</td>
<td>The recipient needs to have access to a computer and an e-mail service provider that involves regular fees to be paid for maintenance.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Fraud</strong></th>
<th><strong>Manpower and transport costs are involved.</strong></th>
<th>Same as Delivery cost internal above.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The only threat in using traditional mail is the removal of contents from envelopes. Fraud is increasing through e-mail and the internet. This leads to companies spending enormous amounts to protect their systems against fraudulent transactions.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 4.2: Comparison of advantages and disadvantages of traditional mailing and e-mailing systems.
(Figure 4.2 continues)

<table>
<thead>
<tr>
<th>TIME EFFECTIVENESS</th>
<th>EFFICIENCY OF SYSTEM</th>
<th>COST EFFECTIVENESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junk mail</td>
<td>Mailing cost internal</td>
<td>Chain envelope or standard envelope is used.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No postage, delivery or printing cost.</td>
</tr>
<tr>
<td></td>
<td>Mailing cost external</td>
<td>Any standard envelope in different sizes, stamps and postage seals are used.</td>
</tr>
</tbody>
</table>

A standard PC with MicroSoft Outlook.

FIGURE 4.2: Comparison of advantages and disadvantages of traditional mailing and e-mailing systems

Synopsis of comparison variables

1. **Time effectiveness**
   A traditional mailing system is more time consuming than an e-mail system. Correspondence can be sent or received via e-mail within a few seconds which clearly means that the e-mail system is a much more effective than the traditional mailing system.

2. **Efficiency of system**
   Little abuse takes place with a traditional mailing system, because all outgoing post is checked by either the receptionist or secretary of the department where an internal requisition is made out and sent with the external post to the mail section. Although the e-mail system is a very effective communication tool, abuse of the e-mail system could become a problem. Corporate junk mail in a traditional mailing system is much less than in an e-mail system, although by using the filtering process, junk mail could be rejected before it enters the mailbox.

3. **Cost effectiveness**
   According to the above, it is clear that the traditional mailing system requires a lot of expensive equipment. Sending and delivery costs include envelopes, stamps and manpower, whilst e-mail does not.
4.2 EMPIRICAL STUDY

4.2.1 RESPONSE RATE

From the sample of 161 administrative staff at HEIs in the Gauteng area, 150 questionnaires were completed and returned. This is a significant response rate of 93.20 percent providing a well-represented sample of the target population. Table 4.1 presents a breakdown of the response rates \((n = 7)\) pertaining to the respondents’ affiliated institutions.

**TABLE 4.1: Response rates**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Valid</th>
<th>Frequency</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDUNSA</td>
<td></td>
<td>23</td>
<td>15.33%</td>
<td>15.33%</td>
</tr>
<tr>
<td>NWU</td>
<td></td>
<td>19</td>
<td>12.67%</td>
<td>28.00%</td>
</tr>
<tr>
<td>TUT</td>
<td></td>
<td>21</td>
<td>14.00%</td>
<td>42.00%</td>
</tr>
<tr>
<td>UJ</td>
<td></td>
<td>18</td>
<td>12.00%</td>
<td>54.00%</td>
</tr>
<tr>
<td>UNISA</td>
<td></td>
<td>23</td>
<td>15.33%</td>
<td>69.33%</td>
</tr>
<tr>
<td>UP</td>
<td></td>
<td>23</td>
<td>15.33%</td>
<td>84.67%</td>
</tr>
<tr>
<td>VUT</td>
<td></td>
<td>23</td>
<td>15.33%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>150</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

The above samples provide a fairly equal distribution of representation between the seven HEIs as between 12.0 percent to 15.3 percent.

4.2.2 FREQUENCIES OF QUESTIONS

The research objectives aimed to explore and describe filing and mailing practices in HEIs. The frequency distributions for each of the questions are presented in this section and the results are presented for the three sections respectively (A, B and C as indicated in the question numbers) according to the empirical investigation.
4.2.2.1 Question (Q.) A1: After typing a document on your PC, what do you do?

"Save on PC, print and save hard copy" was selected by 40.67 percent of the respondents. "Save on PC, photocopy original for filing" was selected by 26.67 percent of the respondents. One third (29.33 percent) indicated that they only save the typed document electronically. A small number of respondents (3.33 percent) indicated that they only make a hard copy of the document.

The responses to Question 1 are meaningful in that they indicated that an accumulative 96.67 percent of the respondents make use of e-filing methods. Of concern however, in terms of the paper war, is the duplication of electronic and traditional filing methods, which clearly indicates abuse of paper. A cumulative 67.34 percent indicated that they duplicate their filing methods. This response is significant in proving the abuse of paper and subsequently also the printing facilities. The impact of this duplication is reduced time and cost effectiveness of systems and equipment. More unproductive working hours are spent printing and filing documents that have already been saved electronically. The amount of money spent on
maintenance of printers, ink and paper is increased as a result of the duplication of filing methods. The significance of only 3.33 percent using e-filing exclusively, clarifies the reasons of paper abuse.

4.2.2.2 Q. A2: What type of paper file is mostly used in your working environment?

TABLE 4.2: Type of paper file/folder used

<table>
<thead>
<tr>
<th>Table 4.2: Type of paper file/folder used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Carton folders</td>
</tr>
<tr>
<td>Lever arch files (grey &amp; white)</td>
</tr>
<tr>
<td>Lever arch files (plastic)</td>
</tr>
<tr>
<td>Hanging/suspended files</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>No response</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Lever arch files are the most commonly used files with a frequency of 36.67 percent. Hanging or suspended files are the second most commonly used files used with a frequency of 22.67 percent. The frequency for lever arch files (coloured files) is 19.33 percent and lastly, 4.67 percent of the respondents indicate that they use “other” types of files/folders.

It is therefore clear that paper filing systems result in more files, more space and more cabinets being used and consequently even more paper is used on a daily basis. Carton folders and hanging or suspended folders (frequency of 37.34 percent) are also made of high density paper which adds substantially to the matter of paper abuse and increased costs.
4.2.2.3 Q. A3: What type of filing system is mostly used in your department?

Almost half of the respondents (48.67 percent) indicated that they use the alphabetic classification system. A total of 25.33 percent indicated that they use the numeric classification system. Only 4.67 percent indicated that they use the electronic (scanning) system. A total of 20.67 percent indicated that they use the computer as a filing system, while only 0.67 percent indicated that they use “other” filing systems. When considering these figures, it is significant to note that only one quarter (a cumulative 25.33 percent) of the sample actually use e-filing optimally. By implication, 74.67 percent add to the problem of paper abuse. In the contemporary business world where appropriate technology and the use of such ICTs should be the norm, the above is a matter of great concern.

TABLE 4.3: Type of filing system according to HEI

<table>
<thead>
<tr>
<th>Institution</th>
<th>Type of filing system</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alphabetical</td>
<td>Numerical</td>
<td>Electronic (scanning)</td>
<td>Computer</td>
<td>Other</td>
</tr>
<tr>
<td>MEDUNSA</td>
<td>16</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>NWU</td>
<td>7</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TUT</td>
<td>9</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>UJ</td>
<td>11</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>UNISA</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>UP</td>
<td>10</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>VUT</td>
<td>14</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>38</td>
<td>7</td>
<td>31</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 4.3 provides a highly significant state of affairs on the sampled population. At UNISA, e-filing methods (scanning and computer) are used by 73.91 percent of the respondents, which presents a positive result for the institution. Other institutions recorded only 34.78 percent at UP and only 28.57 percent at TUT using e-filing systems effectively. Respondents at NWU indicated that none uses any form of e-filing. At VUT and MEDUNSA both, only 8.69 percent (17.38 percent) showed that they make use of e-filing and only 16.66 percent at UJ. This result reflects negatively on the effective use of e-filing, whereby only 14.30 percent of the population indicates a positive result, with the remaining significant 85.70 percent adding to the problem of paper and other related abuses of equipment and processes.

4.2.2.4 Q. A4: Are you required to leave your office or working area in order to conduct your filing?

![Figure 4.5: Leaving the office to do filing]

About half of the respondents (54.67 percent) indicated that they “never” have to leave their offices for filing purposes, while 26.67 percent indicated “sometimes”. A total of 18.66 percent of the respondents indicated “often” and “always”. The fact that only about half of the respondents never have to leave their offices in order to attend to filing elsewhere, could be ascribed to the fact that ergonomically designed office layouts are designed to accommodate filing cabinets within easy reach.
The 26.67 percent of respondents indicating that they sometimes have to leave their offices to do filing could be an indication that a portion of the filing system might be located outside of the respondents’ offices. The last two categories, namely “often” and “always” account for an accumulative 18.66 percent and reflect positively on counterproductive activities where filing is concerned.

4.2.2.5 Q. A5: How many files (lever arch, hanging/suspended files, etc.) on average, do you use per year for filing purposes?

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 20</td>
<td>74</td>
<td>49.33%</td>
<td>49.33%</td>
</tr>
<tr>
<td>21 to 40</td>
<td>28</td>
<td>18.67%</td>
<td>68.00%</td>
</tr>
<tr>
<td>41 to 50</td>
<td>14</td>
<td>9.33%</td>
<td>77.33%</td>
</tr>
<tr>
<td>51 to 100</td>
<td>11</td>
<td>7.33%</td>
<td>84.67%</td>
</tr>
<tr>
<td>More than 100</td>
<td>23</td>
<td>15.33%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

Almost half of the respondents (49.33 percent) indicated that they use between 1 to 20 files annually and 18.67 percent indicated that they use between 21 to 40 files annually. A total of 9.33 percent indicated that they use between 41 to 50 files annually and 7.33 percent indicated that they use between 41 to 100 files annually. Lastly, a total of 15.33 percent indicated that they use more than 100 files annually.

The use of hard cover files/folders also indicates the use of paper. It proves that files are not utilised without the necessary documentation inside. The use of more than 100 files annually indicates that a very large volume of paper is being consumed on a regular basis. The excessive use of paper also relates to escalating printing costs. As indicated in Figure 4.16, one lever arch file has space for up to 500 sheets of paper.
4.2.2.6 Q. A6: On average, how many reams of A4 paper do you use per month for printing and photocopying?

TABLE 4.5: Reams of paper per month

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1</td>
<td>27</td>
<td>18.00%</td>
<td>18.00%</td>
</tr>
<tr>
<td>1 to 3</td>
<td>48</td>
<td>32.00%</td>
<td>50.00%</td>
</tr>
<tr>
<td>4 to 7</td>
<td>29</td>
<td>19.33%</td>
<td>69.33%</td>
</tr>
<tr>
<td>8 to 11</td>
<td>10</td>
<td>6.67%</td>
<td>76.00%</td>
</tr>
<tr>
<td>12 to 15</td>
<td>13</td>
<td>8.67%</td>
<td>84.67%</td>
</tr>
<tr>
<td>More than 16</td>
<td>23</td>
<td>15.33%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

A total of 18.00 percent of the respondents indicated that they use less than 1 ream per month. A total of 32.00 percent indicated that they use between 1 to 3 reams of paper per month, while 19.33 percent indicated between 4 to 7 reams of paper per month. A total of 6.67 percent indicated between 8 to 11 reams and 8.67 respondents indicated between 12 to 15 reams per month.

Only 15.33 percent indicated that they use more than 16 reams of paper per month on printing and photo copying. Paper consumption is an important indicator of the efficiency of an office. Should the excessive use of paper be indicated, then the logical result will be increased expenditure on filing equipment such as cabinets, files and printing facilities (refer to Figure 4.16 as to the cost implication).
Table 4.6 indicates the total number of reams used per month for each university. The “total” column indicates the number of respondents per university.

### TABLE 4.6: Number of reams per month for each University

<table>
<thead>
<tr>
<th>Institution</th>
<th>Number of reams</th>
<th>Less than 1</th>
<th>1 to 3</th>
<th>4 to 7</th>
<th>8 to 11</th>
<th>12 to 15</th>
<th>More than 16</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDUNSA</td>
<td></td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>NWU</td>
<td></td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>TUT</td>
<td></td>
<td>8</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>UJ</td>
<td></td>
<td>1</td>
<td>10</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>UNISA</td>
<td></td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>UP</td>
<td></td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>VUT</td>
<td></td>
<td>4</td>
<td>6</td>
<td>9</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>27</td>
<td>48</td>
<td>29</td>
<td>10</td>
<td>13</td>
<td>23</td>
<td>150</td>
</tr>
</tbody>
</table>

In order to calculate the costs per month and annually, the average reams per category is taken into account, for example, 4 to 7 reams per month represents an average of 5.5 reams per month as calculated in Table 4.7.

### TABLE 4.7: Number of reams per month and annually with costs

<table>
<thead>
<tr>
<th>Reams of paper</th>
<th>Costs</th>
<th>Valid</th>
<th>Less than 1</th>
<th>1 to 3</th>
<th>4 to 7</th>
<th>8 to 11</th>
<th>12 to 15</th>
<th>More than 16</th>
<th>Total</th>
<th>Cost per ream</th>
<th>Cost per annum (12) average per month</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDUNSA</td>
<td></td>
<td>4</td>
<td>14</td>
<td>16.5</td>
<td>28.5</td>
<td>13.5</td>
<td>90</td>
<td>156.5</td>
<td>3,639.56</td>
<td>43,674.77</td>
<td>49,116.67</td>
</tr>
<tr>
<td>NWU</td>
<td></td>
<td>0</td>
<td>10</td>
<td>11.0</td>
<td>28.5</td>
<td>94.5</td>
<td>32</td>
<td>176.0</td>
<td>4,093.06</td>
<td>49,116.67</td>
<td>55,372.30</td>
</tr>
<tr>
<td>TUT</td>
<td></td>
<td>8</td>
<td>14</td>
<td>5.50</td>
<td>19.0</td>
<td>-</td>
<td>48</td>
<td>94.5</td>
<td>2,197.69</td>
<td>26,372.30</td>
<td>31,556.06</td>
</tr>
<tr>
<td>UJ</td>
<td></td>
<td>1</td>
<td>20</td>
<td>22.0</td>
<td>9.5</td>
<td>-</td>
<td>32</td>
<td>84.5</td>
<td>1,965.13</td>
<td>23,581.58</td>
<td>28,737.58</td>
</tr>
<tr>
<td>UNISA</td>
<td></td>
<td>4</td>
<td>12</td>
<td>22.0</td>
<td>9.5</td>
<td>27.0</td>
<td>96</td>
<td>170.5</td>
<td>3,965.15</td>
<td>47,581.78</td>
<td>53,737.58</td>
</tr>
<tr>
<td>UP</td>
<td></td>
<td>6</td>
<td>14</td>
<td>33.0</td>
<td>-</td>
<td>27.0</td>
<td>32</td>
<td>112.0</td>
<td>2,694.67</td>
<td>31,256.06</td>
<td>36,202.47</td>
</tr>
<tr>
<td>VUT</td>
<td></td>
<td>4</td>
<td>12</td>
<td>49.5</td>
<td>-</td>
<td>13.5</td>
<td>48</td>
<td>127.0</td>
<td>2,953.51</td>
<td>35,442.14</td>
<td>40,997.77</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>27</td>
<td>96</td>
<td>159.5</td>
<td>96.0</td>
<td>175.5</td>
<td>368</td>
<td>921.0</td>
<td>21,418.79</td>
<td>257,025.31</td>
<td>293,025.31</td>
</tr>
</tbody>
</table>

Costs are VAT exclusive.

In Table 4.7, the average costs relating to 150 employees are remarkably high. Should one do a hypothetical calculation for an institution whereby employment amounts to 300 employees, one can just imagine the annual expenditure on paper only. It is significant to note that between only seven HEIs, expenditure for paper amounts to about a quarter of a million Rand (R257 025.31) per annum.
4.2.7 Q. B1: How do you file electronically?

A commendable total of 31.33 percent indicated that they use a prescribed e-filing model, while 57.33 percent indicated that they use their own structured models with a cumulative 11.33 percent indicating that they use "any manner" and "other" methods. Therefore, a very significant accumulative 68.66 percent devise their own methods of e-filing which may be detrimental for efforts to combat the paper war effectively. Incorrect filing may occur should a person forget the file name or where the documents have been saved. The lack of adequate knowledge and corporate structured models reduce productivity and leads to the subsequent increase in the use of cumbersome and unstructured methods.

4.2.8 Q. B2: What type of back-up system do you use when filing electronically?

**TABLE 4.8: Electronic back-up system**

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portable hard rive</td>
<td>8</td>
<td>5.33%</td>
<td>5.33%</td>
</tr>
<tr>
<td>Flash drive/memory stick, floppy diskette, CD/DVD</td>
<td>51</td>
<td>34.00%</td>
<td>39.33%</td>
</tr>
<tr>
<td>Server back-up</td>
<td>34</td>
<td>22.67%</td>
<td>62.00%</td>
</tr>
<tr>
<td>Combination of first and second</td>
<td>9</td>
<td>6.00%</td>
<td>68.00%</td>
</tr>
<tr>
<td>Combination of second and third</td>
<td>24</td>
<td>16.00%</td>
<td>84.00%</td>
</tr>
<tr>
<td>No back-up</td>
<td>23</td>
<td>15.33%</td>
<td>99.33%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>0.67%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>
A total of 5.33 percent of the respondents indicated that they use a portable 
hard drive as a back-up system, while 34.00 percent indicated that they use 
either flash drives/memory sticks, floppy diskettes or CDs/DVDs. A total of 
22.67 percent indicated that they use the server as back-up system. Only 
6.00 percent indicated that they use a combination of the first and second 
categories. A total of 16.00 percent indicated that they use a combination of 
the second and third categories. It is of great concern that a significant total 
of 15.33 percent indicated that they use no back-up system with another 
0.67 percent indicating “other”.

All portable and removable back-up systems are expensive and in most 
instances the use of more than one device will be required. Most of the 
back-up devices are small and can be damaged, misplaced or lost. The latest 
computer models also do not contain diskette drives anymore. Although all 
electronic back-up devices are fallible, the most reliable forms comprise of 
portable hard drives and institutional servers, which means that a significant 
72.00 percent of respondents do not maintain fairly safe back-up systems.

4.2.2.9 Q. B3: How long does it take to retrieve a document from your e-filing 
system?

![Bar chart](image)

FIGURE 4.7: Electronic retrieval time
Document retrieval in less than one minute was indicated by 56.00 percent of the respondents. A total of 34.00 percent indicated a retrieval time of between one to three minutes. A total of 6.00 percent indicated a retrieval time of three to five minutes and 2.00 percent indicated retrieval time of six to ten minutes. The figure of 56.00 percent of respondents retrieving a document in less than one minute indicates an effective e-filing system in terms of retrieval. The retrieval of an electronic document is effected without the necessity of physically standing up or manoeuvring of cabinet drawers or hard cover files/folders.

This is also time effective, because by pressing a few keys on a keyboard, a document appears on the monitor. High levels of productivity can be expected from a cumulative 90.00 percent of the sample who are able to retrieve a document effectively in less than three minutes and to continue with their work immediately. Slower document retrieval, (between three and ten minutes) was reported by 8.00 percent of the respondents. This figure raises a concern regarding the method of e-filing used by these respondents. Ineffective networks or storage of information on obsolete media such as diskettes could be the cause of these slow retrieval times.

4.2.2.10 Q. B4: Have you received any guidelines or training on e-filing?

<table>
<thead>
<tr>
<th>Training on e-filing</th>
<th>Valid</th>
<th>Frequency</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>55</td>
<td>36.67</td>
<td>36.67</td>
<td></td>
</tr>
<tr>
<td>NO</td>
<td>94</td>
<td>62.67</td>
<td>99.33</td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>0.67</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The majority of respondents (62.67 percent) did not receive any guidelines or training on e-filing whilst 36.67 percent indicated that they did receive guidelines or training. Where untrained staff operate electronic systems, their productivity will of necessity be lower and the abuse of systems could occur.
4.2.2.11 Q. B5: How often do you clean up your e-filing system?

A total of 19.33 percent of the respondents indicated that they never clean up their electronic systems, while 48.67 percent of the respondents indicated that they only “sometimes” clean up their electronic systems. A total of 31.33 percent of the respondents indicated that they “often” or “always” clean up their electronic systems which means that a significant cumulative 68.67 percent do not maintain their filing systems effectively.

It is clear that should systems not be maintained properly, much needed storage space will be occupied and could clog up and slow down systems detrimentally. The one third of respondents who indicated that they practice appropriate e-filing techniques by cleaning up their systems “often” or “always” is not sufficient to promote optimally operated systems.
4.2.2.12 Q. C1: How often do you do the following after opening your e-mail?

Figure 4.9 presents a summary of respondents' reported activities after opening their e-mail.

![Figure 4.9: Activity after opening e-mail](image)

**FIGURE 4.9: Activity after opening e-mail**

a) **How often do you read then delete after opening your e-mail?**

Only 7.30 percent of the respondents indicated that they never read and delete their e-mails whilst 36.70 percent reported that they only sometimes read and immediately delete. A cumulative 56.00 percent indicated that they “often” and “always” read and then delete their e-mails. It is a concern that nearly half of the respondents allow their e-mail boxes to overflow by not deleting e-mails that have been attended to pro-actively. This question does not differentiate between e-mails that are personal, work related or junk mail. E-mail facilities allow for rapid and convenient internal and external communication and the cost for the use of e-mail is much less than the cost of traditional mail whilst also being much faster.

b) **How often do you read and then save electronically after opening your e-mail?**

According to Figure 4.9, a total of 11.30 percent of the respondents indicated that they “never” read and then save their e-mail electronically after opening their mail whilst 38.70 percent indicated
that they “sometimes” read and then save their e-mail. The respondents who answered “often” (35.30 percent) and “always” (14.70 percent) adds up to 50.00 percent. It takes only a few seconds to save mail electronically; technology allows the user to create folders and sub-folders within a few seconds. Reading and then saving e-mail is an efficient practice that saves time and increases productivity.

c) How often do you read, print then save in a paper file after opening your e-mail?

Only 21.50 percent of the respondents indicated that they never read, print and then save their e-mails in a paper file. A total of 41.60 percent of the respondents indicated that they “sometimes” read, print and then save their e-mails in a paper file. Respondents who answered “often” (22.80 percent) and “always” (14.10 percent) add up to a significant 36.90 percent. This practice may be considered highly abusive as it would be more efficient to electronically save the e-mail in order to prevent the unnecessary consumption of ink and paper. Productivity is reduced and costs are increased.

d) How often do you read, print and then dispose after opening your e-mail?

A significant cumulative 72.00 percent of the respondents indicated that they “never” or “sometimes” apply this option, whilst only 28.00 percent indicated “often” and “always”. This result clearly indicates abuse of the system concomitant with paper abuse being committed also leading to a tremendous impact on printing facilities, time, cost and productivity.
4.2.13 Q. C2: Estimate how many work-related e-mails you receive during one workday?

![Figure 4.10: E-mail practices](image)

A total of 20.00 percent of the respondents indicated that they receive less than five e-mails per day, while 32.70 percent indicated that they receive between six to ten e-mails per day. This result indicates a fairly insignificant use of the e-mail facility by a little more than half of the respondents. However, a significant cumulative 47.30 percent indicated that they receive anything from eleven up to twenty and more e-mails per day. E-mail can be as effective as the user allows it to be. Communicating via e-mail saves time and cost and a quick response can be provided within a few minutes. Potentially, e-mail can result in personnel that are more productive and spend more time on core business as communication channels are streamlined.

4.2.14 Q. C3: Estimate how many non-work-related e-mails you receive during a single workday?

**TABLE 4.10: Non-work-related e-mails per day**

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>57</td>
<td>38.00%</td>
<td>38.00%</td>
</tr>
<tr>
<td>6 to 10</td>
<td>58</td>
<td>38.67%</td>
<td>76.67%</td>
</tr>
<tr>
<td>11 to 15</td>
<td>16</td>
<td>10.67%</td>
<td>87.33%</td>
</tr>
<tr>
<td>16 to 20</td>
<td>8</td>
<td>5.33%</td>
<td>92.67%</td>
</tr>
<tr>
<td>More than 20</td>
<td>11</td>
<td>7.33%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>
A cumulative 76.67 percent of the respondents receive up to ten non-work-related e-mails per day, while 23.33 percent receive from eleven and more personal e-mails per day. Receiving such large volumes of non-work-related e-mails that are then printed and/or replied to, amounts to severe abuse of the e-mail system and subsequent counter productivity. Internal control by the IT department allows for the detection of abuse of the e-mail facility which means that e-mail content is not confidential. There is a significant association between non-work-related e-mails received and non-work-related e-mails printed per week. This ultimately leads to the abuse of company time that should be monitored closely and addressed according to employment and IT policies.

4.2.2.15 Q. C4: If you receive non-work-related e-mails, estimate how many pages you print per week?

TABLE 4.11: Number of pages of non-work-related e-mails printed per week

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>129</td>
<td>86.00%</td>
<td>86.00%</td>
</tr>
<tr>
<td>6 to 15</td>
<td>18</td>
<td>12.00%</td>
<td>98.00%</td>
</tr>
<tr>
<td>16 to 25</td>
<td>2</td>
<td>1.33%</td>
<td>99.33%</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>0.67%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

A cumulative 86.00 percent of the respondents print less than five non-work-related e-mails per week and a total of 12.00 percent indicated that they print anything from six to fifteen non-work-related e-mails. A total of 1.33 percent indicated that they print between sixteen to twenty five non-work-related e-mails. These figures indicate a severe abuse of paper, printing facilities, systems and company time. Should these figures be multiplied by 4 (4 weeks per month) and then by 12 (12 months per year) the detrimental impact of this result is clearly evident.
4.2.2.16 Q. C5: Has your e-mail facility ever been blocked because of abuse?

TABLE 4.12: Blocked e-mail facilities

<table>
<thead>
<tr>
<th></th>
<th>Valid</th>
<th>Frequency</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td></td>
<td>9</td>
<td>6.00%</td>
<td>6.00%</td>
</tr>
<tr>
<td>NO</td>
<td>141</td>
<td></td>
<td>94.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td></td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

A total of 94.00 percent of respondents indicated that their e-mail facility had never been blocked due to abuse whilst 6.00 percent reported a positive response. Although the frequencies for non-work-related e-mails received and pages printed indicated a degree of e-mail and paper abuse, it would appear that HEIs are relatively slow to react to this abuse by blocking e-mail facilities. It can also be assumed that the high percentage of respondents indicating that their e-mail had never been blocked could be a result of the IT departments at these institutions enforcing strict PC rules and policies.

4.3 CORRELATION AND CROSS-TABULATION

The Chi-Square test, specifically Pearson’s Chi-Square was performed in order to establish whether a significant relationship was present between two pre-defined sets of variables. Where a significance value was greater than 0.05, a meaningful relationship could be inferred.

The next statistical measure that was applied to the selected data-set was the Likelihood Ratio Statistic, which, according to Tabachnick and Fidell (1989:242), can be used to evaluate significance of observed relationships between variables. Directional measures including the Lambda \( \Lambda \), the Goodman and Kruskal tau and the Uncertainty Coefficient were also performed on the selected data-set. The Lambda directional measure, also referred to as “Wilk’s lambda \( \Lambda \)”, is described by Tabachnick and Fidell (1989:386) as “the ratio of the determinant of the error cross-products matrix to the determinant of the sum of the error and effect cross-product matrices".
Tabachnick and Fidell (1989:389) further note that a measure of strength of association is readily available from Wilk's lambda $\Lambda$. The Goodman and Kruskal lambda $\lambda$ and the Goodman and Kruskal tau $\tau$ are classified as forming part of the statistical technique known as “latent class cluster analysis” which is defined as “the classification of similar objects into groups, where the number of groups, as well as their forms are unknown where both the number of classes (groups) and the properties of these classes are to be determined.

In order to evaluate latent class cluster models, a set of methods based on the uncertainty of classification or, equivalently, the separation of the clusters can be used to indicate how well the indicators predict class membership. “Besides the estimated total number of misclassifications, Goodman-Kruskal lambda, Goodman-Kruskal tau, or entropy based measures can be used to indicate how well the indicators predict class membership”.

4.3.1 Results of statistical correlations
The aforementioned statistical measures were applied to all sets of variables in order to establish whether any meaningful association could be deduced.

**Only two associations could be found that were less than 0.05 percent:**

**Question:** Action taken after typing and type of filing system.
The value of Pearson Chi-Square is 0.000 and the likelihood ratio is 0.000. Both of these values are zero, therefore an association can be deduced between the action taken after typing and the type of filing system used.

**Question:** Number of reams used and action taken after e-mail
**Read_print_save_paper file.**
The value of Pearson Chi-Square is 0.031 and the likelihood ratio is 0.03. The value of Pearson Chi-Square is 0.031 and the likelihood ratio is 0.032. Both of these values are less than 0.05 therefore a meaningful association is present between the number of reams used and the action read_print_save_paper file.
4.4 E-FILING AND E-MAIL, MODELS
After the literature and empirical study was conducted, a need arose to design an e-filing and an e-mail model that could serve as guidelines. These two models could be a point of departure to administrators making use of e-filing and e-mailing in order to optimise e-filing and e-mailing effectively. Through these structured models, the basic principles on how to design an e-filing and e-mailing system are given.

4.4.1 E-FILING MODEL
4.4.1.1 Synopsis of e-filing
E-filing can be described as an electronic method of filing documents by using a computer, a modem and approved software package such as Microsoft Office (MSOffice). According to Watson (2003), “a computer is basically an e-filing cabinet; regardless of what kind of operating system your computer uses, what kind of graphic interface it uses to show you how things are organised, what tools are available, and what kind of words or icons it uses to identify and describe the feature of those tools, the principles of organising the programs and the information are basically the same”.

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4.4.1.2 Creating an e-filing system

Figure 4.11 presents an overview on the structure of folders and files created with four main folders, by using color-coded folders.

![Diagram of file structure]

**FIGURE 4.11: The structure of files and folders**

4.4.1.3 Where does one start?

All files should be placed under one directory, for example: *My Documents*. Then one can create subdirectories for each of the computer programs that will be used, for example, Microsoft Word (MSWord), Excel,
PowerPoint, etc. One can also create additional subdirectories for the different types of work that need to be done. However, one should be careful not to create too many subdirectories: the fewer the directories, the fewer places to search (Watson, 2003).

4.4.1.4 Creating folders

- Folder names

When creating an e-filing system for the first time, one should plan ahead, by means of which folders should be created, what sub-folders would be needed and filenames to be allocated. The different managers or line managers have to be considered when creating main directories for more than one person.

- What is a folder?

(COED, 2002:447) describes a folder on a computer as a “directory containing related files or documents”. According to Calabria, Burke and Kirkland (1999:689), a folder is described as a “container (also called directory) which lists file names and is used to organise files on a computer hard drive”. Folder names are identified by the division of work, for example: Budget, Correspondence, Meetings, Policies and Procedures, and the same principles could be followed as with traditional folder names.

- The purpose of a folder

The two main purposes of creating folders is to organise and cross-reference the files in such a way that it is easy for the user to find and to sort all files which are related together under one folder (What is a folder, 2006f).
Figure 4.12 is an example of a screen printout showing a folder name with its four different main folders.

![Folder Structure](image)

**FIGURE 4.12: Four main folders - MSWord**

In Figure 4.12, the main directory name is “My Documents” containing four sub-folders, named “Mr Molefiie”, “My e-Books”, “My Pictures” and “Research 2005”. These sub-folders could, in turn, contain many files or documents relating to the specific topic.

One of the greatest advantages of having folders for different divisions of work done, is the time saved. When a document needs to be filed after it has been captured and processed, the subject heading of the document will identify where it has to be filed, for example: "Amendments on telephone policies – 2005"; this heading clearly identifies the words “telephone policies”. This document will be filed under the folder: “Policies and procedures”, then under the sub-folder “Policies”, then under another sub-folder “Telephone”. Finally, the document will be filed under the filename “Amendments 2005”, as indicated in Figure 4.13.
Figure 4.13 illustrates a screen printout of a sub-folder with a filename.

Calabria et al. (1999:689) explains that “folders created within folders are called sub-folders”. Not all divisions of work “Folders” will necessarily have sub-folders. Sub-folders only help to break down the divisions of work in smaller groups in order to simplify the work and this will surely enhance productivity as well as maintaining an effective e-filing system.

4.4.1.5 Creating file names

As opposed to folders, file names or document names cannot be decided on beforehand but only after or while creating and completing a document.

• What is a file?

The word “file name” refers to a series of related documents containing the same subject in a folder where files are stored or saved. MSWord (2000) also describes a file as “a complete, named collection of information, such as a program, a set of data used by a program, or a user-created document. A file is the basic unit of storage that enables the computer to distinguish one set of information from another”. The
most common way to create a file name is to think of the first word that comes to mind when one thinks of a specific document. For example, in a Human Resources department, when the administrator captures a letter regarding a staff member's leave, the heading of the memorandum could be as follows: "Amendments to annual leave". Should a copy of this letter be filed, an obvious file name would be LEAVE.

Figure 4.14 is an example of an MSWord screen printout, where a sub-folder was created containing documents with relevant file names under several levels of sub-folders.

FIGURE 4.14: Sub-folders with Word and Excel files - MSWord

By creating file names, it becomes easier to file and retrieve a document. Figure 4.14 illustrates the folder "Financial Aid"; under this folder MSWord files and Excel files are visible. When working with a file, saving one's files frequently ensures that work will not be lost during an unexpected power failure. The first time one saves a file, a file name and folder in the Save As dialogue box have to be specified. When the file has to be updated, MSOffice automatically saves the file with the same name in the same folder. Should one wish to change a file name or location, the Save As dialogue box can again be used to create a copy of the original file (Microsoft Office 2000, 1999:10-11).
4.4.1.6 How to organise folders and files

According to Murray (2005), “one way to make sure you’ll keep your files organized is to remove the clutter with a filing system that makes sense for the way you use your computer”.

The arrangement of documents within files should be simple and logical. The following can be used as guidelines:

a) Correspondence and meeting papers can be arranged in date order, for example:
   20060614 - meeting with union - salaries;
   20060616 - meeting with human resources;
   20060629 - meeting with union - salaries.

b) Correspondence and memorandums can also be arranged according to the alphabet, for example:
   Elcar Donations 2006
   Golden Sun Donations 2006

c) Invoices are usually arranged numerically by invoice number, or by date, for example:
   Inv31 - Karbochem Steel
   Inv32 - AECC
   Inv33 - Daniels Creations

d) Bank statements are usually arranged by account number and date, for example:
   Acc no: 200664123
   Acc no: 201453210

e) Student reports or statements are usually arranged by student number for example:
   9800043
   9803043

f) Reports are usually arranged by report number (Roux, 2006).
4.4.1.7 Retrieving of files

According to Hemphill (1999), the value of a computer “is that it allows you to use a file again, but only if you can find it again”. This comes back to the point that one needs to plan carefully how and under what folder name a document is filed.

4.4.1.8 How to manage files

“Managing files on your computer is a lot like managing paper files. They can be organized using folders and then stored in specific locations for when you need them, and, just like paper files and folders, if you don’t have a way to organise them, things can get lost” (Microsoft, 2004).

The following guidelines can be followed to ensure that files are efficiently managed:

a) Be consistent when creating file and folder names.
b) Keep names brief and easily understandable.
c) Ensure that the same type of files is sorted under one folder for easy retrieval.
d) Software programmes automatically sort files alphabetically that results in less time needed to search for a file when required.
e) Be consistent when creating file and folder names.
f) Avoid saving a file if it is not necessary or if the file has no value for future references (Microsoft, 2004).

4.5.2 E-MAIL MODEL

This model will assist in creating an e-mailing system. Although the MSWord help function (F1) is available on the computer, this model summarises the most important guidelines to design and maintain an effective system. However, it is recommended that the help function be used in collaboration with the model. In this e-mail model, terminology of the basic concepts of e-mail will be explained, as well as how to handle incoming mail and the sending of e-mail.
How to create a folder and how to save a file will also be discussed. Figure 4.15 provides a graphic illustration of how e-mail is organised on MSOutlook.

![MSOutlook screenshot](image)

**FIGURE 4.15: MSOutlook**

Figure 4.15 illustrates the MSOutlook e-mail program. On the left hand side under Main folders, all the different folders are visible, for example, Deleted Items, Drafts, Inbox, Junk E-mail, Outbox and Sent Items.

- The **Deleted** folder reflects all the items which were deleted from the Inbox folder.
- The **Inbox** folder displays all incoming mail.
- The **Outbox** folder stores all outgoing mail (sent items).
- The **Draft** folder stores all documents/files which are pending and will be sent later (adjustments could still be done).
- The **Junk e-mail** folder can be used to store advertisements, news clips and any other non-work-related e-mail.

It is crucial for all users to understand the e-mail tools and icons. The toolbar allows the user to use the MSOutlook software effectively.
4.5.2.1 Synopsis of the e-mail function

- What is e-mail?
E-mail refers to the transmission of messages between computers across a network or across the Internet which allows text, graphics and sometimes sounds to be transmitted instantaneously (Shelly, Cashman & Vermaat, 2003:2.25).

- What is a user name?
The user name is a unique combination of characters, such as letters of the alphabet and/or numbers that identify a specific user and that differs from other user names in the same domain (Shelly et al., 2004:2.27).

- What is an attachment?
An e-mail attachment can be described as a “computer file which is sent along with an e-mail message” (Wikipedia, 2006b).

- What is an e-mail address?
An e-mail address consists of two parts separated by an @ symbol, for example, dillen@focuson.com: the user name is Dillen, the middle part is the name of the mail server and the last part indicates that it is a company address (.com). This is the address of the computer that contains the mail in order for the recipient to retrieve the message and reply to it or forward it to other recipients. In MSOutlook, an e-mail address is linked to a person’s name and postal address (MSOffice Assistance, 2003b; Shelly et al., 2004:2.27).

4.5.2.2 How to handle incoming e-mail

- All incoming e-mails are firstly saved on the e-mail server. On opening the e-mail program, it prompts the server to see if there is e-mail for any particular users, and if so, the e-mail is downloaded to the inbox on the particular user’s computer. Alternatively, the e-mail remains on the server.

- To peruse incoming messages, the user clicks on the “Inbox”. A list of messages will appear that contains the name of the sender, the subject line of the message and the date and time that each message was sent.
• To read a message, the user clicks on a specific message listed in the
"Inbox" window. It is not necessary to print all e-mails. The user first
has to decide what the purpose of the printed e-mail is before printing a
copy. The yellow envelope icon indicates whether a message has been
read or not. The closed envelope indicates an "unread" message and
the open envelope indicates a "read" message.
• Messages which have been read will remain in the Inbox until it has
been saved in a different folder by moving it or by deleting the
message. Messages should be frequently moved or deleted to ensure
that cluttering in the Inbox is restricted to a minimum. Server managers
usually restrict users to a maximum space on the server per user.
Should an individual not clear out the e-mail messages regularly,
he/she will automatically receive a warning message of the mailbox
being over its limits and the user may even be removed from the
server. Users not adhering to such policies, cause an overload on the
server and slows down the entire network.
• To compile a new message, the user clicks on the New Mail icon on
the toolbar, and to send a message, the user clicks on the Send button

4.5.2.3 Folders
The number of messages that a user receives may crowd the Inbox and
make it difficult to keep track of information. The user can create new
folders and organise messages. Therefore, it is important for an
administrator to maintain an effective e-filing system for all e-mail
messages. Similar to e-filing, the user may wish to create different folders
for meetings, follow-ups, messages pending and claims. The user can also
create folders within folders to further organise the e-mail messages.

4.5.2.4 Procedure to clean up folders
Cleaning up of folders ensure a more effective system. Any of the following

steps can be followed to ensure an effective system.

- Make a decision on how long a file should be kept, for example 6 months, 12 months, 18 months etc.
- Archive items (files) regularly by using Auto-archive.
- Empty the Deleted items and Sent items folders regularly (MSOffice Online, 2006a).

4.5.2.5 Back-up of e-mail messages

E-mail messages can be archived using the Outlook Auto-archive feature. This method of back-up should be done at regularly scheduled intervals. Another method to make a back-up file is by exporting the contents of the message folder to a Personal Folder (MSOffice Assistance, 2006a).

4.5.2.6 Sending messages

- How to send a message

Sending a message via e-mail has become a modern lifestyle and portrays the quality of work and the image of the company. With this in mind, one should consider a proper layout and “netiquette” that conform to the corporate format of e-mail for all users within an individual company.

- Netiquette when writing an e-mail

  a) The user must ensure that a meaningful subject heading is used. A brief and accurate heading can help the recipient to decide on the relative importance of the mail.

  b) When writing or compiling an e-mail message, one should use correct paragraphing and heading styles to enhance the clarity of the message.

  c) An e-mail message should be captured in lower case. If uppercase is used it is considered as “shouting” at the recipient.

  d) One should use the spell and grammar check features before sending an e-mail as errors create a bad impression of the sender
and the company involved.

e) A signature should be included at the end of each e-mail which could include the user’s full name, the capacity under which the user is writing, telephone and fax numbers, and the user’s e-mail address (Burton & Shelton, 2005: 153; Henning, 2006; Roux, 2006).

f) Normal guidelines to be followed as also applicable to the writing of business correspondence, such as conciseness, to the point, correct use of grammar, punctuation, etc.

- Mass mailing

Nothing is more frustrating and time consuming than receiving an e-mail which has no reference to oneself or the work situation. Therefore, the sender has to ensure that the e-mail is recipient specific. If at any time the user needs to send a single message to a group of people, the user can just add all the addresses in the To box and send carbon copies (CC) the recipients’ names are visible to other recipients of the message to as many other recipients who also need to be informed about the specific content.

However, this results in sharing e-mail addresses with everyone on the list. To avoid this, the user can alternatively create a group or use the blind carbon copy (BCC – the recipient’s name is not visible to other recipients of the message) field. When the user uses the BCC field, none of the e-mail addresses are revealed.

However, the user needs to place at least one e-mail address in the To field and that can also be the user’s own address. The BCC field should not be used to send messages “incognito” as this could also be considered as being rude (Henning, 2006; Stroman, et al., 2004:200).
4.5.2.7 Organising e-mail

During peak periods in offices, it often happens that one opens an e-mail message and is then unsure of what to do with it. The message could then be closed and reopened again at a later stage. This action results in more time spent on the opening and reading of the same message and the e-mail box becoming over its limits. Better control over the Inbox will allow employees to be more productive and efficient.

The following steps can be followed to organise e-mail more effectively:

- Work according to a simple and effective e-mail reference system.
- Put aside uninterrupted time to process e-mail.
- Create a system to process one e-mail at a time, for example by opening an e-mail only once and dealing with it immediately.
- Taking a decision on what to do with a message such as the following: either delete it, do it, delegate it or defer it (MSOffice Online, 2004b). For more detailed information on how to set up an effective e-mail reference system, the user could use the F1 feature (help function).
- Attend to e-mail messages as one would have done with conventional mail in terms of opening, reading, responding and filing (or emptying the “in” tray) on a daily basis.

4.6 COST ANALYSIS

This section contains a breakdown of the costs associated with most commonly used paper-based and e-filing storage devices. The VUT was selected for this cost analysis by the researcher due to the accessibility to
the different departments as well as the fact that VUT makes use of a variety of standard storage devices and filing systems.

A comparison is made between the different paper-based storage devices and the resulting cost whilst the most affordable system will also be identified. The last part of this section contains a comparison of paper-based versus electronic systems. During the cost analyses, Office Plan Sasolburg, one of the biggest suppliers of office furniture to the VUT for the last fifteen years (Hill, 2006), identified the most commonly used paper-based storage devices.

For the comparison in costs between paper-based storage devices and electronic storage devices, the Bursary and Administration section of the VUT has been used. These two sections have fully implemented filing systems that have been used for a period of longer than two years whilst making use of the five different storage devices as indicated in Figure 4.16. The two sections were visited and the five devices were investigated.

Samples were taken from each storage device, whereby files were counted as well as the total number of pages per file. This exercise enabled the researcher to identify the total files and paper used per storage device. In cases whereby the four-drawer wooden cabinet was not fully used, a scenario was created by adding files and paper to drawers in order to identify the capacity of the four-drawer cabinet.

Figure 4.16 provides a summarised graphic illustration of paper-based filing and storage devices as opposed to e-systems in order to obtain a clear understanding of the cumbersome (paper-based) versus the streamlined (e-filing) systems.
Figure 4.16 serves to provide the reader with a synopsis of the holistic and ipso facto results of this investigation.

### PAPER-BASED SYSTEMS

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Type of storage equipment</th>
<th>Floor space</th>
<th>Cost per unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) 5 Drawer cabinet with boxes</td>
<td>Steel</td>
<td>$\text{m}^2: 900 \times 450 = 0.410 \text{m}^2$</td>
<td>$\text{R}600.00$</td>
</tr>
<tr>
<td>B) Steel and wooden cabinet - 2 doors</td>
<td>Steel cabinet</td>
<td>$\text{m}^2: 900 \times 550 = 0.520 \text{m}^2$</td>
<td>$\text{R800.00}$</td>
</tr>
<tr>
<td>C) 4 Drawer steel and wooden cabinet</td>
<td>Steel</td>
<td>$\text{m}^2: 460 \times 650 = 0.30 \text{m}^2$</td>
<td>$\text{R1,450.00}$</td>
</tr>
<tr>
<td>D) Mobile cabinet</td>
<td>(One bay with folders is visible)</td>
<td>$\text{m}^2: 1,150 \times 400 = 0.459 \text{m}^2$</td>
<td>$\text{R1,750.00}$</td>
</tr>
<tr>
<td>E) Open shelving unit (archiving)</td>
<td>(archiving)</td>
<td>$\text{m}^2: 8'6\times 3.05 = 0.29 \text{m}^2$</td>
<td>$\text{R690.00 per unit}$</td>
</tr>
</tbody>
</table>

### FILES / FOLDERS

<table>
<thead>
<tr>
<th>Type of file/folder</th>
<th>Total pages per unit</th>
<th>Cost of files</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folding files (2 half fold)</td>
<td>20 files per box x 70 boxes = 1,400 files</td>
<td>$\text{R11.20 per box x 50 boxes = R560.00}$</td>
</tr>
<tr>
<td>Lever arch files</td>
<td>Back side 7cm wide</td>
<td>Steel: 5 Rows x 12 files per row = 60 files Wooden: 4 Rows x 12 files per row = 48 files Steel: $\text{R8.60 per file x 60 files = R516.00}$ Wooden: $\text{R8.60 per file x 48 files = R412.80}$</td>
</tr>
<tr>
<td>Folding and suspension files</td>
<td>20 Files per unit x 84 units = 1,680 files per box x 6 days = 10,080 files</td>
<td>Steel: $\text{R11.20 per file x 10,080 = R112,992.00}$ Wooden: $\text{R8.60 per file x 4,200 = R37,320.00}$</td>
</tr>
</tbody>
</table>

### PAPER HARD COPIES

<table>
<thead>
<tr>
<th>Total pages</th>
<th>Cost of paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ream = 500 pages</td>
<td>9 boxes (45 reams) @ $\text{R116.28 per box = R1,046.52}$</td>
</tr>
<tr>
<td>2 reams</td>
<td>$\text{R111.28 per 2 reams = R222.56}$</td>
</tr>
<tr>
<td>3 reams</td>
<td>$\text{R119.28 per 3 reams = R357.84}$</td>
</tr>
<tr>
<td>4 reams</td>
<td>$\text{R115.28 per 4 reams = R461.12}$</td>
</tr>
<tr>
<td>5 reams</td>
<td>$\text{R111.28 per 5 reams = R556.40}$</td>
</tr>
<tr>
<td>6 reams</td>
<td>$\text{R107.28 per 6 reams = R643.68}$</td>
</tr>
<tr>
<td>7 reams</td>
<td>$\text{R103.28 per 7 reams = R710.96}$</td>
</tr>
<tr>
<td>8 reams</td>
<td>$\text{R99.28 per 8 reams = R778.24}$</td>
</tr>
<tr>
<td>9 reams</td>
<td>$\text{R95.28 per 9 reams = R845.52}$</td>
</tr>
<tr>
<td>10 reams</td>
<td>$\text{R91.28 per 10 reams = R912.80}$</td>
</tr>
<tr>
<td>11 reams</td>
<td>$\text{R87.28 per 11 reams = R979.08}$</td>
</tr>
<tr>
<td>12 reams</td>
<td>$\text{R83.28 per 12 reams = R1,046.32}$</td>
</tr>
</tbody>
</table>

### ARCHIVING / BACKUP SYSTEMS

<table>
<thead>
<tr>
<th>Type of backup system/archiving</th>
<th>On-site, a separate room or building is used for storing old records/documents for the retention period. The retention period can be described as &quot;the time period records must be kept according to operational, legal, regulatory, and fiscal requirements&quot; (Glossary of records management terms, 2000:21).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off-site: An off-site company is used for the storage of inactive records/documents for the retention period.</td>
<td></td>
</tr>
</tbody>
</table>

### Costs

- Cost implications frequently revolve around the need for a building(s) or room(s) involving high cost and space allocations; also pertaining to maintenance, staffing, and overhead expenses.
- On-site: The cost will depend on the type of storage equipment, and the total files to be stored. N.B. use of open shelves (Figure E) with lever arch files.
- Off-site: Due to various companies specializing in off-site record facilities, costs could vary considerably.

### Figure 4.16: Graphic comparison of results

1. Ipsi facto can be described as "by the fact itself" (Wikipedia, 2006c).
2. A filing "unit" can be described as a body of related records within a record series or a word or number in a filing segment considered when alphabetizing and arranging of files" (Glossary of records management terms, 2000:10).
3. Software costs: See par. 4.6.2.3.

---

On-site

Off-site
### Electronic Systems

#### Equipment

<table>
<thead>
<tr>
<th>Type of Storage Equipment</th>
<th>Computer</th>
<th>Internet Access - E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Floor Space**
- Limited space needed for placement of equipment and desk

**Costs per Unit**
- Complete computer unit: R4,200.00

#### Type of File / Folder

**Type of File**
- Electronic folder - only one type of folder

**Files saved in various software programs for example:**
- Only one type of file
- Only one type of file

**Total Files / Folders per Unit**
- Unlimited, irrespective of file sizes

**Cost of Files**
- Software packages: R260,000.00 (for the year 2006)

#### Paper

**Not Applicable**

#### Back-up Systems

**Type of Back-up / Archive (Hardware)**
- Network back-up
- Flash drive
- Portable hard drive
- Floppy diskette
- CD
- Tape

**Costs**
- 4Gb: R1,100.00
- 2Gb: R1,050.00
- 1Gb: R999.00
- 320Gb: R1,219.00
- 500Gb: R2,487.00
- Verbatim 700 Mb: R25.00 (Pack of 10)
- Verbatim 1.2Gb: R35.00 (Pack of 10)

Containers to store back-up / archiving hardware require limited space, and a network server can host the archiving of an entire company. Server archiving is accessible via LAN, MAN and WAN. (No geographical restrictions).
The dimensions with regard to paper-based and e-systems outlined in Figure 4.16, cover the following aspects (green section = paper-based systems) and (yellow section = e-systems) with cost implications indicated in red print for the two respective sections:

- Type of storage equipment and required floor space.
- Type of required file/folder and number of required files/folders.
- Total copies (pages) accommodated as per storage device.
- Type of back-up or archiving system required.

In order to clarify the findings as to the independent variable on which this investigation is focussed, namely the war on paper abuse, a brief cost analysis is necessary to understand the effects on the optimisation of the two dependant variables, namely e-filing and e-mailing as apposed to the traditional methods.

4.6.1 Paper-based filing costs

The following section contains a breakdown of the costs associated with most commonly used paper-based filing storage devices as found at the VUT.

4.6.1.1 Paper costs

HEIs in SA are all affiliated to PURCO which has been established in 1999 and provides non-profit joint purchasing services to the HE sector in Southern Africa. HEIs benefit from their membership to PURCO in terms of price and service advantages through collaborative purchasing. PURCO also allows members to share best purchasing practices through networking and interacting with purchasing experts that reduces costly duplications in networking activities (Purco, 2006). The purchasing power of PURCO is clearly evident when the cost of paper is explored.
Lexmark in SA (Horn, 2006) reported that a European group, “Ipsos” in Europe, did research on the abuse of paper whereby interviews were conducted with two thousand office employees from different countries. Through these interviews, Ipsos reported that only a small percentage of employees are aware of the influence that paper abuse has on an organisation and only a few admitted having any part in the abuse.

A total of 34 pages are printed on a daily basis by the average office worker and 20 percent of those pages are not used at all. A remarkable 52 percent of the office workers admitted that paper are misused in their offices, whilst 26 percent admitted that they had part in the abuse. In the public sector, 76 percent of the office workers admitted that they are part of the abuse of paper and printing facilities.

### TABLE 4.13: Research results from Ipsos (Beeld, 2006:26)

<table>
<thead>
<tr>
<th>Business</th>
<th>Waste of paper per day</th>
<th>Total of printing copies per day per employee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small businesses</td>
<td>25 percent</td>
<td>47</td>
</tr>
<tr>
<td>Construction</td>
<td>21 percent</td>
<td>17</td>
</tr>
<tr>
<td>Financial Services</td>
<td>18 percent</td>
<td>46</td>
</tr>
<tr>
<td>Industries</td>
<td>17 percent</td>
<td>31</td>
</tr>
<tr>
<td>Public Sector</td>
<td>17 percent</td>
<td>31</td>
</tr>
</tbody>
</table>

#### 4.6.1.2 Cost of files

The three most commonly used paper files at VUT, where large volumes of documents need to be stored, are grey Lever Arch files, customised folding files and suspension files.

- **Lever arch files**

  Standard reams of A4 paper are used and one Lever Arch file has the capacity to hold approximately one ream of paper (500 pages). Plastic Lever Arch files are used in departments that require storage facilities for smaller volumes of documentation. Since these files are more expensive, they are generally used for active files.
One lever arch file costs R8.60 (Motiokeng, 2006). These files can be used in open shelving units or in two door cabinets (refer to Figure 4.16).

- **Customised hard copy folders (3 folds)**

At VUT, the Administration section has adopted customised files for each student in order to keep records of biographic information, students’ history and academic records. These files are placed in a suspension folder that safeguards the files from tearing or falling out. One folder costs R1.20 and one suspension folder costs R4.16. This means that the basic folders needed costs R5.36 per client or student. Should this amount be multiplied by the total number of students registered at a HEI, the cost of these folders could be as follows:

15,000 students @ R5.36 = R80,400.00

Folders are also used in the Bursary and loan section whereby student information such as loan applications and academic information are filed. Again, the folders are placed in a suspension folder should a four drawer or any other drawer cabinet be used. In the mobile filing cabinet, folders are placed vertically in an up-right position between the different iron rods, which sub-divide the different units. Each unit holds up to 20 folders with approximately 15 to 20 pages in each folder. With the assumption that in the mobile cabinet 20 pages are stored in each folder, the cost analysis will be as follows:

20 folders per unit x 84 units = 1,680 folders per bay
1,680 folders per bay x 6 bays = 10,080 folders
1 folder @ R1.20 each x 10,080 folders = R12,096.00
With reference to the graphic comparison of results in Figure 4.16, a mobile cabinet has 6 bays. One bay refers to one side of the mobile cabinet (= six sides). This cabinet has three movable sides. The left and the right side each has only one bay while the two middle sections each has two bays, one left and one right, which equals 6 bays.

- **Suspension folder**
  Suspension folders can only be used with appropriate cabinets such as five drawer wooden or steel cabinets. Although these cabinets are available in two to six drawer sizes, the most commonly used cabinets at the VUT in the Administration and Finance sections are four drawer wooden cabinets. Suspension folders can be used without containing any folders, but this will increase the risk of loose papers getting lost or misfiled (refer to Figure 2.24 for more detailed illustrations).

### 4.6.1.3 Cost of storage equipment

Figure 4.16 indicates the different costs in paper-based storage equipment, as well as the floor space which will be needed for the necessary equipment. In most offices, two different types of equipment will be found. For the prices per unit on each piece of equipment, refer to Figure 4.16.

### 4.6.1.4 Cost of back-up systems

Paper-based filing systems involve the use of traditional files, for example, the grey lever arch files. The spines of these files are marked for clarification of the contents and are filed vertically in open shelves. The room should be protected against flooding, theft and fire (refer to Figure 4.16 for a detailed outline of prices per unit (refer to open shelving units), that is also adding a rippling effect relating to even more expenses involved.
4.6.1.5 Summary of paper-based filing costs

Table 4.14 contains a break down of the five storage devices and related costs pertaining to equipment, files and paper that indicate the different totals per device (excluding value added tax (VAT)).

<table>
<thead>
<tr>
<th>TABLE 4.14: Total costs of five storage devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>设备类型</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>5-drawer cabinet</td>
</tr>
<tr>
<td>2-door cabinet</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>4-drawer cabinet</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Mobile cabinet</td>
</tr>
<tr>
<td>Open shelving units</td>
</tr>
</tbody>
</table>

*All prices are VAT exclusive

The inferential analysis and interpretation pertaining to each of the five devices are clarified as follows:

- **5-drawer cabinet**
  This is the second most expensive cabinet that could accommodate 22,500 pages and 1,500 folders. This cabinet takes up the most floor space and, just like the 4-drawer cabinet, the biggest problem with this system is the expansion of files. When new folders are added, all the folders need to be shifted backwards or moved over to other drawers.

- **2-door steel or wooden cabinet**
  There is very little price difference between the 2-door steel and the wood cabinet. Although these cabinets are more cost effective, it takes up a lot of floor space and cannot really accommodate many folders.

- **4-drawer steel or wooden cabinet**
  The 4-drawer wooden cabinet costs R412.80 more than the steel cabinet and could be handy for small volumes of filing.

- **Mobile cabinet**
  The mobile cabinet with a capacity for 33,600 pages and 10,080 folders
is clearly the most expensive paper-based filing container. However, it also does not leave much room for expansion.

- **Open shelving units**

  The open shelving units with a capacity for 36 000 pages and 72 folders are the most affordable filing device. It uses less floor space and can hold more paper than any of the above-mentioned devices. No doors or drawers need to be opened, which also saves space for more filing equipment. No additional filing accessories such as tabs, folders, etc. are needed. Files are marked on the spines, and are at all times easily retrievable.

4.6.2 **Electronic costs**

4.6.2.1 **Electronic equipment**

  With reference to Figure 4.16, an approximation of the costs associated with paper-based filing was obtained from Office Plan, Sasolburg (Hill, 2006). To obtain general costs of electronic equipment and back-up systems, two computer organisations, namely Tele Computers and Abacus Computers were selected for this comparison (refer to Figure 4.16).

  Basic requirements for electronic storage include a Pentium IV PC with Windows 2000. The computer needs to have sufficient RAM and sufficient HDD space for electronic storage. Originally, computer users stored data on 5.25 inch diskettes and later 3.5 inch diskettes using appropriate diskette drives. As technology progressed, it has become standard practice for computer users to store data onto their HDDs, a network server or on flash drives or memory sticks. It is advisable that the workstation has a CD-writer and a CD-drive; alternatively the computer may have USB ports allowing the user to make use of flash RAM HDDs.

  Although the literature study provided ample information regarding data tape drives, this form of electronic storage is most commonly used at HEIs in the IT departments.
According to Dempers (2006), tape drives are an unreliable storage medium, especially in terms of data retrieval, as these tapes often stretch or break and recorded information is then lost.

The portable HDD is the back-up system of the future. According to Ramasodi (2006), it is difficult and expensive to keep up with the speedy development of new technology. DVD technology is in the process of replacing CD-ROMs (also called blue laser), which is three times faster. From an IT specialist's point of view, a data tape system with a capacity of 10 - 100 gb is the best and most cost-effective way of saving system files, configurations, databases, logs and file systems (Ramasodi, 2006).

4.6.2.2 Back-up system costs

The network as a back-up system (scenario)

Figure 4.17 illustrates a network back-up system of one department, whereby data tapes are made and stored off-site for a six months period.

FIGURE 4.17: A network data tape back-up system
For classification purposes, it is necessary to first explain the different terminologies used in Figure 4.17. A network can be described as “a group of computers connected by communication lines to share information and resources” (Glossary of records management terms, 2000:16). A server can be described as a “device that provides shared services to workstations over a computer network” (Glossary of records management terms, 2000:22). A data tape can be described as a “recording medium for data in computer programs. Generally used as a mass or portable storage medium in magnetic form” (Glossary of records management terms, 2000:23).

- The process of capturing data starts at the desk top PC (A) of employees within an organisation (for example the Finance Department), capturing and processing data on a daily basis. These could be cashiers, debtors or other sections. This information is then stored on the central server (C).
- The connectors represent the cables (B) between the PCs and the network. From an employee’s PC at Finance Department through the network (cables), all files are transmitted electronically to the server (C) for back-up purposes and information sharing. The server is normally located in the IT department of an organisation.
- This information is accessible to all relevant employees, for example, employees from the Finance Department may or may not have access to information of the Human Resources Department, depending on company policies.
- From the IT Department, the information is copied on a tape (D) that contains the entire back-up of information. For example, information from 1990 up to the date of back-up could be stored on one tape. Every week this information increases and is replaced with the latest. Information tapes are kept for six months only whilst older tapes are destroyed based on how many times it was used. This is to ensure that the quality of the tapes remains usable and reliable.
These tapes are sent to an off-site archiving facility. Each tape will be covered in a box, bottle or folder to ensure that no heat, water or damage could occur during the transportation. When information is required for the year 2001, a phone call to the off-site organisation ensures that the tape is retrieved and delivered within a few hours' time. The costs involved in implementing such a network back-up system can add up to thousands of Rands. However, this is a reliable and secure way of ensuring that the historic information of a company is guaranteed (Ramasodi, 2006).

**Back-up devices (flash drives/memory sticks/mass storage devices, CDs, diskettes and portable hard drives)**

When one discusses electronic back-up systems, the abovementioned devices come to mind and users have their own perceptions on what to save on these devices. Interviews with different users provided the following information:

Through the continuous improvement of technology, dated storage devices are replaced with contemporary ones and previously used devices then become obsolete. The diskette for example, was affordable but it was sensitive to hazards such as fluids, heat and viruses. When it was reused for too long, it could become corrupt without any warning and the information stored on it would be lost.

Flash drives (also referred to as memory sticks or mass storage devices) were invented and new computers contain USB ports that rendered diskette drives obsolete. The flash drive is a small portable device which is user friendly, small and light to carry around. However, similar to the floppy diskette, a flash drive can also become corrupt especially if it has been used for a long period of time. The flash drive has been found to be more stable than the CD since it cannot scratch or crack easily.
The portable hard drive is a very convenient and handy tool when information needs to be transmitted between various processors. However, this cannot serve as a back-up device for information that needs to be stored for a long period of time. Although the portable hard drive is small, it could still be cumbersome to carry around, should a number of employees make use of it.

The CD as a back-up device has many advantages over the abovementioned devices. CDs are easy to operate and its small size requires small storage devices and little floor space. Mini CDs allow the user to keep it in his/her pocket or wallet but it is more costly than standard CDs (Henning, 2006; Ribeiro, 2006).

4.6.2.3 Software costs
Institutions make use of a resellers-eclipse, whereby software licenses are supplied. This license from Microsoft is referred to as a “Campus agreement” that allows all employees at the institution access to the following: MsOffice applications, servers, exchange server and Windows operating systems. An annual fee of R260,000.00 is payable for all the above-mentioned software packages, which is dependent on the number of staff and PC's/laptops as per the headcount of the Higher Education Management Information System (HEMIS) (Naudé, 2006; Van Blerk, 2006).

4.6.3 Comparison between paper-based filing costs and e-filing costs
Paper-based and an e-filing systems have one main factor in common and that is that they both can ensure that the history of an organisation is saved for future reference. “Today, record keeping provides the intellectual infrastructure that underpins all human endeavour. The components of an ideal society, freedom, responsibility, accountability, integrity, industry and justice cannot exist without effective record keeping support” (HQ paper maker, 2005b).
Therefore, when the cost of any paper-based filing system is analysed, the following should be taken into consideration: method of filing (alphabetical, numerical, etc.) storage equipment used, files, floor space and the amount of paper each device or system can accommodate.

4.7 SUMMARY
This chapter has provided the empirical results and a comparative evaluation of traditional filing and mailing methods as apposed to e-filing and e-mailing methods. These filing systems were compared in terms of time, efficiency and cost effectiveness. Pertaining to effectiveness and productivity, this chapter has shown that electronic systems allow for standard procedures and practices to be completed much faster and more effectively than when using traditional methods.

Electronic systems allow for far more accurate filing, record retention and retrieval to take place; training is relatively simple and filing systems can be expanded easily. Traditional filing systems are not as user-friendly as electronic systems and electronic systems allow for enhanced security in terms of password protection.

In Chapter 5 conclusions will be reached and recommendations will be made based on the findings, analysis and interpretation. Possible areas for future research will also be identified.
CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Chapter 4 was divided into three sections. In the first section, a comparison was made between the advantages and disadvantages of paper-based and electronic filing systems. This part focussed on three dimensions namely, time effectiveness, cost effectiveness and the evaluation of traditional systems. In the second section, the empirical study was reported on. Each question was interpreted according to the applicable frequencies. Correlations and cross-tabulation were done, whereby only two questions had an association with less than 0.05 percent. Lastly, a cost analysis was provided in order to outline the comparative dimensions in terms of the advantages versus disadvantages of traditional and electronic systems.

This final chapter focuses on the conclusions, recommendations, limitations of the study and recommendations will be given pertaining to possible further research.

5.2 CONCLUSIONS

In this section, a brief summary of the most important findings is presented according to the specific objectives as indicated in Chapter 1.

5.2.1 Identifying different types of filing systems implemented

In HEIs a hybrid of traditional filing methods and e-filing systems are utilised. Traditional filing systems included alphabetic and numeric classifications. E-filing systems included e-filing on PC and the scanning of documents. From the above types of filing systems, the alphabetic filing system proved to be the most understandable, and most commonly used system.
Paper-based filing involves documents that require folders and that lead to the occupation of a lot of floor space. It was proven that any paper-based filing system is costly, ineffective and counterproductive. The office of today, whereby the majority of the respondents indicated that they use traditional methods of filing, is far removed from the paperless office concept which all institutions should strive for. It can therefore be concluded that the combating of the paper-war is far from over.

5.2.2 Exploring the time and cost effectiveness of systems and equipment

Approximately half of the employee sample indicated that they need to leave their offices to do paper-based filing. Therefore, it is time consuming and counterproductive, taking in consideration the preparation of documents, opening of folders and the creation of indices. Alternatively, e-filing requires no paper documents, and files and folders can be electronically created, sorted and saved. It can therefore be concluded that the e-filing system is much more time effective than paper-based filing.

The cost analysis of filing systems has shown that traditional filing methods require a considerable capital layout. Concomitant with this conclusion, e-filing systems also require a large amount of capital investment to establish. In terms of floor space requirements, electronic systems present definite advantages. Maintenance and expansion of traditional filing systems are costly in terms of additional equipment purchases and on- or offsite storage requirements. E-filing systems, once established, are much more cost effective to maintain and expand.

It would appear that e-filing systems are more effective over the long term with regard to cost and time effectiveness. However, effective back-up systems are still required, although this can also be done electronically. In terms of mail, traditional mailing systems will always remain necessary for the sending and receiving of original documents, but e-mail has an important role to fulfill in order to combat paper abuse.
5.2.3 Comparisons of the advantages and disadvantages of paper-based and e-systems

Although e-mail has inherent advantages over traditional mail in terms of delivery, speed and sending costs, e-mail systems are accompanied by three major disadvantages. Firstly, employees tend to print hard copies unnecessarily and e-mail and the Internet have in fact led to an increase in paper consumption. The second drawback of e-mail is related to time-effectiveness and productivity, as employees tend to abuse their companies' e-mail systems by sending and receiving large volumes of personal mail. Abuse on the aforementioned scale is not found in traditional mailing systems. The third drawback of e-mailing systems is related to the threat of viruses and spam that can enter or be introduced to the company's computer systems and cause damage to stored information if proper precautions are not maintained.

5.2.4 Abuse of paper, printing facilities and e-mail

The effectiveness of systems can be measured by the use (abuse) of paper in the office. The enormous cost implications of the proven paper abuse are caused by the duplication of filing documents by saving it on the computer and also printing hard copies that have to be filed in paper folders. The duplication of tasks results in counter-productiveness and extensive use of floor space and storage devices and equipment. The abuse of e-mail is found in all institutions, whereby receipt of non-work-related e-mails proves major abuse, also of printing facilities. Through the installation of too many printers in an organisation or business, it becomes more difficult to control paper and ink and it will also stimulate abuse.

5.2.5 Effectiveness of the system implemented

During this investigation, it was found that no constructive e-filing or e-mailing models are in place for personnel to follow. More than half of the respondents use their own methods.
As those methods/systems used are not always reliable or properly implemented, the end result will include misfiling, counter productivity and unnecessary cost implications.

The above could be made worse because of some institutions rotating administrators, which in turn causes a lack of continuity, thereby creating a snowball effect. It can be concluded that the effectiveness of a paper-based filing system is much less than e-filing. Documents are captured, printed and placed aside for filing.

Inactive folders need to be shifted for archiving and a retention schedule/policy needs to be in place and maintained. This is a result of employees not receiving standard training on software packages used, such as MSOffice. Where corporate guidelines, appropriate training and monitoring are not applied, confusion, chaos and abuse can be expected.

It remains the responsibility of administrators to use e-mail effectively. It can be concluded that e-mail is a very effective communication method and allows the user to save a lot of time and cost, thereby increasing productivity. However, employees receiving non-work-related e-mails abuse this method. The back-up systems used are also of concern. Most respondents use devices such as memory sticks, diskettes and CDs, while a very small percentage indicated that they use the server as back-up system.

5.2.6 Duplication of filing in both paper-based and e-filing systems

Most employees save documents on PC as well as print hard copies for paper-based filing. This duplication clearly proves the major reason for abuse of paper and escalating costs. The unnecessary consumption of paper is an indication that the paper-war has not been won.
5.2.7 **E-filing and e-mailing models**

The majority of the respondents indicated that no training or guidelines were provided on e-filing and e-mailing. As previously stated, no system can be effective if employees are not trained to use the systems optimally.

Wilkinson (2004:134) stated that “the need for training is confirmed by the demand for a formal qualification in office management”. It can therefore be concluded that through the e-filing and e-mail models as guidelines, the effectiveness and efficiency of an e-filing and e-mailing system will increase and employees will be more productive.

According to various newspaper articles, organisations are struggling to prohibit internal e-mail abuse. This abuse would refer to employees spending more and more time on e-mail with the sending and reading of non-work-related e-mails. It was also clearly indicated that paper consumption was well on the increase and that the use of e-mail increased the printing of documents by 40 percent (par. 2.18.2 page 67).

Problems encountered alongside the unlawful use of e-mail, are spam and viruses. Companies and Institutions of Higher Learning have been forced to increase their spending due to the countering and expunging of some of these extremely virulent viruses in the networks (par. 2.18.3.1 page 69).

It can firstly be stated with confidence that the abuse of paper occurs most routinely when using e-mail as well as traditional filing methods. It therefore follows that printing facilities are also abused. Although e-mail is definitely abused, it remains a very effective and excellent tool for quick and effective communication both internally and externally. It has become an everyday reality that the more advanced and innovative the abuser becomes, the more the filtering and countering processes that need to be developed and implemented in order to address this problem.
Although recycling of paper was never investigated during this study, it was noted that most departments do not recycle paper. The question arises as to what happens with paper which lands in the dust bin and how many of those reams used by employees (as indicated in question A6, par. 4.2.2.6) are thrown away because of documents with grammar errors and other reasons of unnecessary printing.

5.3 RECOMMENDATIONS

Following the conclusions that have been drawn according to the objectives stated, relevant recommendations will now be formulated.

5.3.1 Identifying different types of filing systems implemented

With all the contemporary technology and systems available, it is not necessary to redesign the wheel, it is only a matter of adopting best practice, such as scanning and e-filing. Duplication should be avoided at all costs and proper policies, models, training, and monitoring should be implemented and maintained.

5.3.2 Exploring the time and cost effectiveness of systems and equipment

It is highly recommended that e-filing and e-mailing systems be used. These systems have been proven as less costly, saving time and improving productivity.

5.3.3 Comparisons of the advantages and disadvantages of paper-based and e-systems

It is recommended that employers need to promote and enhance the importance of e-filing and e-mailing above those of traditional methods. Managers must lead by example and facilitate an effective war on paper abuse by providing the necessary electronic logistics and infrastructures.
5.3.4 Abuse of paper, printing facilities and e-mail

It is recommended that employees should share printers because this will allow better control over equipment as well as the use of paper. Guided use of the e-mail facility should be a major focus through policies, control and training measures.

5.3.5 Effectiveness of the system implemented

It is recommended that well-structured models be used for all e-filing and e-mailing purposes. In the interest of best practice, it is recommended that all administrative employees receive training in MSOffice. This should be compulsory for all new appointments as well as regular updating of skills transfer in order to adapt to new ICT developments. It was found that the productivity levels of administrative staff who file electronically are higher than the productivity levels found when traditional filing is the norm.

It is recommended that paper-based filing systems be seriously reassessed and adapted to encompass an e-filing system. Counter productivity is strongly indicated when offices are left unattended, resulting in a loss of professionalism and inefficiency, which should be avoided as far as possible.

E-mail is less costly than traditional mail and the time saved when using e-mail appropriately, must be emphasised. It is recommended that institutions establish an effective e-mail policy and that they maintain and upgrade this policy on a regular basis. This policy must be distributed to all employees, at least once a year. The IT department should monitor the system to ensure that no abuse is taking place.

It is also recommended that receiving and responding to personal e-mail should be strictly regulated by the applicable monitoring department. Appropriate regulation will prevent abuse of the e-mail facility and curtail paper abuse effectively.
Figure 5.1 provides an extract from an electronic communications policy and procedures (Appendix D).

### PC GUIDELINES

**Use of VUT resources is restricted to business purposes only.** VUT has all rights to audit usage and content. All messages and documents sent, received and stored are treated as VUT owned business information.

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>RESTRICTED TO BUSINESS USAGE</th>
</tr>
</thead>
</table>
| Personal computer | • No games or screen savers to be installed  
|                   |   • Protect the asset  
|                   |   • It is your tool, take care of it as any other critical tool for performing your job  
|                   |   • No pirate software/operational systems                                                   |
| E-mail            | • No chain letters, jokes or advertisements  
|                   |   • No defamatory, obscene, offensive or harassing messages and material  
|                   |   • Don’t routinely forward messages to large distribution list unless you have business needs to do so |

<table>
<thead>
<tr>
<th>SECURITY</th>
<th>YOU ARE KEY TO SECURITY</th>
</tr>
</thead>
</table>
| Virus             | • Only VUT licensed anti-virus software may be utilised  
|                   |   • Act carefully  
|                   |   • User’s responsibility to upgrade latest version and updates  
|                   |   • Contact IT Services in case of doubt                                                     |
| Access control    | • Protect confidentiality of your password  
|                   |   • Have ‘hard to guess’, ‘easy to remember’ password  
|                   |   • Do not give, write or store electronically your password  
|                   |   • Do not share your password  
|                   |   • Do report any suspicious activity                                                        |
| Screen saver      | • Activate password protection                                                                |

<table>
<thead>
<tr>
<th>DATA PROTECTION</th>
<th>YOU ARE RESPONSIBLE FOR YOUR DATA PROTECTION</th>
</tr>
</thead>
</table>
| Confidentiality   | • Classify according to Confidentiality  
|                   |   • Protect according to sensitivity  
|                   |   • Safest places are your personal share on the server, or a diskette  
|                   |   • Files can be password protected  
|                   |   • Don’t store confidential information on the hard drive of your Laptop  
|                   |   • Check who has access to your e-mail, your hard drive (if shared)                        |
| Back up           | • Regular back up of data is the user’s responsibility  
|                   |   • Important files may be stored on the server at user’s request                            |
| Record retention  | • Organize your filing  
|                   |   • Regularly delete documents / E-mail which have exceeded record retention periods         |

**FIGURE 5.1: Electronic communications policy and procedures**

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It is recommended that the server be used as main back-up system for all files. The server allows for better protection against loss, fire, damage or fraud. Portable or removable back-up devices are costly and can be misplaced or easily lost when not locked away. Back-up data tapes are stored off-site and are at any time available when needed.

5.3.6 Duplication of filing in both paper-based and e-filing systems
Employees should ensure that no tasks are duplicated. No tasks should be saved electronically as well as on a paper-file. It is recommended that employees should make use of only one filing method (either electronic or paper-based). However, the best solution should be found in the exclusive use of e-systems, where it is available and fully functional.

5.3.7 E-filing and e-mailing models
It is recommended that each organisation have structured models in place which administrators can follow. A loss of productivity or efficiency occurs when an administrator “forgets” where a document has been filed, because of unstructured procedures and lack of monitoring, maintenance and control.

5.4 LIMITATIONS
During the course of this study, it became clear that no questions were asked regarding the abuse of printing facilities. When reading the newspapers, one can see the impact of abuse on printing facilities as this goes hand in hand with the abuse of paper.

5.5 RECOMMENDED FUTURE RESEARCH
Through data collection and the investigation of traditional filing methods, it was astonishing to find so many companies advertising the way to “paperless office”. These companies mainly focus on electronic filing methods through online programs which are monitored by the supplier or through a scanning system. Recommendations for follow-up research could focus on electronic filing methods versus scanning of documents for filing purposes.
In addition to the previous, one often reads about “recycling” and why recycling of cans, paper, and plastic is necessary. To combat corporate paper abuse, every person should also be made aware of the recycling of paper since this could save tremendously on resources and energy. According to the recycling facts (Kingwood Green Information, 2006e), “the production of a ton of paper requires 17 trees, 7,000 gallons of water and more energy per ton than glass or steel”. The following paper facts could serve as a point of departure for such an investigation.

- In America, so much office paper is thrown away annually that one could build a 12 feet high wall that stretches from Los Angeles to New York City.
- Paper used for junk mail equals up to 100 million trees which is cut down every year whereby half of the junk mail is thrown away or never read.
- Forestland of up to 20 million acres could be freed, if half of the world’s paper is recycled or abuse of paper restricted.
- By recycling Sunday newspapers, 500,000 trees could be saved.
- American businesses generate so much paper per day that it could circle the earth 20 times.
- Newspapers 4 feet high could save a 40 feet pine tree.
- To produce paper to the mass of one ton will mean that 17 trees must be felled, water to the amount of 7,000 gallons is required, which will supply energy per ton adequate to glass or steel. This will generate energy to heat up a complete home for approximately 6 months (Kingwood Green Information, 2006e).

5.6 SUMMARY
The problem investigated focused mainly on the uninformed use of the e-mail and e-filing facilities at HEIs, with a concern about the abuse of paper.
According to the completed investigation, solving of the problem was successful as proven by the analysis and interpretation of the processed data. The main and specific objectives were to investigate traditional filing and mailing practices as opposed to electronic systems in the computer support or administrative environment.

This research has shown that the paper war has not been won and HEIs are fighting a losing battle. New technology which was meant to save time and improve quality of work, had a different outcome. Employees are abusing the e-mail facility and the majority of employees apply hybrid filing methods. The paper war can only be effectively combated when e-filing systems are implemented and e-mail facilities are used optimally according to structured policies and guidelines. Through the theoretical and empirical study, this research has clearly indicated that e-mail practices are abused in the corporate environment. Data was collected specifically at HEIs but, although the focus was the HE sector, there was a clear indication that paper filing and e-mail abuse are rampant and of great concern.

According to the completed investigation, the objectives were met and the title of the investigation was clarified theoretically and empirically:

**COMBATING THE CORPORATE PAPER WAR:**

**OPTIMISING ELECTRONIC MAIL AND ELECTRONIC FILING**

Through all the statements made by experts on the “paperless” office, it is clear that this concept could never be the case unless drastic measures are applied. While electronic systems have become global in offices, and the power of software applications have multiplied, the result has not been a paperless office. Indeed, the ability of electronic systems to accommodate information has in many respects resulted in more paper, in stead of less (Cooperman, 2002:108).
REFERENCES


ARMA INTERNATIONAL. Arma international guideline for records and information management. Alphabetic filing. 1995. USA: Publisher unknown.

ARMA INTERNATIONAL. Arma international guideline for records and information management. Filing procedures. 1989a. USA: Publisher unknown.

ARMA INTERNATIONAL. Arma international guideline for records and information management. Numeric filing. 1989b. USA: Publisher unknown.

ARMA INTERNATIONAL. Arma international guideline for records and information management. Subject filing. 1988. USA: Publisher unknown.


DU PRE, R. (Dupre@vut.ac.za). 2005. E-mail sent to staff. [Email to: VUT internal mailing list] 25 Jan.


TRACY, B. 2004. Time power: a proven system for getting more done in less time than you ever thought possible. New York: AMACOM.


Dear Respondent,

I am busy at the Vaal University of Technology with a study towards obtaining a Magister Technologie / MTech in Office Management and Technology. The focus is on the following topic:

COMBATING THE CORPORATE PAPER WAR: OPTIMISING ELECTRONIC MAIL AND ELECTRONIC FILING.

The project is intended to identify all filing and mailing practices that lead to global abuse of paper or hard copies.

I am aware that you have a busy schedule and sometimes have to work under difficult circumstances. However, I am convinced that you will be able to add constructive value to the success of my research project by completing the attached questionnaire. It should not take more than 15 minutes of your time. There are no right or wrong answers. I guarantee that your identity will not be divulged.

Please mark each answer clearly with a “X”. Please note that only one answer per question should be marked if not specified otherwise. The questionnaire will be collected on 29 March 2006.

Thank you for your kind co-operation and support in this study.

Regards

MS MM BOTHMA
SENIOR ADMINISTRATION OFFICER:
FINANCIAL AID BUREAU
APPENDIX B: QUESTIONNAIRE

QUESTIONNAIRE

COMBATING THE CORPORATE PAPER WAR: OPTIMISING ELECTRONIC MAIL AND ELECTRONIC FILING.

The following questionnaire should be answered by marking the appropriate block with an 'X'. In each case please mark only one block.

Name of Institution: ________________________________

Department: ____________________________

CATEGORY A: PAPER-BASED SYSTEMS

1. After typing a document on your PC what do you do?
   1.1 Save document on PC then print a hard copy to save.
   1.2 Save document on PC make a photocopy of original for filing.
   1.3 Save document on PC without making hard copies for file.
   1.4 Do not save document on PC make hard copy of original to save in file.

2. What type of paper file is most used in your working environment?
   2.1 Carton folders.
   2.2 Lever arch files (hard cardboard - grey and white).
   2.3 Lever arch files (hard cardboard - plastic).
   2.4 Hanging/Suspended files.
   2.5 Other. Please specify:

3. What type of filing system is most used in your department?
   3.1 Alphabetical filing system.
   3.2 Numerical filing system (chronological, alpha-numeric, terminal digit etc.).
   3.3 Electronic (scanning system).
   3.4 Computer filing system.
   3.5 Other. Please specify:

4. Are you required to leave your office or working area in order to conduct your filing?
   Never | Sometimes | Often | Always
   1     | 2        | 3     | 4     

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5. How many files (lever arch, hanging/suspended files, etc.) on average do you use per year for filing purposes?

5.1 1 – 20.
5.2 21 – 40.
5.3 41 – 50.
5.4 51 – 100.
5.5 101 – and more.

6. On average, how many reams of A4 paper do you use per month for printing and photocopying?

6.1 Less than 1 ream per month.
6.2 1 to 3 reams per month.
6.3 4 to 7 reams per month.
6.4 8 to 11 reams per month.
6.5 12 to 15 reams per month.
6.6 16 and more reams per month.

**CATEGORY B: ELECTRONIC FILING SYSTEM**

1. How do you file electronically?

1.1 According to a prescribed model.
1.2 I use my own structured model.
1.3 I use any manner of filing.
1.4 Other. Please specify.

2. What type of back-up system do you use when filing electronically?

2.1 Portable hard drive.
2.2 Flash drive/memory stick, stiffies, CD/DVD.
2.3 Server back-up.
2.4 Combination of 2.1 and 2.2
2.5 Combination of 2.2 and 2.3
2.6 No back-up system.
2.7 Other. Please specify:

3. How long does it take to retrieve a document from your electronic filing system?

3.1 Less than 1 minute.
3.2 Between 1 and 3 minutes.
3.3 Between 3 and 5 minutes.
3.4 Between 5 and 10 minutes.
3.5 More than 10 minutes.

4. Have you received any guidelines or training on electronic filing?

4.1 Yes.
4.2 No.
5. **How often do you clean up your electronic filing system?**

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**CATEGORY C: E-MAIL SYSTEMS**

1. **How often do you do the following after opening your e-mail?** (Each point should be answered separately)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Read then delete.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.2</td>
<td>Read then save electronically.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.3</td>
<td>Read, print then save in a paper file.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1.4</td>
<td>Read, print then dispose of it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

2. **Estimate how many work-related e-mails you receive during one work day.**

- Less than 5 per day. (2)
- Between 6 and 10 per day. (3)
- Between 11 and 15 per day. (4)
- Between 16 and 20 per day. (5)
- More than 20 per day. (5)

3. **Estimate how many non-work-related e-mails you receive during a single work day.**

- Less than 5 per day. (1)
- Between 6 and 10 per day. (2)
- Between 11 and 15 per day. (3)
- Between 16 and 20 per day. (4)
- More than 20 per day. (5)

4. **If you receive non-work-related e-mails estimate how many pages you print per week.**

- Less than 5 per week. (1)
- Between 6 and 15 per week. (2)
- Between 16 and 25 per week. (3)
- Between 26 and 30 per week. (4)

5. **Has your e-mail facility ever been blocked because of abuse?**

- Yes. (1)
- No. (2)

Your time and effort in completing the questionnaire is much appreciated. Thank you.
marelize bothma

From: prof roy du pre
Sent: 25 January 2005 07:16 PM
Subject: EMAILS SENT TO ALL STAFF

Dear Colleagues

I am concerned at the way emails containing a general announcement/notice/information is sent to all staff.

This creates the following problems:

1. The email arrives with a long list of all the staff contained in our Global Address List. This huge email instantly clogs up our email system and places a vast amount of data on everyone's inbox. Sometimes this fills up the inbox and staff members are advised that their mailbox is full. Any emails sent to that email address bounces and are returned "undelivered".

2. Some administrators/staff then print out this announcement/notice/information for their line managers or other staff. The print-out then contains two pages of names, followed by message or announcement which very often is only one line. This is a tremendous waste of paper. Imagine if such a notice is sent to 800 staff members and everyone prints it out, the notice will consume 1600 pages which is more than 3 reams of paper. Such a notice, if printed at least once a week for a year equals around 100 reams which is 20 boxes of copy paper. This costs the institution more than R4000 and finishes off a little forest every year.

May I share with you a method in which you can send a general notice to all staff:

1. When you copy the global address list, do not click on the TO button. Rather click on the Bcc button. All the names will then be posted to the Bcc field.

2. When you then send the email, it will go to all persons in the Global Address List but the names wont be reflected on the email when it is received by staff members, neither will it be appear when printed out.

Happy sending

Prof Roy du Pré
Deputy Vice-Chancellor: Academic
Vaal University of Technology
(formerly Vaal Triangle Technikon)
South Africa
Ph: +27 16 950 9326
Fax: +27 16 950 9798
www.wtu.ac.za
APPENDIX D: ELECTRONIC COMMUNICATION POLICY AND PROCEDURES

VAAL UNIVERSITY OF TECHNOLOGY

ELECTRONIC COMMUNICATIONS POLICY (ECP) AND PROCEDURE:

THE USE OF THE INTERNET, INTRANET & E-MAIL VIA THE

VAAL UNIVERSITY OF TECHNOLOGY’S NETWORK

The policy must be co-ordinated with other policies such as:

- Security practices
- Pre-publication
- Confidentiality
- Disclaimers/publication of the institution

Prepared by:
IT Services
Vaal University of Technology
1. PURPOSE
In keeping with the University’s commitment to utilizing technology in teaching and learning, the purpose of this policy is to provide direction in the appropriate use of the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology’s Network.

2. TERMINOLOGY

2.1 Internet
An international computer network of networks that connect government, academic, business institutions and individuals. Internet networks communicate using TCP/IP. The internet connects colleges, universities, military organizations and contractors, corporations government research laboratories, and individuals. Used as a descriptive term, an internet is a collection of interconnected packet-switching networks. Any time you connect two or more networks together, you have an internet as in inter-national or inter-state.
This global information network provides a unique means of communication and offers a variety of applications to its users. Of these, the media would be physically involved in the following: electronic mail (e-mail file downloading, usenet newsgroups, internet chat, world wide web, internet voice telephony services and electronic publications.

2.8 Intranet
A private network that uses Internet-related technologies to provide services within an organization.

3.9 VUT
The electronic messaging/ information system used by VUT community.

2.4 E-Mail (Electronic mail)
Messages, usually text, sent from one person to another via computer. E-mail can also be sent automatically to a large number of addresses (mailing list).

2.5 Network
Any time two or more computers are connected together so that they can share resources, you can have a computer network. These resources involve the hardware including (but not limited to) copper and fibre optic cabling, hubs, switches, bridges, repeaters, routers and network cards, as well as the software, including (but not limited to) network operating systems and associated transmission protocols.

2.6 Network capacity
The quantitative dimensions by which networks are measured.
2.7 Chain letters
Chain letters are defined as having one or both of the following attributes:
- Encourages the re-sending or forwarding of messages
- Is not related to VUT business

2.8 Spam
To send a message (usually on advertiseemail) to many discussion groups (bulletin boards or newsgroups) without its topical relevance.
Service providers should be able to prevent spammers from using the property of others for their own purposes. If spamming causes damage or a pure economic loss as a result of a denial of service, a delictual claim for patrimonial loss could be instituted against the spammer.

2.9 Authorised use
Is use consistent with the education and service mission of VUT.

2.10 Authorised users
All registered users of the Internet, Intranet and E-mail Facilities via Vaal University of Technology’s Network.

3. THE POLICY
VUT monitors all electronic systems including, exchange and access to the Internet and Intranet.
The purpose of the policy is to identify acceptable use of the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology’s Network.

It intends to allow for:
- To protect the Institution by reducing potential legal liability in respect of claim by employees or third parties.
- To protect proprietary of confidential business information from unauthorized access or disclosure to third parties.
- To educate employees in the proper use of e-mail, internet and create an awareness of the risks that are associated with conducting business using electronic communications in an on-line environment.
- Endeavour to prevent vicarious liability for employee’s actions.
- To prevent losses (e.g. of data or other proprietary information).
- The use of the above mentioned facilities within the legal parameters set.

All authorised users are required that the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology’s Network must be used responsible and within legal parameters.
This includes but is not limited to:

- Intentional harassment of other users (threaten, stalk or sending of unwanted e-mails)
- Intentional destruction of, or damage to equipment, software or other data belonging to VUT
- Intentional disruption of unauthorised monitoring of electronic communications
- Unauthorised copying of copyrighted material
- Carrying any obscene, defamatory or discriminatory material
- Violating terms that are made intentionally with a view to cause someone harm.

The use of the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology’s Network is extended to members of the University community to help them meet the objectives of their job-related tasks, research and studies.

Authorised users are responsible to:

- respect and value the rights to privacy
- recognise and respect the diversity of the population and general opinion of the Vaal University of Technology community.

Vaal University of Technology makes no warranty, expressed or implied, regarding the Internet, Intranet and Electronic Mail Facilities offered via the Vaal University of Technology’s Network for any particular purpose. The Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology’s Network will be designed to serve the broad base of authorised users in the University community, but cannot be expected to fulfill every specialised need.

All use of and access to the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology’s Network should comply with all applicable legislation and common law principles.

Vaal University of Technology has the right to revoke the privilege of using the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology’s Network at any time. For reasons such as:

- posting false or embarrassing information on the system
- using inappropriate language
- sending messages that are likely to result in the loss of recipient’s data or accessability to data or system
- carries defamatory, discriminatory or obscene material
- carries sexually explicit messages, images, cartoons or jokes
- carries religious or racial slurs
- is used in connection with any infringement or another person’s (whether natural or juristic) intellectual property rights (e.g. copyright)
- may be seen to be insulting, disruptive, offensive to other employees harmful to institutional morale
- is used in connection with any attempt to penetrate the computer network or network security, or other companies computer systems, or to gain, unauthorized access to any other persons’ computer or e-mail.
Appropriate use of the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology's Network should always be legal, ethical and should reflect academic honesty. Vaal University of Technology reserves the right to monitor employees' access to and use of the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology's Network, within the parameters of the country's laws. Unauthorised usage may lead to disciplinary actions and in severe cases even dismissal.

E-mail is a tool for electronic communication, and is an asset of Vaal University of Technology. The purpose of e-mail via the Vaal University of Technology's Network is to provide authorised users with a mechanism to speed up communication, share information (job related) in order to improve the effectiveness of all employees.

Users should target their e-mailed information sent via Vaal University of Technology's Network carefully in order not to annoy other users. Attachments should be limited to important information only. Subject fields should be filled in at all times.

Usage of the Internet, Intranet and Electronic Mail Facilities via the Vaal University of Technology's Network should demonstrate respect for intellectual property, ownership of data, system security mechanism and individual rights to privacy and ease from intimidation and harassment.

4. SECURITY

To ensure the security and confidentiality of information stored on an authorised user's computer system, the following is expected of the user:

- Computer passwords and other types of authorisation are assigned to individual users and should not be shared with others
- The user should select an obscure password and change it frequently
- The user should take steps to avoid computer viruses and other destructive computer programs to be loaded or spread on or from their individual machines.

5. VIOLATION OF THE INTERNET, INTRANET AND ELECTRONIC MAIL FACILITIES VIA THE VAAL UNIVERSITY OF TECHNOLOGY'S NETWORK

Violating the Electronic Mail Facilities via the Vaal University of Technology's Network

- Use computer resources to send large amounts of email to an internal or external system/s (Spamming)
- Send chain email to other users from your machine
- Send unwanted and repeated communication or letters by email
- Deliberately send email containing viruses of any type to someone's address in an effort to disable their email capabilities
- Use email to threaten or harass another user/s
• Send communication by e-mail which is motivated to cause propaganda for war, incitement for imminent violence, or advocacy of hatred that is based on race, ethnicity, gender or religion and that constitutes incitement to cause harm.

Post any form of communication on "hate speech" regarding a group’s race, ethnicity, religion, gender, political belief or sexual orientation.

Violating the Internet and Intranet Facilities via the Vaal University of Technology’s Network

• You may not use the Internet and Intranet Facilities via the Vaal University of Technology’s Network to breach security of any computer system
• Authorised users may not attempt to gain access codes or network identification passwords of other users
• Use the Internet, Intranet Facilities via the Vaal University of Technology’s Network for non-Vaal University of Technology related activities that unduly increase the network load (e.g. chain mail, spamming, internet surfing for non job related activities)
• Violate the computer system security
• Use the Internet and Intranet Facilities via the Vaal University of Technology’s Network for non-job related activities (internet usage for hobbies, relaxation, social and other interests, pornography etc.)
• Use of the Internet and Intranet Facilities via the Vaal University of Technology’s Network for private business purposes unrelated to the mission of Vaal University of Technology
• Academic dishonesty
• Violation of software license agreements
• Infringement of another user’s privacy
• Violation of the usage of this asset will not be tolerated
• Inaccurate information suffered as a result of either intentional or negligent mis-statements in the form of a factual misrepresentation or of advice
• Infringe another’s copyright.

6. PRIVACY, UNAUTHORISED ACCESS, REPRODUCTION OR USE OF RESOURCES OF OTHERS

You may not run or otherwise configure software or hardware to intentionally allow access by unauthorised users.

When you cease being a member of the Vaal University of Technology campus community, or if you are assigned a new position and or responsibilities within Vaal University of Technology, your access authorisation to the Vaal University of Technology’s Network must be reviewed. You are only allowed to use the facilities, access codes, privileges or information for which you are authorised.

Staff members may not:

• Make copies of copyrighted material via Vaal University of Technology’s Network (software, graphic images, research material etc.)
• Use resources to gain access to another user's passwords
• Use resources to gain personal information (academic records, financial records etc) about an individual without their permission.
• Vaal University of Technology wishes to honour the authorised users' privacy therefore scanning messages for viruses would not be considered on infringement of privacy.
• Authorised users must recognise that Vaal University of Technology's computer systems and networks are public and subject to the Promotion of Access to Information Act 2 of 2000.
• Users must be aware that they access and utilise the systems at their own risk.
• Monitoring of usage is in accordance to bandwidth.
• Store e-mail messages on the e-mail server.

Simply being able to access a file or other information that is the property of others, doesn't imply permission to do so.

7. ACCESS TO PERSONAL COMPUTERS BY TECHNICAL STAFF

Vaal University of Technology's computer services staff may not access or facilitate access to information on personal computers to someone other than the person to whom a personal computer is assigned. This includes but is not limited to:
• An individual's e-mail or e-mail files stored on the University's network
• Networked traffic to and from Vaal University of Technology-owned computers, be it personal computers or networked computers.

Vaal University of Technology undertakes not to disclose personally identifiable information about its authorised users to any third party without first receiving that authorised user's permission, unless it is necessary when called upon to defend its position or institute legal proceedings to protect or enforce its or another employee's right.

Access may be granted if the technician has:
• Written permission from the individual to whom the computer is assigned
• Has reasonable belief that materials on the computer will cause significant system or network degradation
• Receives written authorisation from the line manager, for situations where there is reasonable belief that the authorised user is involved in violations of the Vaal University of Technology's policies.
• Receives a written request from the Director/Senior Director/Executive Director/Dean or Vice-Rector of the department to access the account of the authorised user who is deceased, terminated or is otherwise incapacitated for the purposes of retrieving material critical to the operation of the department
• Receives a legal court order.

In such events, stored files and e-mails can be stored to ensure a lasting document for reference purposes.
**Vaal University of Technology**

reserves the right to change the policy in response to altered or unanticipated circumstances.

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**VAAL UNIVERSITY OF TECHNOLOGY**

**PC GUIDELINES**

Use of VUT resources is restricted to business purposes only. VUT has all rights to audit usage and content. All messages and documents sent, received and stored are treated as VUT owned business information.

<table>
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<th>RESOURCES</th>
<th>RESTRICTED TO BUSINESS USAGE</th>
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| **Personal computer** | • No games or screen savers to be installed  
|                   | • Protect the asset  
|                   | • It is your tool, take care of it as any other critical tool for performing your job  
|                   | • No pirate software/operational systems                                                   |
| **E-mail**       | • No chain letters, jokes or advertisements  
|                   | • No defamatory, obscene, offensive or harassing messages and material                      
|                   | • Don’t routinely forward messages to large distribution list unless you have business needs to do so |
| **Internet**     | • All accesses are logged and reviewed and be work related                                 |
|                   | • Do not download screen saver, bitmap pictures                                             
|                   | • E-mail should not express Company opinion without approval of Corporate Affairs          
|                   | • Act very carefully in downloading programs, files, attachments                           
|                   | • Internet mail is not secure enough to use it for exchanging confidential or personal information |
| **Non Standard Software** | • Valid licence must exist  
| | • No support will be given by IT Services                                                   |
| **SECURITY**     | **YOU ARE KEY TO SECURITY**                                                                 |
| **Virus**        | • Only VUT licensed anti-virus software may be utilised                                    |
|                   | • Act carefully                                                                            
|                   | • User’s responsibility to upgrade latest version and updates                              |

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| **Access control** | • Contact IT Services in case of doubt  

- Protect confidentiality of your password  
- Have 'hard to guess', 'easy to remember' password  
- Do not give, write or store electronically your password  
- Do not share your password  
- Do report any suspicious activity  

| **Security incidents** | • Must be reported immediately to IT Services  

| **Screen saver** | • Activate password protection  

| **DATA PROTECTION** | YOU ARE RESPONSIBLE FOR YOUR DATA PROTECTION  

| **Confidentiality** | • Classify according to Confidentiality  
- Protect according to sensitivity  
- Safest places are your personal share on the server, or a diskette  
- Files can be password protected  
- Don’t store confidential information on the hard drive of your Laptop  
- Check who has access to your e-mail, your hard drive (if shared)  

| **Back up** | • Regular back up of data is the user's responsibility  
- Important files may be stored on the server at user's request  

| **Record retention** | • Organize your filing  
- Regularly delete documents / E-mail which have exceeded record retention period  

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