Utilization of Information Technology to support Information and Knowledge Management by Law Firms in Polokwane City

Phd (Information Studies)

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2008

UTILIZATION OF INFORMATION TECHNOLOGY TO SUPPORT INFORMATION AND KNOWLEDGE MANAGEMENT BY LAW FIRMS IN POLOKWANE CITY

By

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RESEARCH THESIS

Submitted in fulfilment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

INFORMATION STUDIES

in the

FACULTY OF HUMANITIES

(SCHOOL OF LANGUAGES AND COMMUNICATION STUDIES)

at the

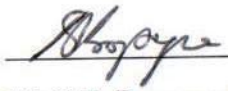
UNIVERSITY OF LIMPOPO

SUPERVISOR: Dr M.E. Maepa

2009

DECLARATION

I **Solomon Tsekere Bopape** declare that the thesis hereby submitted to the University of Limpopo for the degree of **Doctor of Philosophy** in the **Discipline of Information Studies** of the **School of Languages and Communications Studies**, **Faculty of Humanities**, has not previously been submitted by me for a degree at this or any other university; that is my work in design and in execution, and that all material contained herein has been duly acknowledged.



Mr S.T. Bopape

23/03/2009

Date :

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Dedication

This work is dedicated to my wife, **Caroline Ntabalaka Bopape**, and my two sons, **Peter Tshepo Thulare** and **Botang Malesela Caleb Bopape.**

Acknowledgements

Work of this magnitude is largely dependent upon the support one gets from other people. It is not an individual effort. I am, therefore, greatly thankful to the following people for making it possible for me to produce work of this enormity:

1. The late Dr S.A. Brink, from the Department of Information Studies at the University of Limpopo (Turfloop Campus), for his guidance and for serving as my promoter and supervisor before his passing away. His invaluable support, encouragement and advice during the process of compiling this work are greatly appreciated;

2. Dr M.E. Maepa and Mrs M.J. Ntsala for bailing me out of bewilderment upon the passing away of Dr S.A. Brink, by taking over from where the deceased had left;

3. My colleagues, who encouraged me not to give up during difficult times, more particularly the Library Senior Management Team at the University of Limpopo Turfloop Campus Library, for granting me the study leave to continue with this work;

4. My other colleagues in the Subject Reference Section of the University of Limpopo Library (Turfloop Campus) who provided services to my clients when I was away on study leave;

5. The University of Limpopo (Turfloop Campus), for its financial support and for making facilities available for me to be able to compile this work;

6. All people who organized workshops, seminars, and conferences that afforded me an opportunity to present on this research. The inputs and suggestions received from these workshops were very valuable;

7. All the members of the law firms operating in Polokwane City who participated in this research, especially Mrs Rosina Ramaboea of Kganyago-Matlala Attorneys, for ensuring that all members of law firms receive the letters to request them to participate in this research;

8. Finally, my father, Caleb Malesela Bopape, for his inspiration; my family, for having confidence in me; as well my fellow congregants at the Kgokong Lutheran Church, for their prayers; and, above all, God the Almighty, for giving me strength and courage.

SUMMARY

This research report serves as an empirical investigation into the utilization of information technology to support information and knowledge management in law firms, as well as an attempt to design an information and knowledge management model for law firms. Members of the legal profession attached to law firms in the Polokwane City were investigated to find out how optimally they utilize information and communication technologies to support information and knowledge management in their daily operations. The research indicated that there are several ways in which information technology could be used to support the creation, organization, and transfer of information and knowledge in law firms, for the benefit of both lawyers and their clients

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In order to provide for an empirical basis for this research, a survey research method, through the use of the questionnaires and interviews, was conducted, followed by a detailed content analysis of law firm websites. An in-depth literature review on the utilization of information technology to support information and knowledge management in law firms was also carried out to determine the findings of other studies that have been conducted elsewhere on the current topic.

The results of this research showed that lawyers attached to law firms in the city of Polokwane appear to be non-users of information technology in as far as information and knowledge management is concerned. Most of the members of the law firms in the city seem to be utilizing information technology for basic purposes such as word processing, legal research, client billing, and communication through the e-mail. Other information and knowledge management tools, such as intranets, extranets and web portals, appear not to be utilized by most of the law firms in the city.

Based on the findings of this research project, an information and knowledge network model, in a form of Wireless Local Area Network for the law firms in the Polokwane

City, is proposed. This network could be utilized by law firms operating in the city to deposit, organize, retrieve, and share information and knowledge collaboratively through the use of information technology. Factors that should be taken into consideration in attempting to implement the proposed model are also discussed. At the end of the research report, some recommendations on encouraging lawyers to utilize information technology optimally are provided, together with recommendations for future research.

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CHAPTER ONE
INTRODUCTION TO THE STUDY

1.1. Introduction and background to the problem statement

Advances in information and communication technologies have brought in some changes in the way individuals survive, organisations execute their businesses, governments are administered, and nations of the world interact with one another. Hodge & Miller (1997:2), state that the modern age has been characterised by a transformation from an industrial social order to an information and knowledge society wherein a revolution of information and communication technology is taking place in the world. Individuals, organisations and governments are linked and networked through computers and related information and communication technologies like the internet. Katsh (1995:8) also reckons that society has entered a new era in which print is being displaced by electronic informational technologies, and words fixed on paper are being joined by words appearing on a screen. Society is going through rapid transformation due to technological changes, and we live in the middle of an information technology revolution described by Gevers (1998:1) as the knowledge or networked society.

Coupled with technological advances in the world, there is also an increasing recognition of the importance of information and knowledge as the indispensable and most valuable resources for every organisation (Parson, 2004:2). Every company or organisation depends increasingly on information and knowledge to function (Cascio, 2001:15). Therefore, the success of every company or organization is largely dependent on how efficiently and effectively an organization can manage its information and knowledge, and the majority of business managers believe the power of computers and communication technologies in information and knowledge management (Bhatt, 2001:68). Mack et al. (2001:925) state that information technology can support the goals of information and knowledge management activities in any organization. Many businesses are information and knowledge intensive. Examples of information and knowledge intensive companies or

organisations include, among others, consulting, advertisement, media, law, pharmaceutical, insurance, software development, and other human capital- based organisations (Lindvall et al., 2003:137).

In this study, particular emphasis is placed on the legal industry as information and knowledge intensive industry. The law firms are investigated as one of the businesses or industries where information and knowledge are recognised as the most valuable and indispensable assets, and it is explained how computers and related information technologies can play a pivotal role in support of management of these resources; i.e., information and knowledge in law firms. Several articles and comments on the relationships between information technology and the legal practice have expressed and emphasised the worth and the importance of utilising information and communication technologies in the practice, particularly to support information and knowledge management.

Whitt (2001:1) expresses the view that the legal profession cannot afford to remain within the parameters of the nineteenth and twentieth century practices whilst the rest of the world moves on in electronic leaps and bounds. Gottschalk (2000b:69) maintains that the use of advanced technology enables a law firm to take advantage of the most appropriate tools to improve efficiency, increase effectiveness, streamline communication, and reduce costs to their clients, and further emphasises that law firms represent an industry, that seems very well suited for information and knowledge management investigation. The use of advanced information technology to support information and knowledge management in law firms can, therefore, transform these organisations in future.

Kay (2002: 3) affirms that the application of information technology can play an important role in successful information and knowledge management in a law firm. Katsh (1995:6-7) also points out that the new information technologies are relevant to law because law is oriented around information and communication, and that law can be looked at in many ways, but in every incarnation of it, information and knowledge are the central point.

Lawyers are, therefore, producers, processors, managers, and purveyors of information and knowledge. The main tasks of lawyers have been summarised as information collection and retrieval, communication of information, information management, research and evaluation of information. Thus it is suggested that the lawyers' task can be facilitated by the use of information and communication technology (Fombad & Moahi, 2005:225). Du Plessis (2004:14) also states that the functions and possibilities of the new information technologies are enabling lawyers to manage information and knowledge in order to become increasingly more efficient and effective in their practices.

The role of information technology in successful knowledge management is again emphasised by Khandelwal and Gottschalk (2003:2) who maintain that a law firm can be understood as the social community specializing in speed and efficiency in the transfer of legal knowledge and further that knowledge management was introduced to law firms to help them create, share, and use knowledge more effectively. Information technology can therefore play an important role in successful knowledge management initiatives in the legal environment.

Several authors, therefore, agree that advances in information technology are transforming the methods that lawyers can use to access, retrieve, process, and share information and knowledge in order to deliver legal services to their clients. Duncan (1997:1) asserts that information and communication technology is a powerful tool, which can manipulate information and knowledge, the stock-in-trade of the legal profession. Singh et al. (2002:2) mention that most individual, corporate and commercial clients for lawyers are fast becoming computer literate and are keen to communicate their queries electronically with their legal representatives and are therefore forcing legal professionals to invest more and more in information and communication technologies. Schlein (2003:3) encourages law firms to have a domain name or web sites because clients and potential clients have become more sophisticated and want to check out their lawyers on the web before assigning tasks to them. Law firms should therefore realise that they could provide excellent services to their clients and make their businesses more competitive and profitable by investing more in information and communication technologies.

1.2. Statement of the problem

Information in law firms subsists in legal information sources such as legal reference works, indexes, digests, law reviews, legal periodicals, and academic works of legal researchers, commentaries, books, and articles from specialised law publications. Knowledge in the practice of law is knowledge on law and its applications which are used to procure, to produce and to manage legal work. This knowledge is acquired from utilising information gathered through legal studies, research, and experience. Information and knowledge management in law firms is, therefore, about providing the firm's lawyers and staff with cost effective tools to support daily processes through which an understanding of "the law", "the world", and "the client" is created and shared. Some of such tools are technology based (Du Plessis & Du Toit, 2005:2).

Despite pressures from their individual, corporate, and commercial clients as well as the benefits or advantages of utilising information and communication technologies to support information and knowledge management in law firms, as supported by several authorities above. Legal practice seems to be a predominantly paper-based profession even today. Generally, the legal profession seems to be still heavily dependent upon the physical carrying of information in paper-based format, from one party to another, as Wall (1998:3) points out.

Several studies, which have investigated on the subject, share the same sentiment. Singh et al. (2002:3) agree to this contention by stating that legal professionals seem to be moving slowly in embracing the information age. Staudt (2003:2) affirms that since the beginning of the office technology boom in the 1980s, lawyers have been accused of being fearful and reluctant to adopt modern technology. Kennedy (2002:1) also asserts that while the vendors of software packages and other information technologies consistently see the legal profession as a fertile market for their new advanced products and initiatives, they are often disappointed by the resistance they receive from the lawyers and law firms.

Fombad and Moahi (2005:225) observe that lawyers seem to have lagged behind, failing to understand and appreciate the vast changes that information and communication technologies are having on legal practice. Turning the focus to South

Africa, Hoffmann (2002:255) expresses the feeling that it is sad to see that in so many law firms in South Africa the senior partner does not even know how to switch on a computer.

The lawyers are, therefore, probably the most prodigious movers of paper of any profession or industry. Almost every aspect of their working life involves handling files, books, letters, memoranda, and so on. According to Mayson (1992:29), even though technology has made great strides a law office that is literally paperless is still many years away.

The Committee of Ministers of the Council of Europe (1994:9) pronounce that whereas computers, databases, telecommunication and other elements of modern information technology are used more and more frequently in all fields of administration, commercial life, manufacturing etc., practising lawyers are still not familiar enough with these new phenomena. Neither are they always sufficiently aware of the applications of information technology in the legal sector, ranging from legislative information and text processing systems to practical uses in law offices and in the administration of justice – applications which already affect their daily working methods – nor do all lawyers realise that normative problems of considerable concern are being caused by the use of information technology in numerous areas of daily life. Du Plessis (2005:60) also confirms that in the legal industry, compared to other industries, the acceptance of information technology has been slow, but not without reason.

Based on the contentions above, this study therefore contemplates that there could be a number of reasons for the non-usage of information technology to support information and knowledge management by legal experts or professionals in general, which warrant investigation. An attempt is subsequently made in this research project to determine what those reasons are by examining the trends in technological usage among the legal community to support information and knowledge management.

Through this study the researcher attempts to affirm or challenge the above assertions by investigating the utilization of information technology to support information and

knowledge management by the legal professionals attached to law firms in Polokwane City in the Limpopo Province of South Africa. In other words, this study is intended to distinguish between limiting factors, if any, that might be contributing to the slow acceptance of information technology to support information and knowledge management activities in law firms. Law firms or the legal professionals attached to the law firms in city of Polokwane have been chosen as the population for this study.

Staudt (2003:2) challenges those who argue that lawyers are reluctant to utilize information technology by arguing that while lawyers have been accused of failing to adopt modern technology that is common in other professional services organizations, usually this criticism has been unfair. In fact, law firms have adopted back office software and hardware on the same schedule as most information and knowledge businesses. Attorneys are more conservative in jumping into new technologies that change the way they do their knowledge work. Even the literature on the history of utilization of information technology by lawyers demonstrates that lawyers will invest in front office technology, and even lead other professions in adopting such technologies, once productivity advantages are clear and powerfully demonstrated (Staudt, 2003:2). This study seeks to find out if these arguments also hold true.

Widdison (2003:3-4) argues that current technology has not yet enabled legal practitioners to take ultimate steps in certain computer applications especially in case management. This remains as one of the biggest obstacles to the possibility of achieving the "paperless law office". Legal documents such as letters, contracts, wills, cases, deeds, and pleadings will remain in electronic form as the by-product of having been created on word processors, such as Microsoft Word, Spreadsheet, and PowerPoint.

1.3. The aim of the study

This study serves as an attempt to investigate the extent to which legal professionals or lawyers utilise information and communication technologies to support information and knowledge management in law firms. In other words the study endeavours to explore the prominent role of information and communication technologies in the daily operations of law firms and at the same time to survey the utilisation of these

technologies by lawyers to support information and knowledge management. The study also seeks to investigate the extent to which the legal professionals or lawyers attached to law firms in the Polokwane City utilise information technologies to support information and knowledge management activities in their firms and is to design an information and knowledge management model for law firms in the city.

1.4. Research question

The research question that needs to be answered in this research is how optimally do lawyers attached to law firms in Polokwane utilize information technology to support information and knowledge management activities in their daily operations?

1.5. Objectives of the study

The specific objectives of this study are to determine:

- The status of information and knowledge management activities of law firms in the city;
- Purposes for which the lawyers in the city utilize information technology;
- The usage levels of information technology to support information and knowledge management by the legal community in the city;
- The knowledge of lawyers with regard to information technology concepts and applications in the city;
- The attitudes of lawyers in the city towards information and knowledge management technologies;
- The awareness of lawyers in the attached to law firms in the city about information and knowledge management as competitive advantage;
- The limiting factors contributing to the slow acceptance of information technology within the legal community in the city, if any; and
- To design of a model for information and knowledge management system for law firms in the city.

1.6. Significance of the study

1.6.1. Designing of an information and knowledge management model for law firms

The main objective of this study is to serve as a foundation for the design of a knowledge base or information and knowledge management model for lawyers in the city. It is considered that once lawyers in the city are aware of the value of how information technology can facilitate information and knowledge management in their practices, they will endeavour to create knowledge bases for their firms in future, using information and communication technologies. The purpose of the knowledge base is to ensure that research and activities of recent assignments or tasks are not duplicated in the firm or among the legal community and to standardise best practices in the profession. Hoffman (1997:250-251) recommends that law firms should have an office precedent management system that stores opinions, precedents and advices prepared by the firm over time. This will enable the lawyers of the firm to check whether someone else has already advised on the area one is dealing with so that the wheel should not be re-invented at the clients' expense (Kennedy, 2001:1).

Through this study, therefore, the researcher intends to come up with a model for designing and developing an information and knowledge management system or knowledge base for law firms in the city which will enable lawyers in the area at large to generate, organize, process, and share information and knowledge which are currently contained in their traditional internal files as papers. The typical infobank or depository may include law firm policies and procedures, precedents of the firms, CV's of lawyers in the firms, conference papers, useful opinions and advices (best practices), documents, memorandum, briefs, forms, court transcripts, in-house databases, external databases, etc. The researcher also attempts to suggest how law firms could organize and share information and knowledge collaboratively in the form of a network.

1.6.2. Creating awareness

The significance of the study to the legal profession in general is to create awareness on the role of information and communication technology and its importance in information and knowledge management. Duncan (1997:2) contends that if the views of literature emphasising the value of information technology are valid, then it would

be reasonable to expect an increasing number of small legal firms to be making considerable use of information technology and initiating information and knowledge management programmes in their firms. In order to create awareness in the legal community, this study will therefore attempt to explain in depth the role of information and knowledge management in law firms as well as the importance of utilising information technology tools to support information and knowledge management in law firms.

1.6.3. Complementing existing body of literature

According to Gottschalk (2000:117), little empirical research has been done on information technology support for information and knowledge management, in law firms. Most published research on information technology support for information and knowledge management in law firms develops recommendations on successful knowledge management without empirical basis. This study is, therefore, an attempt to complement existing research by focussing explicitly on the use of information technology to support information and knowledge management in law firms while contributing to the body of empirical research on information and knowledge management. It is envisaged that, after the study, an article on the use of information technology to support information and knowledge management in law firms will be published to add to the body of literature on the topic in the library and information sciences field, as well as in the legal field.

1.6.4. Stimulating future research

It seems there is an apparent lack of research in this area, most particularly in South Africa. The study therefore, anticipates stimulating future research into the utilisation of information technology by legal professionals not only in the Polokwane City of the Limpopo Province, but also in South Africa as a whole. Further research can be undertaken elsewhere in South Africa to determine the usage of information technology by legal professionals to support information and knowledge management. The utilisation of information technology by lawyers in Polokwane might not be the same as in the other cities belonging to other provinces such as Pretoria and Johannesburg in Gauteng Province. There should be a number of variables that are attributable to the difference in information technology usage by legal professionals in

various provinces of South Africa. Developments in information technology are also not static; hence the use of information technology by lawyers will not remain the same. New information and knowledge management software and technologies or tools may be developed; hence the utilisation levels and behaviour of information technology by lawyers might also change.

1.6.5. Transforming legal education curriculum

Whitt (2001:2) suggests that, in order to provide competent legal service to their clients, lawyers will have to learn new skills and acquire new knowledge that has been absent from the curriculum of the traditional law schools. Cuffe (2002:3) expresses concern that in higher education the focus has traditionally been on the academic content of courses. Today, emphasis should also be on the use of information technology as well as information and knowledge management in the curriculum relevant to contemporary legal education. It is, therefore, envisaged that legal schools will emphasize the importance of not only information technology in their curriculum, but also legal information and knowledge management.

Kennedy (2001:2) points out that the new generation of lawyers currently leaving the law schools is being raised in an era of computers. Soon, there will be a generation of law students who have never known a time when the internet was not available. It is anticipated that the level of expectations and reliance on sophisticated approaches to information and technology of these future lawyers will be very high. Law schools should realise that including technology modules in the legal curriculum is an essential part of attracting and retaining the best talent for future law firms. The study, therefore, serves as an attempt to persuade law schools to include the role of information technology, as well as information and knowledge management modules in their curriculum.

1.6.6. Information technology strategic planning

According to Buys (2000b:5), most legal firms might find it difficult to develop an information plan when considering utilisation of information technology. The purpose of an information technology plan is to support the firm's long-term business plan. Some legal firms might have considered information technology investment but failed

because of lack of such a plan. This study, therefore, also attempts to emphasize the importance of developing an information technology plan when considering information technology investment. Pannett (1992:121); Buys (2000b:1-2) and Schlein (2003:1-3) explain the ways in which an information technology strategy is devised.

1.7. Scope/delimitation of the study

The research project is restricted to the extent to which lawyers in the Polokwane City of Limpopo Province in the Republic of South Africa utilise information technology to support information and knowledge management. Information technology in this research project refers to computer-based technology and tools that have been specifically designed for information and knowledge management purposes. These include technologies that enable the handling of information and knowledge and then facilitate different forms of communication that are computer-based, including capturing, storage and processing, transfer, communication, as well as display technologies. Emphasis is placed on computer-based tools because of their dynamic capabilities, quick evolution and their organizational impacts (Tyndale, 2002:183-190).

The study also attempts to examine the applicability of knowledge management tools only in legal or law firms, because law firms are, according to Gottschalk (2000a:1), knowledge intensive and very well suited for knowledge management investigation, since their work revolves around legal knowledge. Du Plessis and Du Toit (2005:1) affirm that the practice of law is, in its core, the provision of specialised knowledge. Consequently, lawyers or legal professionals are also included in this study because they are in the business of selling their knowledge about legal issues. Potter (2005:1-2) corroborates that lawyers are selling their knowledge when they use their expertise in drafting transactional documents, appellate briefs or estate planning documents. Knowledge, in this study, refers to knowledge that is easy to express in some format; that is, tacit knowledge.

Lawyers who are in private law firms, non-governmental organizations, for example, Legal Aid Board, and in government departments, like Department of Justice, are

surveyed to ascertain if there are any differences that exist between the two groups of lawyers regarding the utilisation of information technology to support information and knowledge management. This, however, does not imply that the study sought to compare the technology usage behaviour of lawyers in private practice as against those in the government departments or those in non-government organizations. The study only sought to find out if there are any differences that exist, which might also warrant future investigation. Lauritsen & Staudt (1998:1) argue that the two groups of lawyers use technology in greatly varying ways and to greatly varying degrees. Future research can therefore be undertaken to affirm or negate this argument.

The study was initially aimed to cover all the cities and towns in Limpopo Province. Due to distance, time and financial constraints, a decision was arrived at to concentrate specifically in Polokwane, the capital city of Limpopo Province. The city of Polokwane was specifically chosen as the area for the research project simply because this is not far from where the researcher resides. The researcher was cognisant of the fact that the costs of gathering data and information, making investigations, travelling and attempting to implement the recommendations afterwards, in the area where one resides might be minimal. The research also takes place in the municipality and the city where most of the lawyers are to be found, namely; Polokwane City, which is also reputed as the economic hub of Limpopo Province.

1.8. Assumption

The results of the preliminary investigation or pilot study, which was conducted prior to the main study, showed that most of the law firms in the area of study use computers and related technologies for word processing and communication purposes, and not for supporting information and knowledge management activities. According to the pilot study, law firms that are connected to the internet use it for research and communication (e-mail) purposes. It has been realised to some extent that advanced electronic systems for managing client cases, documents and expert knowledge, as well as for billing clients are not used by most of the law firms.

This study is, therefore, based on the general assumption that most of the lawyers in the area under investigation seem to be reluctant to utilise information technology to support information and knowledge management to the fullest. There are several variables that are attributable to this reluctance. The most common variable that seems attributable to this reluctance by lawyers to utilize information technology optimally is the size of the firms to which they are attached, and the clients they serve. There is evidence that larger firms are likely to be more computerised than small firms. Most law firms in Limpopo Province and specifically in the city are probably small in size and should be serving non-computer literate clients. As a result, they are not exposed to pressures from their clients to invest in information technology as larger firms do. Larger firms are inevitably able to compete more strategically and are more able to develop because they are in a more favourable condition financially whilst small firms are not.

In addition, most legal professionals in the district probably come from rural and disadvantaged communities in various parts of the province and were, therefore, probably not exposed to computer and related technologies in their early years of schooling. Exposure to computers and related information and communication technologies might possibly not have happened when they were studying law at tertiary level. This is where the problem of "digital divide" comes in as one of the determinants of information technology usage or non-usage.

From history in the making, it has been observed that the South African technological scenario has been characterised by two groups of users of information technology; namely, the "technologically advantaged" and "the technologically disadvantaged". Most of the lawyers in this province, specifically in the city are probably categorised in the latter group of information technology users.

There is also the possibility that most lawyers might have completed their legal degrees a long time ago with little or no training and little knowledge of the role and use of computers in the legal profession. This statement or premise is closely related to the "generation gap" that might also be accountable for the usage and non-usage of information technology among the legal professionals in the city. Therefore, there is

no doubt that lawyers who have just entered the legal profession recently are more likely to utilize information technology than the ones who have been in the profession for a longer time. Older lawyers are not likely to utilize information technology as the new generation of lawyers would do. However, it is also assumed that older lawyers are resistant to information technology, not because they are intimidated by computers or because they do not want to learn something new, but rather because computers will shift more work into their hands rather than into the hands of their support staff (Staudt, 2003:2).

Staudt (2003:2) argues that lawyers are well supported with clerical staff because their time is valuable. Perhaps it is faster and more productive for lawyers to delegate to their support staff any new effort that interferes with their means of working. Therefore, it has been difficult to introduce into law firms new technologies that directly affect the way lawyers themselves perform their professional tasks. This study, therefore, sought to establish if the above – mentioned statements and assumptions hold true.

The other contributing factor to the usage or non-usage of the information technology might be the usefulness of a software, hardware or system being utilized. The utilization of a particular hardware, software or information technology tool in a law firm is dependent upon the results that it has yielded in the past. If a particular software or information technology tool has yielded good results in the past, then it is likely that it will be used by the majority of law firms.

This is closely related to the theory upon which this study is based; namely, Technology Acceptance Model (TAM). TAM, which was advanced by Davis (1989: 319-339), was specifically designed for modelling user acceptance of information systems or technology. The goal of the model is to provide an explanation of determinants of computer acceptance by tracing the input of external factors on internal beliefs, attitudes, and intentions. It consists of two beliefs; namely, perceived utility, and perceived ease of use. This model will be discussed in detail when the theoretical background upon which this study is based, is discussed.

Other factors that might be responsible for law firms not to invest in information technology might include lack of information technology personnel, ignorance, lack of time, lack of technology skills, attitudes towards information technology, the culture in which the lawyers are working, etc. This study is intended to establish if all these factors are indeed responsible for non-usage of information technology to support information and knowledge management by the legal professionals, with specific reference to lawyers attached to law firms in the city of Polokwane in the Limpopo Province of South Africa.

1.9. Research methodology

The nature of research approach followed in this study is an empirical quantitative and qualitative one, through the utilization of questionnaires, interviews and content analysis of websites. A questionnaire was compiled and utilised as the most dominant data collection method and distributed to the entire complement of the legal professionals in the Polokwane City, through the Law Society of the Northern Province, Circle Council of Limpopo.

Interviews were also conducted with some selected few lawyers identified by the researcher on two occasions. These were used in order to complement the questionnaire.

The websites of law firms that appear on the internet were also critically analysed to determine how well they utilize the web for information and knowledge management purposes.

Printed and electronic literature, locally and internationally, concerning the research problem was also gathered and studied critically and in depth. The information and knowledge resources acquired from this literature were used as a yardstick for measuring and investigating the utilization of information technology to support information and knowledge management by the legal professionals attached to Polokwane city.

1.10. Outline of chapters

Chapter One is a general introduction to the study. It provides the reader with background information to the problem that is being investigated. The aims of the study, the research question, scope or delimitations, as well as the significance of the study and the general assumption, on which this study is based, are outlined in Chapter One of this research project.

Chapter Two focuses on the concepts that frequently appear in this research project. The main concepts that need to be broadly defined in this chapter include law firm, knowledge, information, information and knowledge management, and information technology. This chapter focuses on the role of information and knowledge management in law firms, as well as the information technology tools and applications that are available to support information and knowledge management. These include tools such as the internet, intranets, portals, e-mail and other tools that have been specifically designed for information and knowledge management purposes. Technological tools that may be used in law offices to generate, codify and distribute information and knowledge are discussed in this chapter.

The chapter also presents an in-depth and critical review of relevant literature about the utilization of information technology by lawyers to support information and knowledge management, both internationally and locally in South Africa. This literature will be used as a measuring instrument or yardstick for determining the usage of information technology to support information and knowledge management by the legal professionals in the city.

Chapter Three presents the theoretical framework on which this study is based. Different models or theories that have been developed for determining the interaction between human being and information technology are discussed, in order to enable the researcher to choose the most appropriate model for this study.

Chapter Four discusses the approaches, methods and techniques that have been used to collect data in this study. Three data collection methods, namely, questionnaires, interviews and content analysis of websites, were developed and used due to the nature of data or information that was required, which is quantitative and qualitative

data. The characteristics of the area and the population to be studied, followed by the fashion in which these three data collection methods triangulate are discussed.

Chapter Five deals with the presentation of data, collected through the utilization of the questionnaire, interviews and content analysis of websites. Data for the questionnaire are presented in the form of graphs and tables, whereas data for the interviews and content analysis are presented in descriptive format.

Interpretation of the results for both the data collection methods employed in this study are dealt with in Chapter Six of this research report.

Chapter Seven of this work deals with the model for developing information and knowledge management system for law firms in the Polokwane City.

Chapter Eight discusses conclusions and recommendations based on what has been discovered in the research project.

CHAPTER TWO
INFORMATION AND KNOWLEDGE MANAGEMENT IN LAW FIRMS: A REVIEW OF LITERATURE

2.1. Introduction

The previous chapter has introduced the reader to the central point and the main research problem of this study. In the introduction and background information section, the main concepts that frequently appear in this study were also identified. It follows that the first part of this chapter should, therefore, be to discuss systematically the broader definitions of the main concepts that are used in this study, namely; law firm, knowledge, information, information management, and knowledge management, as well as the concept Information Technology. Although there are several definitions for these concepts, the main focus in this chapter is just to come up with the working definitions for the purposes of this study. Some models that have been developed with regard to the theory of information and knowledge management are also discussed in this chapter.

The second part of this chapter discusses the role of information and knowledge in law firms. This part will first focus attention on the historical developments with regard to the utilization of information technology to support information and knowledge management in law firms. Legal research, legal obligation, heritage, disaster discovery plan, and developments in government are discussed as some of the reasons for law firms to engage in information and knowledge management activities.

In law firms, information and knowledge in various formats and applications are used for the purpose of creating, storing, organizing, retrieving, and transferring information and knowledge. Such comprise, for example, word processing programmes and document and case management systems. In recent years, some law firms have developed intranets and sophisticated portals to encourage sharing of information and knowledge (Du Plessis & Du Toit, 2005:2). These technologies which lawyers utilise to access, retrieve, process, and transfer information and knowledge will be discussed in the third part of this chapter.

The last part of this chapter examines the studies that were conducted in the past, with regard to the utilization of information technology by law firms to support information and knowledge management, both internationally and locally. This presents a discussion of the literature explaining the findings from the previous studies, to enable the researcher to relate these findings to the results that will be established at the end of the current study. The fact that some literature that was found appears to be old will enable the researcher to notice some historical developments in as far as the usage of information technology by law firms in those countries is concerned.

2.2. Research concepts

2.2.1. Law firm

The most common characteristic of law firms is that they generate and use knowledge about legal issues. A law firm can therefore be defined as an industry that involves charging its clients for the use of its knowledge resources on legal issues. This means that the legal services that law firms (lawyers) provide to their clients derive from the knowledge of a group of lawyers attached to a particular law firm. The clients of law firms include large corporate enterprises, organizations and individuals who need continuous and specialised legal services that can only be supplied through the knowledge of a team of lawyers. Lawyers can therefore also be defined as knowledge workers. Mayson (1992:13) states that the legal practice revolves around the processes of providing legal know-how to clients. Lawyers sell what they know how to do. The success and reputation of a law firm is based on the collective know-how of its lawyers and on its ability to transfer that know-how from lawyer to lawyer.

Khandelwal and Gottschalk (2003:7) confirm that lawyers are professionals who have gained knowledge through formal education (explicit) and through learning while on the job (tacit). Du Plessis (2004:14) expresses the view that legal knowledge is acquired from internalising valuable information gathered during legal studies, research, and experience. A law firm is, therefore, a knowledge-based industry in that it deals with knowledge.

Lambe (2003:1) also contends that from the code of Hammurabi almost four thousand years ago, to modern law reports and Lexis Nexis, the practice of law has been a practice of knowledge, requiring accurate, effective and objective use of information. Unlike other industries affected by the impact of the knowledge economy, the subject of knowledge in the legal profession is not new. Law firms are in the business of knowledge and therefore they need to find new conventions for working with knowledge. Lamont (2002:1) affirms that law firms are increasingly recognising that their primary product is intellectual capital or knowledge. Knowledge has always been the key to profitability in law firms. Parsons (2004: 2) also affirms that law firms have always been pure knowledge businesses, always conscious of the fact that their sustainable advantage is the expertise and knowledge of both their lawyers, and their firms, rather than any physical factors of production. Therefore, the values of lawyers' products have always been dominated by knowledge rather than the goods sold. It is for this reason that the definition of the concepts knowledge and information is of utmost importance, because they are the ultimate lifeblood of law firms.

2.2.2. Knowledge

Knowledge is today recognised as a fundamentally important and inherent part of an organization's capital resources. Gottschalk (2000:69) states that organizations are viewed as bodies of knowledge and knowledge management is considered an important source of competitive advantage. Sher and Lee (2003:2) also maintain that today knowledge seems to be replacing traditional factors such as capital, land and labour as the factors that the competitiveness of the firm relies on. However, to the researcher knowledge is embedded in the minds of labour in an organization. In that sense, in every organization, labour is as important as the knowledge that workers have in their minds.

According Chen et al. (2005:5), defining knowledge is difficult as it includes many intangibles such as experience, intuition, judgement, skill and lessons learned. Plato in Kakabadse et al. (2003:76) first defined the concept knowledge as "justified true belief". Knowledge as "justified true belief" is that which people believe and value on the basis of meaningful and organised accumulation of information (messages) through experience, communication, or inference. Newman (1999:1) observes that

there are two problems with the concept knowledge. First it is enormously inclusive, embracing a broad range of terms like data, data structures, myths, intelligence, rumours and even information. The second relates to the act of knowing which implies that knowledge is defined by awareness. This means that knowledge is what one is aware of or is what one knows. According to this definition, there is no knowledge without someone knowing it. Knowledge requires a knowing subject. This means that knowledge cannot be stored in computers; it can only be stored in the human brain. According to Newman (1999:5), once this knowledge is stored in a computer, it becomes information.

According to Khandelwal and Gottschalk (2003:5), this information becomes knowledge when one combines it with experience, context, interpretation, reflection, intuition and creativity. Information, which is stored in computers, also becomes knowledge once it has been stored in the mind of an individual. Gottschalk (1999:2) reflects that knowledge becomes information again once it is articulated or communicated to others in the form of text, computer output, spoken, written words or other means.

Chen et al. (2005:5) define knowledge as a combination of contextual information and the individual awareness and understanding of facts, truths or information acquired through reasoning, experience and learning. In organizations, knowledge often becomes embedded, not only in documents or repositories, but also in organizational routines, processes, practices and norms. Knowledge can be obtained from individuals, groups of knowers and sometimes from organizational routines and processes. It is delivered through structured media such as documents, and person-to-person connections. New knowledge is created or acquired through experience, interacting and learning.

2.2.3. Relationship with information

What is knowledge for one person can be information to another. This is the reason for discussing the relationship between knowledge and information. Organizations falsely believe that establishing an effective information management strategy embodies their knowledge management initiative (Meyer & Botha, 2000:276). The

concept knowledge can therefore also be defined by relating it to data and information.

Data are defined as raw facts and figures. Data are the smallest building blocks of information. They consist of random facts and figures and have no meaning unless one understands the context in which they were gathered (Meyer & Botha, 2000: 277). Information is defined as structured or patterned data, or data that have been given some meaning through evaluation. Steyn (2003: 209) affirms that information is recorded in documents, journals and electronic formats; it is tangible and exists independently of people. Information has little value until it is processed in a person's mind through the process of learning, which leads to knowledge that is either tacit (embedded in people's minds) or explicit (codified in documents).

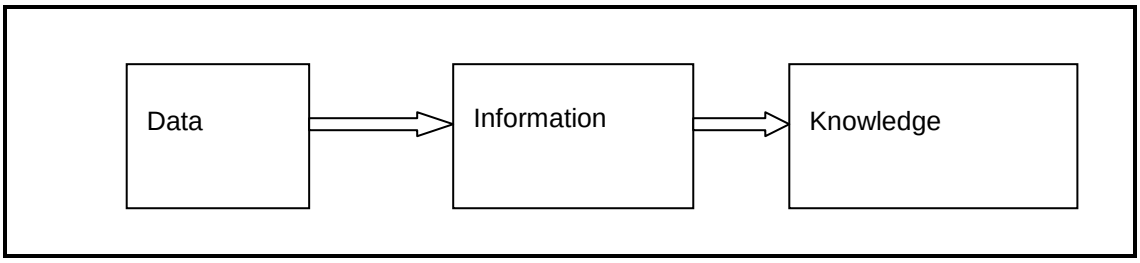


Figure: 2.1. Relationship between data, information and knowledge

From the discussion mentioned above about the relationship between knowledge and information, it can be deduced that knowledge follows from information and information follows from data. Knowledge is information in use, and it is the interaction of information with the human mind that gives it meaning and purpose to become knowledge. The interrelationship between data, information, and knowledge is illustrated in Figure 2.1 above.

An important point that distinguishes knowledge from data and information is that knowledge contains judgement and value that relate to the interpretation of data and information. Bhatt (2001:2) states that data are considered as raw facts, information is regarded as an organised set of data, and knowledge is perceived as meaningful information.

	Information	**Knowledge**
Definitions	Organizational resource; Meaningful and useful data; A representation of knowledge;	A combination of contextual information, and the individual awareness and understanding of facts, truths or information acquired through reasoning, experience and learning
Characteristics	Generated internally by an individual or an organization from undertaking a business action, or acquired from an external published source; It is the lifeblood of the organization with internally generated information for management and control of the business, and externally sourced information for planning and strategic decision-making; Can be given away and retained at the same time; Can be used simultaneously by many people for different purposes; Its usefulness, relevance or value can vary with time, user and purpose; Must be meaningful to the recipient in such a way that it leads to greater understanding and knowledge acquisition; Information, as a thing, is tangible and one can measure it; Comes in a variety of formats such as internal documents, data, books and journals.	Created through experiencing, interacting and learning; Formulated and applied in the minds of individuals as they do their jobs; Organizational knowledge embedded in documents or repositories as well as in organizational routines, processes, practices and norms; Two types of knowledge: explicit and tacit with different characteristics; Shared between groups and communities through the transfer of tacit and explicit knowledge; Delivered through structured media such as documents; Highly subjective; Authoritative; Dynamic; Context-dependent.

Table 2.1.The difference between information and knowledge (Chen et al., 2005: 7)

Six characteristics of knowledge, depicted by Du Plessis (2004:28), distinguish knowledge from data and information:

- Knowledge is a human act;
- Knowledge is the residue of thinking;
- Knowledge is created in the present moment;
- Knowledge belongs to communities;
- Knowledge circulates through communities in many ways; and
- New knowledge is created at the boundaries of old knowledge;.

The difference between knowledge and information is depicted in Table 2.1 above. From the discussions above on data, information and knowledge, it means that knowledge resides in peoples' heads until it is encoded in any format. Once this knowledge is put on paper or on any format, it becomes information. But before this information is read, understood, interpreted and meaning attached to it, it remains data. Chen et al., (2005:4) have also identified six principal uses of the concept information based on literature as follows:

- Information as a resource;
- Information as useful data or a thing;
- Information as a representation of knowledge;
- Information as part of the communication process;
- Information as a constructive force in society; and
- Information as understanding

2.2.4. Types of knowledge

Nonaka and Takeuchi (1995: 56-94), make a distinction between explicit and tacit knowledge. Explicit knowledge can be expressed in words and numbers and shared in the form of data, scientific formulae, specifications, manuals, and the like. Du Plessis (2004:41) defines primary sources of law, namely, case law and legislation, as well-documented and highly structured information and knowledge that meet high standards of completeness, reliability and authority that fall within the category of explicit knowledge. This kind of knowledge can be readily transmitted between individuals formally and systematically (Gottschalk, 1999:2). Bloodgood and Salisbury (2001:58-59) contend that explicit knowledge is knowledge that is easily

expressed. Kofoed (2002:8) also states that explicit knowledge is the kind of knowledge that can be easily put down on paper or into another media directly accessible to the persons one wishes to transfer knowledge to. The documents that an organization produces represent explicit knowledge (Lindvall et al., 2003:140).

Tacit knowledge, on the other hand, is highly personal and hard to formalize, making it difficult to communicate and share with others. Subjective insights, intuitions, and hunches fall into this category of knowledge (Gottschalk, 1999:3). Contrary to explicit knowledge, tacit knowledge is not easily transferred (Kofoed, 2002:8). Bloodgood and Salisbury (2001:5) maintain that management of tacit knowledge is difficult to express and relate tacit knowledge closely with the concept of knowledge with a low level of codification. According to Bhatt (2001:8), a small part of knowledge that is visible and tangible is explicit and a large part of knowledge, which remains elusive to codification and imitation, is tacit. The difference between explicit and tacit knowledge is illustrated in the above Table 2.2 below.

EXPLICIT KNOWLEDGE	TACIT KNOWLEDGE
Legal information sources	Skills and expertise of lawyers
Expressed in words and numbers	Subjective insights, intuitions, and hunches
Can be shared between individuals	Highly personal and hard to share
Codified in documents	Embedded in people ‘s minds
High level of codification	Low level of codification
Visible and tangible	Elusive to codification and imitation

Table: 2.2. The difference between tacit and explicit knowledge

Explicit knowledge is therefore the type of knowledge which can be expressed in words and numbers and shared in the form of data, scientific formulas, manuals, etc. This type of knowledge can be transmitted across individuals formally and systematically. Tacit knowledge, on the other hand, is personal and hard to formalize. It is deeply rooted in each individual’s actions and experiences, as well as in the ideals, values, and emotion. Individuals, therefore, acquire knowledge in the form of receiving explicit knowledge from the experts during the learning process. Through repetition, knowledge becomes intuitive to the person until it progresses forward to an expert level. Eventually, the knowledge becomes tacit because it can be remembered

by the learner without job aids or references. At this point, the learner becomes a subject matter expert and can then transfer this knowledge out of his or her head and distribute it to learners in the form of explicit knowledge.

Nonaka and Takeuchi 1995 (1995: 61), however, state that tacit and explicit knowledge are not totally separate but mutually complementary entities. They emphasize that these two types of knowledge interact with and change into each other, in the knowledge creation process of human beings. Their model is based on the assumption that human knowledge is created and expanded through social interaction between tacit knowledge and explicit knowledge – a process which is referred to as "knowledge conversion". The assumption that knowledge is created through the interaction between tacit and explicit knowledge allows them to postulate four different models of knowledge conversion; namely, socialization (from tacit knowledge to tacit knowledge, externalization (from tacit knowledge to explicit knowledge), combination (form explicit knowledge to explicit knowledge and internalization (from explicit knowledge to tacit knowledge. A model of knowledge creation by Nonaka and Takeuchi (1995:56-94) can be represented in a form of a cycle in Figure 2.2 below.

Socialization is the process of sharing experiences and thereby creating tacit knowledge. An individual can acquire tacit knowledge directly from others, for example when an apprentices work with their master (Nonaka & Takeuchi, 1995:62-63). Tacit knowledge is transferred from one person to another without verbal or written documentation, and it can also be gained through observation, on-the-job training, mentoring, joint activities, and project teams (Al-Hawandeh, 2003:23).

Tacit knowledge can be acquired through shared experiences, such as spending time together or living in the same environment, and it can also occur beyond organizational borders (Nonaka et al., in Little & Ray, 2005:26-27). In the law firm, when a paralegals or an administrative personnel work with or under direct supervision of a lawyer they acquire knowledge through observation, imitation and practice. Junnarka and Brown (1997:142) state that individuals have a wealth of tacit

knowledge that they share with other members in an organization through meetings, training, teleconferencing and teams.

Externalization (tacit knowledge to explicit knowledge) is the process of articulating tacit knowledge into explicit knowledge. This means externalization involves the process of expressing tacit knowledge into explicit through concepts, definitions, analogies, hypothesis, models, etc (Nonaka & Takeuchi, 1995: 64). For instance, when an individual or groups in an organization are able to codify policy and procedure manuals or what they have learned about their work, they are converting tacit knowledge into explicit knowledge.

	Tacit knowledge to Explicit Knowledge	
Tacit Knowledge from	**Socialization**	**Externalization**
Explicit Knowledge	**Internalization**	**Combination**

Figure 2.2: Four models of knowledge conversion from Nonaka & Takeuchi (1995:62)

Combination is a process of systemizing concepts into knowledge systems (Nonaka & Takeuchi 1995: 67). When individuals exchange knowledge through some form of media such as documents, e-mail, computer disks, videotapes, audiotapes and other collaborative tools such as intranets, portals and websites they are converting explicit

knowledge into a more complex sets of explicit knowledge (Al-Hawandeh, 2003:24). Explicit knowledge is collected from inside and outside the organization and the combined, edited or processed to form new knowledge (Nonaka et al., in Little & Ray, 2005: 27).

Internalization refers to the process of utilizing explicit knowledge. Nonaka and Takeuchi (1995:69) refers to internalization as the process of embodying explicit knowledge into tacit knowledge and further that it is related to learning by doing. It is when an individual is able to utilize knowledge that he or she has gained through socialization, externalization and combination. Junnarka & Brown (1997:143) state that to convert explicit knowledge into tacit knowledge depends on an individual's ability to make sense out of explicit knowledge or information.

This model of knowledge creation by Nonaka & Takeuchi (1995: 56-94), therefore, emphasises continuous creation of knowledge in an organization. The critical idea is that knowledge creation in an organization is accomplished through knowledge conversion; that is, existing knowledge is converted into new knowledge. Individuals apply their tacit knowledge in an organization by doing work assignments through experiences and by learning from others through the process of socialization. Immediately they start articulating, expressing or codifying that knowledge into some form of media, they are converting tacit knowledge into explicit knowledge through the process of externalization.

When knowledge is codified through some documents and other forms of media, it then becomes explicit knowledge and this is carried out through the process of combination. Lastly, when individuals or groups in an organization apply the knowledge they have gained from reading organizational manuals and processes, as well as other information sources outside the organization, they are thus converting explicit knowledge into tacit knowledge and this process is referred to as internalization.

2.2.5. Levels of knowledge

Khandelwal and Gottschalk (2003:4) also distinguish between core, advanced and innovative knowledge, which indicate different levels of knowledge sophistication. Core knowledge is the minimum scope and level of knowledge for daily operations in an organization which the majority of members within an organization have. In law firms, such knowledge includes knowledge of the law, knowledge of courts, knowledge of clients and knowledge of procedures. It is the basic knowledge that the firm requires to stay in business. Advanced knowledge, which enables the organization to be competitively viable, is processed by some individuals within the organization. Such knowledge allows the firm to differentiate its products and services from that of competitors through application of superior knowledge in certain areas. In law firms, such knowledge includes knowledge of law applications, knowledge of important court rulings and knowledge of successful procedural case handling (Khandelwal & Gottschalk, 2003: 4).

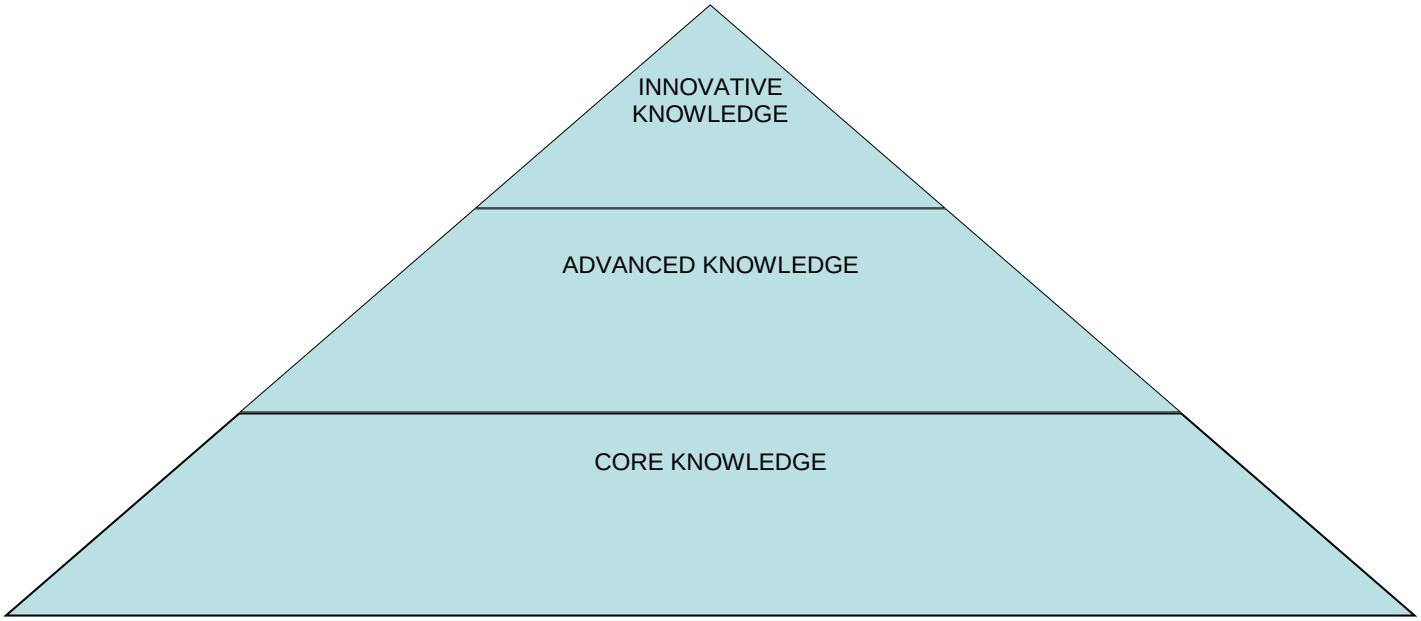


Figure 2.3 Levels of knowledge

Innovative knowledge is that knowledge that enables a firm to lead its industry and competitors, and allows the firm continuously to introduce new business practices and

expand its market share by winning new customers and increasing service levels to existing customers, and is processed by very few individuals within the organization. Examples of innovative knowledge in law firms include knowledge of standardised repetitive legal cases, knowledge of successful settlements and knowledge of modern information technology to track and store vast amounts of information from various sources (Khandelwal & Gottschalk, 2003:4). The levels of knowledge are illustrated in Figure 2.3 above.

These levels of knowledge can be correlated to what Gottschalk (2000:117) refers to as knowledge which is required in law firms; namely, administrative knowledge or data, declarative knowledge, procedural knowledge and analytical knowledge. Administrative knowledge or data includes all of the bolts and nuts information about firm operations, such as hourly billing rates for lawyers, client names and matters, staff payroll data, and client invoice data. Declarative knowledge is knowledge of the law; i.e., the legal principles contained in statutes, court opinions and other sources of primary legal authority, which law students spend most of their law school careers acquiring. Procedural knowledge involves knowledge of the mechanics of complying with the laws' requirements in a particular situation. Declarative knowledge is sometimes labelled know–that, and know–what while procedural knowledge is labelled know–how. Finally analytical knowledge pertains to the conclusions reached about the course of action a particular client should follow in a particular situation (Gottschalk, 2000:117-118).

2.2.6. Knowledge Management

There is no universal definition of the concept knowledge management, just as there are different views as to what constitutes knowledge. Kakabadse et al. (2003:78) reckon that there are a variety of disciplines that have influenced and informed the field of knowledge management thinking and praxis – prominent being philosophy, (in defining knowledge); cognitive science (in understanding knowledge workers); social science (understanding motivation, people, interactions, culture and environment); management science (optimizing operations and integrating them within the enterprise); information science (building knowledge–related capabilities); knowledge engineering (eliciting and codifying knowledge); artificial intelligence

(automating routine and knowledge intensive–work); and economics (determining priorities). Dieng et al. (1998:5) maintain that knowledge management is a very complex problem and can be tackled from several viewpoints. The concept knowledge management is, therefore, defined differently by different corporations of the world and by different individuals within those corporations, as well as embryonic philosophies circulating in the literature. This reveals that there are also many knowledge management models. Some organisations and individuals perceive knowledge management as a form of documents management, and some relate the concept to information technology. Those who relate the concept knowledge management to information technology define it as the use of information technology to organize, manage, and distribute information in electronic format.

Bhatt (2001:2), however, argues that defining knowledge management in terms of technological systems alone endangers the bias of overemphasizing one aspect at the expense of another. The importance of information technology in knowledge management should therefore not be a substitute for knowledge management. Gaier (2003:1), on the other hand, points out that "knowledge sharing", "information systems", "organizational learning", "intellectual assets management", as well as "performance enhancements", are terms that are often associated or used in place of knowledge management.

Ponzi and Koening (2001: 2) remark that the concept knowledge management has been broadly defined with a number of definitions being touted. For example, Ponelis and Fairer-Wessels, in Ponzi and Koening (2001:2), assert that knowledge management is a new dimension of strategic information management. Davenport and Prusak in Ponzi and Koening (2001:2) assert that knowledge management is the process of capturing, distributing and effectively using knowledge. Skyrme, also in Ponzi and Koening (2001:2), expresses the view that knowledge management is the explicit and systematic management of vital knowledge with its associated processes of creating, gathering, organizing, diffusing, using, and exploiting that knowledge.

Barclay and Murray (1997:1) define knowledge management as identifying and mapping out intellectual aspects within an organization; generating new knowledge

and competitive advantage within the organization; making vast amounts of corporate information accessible; sharing of best practices; and the technology that enables all of the above, including groupware and intranets. Other definitions of the concept knowledge management, selected from the web encyclopaedia are:

- Capturing, organizing, and storing knowledge and experiences of individual workers and groups within an organization and making this information available to others in the organization;
- Knowledge management is the name of a concept in which a company or organization consciously and comprehensively gathers, organizes, shares, and analyzes its knowledge in terms of resources, documents, and people skills;
- The way a company stores, organizes and accesses internal and external information. The collection, organization, analysis, and sharing of information held by workers and groups within an organization;
- KM is an enterprise discipline that promotes a collaborative and integrative approach to the creation, capture, organization, access and use of information assets, including the tacit, uncaptured knowledge of people;
- It is the industry buzzword used to describe a set of tools for capturing and reuse of knowledge;
- The process of creating, capturing, and using knowledge to enhance organizational performance;
- Knowledge management is most frequently associated with two types of activities. One is to document and appropriate individuals' knowledge and then disseminate it through such venues as a companywide database;
- Knowledge management also includes activities that facilitate human exchanges using such tools as groupware, email, and the Internet; and
- Knowledge management (KM) is the organization, creation, sharing and flow of knowledge within an enterprise or an organization.

When analysing the various definitions of the concept knowledge management mentioned above, it is clear that knowledge management, as a concept, appears to entail three main activities of knowledge; namely, knowledge generation, knowledge

codification or organization, and knowledge transfer. Knowledge generation includes all the activities that bring new knowledge to an individual, to a group or to the world. It includes activities such as creation, acquisition, synthesis, fusion, and adaptation. Knowledge codification or organization is the capturing and representation of knowledge so that it can be re-used either by an individual or by an organization. This includes all activities that are related to storage and retrieval, such as indexing, abstracting, cataloguing, and classification. Knowledge transfer involves the movement of knowledge from one location to the other (Ruggles (1997: 1-2), through some means of communication tools such as e- mail, intranets, and portals. This is illustrated in Figure 2.4 below.

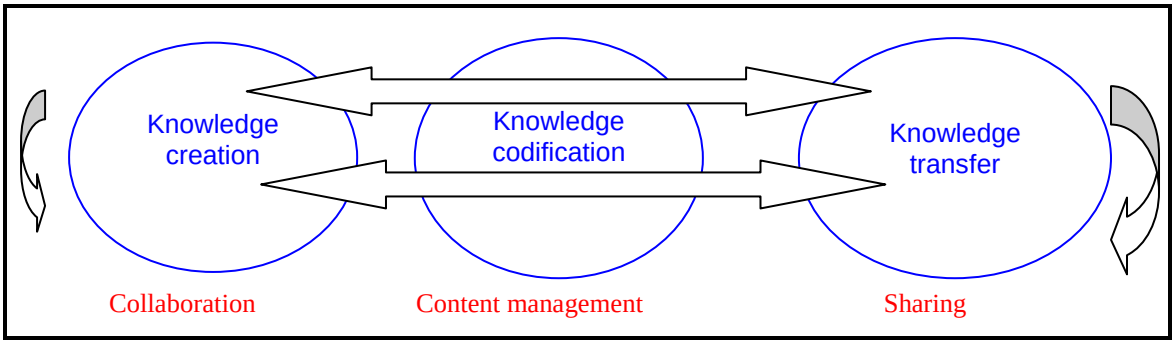


Figure.2.4 Knowledge Management Cycle

Heather (2003:6-8) recognises collaboration as the most important aspect of knowledge management by analysing knowledge management into three elements; namely, collaboration, content management and information sharing. Collaboration refers to colleagues in an organization exchanging ideas and generating new knowledge. Common terms used to describe collaboration include knowledge creation, generation, production, development, use, and organizational learning. Content management refers to management of an organization's internal and external knowledge using information management skills and information technology tools such as document management systems. Terms associated with content management include information classification, organization, processing, storage and indexing and co-ordination. Information sharing refers to ways and means to distribute information and encourage colleagues to share and reuse knowledge in the firm. These activities may be described as knowledge distribution, transfer or sharing.

Heather (2003:8) continues by indicating that these elements of knowledge management can occur concurrently and not necessarily in a sequential order. In this study, therefore, knowledge management is understood as the creation of systems or processes in an organization that allow all employees to have access to the information resources they need to develop knowledge necessary to do their jobs. Those resources may be data that have been collected and stored in a database or knowledge that a co-worker or manager has developed and stored in memory. The vital component of knowledge management is that the resources are shared.

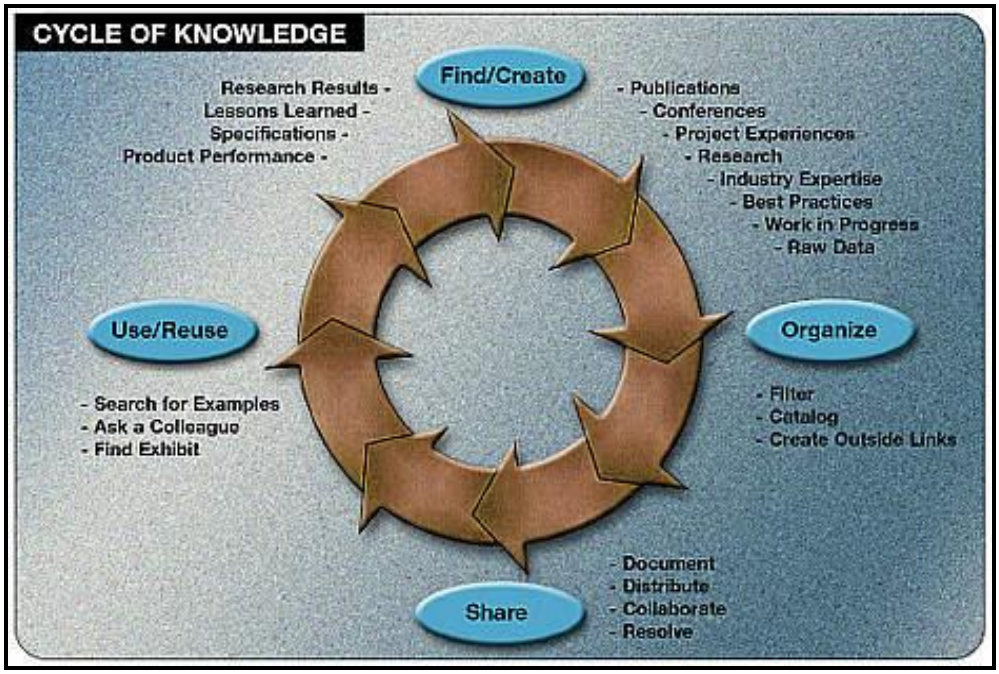


Figure 2.5 Cycle of Knowledge (Burk, 1999:1)

Knowledge management is, therefore, the creation and acquisition; organization and storage; as well as distribution and sharing of knowledge within the firm. Creating, acquiring, capturing, sharing, and using knowledge in any form to improve the performance of organizations might be a valid working definition of knowledge management. It involves blending a company's internal and external information and turning it into actionable knowledge (Platt, 1998:1).

Gottshalk (2000:1) asserts that Knowledge management was introduced to help companies create, share, and use knowledge effectively. Burk (1999:1) reckons that knowledge management can be understood by examining the four basic elements of the knowledge cycle: find/create, organize, share, and use/reuse. Under "find/create," knowledge is gained through a variety of means, including publications, conferences and meetings, project experiences, research, and industry expertise. In the next step in the cycle; that is., "organize," the knowledge is filtered and catalogued, and links to the outside are created. Then the information is shared for wide availability, making use of high-tech computer tools such as the internet and other techniques such as conferences, journal articles, and the natural communication channels created in a collaborative work environment.

To help carry out the "organize" and "share" functions in a specific community of people having a common interest, many experts recommend a knowledge manager. This person has the task of soliciting good practices, indexing and cataloguing new information as it comes in, and serving as an information broker by assisting people to obtain the information they need. The knowledge manager can also serve as an advocate for knowledge-sharing practices within and beyond his or her specific community of practice.

The final stage of the knowledge management cycle; that is, "use/reuse," involves both informal contacts and access to reports, good practices, success stories, and other forms of communication, including exhibits, demonstrations, and training sessions. Much of this knowledge can be made available to a wider audience through the Internet. These results are then captured as part of the lessons learned for use as the knowledge cycle begins again. This is illustrated in Figure 2.5 above.

Knowledge management, therefore, involves a process which can be exemplified in the form of a cycle. Knowledge is first either created or generated within an organization or acquired from an external source, stored in the human minds of individuals in an organization or in the repositories of an organization such as the files, databases or intranet. Secondly, knowledge is organized in such way that retrieval or access is facilitated and used for a specific purpose or to make decisions.

Using information may also include generating or creating another knowledge product. Bhatt (2001:6), however, argues that knowledge management is not a simple question of capturing, storing and transferring information, but knowledge management requires interpretation and organization of information from multiple perspectives. Knowledge management shapes the interaction among technologies, techniques and people. Information technology can capture, store and distribute information quickly, but it has its limits for information interpretation to turn information into knowledge. Knowledge management should, therefore, also emphasize learning collaboratively so that an organization can add more value to its products and services to customers.

2.2.7. Models of Knowledge Management

According Kakabadse et al. (2003:78-82), the objectives of knowledge management in an organization are to promote knowledge growth, knowledge communication and knowledge preservation. Knowledge management entails managing knowledge resources in order to facilitate access and reuse of knowledge. It is for this reason that they identify and analyse four models of knowledge management of which each model treats knowledge in its particular way. The four models of knowledge management, as explained by Kakabadse et al. (2003:78-82) are philosophy based, cognitive, network, and community of practice models of knowledge management.

2.2.7.1.Philosophical Model

The Philosophical model of knowledge management is, according to Kakabadse et al. (2003:78), concerned with the epistemology of knowledge or what constitutes knowledge. Its main concern is how one gathers information about social and organizational reality and is focussed on objectives (values, abstractions, and minds), types (concepts, objects, prepositional) and the sources of knowledge (perception, memory and reason). It is also concerned with the relationship of knowledge to other notions such as certainty, belief, justification, causation, doubt and revocability. The Philosophical model of knowledge management is an attempt to think deeper on how one thinks and acts by posing deep–knowledge questions about knowledge within organizations (Kakabadse et al., 2003:78-79).

2.2.7.2.Cognitive Model

The Cognitive model of knowledge management is concerned with knowledge as a valuable strategic asset by suggesting that for an organization to remain competitive it must effectively and efficiently create, locate, capture, and share knowledge and expertise in order to apply that knowledge to solve problems and exploit opportunities. This model recognises economic value of knowledge, continuous efforts to derive benefits from information via information management and the proliferation of information technology. In this model, knowledge is regarded as an asset that needs to be accounted for and a number of efforts are being made to develop procedures for measuring it. Knowledge is seen as something that needs to be managed (Kakabadse et al., 2003:79).

2.2.7.3. Network Model

The networking perspectives of knowledge management emerge parallel with the theories of the network organization and focus on acquisition, sharing and knowledge transfer. Network organizations are considered to be characterized by horizontal patterns of exchange, interdependent flow of resources and reciprocal lines of communication. From the network perspective, the idea of knowledge acquisition and sharing is seen as a primary lever for organizational learning in order for an organization to choose and adopt new practices where relevant (Kakabadse et al., 2003:80).

The network perspective acknowledges that individuals have social as well as economic motives and that their actions are influenced by networks of relationships in which they are embedded. The perspective also highlights on who are able to tap into external networks and acquire new ideas that they can then share within their own organization. The focus is on how patterns of links between individuals and interest groups structure cliques, coalitions and cleavages and facilitate knowledge sharing and transfer. Thus, networking, or actively building new and maintaining old social relations, with a view to creating a vantage position in the flow of knowledge exchange and transfer, is regarded as being an important activity in its own right. (Kakabadse et al., 2003:80).

The above-mentioned model is supported by Gottschalk (2000:118) who defines a knowledge network as a group of persons and activities that cooperate and exchange information. The term signifies a number of people, resources, and relationships among them, who are assembled in order to accumulate and use knowledge primarily by means of knowledge creation and transfer processes, for the purpose of creating value.

2.2.7.4. Community of Practice Model

The Community of Practice model of knowledge management is based on the notion that knowledge is founded in the thinking that circulates in the community, where language is shared, trust allows exploration of heuristics, patterns may be crafted and subtle symptoms and repetitive solutions are spread via story telling. Kakabadse et al, (2003:81) regard this model as one of the oldest models of knowledge management and observe that it is still receiving revival and recognition within contemporary organizations. The model is also viewed as the base for all the knowledge on the argument that, as children, people first learn from stories that are often told by elders in their communities. The knowledge is then passed from generation to generation through story telling. Knowledge management does not only take place in organizations or in business. Knowledge management also takes place in tribes or in societies. Kok (2005:2) confirms by defining knowledge management as a natural process that humans use to maintain and improve their survival and goes on to state that since the first tribe, humans have been governing the production, transmission and acquisition of knowledge. The survival and legacy of a tribe depended on how well knowledge was managed. Over a long span of time, knowledge has been transmitted from generation to generation and from culture to culture through oral and written history, storytelling, teaching and so on.

2.2.8. Information Management

Information is contained in documents or records within an organization. The management of those documents or records can therefore be regarded as information management. Information explosion or the rate, at which information is produced daily in modern society, makes it imperative that information should be managed as effectively as possible so as to determine what information is of value. Information is

an asset to any organization and the management of this information is a means to manage a document during its entire life cycle. Organisations should have ready access to the information they require in order to deliver their services to their clientele.

	Information management	**Knowledge management**
Definition	Addresses the problem of information as an essential resource which must be effectively and efficiently managed at different organizational levels by using information technology and techniques to effectively manage internal and external information resources through the information life cycle	A multidisciplinary approach to accomplishing organizational objectives by making knowledge accessible to the people in the organization through the structuring of people, technology and knowledge content
Business objectives	To cost-effectively manage and use information resources and technologies; To avoid duplicated information and to consolidate and manage information overload problems; To accomplish organizational objectives.	To improve overall business performance ; Sharing of best practice; To accomplish organizational objectives;
Functions	The functions of information management are dependent on the level. Only one function is given here for each different level; Corporate strategic level: Determining strategic information needs ; Organizational level: determining organizational information and marketing needs, information processes and information flow ; Operational level: generating information Personal level: arranging, making accessible, protecting and storing information.	Capturing tacit knowledge and making it available as explicit knowledge in documents or repositories; Providing access to knowledge and facilitating its transfer among individuals; Creating a knowledge environment conducive to more effective knowledge creation, transfer and use; Managing knowledge as an asset and recognizing the value of knowledge to an organization.
Focus	Cost-effective management of information technologies and of both manual and automated information	Organizational development, intellectual capital management and competence management

Relevant disciplines	Communication theory, information science, information systems, cognitive science, organizational science and document management	Human resource management, organizational learning, strategic planning, communication science, business management, change management, information management, document management, information technology, philosophy, sociology and psychology
Organizational level	All organizational levels	Initially corporate strategic level, eventually all organizational levels

Table 2. 3: Comparison of information management and knowledge management (Chen et al., 2003: 12-13)

Information management includes activities for creating, capturing, and registering, classifying, indexing, storing, retrieving, disposing, and distributing documents in an organisation. The ability to know what documents exist regarding a particular subject, where they are located, what media they are stored in, who owns them constitute information management. To identify their interrelationship, Chen et al (2003:12) determine whether there are any differences and/or similarities between them in terms of their definitions, business objectives served, functions, focus, relevant disciplines, and organizational level as shown in Table 2.3 above.

Chen et al. (2003:11) add that modern information management uses information technology and techniques to effectively manage internal and external information resources throughout the information life cycle; and therefore, their definition of information management involves a few different subject fields such as information systems, information science, computer science/informatics, and management. Information management and knowledge management are interrelated concepts within an organization.

2.2.9. Information Technology

For information and knowledge management activities to take place in an organisation may require the support of a technical infrastructure, that is, information technology. Information technology includes the hardware and software used to capture, store, retrieve process, and transmit data. It can also be referred to as the means to reduce overload and minimise distortion. Gottschalk (2000a:3) asserts that

the coding and transmitting of knowledge in an organization is not new: training and employee development programmes, organizational policies, routines, procedures, reports, and manuals have served this function for many years. What is new and exciting is the potential of using information technologies to systematise, facilitate and expedite the firm's knowledge management initiatives.

Steyn (2003:210) highlights that technology has unfortunately misled some organisations into believing that technology can replace knowledge and skills embedded in people's minds. Instead, what technology does is to make possible the sharing, storing, distributing, and accessing of information in a cost-effective and user–friendly manner. One of the main roles of information technology in information and knowledge management, therefore, is to accelerate the speed of information knowledge creation, storage and distribution. Cascio (2001:15) states that technology facilitates the rapid diffusion of information and knowledge. Information technology intends to help the process of collecting and organizing the knowledge of groups of individuals in order to make this knowledge available in a shared base (Carvalho & Ferrira, 2001:1).

In modern times, reports, activities, minutes of meetings, memoranda, proceedings of conferences and document filing systems maintained by organizations are traditional commonly-used devices for recording content in paper format so that it can be transferred to others. More recently, electronic databases, audio and video recordings, interactive tools, and multimedia presentations have become available to extend the techniques for capturing and disseminating content. This is where information technology, as a means for successful information and knowledge management, comes into the fray.

Information technology may, if well resourced and implemented, provide a comprehensive knowledge base that is speedily accessed, interactive, and of immediate value to the user. There is no doubt that technology vendors are developing different information and knowledge management tools in their software products. The variety of information and knowledge management tools available in the market today, including those that are to be used in this research report as variables, will be

discussed in the subsequent chapters. These will include information and knowledge management solutions such as intranet systems, Electronic Document Management, groupware, knowledge portals, etc.

2.3. Role of I & KM in Law firms

Among some of the roles performed by information and knowledge management in law firms are to enable lawyers to share information and knowledge, conduct legal research, keep records as required by law, accomplish their heritage responsibility and to develop their disaster recovery plans. However, before coming to what roles does information and knowledge management play in law firms, it is necessary to engage in some of the historical developments, in as far as usage of information technology to support information and knowledge management is concerned.

2.3.1. Historical development of IT in law firms

From as early as 1905, it has been perceptively observed that the work of lawyers was limited to space and time. The locality and the pace at which the information was carried from the source to the recipient governed the work of legal professionals (Wall, 1998:3). The legal process was largely dependent upon the physical carriage of information from one party to another (Singh et al., 2002: 2; Wall, 1998:3). According to Wall (1998:3), historically three main trends can be identified within the legal process, which have been responsible for creating internal pressures within the profession to increase operational efficiency, make work practices more economical and make organisational structures more effective during the last four decades.

First, there has been growth of an "advice culture" on the part of legal professionals. During the past four decades, there has been a considerable increase in requests for all types of advice by organizations, agencies, and individuals from the lawyers. There has been an increasing trend of people and organisations reaching out for help in relation to both the material and psychological aspects of their problems. Seemingly, the work of legal professionals revolved around giving personal advice to the clients rather than defending and representing them in legal problems. Some consultation machines which were slower and somewhat controversial were developed (Logan, 1986: 337).

Secondly, there was overall growth in the volume and complexity of legal procedures. Wall (1998:5) demonstrates how the annual number of Acts of Parliament and statutory instruments and the number of pages containing those acts and procedures considerably increased from 1951-1985. The Western legal tradition was characterised by print media. Potter (2005:2) explains that information and knowledge were captured almost exclusively in filing cabinets where print copies of briefs and forms were stored and further that an issue index was tediously created and routinely updated.

Printing brought about its own information explosion in which there were vast increases in the number of books published, in the sizes of libraries and in the number of people able to read (Katsh, 1995:8). The era of information explosion was perhaps the period when a number of legislative measures were passed and cases related to those legislations reported; and therefore, some means for lawyers to handle vast amounts of that information were devised and developed. Some devices to enable lawyers to organize and retrieve such vast amounts of information were also designed as Bull, in Logan (1986:338), explains. Unfortunately, such devices to handle vast amounts of information became more tedious and less effective. However, Potter (2005:2) remarks that some firms are still using these tedious and less effective ways of handling information.

Thirdly, there was an overall popularity of law as a profession in the late 1980's, which other writers, cited by Wall (1998:6) portrayed as a legal explosion, excessive litigation and the liability crisis. It appears that competition among the legal community also became prevalent. Wall (1998: 6) contends that the period when the main increases in the number of practicing lawyers occurred was also a time of increasing uncertainty. Legal practices, like other businesses, have experienced considerable pressure to adapt to modern market forces in order to survive.

Potter (2005:2) confirms that the practice of law has evolved into the business of practicing law with firms using common business practices such as strategic management and marketing tools to stay competitive in the legal environment. One of

the adaptation strategies employed was the introduction of new managerial philosophies into the legal practice management. This was probably the period when information and knowledge came to be regarded as the edge for competitive advantage in every organization. These philosophies are responsible for engineering the introduction of information technology to support and facilitate information and knowledge management in the legal profession. Potter (2005:2) maintains that law firms have started embracing technology to handle broad spectrum of business and legal needs, including time and billing software, contact information, document collection, and the firm's calendar system.

The utilization of information technology in law firms is twofold; namely, "back office" and "front office" operations. "Back office" operations include administrative duties of the law firms performed by clerical and support staff that are essentially non-legal. They are aimed at improving staff efficiency in the law firm. These include tasks such as public relations and marketing, client accounts, time recording, and general office management tasks.

The "Front office" operations are tasks that are performed by lawyers themselves, in their professional efforts. These include legal tasks such as research and case management. Computer aided legal research began in 1973 when the Lexis service began to build an online database of primary research tools for lawyers. It is estimated that within a decade after commencement of the Lexis service hundreds of so many lawyers learned this new way of how to find the legal cases online.

Schlein (2003:3) explains that in the 1970s, clients communicated with their lawyers primarily by telephone and mail, and further that by mid-1980s fax machines became the most advanced technologies through which lawyers and clients communicated. This means that clients could get documents from their lawyers almost instantly and expect responses in a timely fashion. In the middle of the 1990s, lawyers embraced the benefits of networking, e- mail and internet communications, together with mobile phones. The internet quickly became an important tool for lawyer-to-lawyer and client-to-lawyer communication (Staudt, 2003:3).

2.3.2. Information and knowledge sharing in law firms

According to Parson (2004:2), the latter part of the twentieth century witnessed a profound shift in the nature of organisations, and an increasing recognition of the importance of information and knowledge as the forms of sustainable competitive advantage. The traditional factors of production, such as land, labour, and capital, were short-lived and were being replaced by information and knowledge as the means of production. The quantity of goods produced was also being replaced by the quality of services provided or rendered.

The rise of new concepts, including learning organizations, intellectual capital, networked organisations and knowledge management, to describe the new form of organisations also emerged. The success of the organization came to depend largely on what it collectively knows, how efficiently it utilises what it knows, and how readily it acquires and uses new knowledge. Law firms have always been pure knowledge businesses, always conscious of the fact that their sustainable advantage is the expertise and knowledge of their lawyers and their firms, rather than any physical factors of production. Information and knowledge have always been a key profitability aspect in law (Parson, 2004: 2).

Lawyers should be able to have access to information generated in the course of relationships with their clients. That information that is generated in the firm's day to day business should be locatable at all times, so that it should be used again in other cases or when required in future claims relating to the same case (Du Plessis, 2004:41). Staudt (2003:1) confirms that information and knowledge management, as a concept, promises that if the best information and knowledge are captured, shared and reused rather than starting each engagement from scratch, time will be saved, efficiency created and costs of production will drop as quality improves.

Terret (1998:68) maintains that law firms in the United Kingdom have launched their own internal know-how projects, thus recognising that legal documents produced both in-house or elsewhere are a huge dormant asset. The purpose of the knowledge base is to ensure that research and activities of recent assignments are not duplicated in the firm and among the legal community. Therefore, one of the roles of information and

knowledge management in law firms is to ensure that legal work is not duplicated in the course of serving clients. Through information knowledge management lawyers of a particular firm are able to create and share information and knowledge across the firm in order to provide excellent services to clients.

2.3.3. Legal research

Keeping up to date with new legislation and the latest court decisions can be regarded as the most important reasons why lawyers need information (Riley, 2005:2). Law is a very dynamic field as legislation is amended and judgements related to that legislation are decided in court from time to time. It is, therefore, imperative that lawyers should always keep abreast of new developments in law and adapt to these changes that are being effected in the field and develop their professional knowledge. One way of adapting to the legal adjustments and enhancing ones' legal knowledge is through legal research.

Legal research is also one of the essential components in solving legal problems. Riley (2002:2) is of the same opinion that attorneys' most important role is to act as their clients' legal representative, and to be able to provide a legal service to their clients attorneys require information. In order to conduct legal research effectively, lawyers should always have access to external information resources and knowledge through a system that captures, codifies, and distributes information and knowledge.

Lawyers can conduct legal research either traditionally through the use of printed legal materials from primary and secondary sources such as cases and statutes, as well as legal reference works, indexes, journals, etc. Lawyers can also locate information from primary and secondary sources either free of charge or through subscription from the Internet. Legislation and law reports are primary sources of law, whilst secondary sources of law include legal textbooks, loose-leaf publications as well as law journals.

Apart from primary and secondary sources of information in law, lawyers also need access to information generated from within the practice in the course of their relationship with clients. Information that is generated in the daily business of the firm

includes clients' personal details, billing data, clients' cases, known as forms, and precedents in legal jargon. Lawyers require information about the firm, the current business environment and the industries in which the business has to operate competitively. Such information is obtained from the magazines, professional journals, press or in Government Gazettes (Du Plessis & Du Toit, 2005:2). Sound management of both internal and external information and knowledge is the foundation for effective legal research. Without organising and managing the internal and external information resources in the way that they would be easily accessible and locatable, it will be very difficult for lawyers to conduct their legal research effectively.

2.3. Legal requirement and obligation

Information and knowledge management are important in law firms for record keeping purposes and as required by law. Lor and Snyman (2005:3) state that lawyers deal with numerous laws that require records or registers of various kinds to be retained for varying periods and/or to be made available to inspectors and other officials. If these legal requirements are disregarded, this can lead to prosecutions, depending on the legislation. Good records management is a prerequisite to good information and knowledge management. This means that if law firms, design and develop good records management systems, they would be able to have effective and efficient information and knowledge management systems.

Du Plessis and Du Toit (2005:3) emphasise that the work products that lawyers create, for example, every legal document, pleading, disposition, trial, and appellate brief, memorandum; letter, e-mail, and spreadsheet, is potentially an important knowledge asset and ought to be properly managed. If managed well, knowledge is leveraged in the firm. The use of information and communication technologies can facilitate this information and knowledge management initiatives.

2.3.5. Heritage reasons

Information and knowledge management in law firms is also required for heritage reasons. It is highly desirable and recommended that knowledge, and even wisdom of older attorneys or lawyers, should be transferred down to younger attorneys. Kennedy

(2001: 1-2) cautions that older attorneys may leave a firm or die without the knowledge of their experience being captured in a usable fashion. Not only is there loss of substantive practice knowledge, but also loss of the history and stories of a firm's culture. It is through application of information technology that the core knowledge, expertise, and past experiences of the firm can be encoded for future generations to utilize.

2.3.6. Disaster recovery plan

Information and knowledge management also ensure that the law firm has the necessary information and records to continue functioning even in the event of a major disaster. This means that information and knowledge management strategies can be used to recover vital records and information in times of disaster. A practical example is the time when two planes slammed into the World Trade Centre (WTC) buildings on the 11th of September 2001. It was reported by Barr (2003:28) that some of the law firms that were directly hit (Sidley Austin Brown & Wood LLP) were able to survive even after the tragedy because they were able to retrieve some of their vital records and information, for example, contact lists of employees, vendors and client lists. Some of the firms' vital records consisting of floor plans, inventory lists of equipment, procedure manuals, and docket calendars were retrieved from the backup and offsite files for safe keeping and were used within days after September 11th.

2.3.7. Developments in government

The importance of information and knowledge management is also emphasised in the South African government, whereby government departments or agencies are obliged to practice records management. It is essential for government bodies or departments not only in South Africa, but in the world as a whole to give specific consideration to the management of records in hard copy and electronic formats, or in any form as part of their formal policy for managing records. For example, the Promotion of Access to Information Act (Act 2 of 2000) was enacted to promote the right of access to information as enshrined in chapter two of the South African Constitution Act (Act 108 of 1996). Through this legislation, private bodies, including law firms are obliged to compile and make available a manual in which, they describe the records that they hold (Lor & Snyman, 2005:3).

In terms of the National Archives and Records Service of South Africa Act (Act No. 43 of 1996), government bodies should have ready access to the information they require to deliver their services to the public in an accountable manner. According to the Records Management Policy Manual (2004: 1) well organised and managed records:

- Enable the originations to find the right information easily and comprehensively;
- Enable the organization to perform its functions successfully and efficiently in an accountable manner;
- Support the business, legal and accountability requirements of the organisation;
- Ensure consistent delivery of services;
- Support and document policy formation and administrative decision-making;
- Provide continuity in the event of disaster;
- Protect the interests of the organization and the rights of employees, clients and present and future stakeholders;
- Support and document the organisation's activities, development and achievements; and
- Provide evidence of business in the context of cultural activity and contribute to the cultural identity and collective memory of the nation.

2.4. Tools for Information and knowledge management in law firms

Information and Knowledge management in law firms should be supported by a collection of technologies for authoring, indexing, classifying, storing, contextualising and retrieving information, as well as for collaboration and application of knowledge (Lindval et al., 2003: 139). ABA Legal Technology Centre (2002:2) also states that law firms produce and require certain types of information to remain viable, to grow and to thrive, and further that the technology used to capture this information assist in achieving knowledge management. Therefore, for each different type of information

and knowledge the firm creates and seeks to capture, there is a corresponding type of software to help store and management the underlying data.

There are a number of tools that are used to support information and knowledge management in the law office. However, it is important to make the point that information and knowledge management tools should not be seen, or be regarded as replacing people in conducting information and knowledge management activities. Instead, these tools are just there as enablers, whilst the onus of the human being is to conduct information and knowledge management activities.

Ruggles (1997:3) states that information technology tools are designed to ease the burden of work to allow resources to be applied effectively to the tasks for which they are most suited. Riley (2003:4) also emphasises that technology is a facilitator of information and knowledge management, a tool to assist individuals and groups in the creation, capturing and distribution of information and knowledge. Du Plessis (2005:61) also cautions that information technology is applied to improve systems by automating the processes that were previously done manually.

Information and knowledge management tools in law firms should, therefore, be seen as some human construct or artefact that potentially can enhance and enable human activities. Technology is an important enabler of many, if not most, information and knowledge management initiatives (National Electronic Library for Health, 2005:1). The way in which knowledge management tools are used is directed by some methodology – a set of ways of interacting with the technology. Without a human being information and knowledge management tools are inert, they do not play a part in information and knowledge management. It is only when these tools are used in certain defined ways by individuals or organization that they can assist in information and knowledge management (Ruggles 1997: 3).

Information and knowledge management tools are therefore defined as tools that support the performance of applications, activities or actions such as knowledge generation, knowledge codification and knowledge transfer (Ruggles, 1997:3). Tyndale (2002:3) also affirms that technology is a powerful enabler of knowledge

management objectives. It can be said that the goals of knowledge management tools are not to manage information and knowledge by itself, but to facilitate the implementation of the information and knowledge process. Such tools can facilitate the process of generating, structuring, and sharing knowledge through the use of information technology.

2.4.1. Technology in the law office

A typical list of tools that can be used in a law office to support information and knowledge management includes general office applications, in-house customised applications, specialised law office applications, proprietary online services and web technologies. General office applications include Microsoft office suite applications such as Word (word processing), Excel (spreadsheet), Access (relational database manager), and PowerPoint (presentation manager) (Widdison, 1997:2).

Griffith (1998:14) shows that in-house customised applications include those created using applications like Access. These applications do everything from time management to billing and can be used in any office. Specialised law office applications are specifically designed for the law office timekeeping and billing applications and for litigation support. Some examples of such applications are Elite for timekeeping and Summation for litigation support. Proprietary online systems are typically used for legal research purposes, which enable lawyers to access legal information sources such as legislation, case law, and legal articles through the use of the internet (Griffith, 1998:14). Finally, web technologies include intranets, extranets, e-mail and knowledge portals, which are basically used for communication purposes through the internet

Widdison (1997:1) and du Plessis (2004:62) remark that in order to examine the use of information technology in law firms, a fundamental distinction needs to be considered between operational uses and administrative uses. Operational uses involve the application of computer technology for legal tasks such as research and case management whereas administrative uses involve the application of information technology for essentially non-legal tasks such as public relations, marketing, client accounts, time recording and general office management. Staudt (2003:4)

distinguishes between “back office” and “front office” uses of technology. The difference between these uses also lies in the fact that operational uses or “front office” technology tools are used by the lawyers themselves; whereas administrative uses “back office” technology tools are usually used by both the lawyers and support or administrative staff in the firm.

2.4.2. Tools for operational uses

2.4.2.1. External research systems

The logical point at which to start when addressing the role of information technology in law firms is to assess the needs of lawyers and to consider the information support that they require to carry out their work effectively (Pannet, 1992:121). Lawyers typically engage in legal research as means of arriving at a deeper understanding of the issue(s) confronting them in order to better represent the client (Russo, 2005:41). The tools of legal research are information and knowledge management tools that help professionals to locate the wisdom and analysis previously written by judges, expert scholars and lawyers for adaptation and use in context presented by the client (Staudt, 2003:4). It is, therefore, necessary to examine the sources of law that serve as resources or research tools for lawyers to arrive at better solutions for their clients’ problems.

Research in the legal field has over the past years centred on the paper-based law library (Widdison, 1997:1). Most of these information sources or knowledge products were in print form. Access to primary and secondary sources in law can be obtained manually, by locating the book or information material that contains the desired information from the library. Today, database technology provides important additional facilities to the lawyer. Free databases or those that are available through subscription can be accessed electronically (Bekker, 1997:70).

The sources of information in law are divided into two types: primary and secondary sources. Primary sources of law are knowledge products that are original in nature. They emanate from the legislative and judicial processes of government. As the laws of the country are being made, the legislative sources of information are created concomitantly. They may include Bills, Acts (statutes), Hansard Debates, and

Government Gazettes. On the other hand judicial sources of information are published decisions or judgement of the courts. They contain cases or judgements that have been decided by the court (Kok et al., 2002:42-58; Kleyn & Viljoen, 2002:330-338). Secondary sources of information in law are any knowledge products that emanate from primary sources. They include textbooks, journal articles, loose –leaf services, indexes etc (Kok et al., 2002:42-58; Kleyn & Viljoen, 2002:330-338; and Russo, 2005:44-49). All these information sources, primary and secondary, will not be discussed in detail as this will be tantamount to writing a book on legal information sources. What is important is that most of these materials can be accessed electronically and that computer databases to these sources seem to be replacing manual access

Widdison (1997:1) distinguishes between external research systems and internal or in-house systems. External research systems include those knowledge products that contain information in the form of statutes, case reports and journal articles published in both CD-ROM format and on the Internet (primary and secondary sources of information). Such knowledge products are either commercialised or are free of charge on the Internet. Bekker (1997: 70). Barrat and Snyman (2002:3-16) also highlight that there is a substantial amount of free legal information on the internet, specifically on South African law. Examples of free information on the internet include judgments of the Constitutional Court, Land Claims Court, Supreme Court of Appeal and Labour Court, which can be accessed from the law repository of the Witwatersrand University Law School. Bills of Parliament, Acts and other government documents can also be accessed free of charge through the Internet from the Government web site.

The South African Bibliographic Network (SABINET Online) makes these documents such as Acts, Bills and other government documents accessible through subscription to Government Gazette Online. Judgment or cases can also be accessed through subscription to either Juta or Butterworths electronic products. Bekker (1997:70) states that the most convenient research tool which is available to South African lawyers, with regard to both statutory sources and reported cases, is the electronic information produced by both Juta and Butterworths in CD ROM format.

Practically, most lawyers are interested in South African Law Reports, South African Criminal Law Reports, South African Statutes, Jutalex Provincial legislation, South African Tax Library, Labour Law Library and Constitutional Law Library by Juta. On the other hand, products that are currently available from Butterworths are South African Statutes, Constitutional Law Library, Labour Law Library, VAT Library, Tax Library and All South African Law Reports.

In addition to the above-mentioned knowledge products, lawyers can also get access to recent published articles available through subscription to Index to South African Periodicals (ISAP) and SA e-Publications. ISAP provides the user with citations of articles in law or any other subject whereas S.A. e-publication provides the user with full text journal articles in law and other subjects. There is also an index to journal articles which is specific to law referred to as South African Legal Periodicals Index. This is accessed freely through the web page of the South African Constitutional Court and it provides the user with the citations of journal articles rather than full text articles. The advantage of this product over others is that it is purely legal. De Rebus, which is the South African attorney's journal, is also available from the internet free of charge.

All these knowledge products are tools that can assist the lawyers in finding information and gaining and applying knowledge about the legal profession. The ability to conduct fast and efficient legal research utilising the above mentioned tools and products is regarded as the cornerstone for any legal practice (Du Plessis, 2004:86). King George III of England in Russo (2005:25) is also reputed to have said that a lawyer is not someone who knows the law, but is one who knows where to find the law.

2.4.2.2. In-house research systems

Apart from obtaining information and knowledge from external databases, it is desirable that information and knowledge generated from within the firm itself is also captured, stored, retrieved and utilised whenever necessary. The storage and retrieval of information generated from within the firm may be assisted greatly by the development of an in-house database system. This database system may be the

collection of materials in the form of newsletters, precedents, standard forms, manuals, policies and procedures, minutes of previous meetings, opinions of a firm's own experts, papers read or presented at conferences, etc (Widdison, 1997:2-3).

Dieng et al. (1998:5) refer to this type of information sources as corporate memory. Corporate memory is defined as an explicit, disembodied, persistent representation of knowledge and information in an organization. Vandagriff (1993:2) affirms that one of the most valuable resources a law firm possesses is the collection of work it has performed for its clients in the past. Cabinet files are filled with such types of information on previous assignments that the law firm has performed. Retrieval of such kind of information is probably very confusing and relies entirely on the memories of lawyers or support staff who filed the documents and searching through the files is time consuming. Today, a rather more ambitious method of dealing with this type of information is to store these documents electronically in a text indexing and retrieval system (Widdison, 1997:3-4). Document management software provides an excellent tool for categorising those documents.

This is usually done by arranging the documents according to subject files and then maybe alphabetically by title or chronologically by date in each specific subject file. For this to work effectively, the lawyer will also need lots of room to store those documents and a means of deciding what documents need to be kept in the database for a long time and then archived and what documents should be kept indefinitely and never archived. Using a computer, therefore, provides a superb means of storing and accessing the work that the firm has already done in the past and lawyers can instantly find any document the firm has produced for any assignment (Vandagriff, 1993:2).

2.4.2.3. Case Management Systems

Case management refers to storage and retrieval of cases that the firm is responsible for within the firm. Lawyers should be able to get instant access to cases in order to check the status of any case for which they have responsibility. Managing cases in the form of paper files is very frustrating. Sometimes they get lost, mangled or hidden in overflowing stacks beside the lawyer's desks (Vandagriff, 1993:2). Computers

therefore provide a highly efficient means of keeping the information about the status of a case in an electronic filing cabinet that anyone in the firm can access.

A lawyer can create an own database for cases or use case management software just like the document management software. Document management systems offer features that include storing/uploading of documents or files, version control, organization of documents in different ways, search and retrieval based on indexing techniques and advanced searching mechanisms, and access from any Internet connected workstation (Lindval et al., 2003: 140).

Information about the status of the case can also be shared among various attorneys within the firm if there are several attorneys working on the case if it is in the form of an electronic file (Vandagriff, 1993:3). This will also enable the managing partner to check the overall caseload undertaken by each lawyer in the firm. Such a database can also be used in conjunction with the electronic diary facility or computerised calendaring to eradicate risks of missed appointments, limitation periods and court hearings (Widdison, 1997:3). All these technologies that have been discussed above are tools that would assist the law office to organize information and knowledge that has been created or generated by lawyers working in a particular law firm.

2.4.3. Tools for administrative uses

Law firms are also utilizing information technology to streamline back-office processes such as timekeeping, accounting, client database and records management (Granat, 1998:3-4). Wddison (1997:1) states that administrative uses of a law firm involve the application of information technology by lawyers or by support staff to perform non-legal tasks such as public relations and marketing, client accounts, time recording and general office management.

2.4.3.1. Time management Systems

On the subject of time-recording, paper-based systems require lawyers to complete time sheets on which they record their particulars and enter, in respect of each client, the amount of time spent on each activity- interviews, phone, calls letter writing, document drafting etc. This task seems to be viewed by most lawyers as a very

tedious task (Widdison, 1997:8) and it is possible that a lawyer might sometimes forget to record the time as he or she is busy with the client. Time management in a law firm could then also be done through the in-house computer system, which provides information with worksheets containing all time recorded by attorneys and paralegals. These systems enable the information to be captured in electronic form using labour-saving devices such as hand-held barcode readers. The information can then be fed directly into the client accounting system task (Widdison, 1997:8). Schlein (2003:3) states that it has become imperative that law firms should have software to assist them in capturing the time and expenses spent on a clients' behalf and issuing a bill.

2.4.3.2. Client billing and management Systems

Client accounting and billing functions can also be automated using software incorporating basic accounting programmes, practice management and data calculation such as spreadsheets, fields showing how long an electronic file was open, by whom, and the charges and co-ordination of accounts. This type of software is used in many legal practices (Australian Law Reform Commission, 2002:3-4) and modern accounting packages have today evolved into sophisticated practice management and development tools (Widdison, 1997:8). With modern computerised client billing systems, bad payer can be spotted for debt collection purposes and lawyers who client earning are below average or who are slow at billing can readily be identifies. Schlein (2003:3) states that being able to monitor payments and follow up with clients who have fallen behind is critical, especially in a bad economy. These systems could, therefore, also be utilised for monitoring of client accounts and supervision on lawyers within a law firm.

Client management systems include developing and maintaining what can be referred to as client database. A client database is a means through which law firms generate and store information about the clients of the law firm. The basic client database may contain the following information:

- Brief profile of the client;
- Contact details;

- Responsible partner; and
- Types of work carried out, past and present (Pannet, 1992:132).

Van Der Merwe (2000:271) also stresses that an electronic file in a client database can contain information about the client's details, type of matter, responsible lawyer, case deadlines and the status of negotiations. More sophisticated systems allow the creation of templates where users can fill in the blanks and select between options in legal firms where relatively similar documents are frequently drafted. Schlein (2003:3) names some of the practice management products that are commonly used in law firms. They are Time Matters, Practice Master, Amicus Attorney, Abacus Law and ProLaw. These products are, according to Schlein (2003:3), extremely useful in organizing contacts, to-dos and appointments, and they provide links to other legal software such as the billing programs and document assembly programs.

2.4.3.3. General Office Management Systems

Apart from the systems that have been designed specifically for law firms that have been discussed above, there are also other systems or applications that are being utilised for general office management, not only in law firms, but in any other office-based enterprise. Examples of such systems or applications include personnel information systems, payroll packages, access control devices, etc (Widdison, 1997:9; Schlein, 2003:3).

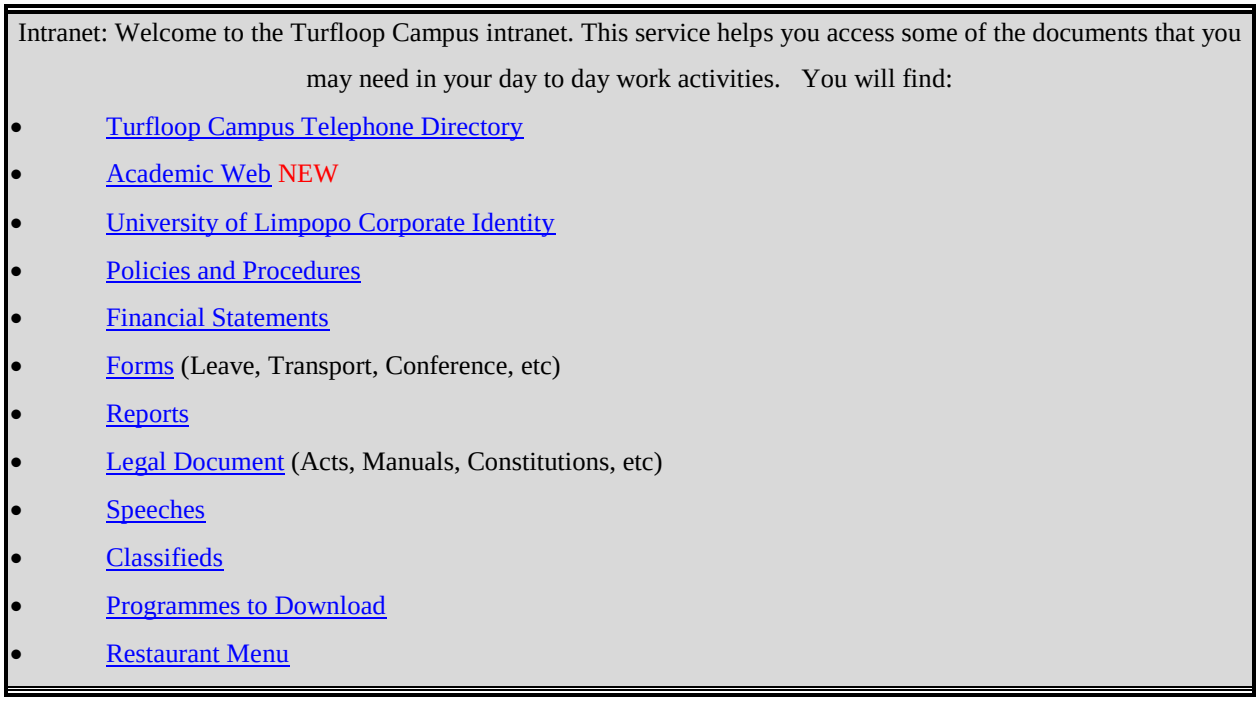
2.4.4. Tools for information transfer and sharing

To transfer and share information and knowledge with other lawyers within the firm or the profession and to establish relationships with distinguished clients, law firms might choose to adopt intranet, extranet, e-mail and portal technologies. These technologies are frequently web-based and their key functions are communication, collaboration, information and knowledge sharing (Du Plessis, 2004: 95).

2.4.4.1. Intranets

An intranet is an internal internet - based protocol, accessible from within an organization. It is an in-house website that can be used by the employees of the same enterprise or firm to make corporate information available and to have a rapid

information distribution system in the firm. An intranet is a company-wide system that uses the Internet browser and other tools and it operates on the LAN (Local Area Network).


Intranet: Welcome to the Turfloop Campus intranet. This service helps you access some of the documents that you may need in your day to day work activities. You will find:

- Turfloop Campus Telephone Directory
- Academic Web NEW
- University of Limpopo Corporate Identity
- Policies and Procedures
- Financial Statements
- Forms (Leave, Transport, Conference, etc)
- Reports
- Legal Document (Acts, Manuals, Constitutions, etc)
- Speeches
- Classifieds
- Programmes to Download
- Restaurant Menu

Figure 2.6: Example of corporate Intranet (University of Limpopo: Turfloop Campus Website)

Documents such as telephone directories, manuals, policy documents and procedures, minutes of meetings, firm news and updates, leave forms, vacancies etc., as shown in the extract above (Figure 2.6), are often placed on the intranet to eliminate high costs of updating, distributing paper documents every time an update occurs (Gevers, 1999:1-2). An Intranet is an internal repository of a variety of information contained within a firm, including client information and news links. The breadth of knowledge that can be placed on an intranet is staggering. It may encompass the whole intellectual property generated by the law firm as well as selected information from the Internet (Meyerowitz, 2003:2). The greatest advantage of adopting intranet technology within the firm is, according to Thomas (2000:223), to eliminate out of date information by publishing the most recent information on it. Every time the document is edited it will automatically be published on the intranet.

Balcombe (1999:94) also maintains that intranets are excellent media for knowledge sharing and need to be carefully managed so that they are always fresh and up-to-date and concentrate on sharing best practices and the "how was it done factor". An intranet can also be used by localised, national or international firms to enable communication among its members and it can also be connected to the Internet and be made available to the public.

2.4.4.2. Extranet

An extranet is basically an intranet to which selected outsiders, such as the paying customers, or even suppliers have access to the firm through the use login names and passwords. Clients of the firms can be given access to the firm's intranet to look for information relating to their matters, for example, correspondence, payment of bills, and give instructions to the firm. Clients are given passwords and logins which allow them to access information relevant to their matters. The well-accepted importance of the extranet is, therefore, customer support and customer relationship management (Lindvall et al., 2003:145).

An extranet supports customers or clients in helping themselves. The greatest advantage of this tool to clients is that they do not have to wait until their lawyer is available in order to receive information on their matter. An extranet can therefore be regarded as a tool for distributing information and knowledge to the fee-earners or the clients or customers of the firm.

2.4.4.3. Portals

A portal, on the other hand, is an internet gateway providing links to many other sites that are organised in a sequence of related categories. Portals are applications, typically web-based, providing single point of access to distributed on-line information and links to specialised websites and documents.

Du Plessis (2004:96) defines a portal as the application of web and other technologies to form a core platform that will combine access to the widest range of information and knowledge resources. It is extensible beyond the internal boundaries of the firm.

Portals create a customized single gateway to a wide and heterogeneous collection of data, information and knowledge (Lindval et al., 2003:145).

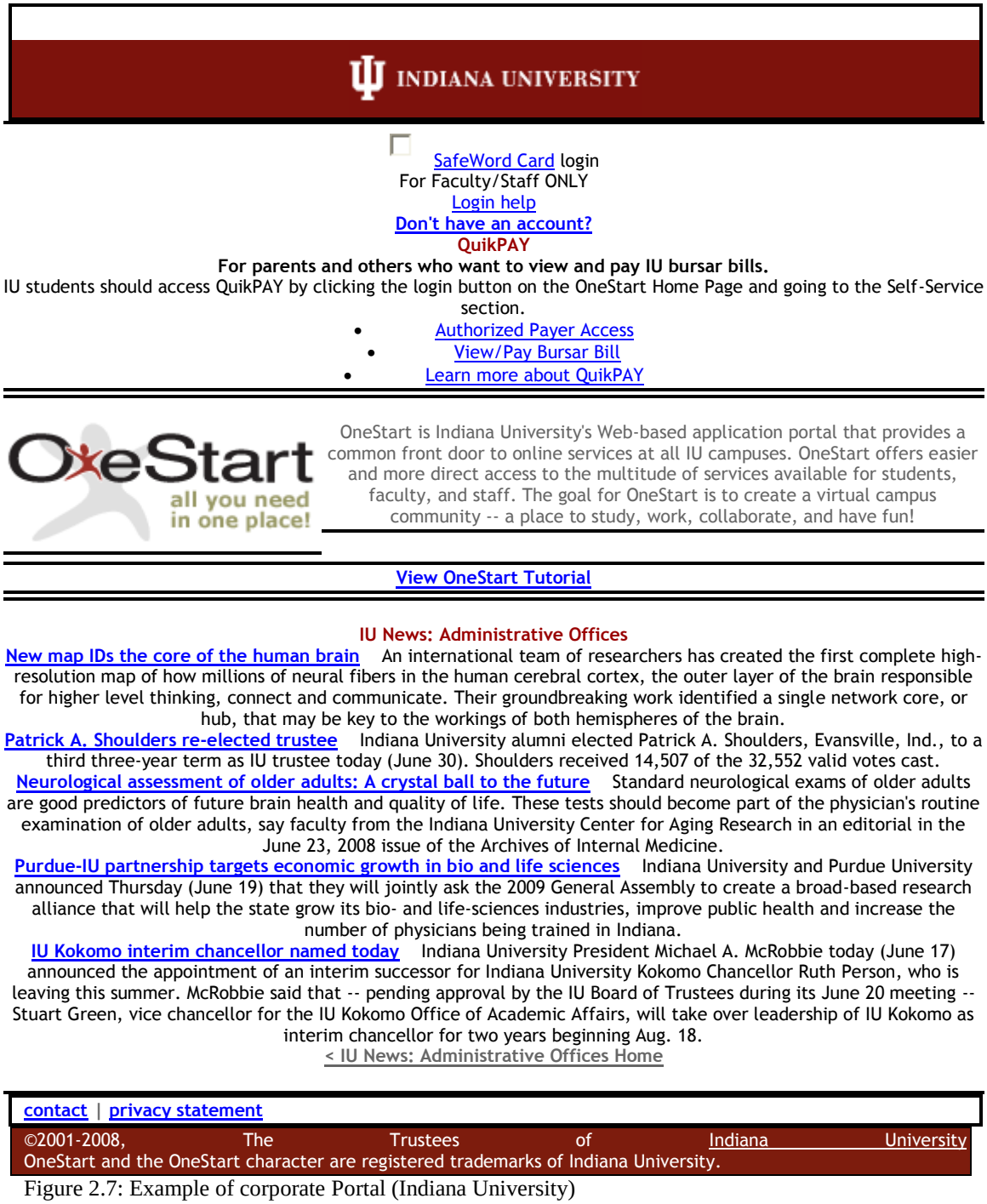


Figure 2.7: Example of corporate Portal (Indiana University)

Cloete and Snyman (2004:48) define portals as applications that enable companies to unlock internally and externally stored information, and provide users a single gateway to personalised information needed to make an informed business decision.

The purpose of a portal, according to National Electronic Library for Health (2005:13), is to avoid information overload by providing an access point at each persons' desktop, to the specific information and tools they need to do their job, while filtering out that which they do not need. Client information, existing work products, the record of firm activities on behalf of specific clients, new developments inside the firm, as well as breaking news can be gathered and shared through a web browser using modern portal technology.

Portals play an important role in knowledge management by delivering knowledge resources when and where lawyers need them and also play a significant role across the knowledge management spectrum (National Electronic Library for Health, 2005:13). Besides the ability to serve as the single entry point to multiple sites on the web, portals provide features for managing the knowledge content–captured information and knowledge residing in the databases, aggregate applications and filter information, and support legal work processes. (Staudt, 2003:5).

An example of a corporate portal is illustrated in the extract above (Figure 3.2.). In this extract the words and phrases that are underlined are links to other websites or documents. By clicking on the underlined word or phrase, one is able to access the other websites or other documents, which also have further links to other websites and documents. The portal, therefore, itself is not the final destination, but a way to reach many other places. It is a website, usually with little content, providing links to many other sites that can either be accessed directly or by following an organised sequence of related categories (Tyndale, 2002: 7). A typical portal in law firms will consist of links to the electronic acts or legislation passed by Parliament as well as the electronic cases and other documents which in turn will also provide links to other documents and websites.

2.4.4.4. E-mail

With e-mail, messages can be sent out, often with attached documents, from one computer to the other via the internet. Lawyers may use e-mail to communicate with other lawyers within and outside their firm and also with their clients. A user logs onto a computer system and writes and addresses a text message to a user on another

computer system. E-mail works like a postal service: computer programmes that talk to one another replace human collectors, sorters and carriers (Hoffman et al., 1999:21). Vandagriff (1993:2) maintains that lawyers are communicators of information. Much of that communication is with other lawyers in the firm. Telephones and paper memoranda are not particularly effective methods of communicating with too many people.

With e-mail, it is as simple to send a message to everyone in the law firm, including every partner and every support staff member, as it is to send to a single person. An e-mail is described by Van Der Merwe (2000:272) as the killer application which would force many technological hold-backs onto networks or onto the internet. E-mail is cheap, quick and remarkably reliable but it is not secure. It is not secure in the sense that a message can be intercepted and read, unless the message is encrypted, that is encoded. Comparing it to an ordinary postal service, e-mail is more like a post card than a sealed letter (Hofman et al., 2003: 21).

Waddison (1995:3) identifies four levels in which an e-mail can be used for communication in law firms. At the simplest level, e- mail takes a form of one-to-one communication. One individual sends a message to another, who may then reply. At the second level, e-mail may be distributed on a one-to-many basis. It is possible to send an identical message to a number of recipients at the same time. The third level, which is more sophisticated, is that of pre-prepared one-to-many mailing list. A number of subscribers who may be widely dispersed geographically are gathered into a group and the group is given its own e-mail address. Message sent by any individual member of the group addressed to the mailing list then passes through a ‘mail exploder’ which automatically addresses and sends the same message to every individual member of the mailing list. At the fourth level of sophistication, Internet-based discussions are increasingly run on a pre-planned basis as formal electronic conferences. A special mailing list may be set up and delegates invited to sign up and participate in the conference (Widdison 1995:3).

2.5. Previous studies and surveys

The body of literature that is currently available internationally concerning the utilization of information technology to support information and knowledge management by lawyers is mainly found in the United States of America (USA) and United Kingdom (UK). This literature will be used to compare the usage of information technology by legal firms in those countries (UK and USA) against the legal firms in South Africa, with specific reference to law firms in the city of Polokwane. The findings of the surveys that were conducted in other countries, for example, Australia, Scotland and Norway, will also be discussed and used as the benchmark for the utilization of information technology to support information and knowledge management by legal professionals in South Africa with specific reference to law firms in Polokwane City.

2.5.1. United Kingdom

According to Wall (1998:6), the survey that was conducted in Leeds in 1998, in the United Kingdom found that most of the law firms were, during that time, still in the process of introducing information technology in their practices. It was found that lawyers who were practising in traditional areas of law, for example, criminal law and family law were least likely to use information technology than lawyers who were practising in the new areas of law, like intellectual property law and environmental law. According to these results, it might be true that the area of law in which a particular law firm is directing its legal service or is specialising has an influence on the extent to which that particular law firm utilizes information technology. South Africa saw development of other areas of law such as labour law, constitutional and human rights law, environmental law during the past decade; that is, after the all-race elections in 1994.

This research project therefore attempts to determine if the lawyers operating in these new areas of law are better users of information technology than those who have been operating in traditional areas of law, such as criminal law, family law etc. The more advanced the hardware and software products are, the more training is needed in order to make the best use of those products is necessary. According to the surveys in the United Kingdom, it is shown that even if law firms were realising the importance of utilizing information technologies in their work, there were some limiting factors that

prevented them from utilizing information technology optimally. Singh et al. (2002:6) revealed the other limiting factors that were attributing to the slow utilization of information technology systems within the legal profession in the United Kingdom.

Although it was revealed in this survey that funding was one of the first factors that any organization has to consider when investing in information technology and the legal profession is no exception, lack of understanding of information technology application in the legal profession was also far more prominent among the law firms that did not use information technology. This limiting factor is also related to lack of qualified information technology staff within the legal firms. Buys (2000:1-2), therefore, cautions that law firms should not employ personnel without adequate training in the use of both hardware and software and further that they should not introduce new software or hardware without sufficient training for current personnel.

Another factor that was recognised in the survey by Sing et al. (2002:6) was that law firms were experiencing difficulties with regard to conflicting cultural and traditional views. This problem had a strong relationship with staff resistance to technology. Wall and Johnstone (1997:117) maintain that attempts to introduce information technology are frustrated by lawyers' cultural resistance. Firms that had traditional lawyers in their employ are least likely to utilize information technology than firms with modern lawyers in their employ. The more partners and fee earners are working in the firm, the more likely that cultural differences and traditional problems will arise (Singh et al., 2002: 6).

Wall and Johnstone (1997:167-170) also found that while investment in information technology is considerable in the North-West of England, a lack of information technology strategic planning resulted in firms not capitalizing upon their investment. It was found that most of the firms spent a vast amount of their financial resources on information technology but without any specialist staff to manage their information technology, nor did they go in for any strategic planning in relation to their information technology investment.

The PA consulting group also conducted a survey in conjunction with the Legal Information Technology magazine amongst both business and Information Technology directors of the top hundred (100) law firms in the UK in 2002. The purpose of the survey was to gather information about how information technology was being used within the law firms in the U.K. to achieve or support commercial and strategic objectives. It was found in the survey that the overwhelming majority of respondents believe that their firms receive good value from their information technology investments. However, the survey showed that this opinion might not be fully supported by the fact that not all the firms measure the value or level of information technology service they receive.

2.5.2. United States of America

Larkan (1990:169) monitored the trends with regard to the utilization of information technology in the legal industry in the U.S.A. According to this observation, computer utilization gained acceptance in the legal business in the U.S.A. during the 1990s. The inter-connection of personal computers by networking was also becoming popular. Lotus 1-2-3 was being taken out of the picture by Microsoft Excel as the better quality and value spreadsheet programmes and the new version of Microsoft Word was also providing some opposition to WordPerfect as the word-processing programme.

According to Larkan's (1990:167) observation, laptop computers were also becoming more powerful and more convenient. Unfortunately, they were still expensive for most of the attorneys to purchase. He further established that law office automation became a priority for most of the law firms in the U.S.A. in the 1990s. The importance of a computer on every attorney's desk and every attorney's home as well as membership of several computer groups by a majority of attorneys was significantly emphasised by the American Bar Association. It was also emphasized that every attorney should at least know how to type. Larkan (1990:169) argues that where a practitioner does not know how to type, it is unlikely that he or she will discover what the machine can do for the practice. The result will be that it will not be possible for the lawyer to make intelligent decisions about what the computer should do. Larkan (1990:169) goes on to argue that even if computers were emphasized by the American Bar Association, there were some problems in investing in computers.

For most law firms in the U.S.A., during that time, computerization required money and skilled staff. The full utilization of computers and technology in the practice requires a budget shift from bookkeepers and secretaries towards suitably qualified staff. Computerization implied the need to train staff in order to achieve optimum utilization of expensive equipment, to maintain it and correctly upgrade it as the technology changes.

The State Bar of Wisconsin (1998:1-10) also carried out a survey in 1998 to determine how Wisconsin law firms used information technology during that period. The overall objective of the survey was to verify adoption and usage levels regarding computer equipment, operating systems, software applications, internet usage and computer training courses. It was found in this survey that most of the firms preferred to use IBM-compatible PCs. Internet usage had also increased substantially, whilst WordPerfect continued to be the most preferred word processing software among law firms. Legal research on the internet topped the list of desired hands-on training. Lack of time to research and implement technology, lack of training, financial constraints, lack of technical information tailored to law firms and lack of in-house knowledge about technology were named as the most common barriers to technology use and adoption among the lawyers in this survey.

According to this survey, therefore, the size of a law firm will have an influence of the type of equipment that the law firm uses. Law firms that are large in size will use advanced modern equipment rather than smaller firms who cannot afford this computer equipment. A subsequent survey with the same purpose and objectives was conducted again in 2000 by the State Bar of Wisconsin. It was found that the usage precedents of information technology by lawyers affiliated to the State Bar of Wisconsin had not changed substantially from that of 1998. The law firms still used the same computer equipment, operating systems and software applications as in the1998 survey.

Lack of time to research and implement technology, lack of training, financial constraints, lack of technical knowledge tailored to law firms and lack of in-house knowledge about technology were named as the most common barriers to technology

usage and adoption. In the comments that were solicited at the end of the questionnaire, the respondents emphasised training as necessary to make technology usable in their work. Most lawyers mentioned training as necessary, because new hardware and software products, more advanced than the ones used in 1998, were probably making their appearance and most lawyers did not know how to make the best use of those products.

Warner (2002:1-8) shows that the American Bar Association (ABA) surveyed a random selection of attorneys in private practices in 2001. The survey covered five distinct technology areas, namely, Law office technology, litigation and courtroom technology, web and communication technology, online research and mobile lawyers. The findings regarding litigation and courtroom technology as well as mobile lawyers are not included because they are outside the scope of the current research project. It was found in the survey by the ABA Legal Technology Resource Centre (Warner, 2002:1), that Microsoft Windows was the operating system of choice of a majority of law firms, with MS Word as the most popularly used word processing programme and WordPerfect the second.

In the storage arena, CD-ROMs were the overall favourite for most law firms whilst newer hardware like CD-RW were gradually gaining acceptance. It was also reported that most of the firms did not have websites for themselves. Those who were connected to the Internet used it to perform online research using free online resources. When accessing the Internet, the vast majority of attorneys were using Microsoft‘s internet explorer (Warner, 2002:1). The results of this survey reported by Warner (2002:1-8) in the U.S. seem to indicate that financial constraints impede most of the attorneys in investing in information technologies. As the costs of a specific type of hardware increases, the less likely it becomes that most of the small firms have a need for the said technology. Lack of finance therefore, seems to be one of the major obstacles for law firms endeavouring to invest in information technology.

The American Bar Association subsequent report (Whelan et al., 2003:1-13) also presents the results of the survey that was carried out in 2002 in the USA. The survey comprehensively looked at how the legal profession uses information technology in

the USA. Various aspects of information technology usage in the USA law firms were investigated including:-

- Technology planning and budget: It was found that lawyers do not appear to be making huge strides when it comes to law firm planning and decision-making related to technology. Other firms had technology committees and again others were holding an annual strategic technology planning meeting and budget.
- Technology Support: It was also reported that while more than half of the lawyers relied heavily on internal support staff for technical support, others turned to outside consultants who recommend products for the law firms.
- Technology information: Some lawyers attested that they received most of their information about information technology from print publications, the web and educational conferences, E-mail discussions lists and trade shows. Other lawyers listed the American Bar Association (ABA) journal as their preferred print publication for obtaining information about legal technology. Lawyers also obtained information about legal technology from the daily newspapers.
- Security: Regarding security, most of the firms relied on the use of official policies to govern technology use by employees. Such policies included document or record management policy, internet use policy, e-mail use policy and computer acceptable use policy.
- Hardware: With the type of hardware used by lawyers, it was found that all lawyers use computers at work, with desktop computer serving as the primary computer for the overwhelming majority of lawyers whilst few lawyers used laptops.
- Communication: e-mails and fax were the most prevalent communication applications available to most of the lawyers.
- Networks, intranets, extranets and internet: The use of networks was high among most lawyers, and the use of intranets and extranets has also improved since 2001. The internet has also become so ubiquitous that almost all firms

have access in their offices and while on the road. Some firms also reported having firm websites.

The report (Whelan et al., 2003:1-13) of the 2002 survey showed that the legal industry in the USA is ahead of the game in terms of technology usage, depending on the type of technology and the size of the law firm. This report also shows that other law firms were still reluctant to use more advanced information technologies applications for information and knowledge management support, evidenced by the reluctance of lawyers to use, on a broad scale, common online communication tools like web-based message boards and e-mail discussion lists.

2.5.3. Other surveys

In Australia, a case study of six Australian law firms was conducted about their use of Internet technologies in 1996. It was found that most of the respondents that have established their presence on the web wanted to communicate with their clients electronically and conduct research on the web with the objective of accomplishing their business strategy. They agreed that communication using the Internet based technologies will become an effective way to communicate with the clients and conduct business effectively. In addition to communication, research offers a great advantage of implementing and utilizing internet technologies, according to the 1996 case study. Increased access to a wide-ranging amount of information related to the firm and the profession was part of most of the firms' business strategies.

In respect of Scotland, Duncan (1997:4) claims that according to literature reviews and some previous pilot work already carried out, it is shown that although the use of information technology for administrative purposes was increasing, most small firms were not utilising information technology to its fullest advantage in Scotland. The use of information technology did not seem to have penetrated the operational part of most of the firms' work.

2.5.4. Africa

In Africa, a study using the theory of diffusion of innovations was conducted in Botswana by Fombad and Moahi (2005: 229-233). The study investigated the

perceptions held by lawyers of ICT and whether these perceptions had any bearing on the adoption and the use of information and communication technology (ICT) by lawyers in Botswana. This study painted a picture of a profession that has not fully embraced ICT (Fombad & Moahi, 2005: 232). According to the results of this study, it was revealed that lawyers in Botswana are still at an early stage of adoption and use of IT. The lack of in-house expertise, high costs of ICT consultants, the lack of interest and skills in ICT, lack of information about appropriate software and limited financial resources were some of the major factors that determine the adoption and use of ICT by lawyers in Botswana. The size of law firms, high costs of legal information technology systems, dissatisfaction with ICT consultants and lack of time for training also determined the adoption and use of ICT in Botswana law firms (Fombad & Moahi, 2005:225).

However, it has been observed that the study conducted by Fombad and Moahi (2005:229-233) concentrated mostly on the perceptions of Botswana lawyers towards information and communication technology without focussing on how well they utilise information technology to support information and knowledge management. This is where lies the difference between the present study and the one conducted by Fombad and Moahi.

2.5.5. South Africa

In South Africa, it looks like there is little information available about the utilization of information technology to support information and knowledge management by legal professionals. Perhaps this is because utilization of information technology by South African lawyers to support information and knowledge management has not been sufficiently investigated. The little information that is available locally, and up to date, informs the reader about the benefits of using information technology in legal practice, rather than investigating as to whether the practising legal professionals are actually using these information technologies to their best advantage, particularly to support information and knowledge management.

Some of the examples of such literature in South Africa are Buys (2000a:1-3), who wrote about how information technology can increase revenue and client satisfaction

in a law firm. Roffey (1997) also investigated the effectiveness of the administrative function in a legal firm when using information technology. Hoffmann (1998: 1-3) also views technology as a necessary tool that will increase efficiency and improve the quality of the legal services delivered in any law firm.

All these studies propagate the benefits and rewards of investing in information technology in law firms, without an empirical approach to the actual usage of information technology in law firms. Wall and Johnstone (1997:117) agree that the amount of legal commentary about the relationship between information technology and law is mostly on how information technology can benefit the legal profession and how it can make legal practice more efficient.

The usage of information technology in the legal industry in South Africa seems to be very far behind other industries such as manufacturing, financial services, wholesale, retailing and other industries. The legal industry was not even mentioned as a user of information technology in the working paper on information technology in South Africa by Hodge and Miller (1997:3-5). When compared to other countries, such as the USA, UK, Australia and Scotland, South Africa seems to be very far behind with regard to the usage of information technology by lawyers. This is evidenced by a lack of literature on the topic. This study, therefore, attempts to fill the gap by investigating the utilization of information technology by law firms in the city of Polokwane.

2.6. Literature on I & KM in law firms

A point of departure for any discussion of literature on information and knowledge management in law firms is to consider the attitudes of lawyers towards the introduction of information and knowledge management in law firms, as to whether information and knowledge management in law firms will result in delivery of better products or services to the customers and better economic performance for them. According to Terret (1998:71) nearly every professional services firm in the world, including law firms, has the basic mission statement; namely: “to deliver outstanding client service, to provide fulfilling careers, and professional satisfaction for its fee-earners, and to achieve financial success so that fee-earners can reward themselves

and grow". Therefore, the literature on information and knowledge management in law firms should look at how these resources contribute to this goal in law firms.

The Global Law Firm Knowledge Management survey report (2002:3) contains the results of interviews conducted by Curve Consulting with leading law firms from the USA, UK and Australia. The survey covered a broad range of topics, including knowledge management strategy and objectives, client service delivery and learning and development. It was found in this survey that leading firms in the US, UK and Australia recognise information and knowledge management as a key business driver. The main objectives of the firms' information and knowledge management initiatives were to provide a better service to clients and creating a more rewarding work environment for lawyers and staff.

The typical law firm information and knowledge management vision was to achieve market differentiation through leveraging its knowledge. Most of the law firms placed a strong emphasis on the relationship between knowledge management and client service delivery, and few placed emphasis on generating revenue for the firms. The firm's ability to service the needs of its clients is therefore prominent in most law firms. But this will depend on the best minds in the firm which must always be accessible and available even if those best minds are fully occupied elsewhere on other client matters. This in turn relies on successful document management (Terret, 1998:72).

The survey also showed that there was more focus on managing the industry information and knowledge by most lawyers. Lawyers involve themselves in information and knowledge management because they require on-going intellectual stimulation. Successful information and knowledge management in law firms feeds new learning and ideas into the firm and offers new opportunities for professional development, and contribute to professional satisfaction.

Financial success and growth is also one of the grounds for successful information and knowledge management in most law firms. According the of Global Law Firms Management Survey Report (2002:3), the law firms that were surveyed engaged in

information and knowledge management initiatives because they want to generate more revenue for the firm. With regard to knowledge of information and knowledge management, it was found that most participants have a narrow information and knowledge management focus. Law firms tend to limit their knowledge management efforts to managing core and explicit legal knowledge.

Gottschalk (2000:117-124) conducted a survey of Norwegian law firms on the use of information technology to support inter-organizational information and knowledge management. Firm culture, firm knowledge and use of information technology were identified as potential predictors of information technology support for information and knowledge management in law firms in Norway. According to the said study, the extent to which law firms in Norway use information technology to support information and knowledge management is significantly influenced by the extent to which firms generally use information technology. This means that developments in information technology increase opportunities for knowledge management between law firms.

The survey also investigated firm cooperation, knowledge cooperation and inter-organizational trust as potential predictors of information technology usage to support information knowledge management in Norwegian law firms. The survey was based on the hypothesis that law firms, which share knowledge internally and cooperate more extensively with other law firms, utilize information technology more extensively to share knowledge with other law firms. It was revealed in the survey that inter-organizational knowledge management seems to be at an early stage in Norwegian law firms. Given the extent to which inter-organizational knowledge management takes place among law firms, information technology is used to a limited extent. Generally, the survey showed that law firms in Norway were not lagging behind other professional service firms in their use of information technology to support inter- organizational knowledge management.

Heather (2003:6) argues that inter-organizational knowledge management among the law firms is restricted to size and the geographical spread of the firms within the coalition or alliance, as well as information technology systems available to support

knowledge management. Knowledge management would be within the boundaries of what knowledge could be shared. Heather (2003:7) concurs with Gottschalk (2000:119) that the knowledge sharing culture of the law firm will influence the application of the knowledge management elements across the alliance.

Ndlela and du Toit (2001:3-4) also emphasise organizational culture as predictor of a successful knowledge management programme. They maintain that people are the key component of knowledge management; hence the type of culture existing in the enterprise is very crucial to the success of knowledge management. They highlight that enterprises that are serious about knowledge foster an environment and culture that support continuous learning, because organizational culture is a basic building block to knowledge management. People are therefore seen as important enablers of knowledge management programmes since knowledge resides in people's heads. It is, therefore, very important for employees to understand the importance of knowledge management. Employees have knowledge in their heads and should therefore be encouraged to share their knowledge with others by making it explicit. Although they were not specifically referring to lawyers, Ndlela and du Toit (2001: 153) have also mentioned customer focus as one of the drivers of knowledge management. They highlight that enterprises are organizing their businesses to be focussed on creating customer value through knowledge management.

In Africa, there is one study that was probably conducted at the time of compiling this research report that was done by Hinson et al. (2007:311-322). The study investigated qualitatively the impact of the Internet on the work of lawyers in Ghana. According to this study, it was found that the Internet improves productivity to most of the law firms in Ghana. It was also found that the Internet is useful as a communication tool and a tool for getting information in most of the law firms in Ghana.

When looking for literature about information and knowledge management in South African, it becomes apparent that the topic has received more attention in the manufacturing industry than in the legal industry. The only works (dissertations) that are presently available about knowledge management in South African law firms are by Du Plessis (2004) and Archbold (1998). The latter work investigated the role of

information and knowledge management in support of legal research in the digital environment, whilst the former investigated the extent to which law firms in South Africa have transformed their business by using TCP/ IP based applications such as the intranets, extranets, home pages and internet browsers to improve their services. In this work, Du Plessis (2004:71) mentions that most South African lawyers are unconsciously practicing knowledge management in many forms. For example, when a legal question arises, to some the first reflex will be to look up the case law or ask someone in the firm who has dealt with similar issues or others may consult their document management system or perform word searches on the firm‘s previous work product. Activities of some law firms include some element of knowledge management even if they do not categorise it as part of the knowledge management initiative.

This is supported by Potter (2005:1-2) who maintains that lawyers, even if they might not realise it, are using knowledge management techniques when they capture the knowledge they have acquired and reuse it the next time they have to draft a contract, pleading, or trust. The findings of the survey by Archbold (1998) showed that the motivation for attorneys in establishing a web presence was not client driven and that the perceived benefits of using ITP/IP based technologies relate more to marketing the firm and less to externally oriented linkages with clients and stakeholders.

There were also not so many articles that were found on knowledge management in South Africa that were specific to law firms. Most of the articles that were found prior to this study contain general information about knowledge management in other types of industries other than in law firms (Ndlela & Du toit, 2001:151-165; Botha & Fouche, 2002:13-19; Newman, 1999; du Toit, 2003:111-120; Du Plessis & Boon, 2004:73-86; Steyn, 2003:206-228, and Kok, 2005). These articles represent the findings of the research project on knowledge management practices in the South African business sector.

The overall objectives of the researches were to describe prevalent knowledge management practices, to identify patterns and trends, and to develop knowledge management benchmarking and strategic management tools for the business sector.

According to these studies, the South African business environment seems to indicate a growing awareness and adoption of knowledge-based strategies and knowledge management practices. This is evident from the many examples of organizations that have embarked on knowledge management initiatives; the appointment of knowledge management officers; and the proliferation of computer-based knowledge management solutions offered by software vendors (Botha & Fouche, 2002:13).

The only articles that were found during the process of this study which were relevant to the essence of this study were published by Du Plessis and Du Toit (2005:1–13; 2006:360-371). In these surveys, it was found that most of the lawyers in South Africa indicated that they use information technology applications and knowledge management systems for managing information and knowledge. This survey also showed that the high percentage of lawyers responding as being "unsure" might indicate lack of knowledge or awareness with regard to these systems or could be an indication that the systems were not used in the South African law firms (Du Plessis & Du Toit, 2005:7). The studies further showed that intranet and internet use was high and that the uses of these technologies were valued, but the concept of extranet proved to be most unfamiliar.

2.7. Conclusion

The purpose of the first part of this chapter was to clarify and define the terms that are frequently used in this study, namely, law firm, information, knowledge, information and knowledge management and information technology. The interrelationship between the terms data, information and knowledge were also provided in this chapter. From this correlation, it was construed that information and knowledge, more especially explicit knowledge, are closely related concepts. It is for this reason that information management and knowledge management are used interchangeably in this research project.

The role of information and knowledge management as well a development of information technology in law firms was also discussed in the second part of this chapter. It has been established that information and knowledge management has a tremendous role to play in the daily operations of law firms. Apart from ensuring the

sharing of information and knowledge and avoiding duplication of assignments, it is also a legal obligation to ensure that information and knowledge are effectively and efficiently managed in every law firm.

Information and knowledge management in law firms can, however, be efficiently and effectively applied through the utilization of information technology. The information technology tools that are used to facilitate the processes of information and knowledge management activities (creation, organization and transfer of knowledge) in law firms were therefore also discussed in this chapter. It has also been alerted that these information and knowledge management tools should not be viewed as information and knowledge management, but rather as tools that facilitate information and knowledge management process.

The last part of this chapter focussed its attention on literature that is available up to date with regard to the utilization of information technology to support information and knowledge management in law firms. According to this literature review, law firms have been and are using information technology in other countries such as the United States of America (USA) and United Kingdom (UK). Hinson et al (2007:312) maintain that most of the research conducted on the topic has largely been in the Western context. Unfortunately, most of the literature that was found appears to be old. This literature could, however, be used to explain the historical development of information technology in law firms and as a benchmark for determining what is happening in South Africa as against other countries. It has also been observed through the review of the literature that whereas lawyers in other countries have adopted information technologies in their law firms, this seems not to be the case with lawyers operating in South African law firms. Perhaps this is because the adoption of information technology in law firms is still in its infancy in South Africa.

CHAPTER THREE
THEORETICAL BACKGROUND

3.1. Introduction

As the world is continuing to move towards global markets and information technologies developing faster, interaction between information technologies and people also becomes vital in every organization. It is, therefore, important to examine the extent to which existing theories can explain or predict technology acceptance behaviour of human beings. Quite a number of studies have been conducted about interaction between people and information technology, and models were developed to provide the theoretical basis or framework for research on the acceptance of information technology and information systems.

The purpose of this chapter is, therefore, to explain those models and provide some approaches through which technology usage behaviour of legal professionals could be studied. Among some of the models that are discussed in this chapter are Theory of Reasoned Action (TRA) developed by Fishbein and Ajzen (1975), Theory of Planned Behaviour (TRB) by Ajzen (1995), Rogers' (2003) Diffusion of Innovations Theory, and Technology Acceptance Model (TAM), advanced by Davis (1989). The reason for the adoption of the model that was chosen for the purpose this study is also explained in this chapter.

3.2. Theory of Reasoned Action

The Theory of Reasoned Action (TRA) was developed by Fishbein and Ajzen (1975:1-578). The model defines the links between beliefs, attitudes, norms, intention and behaviour of individuals. According to this model, as shown in Figure 3.1 below, a person's behaviour is determined by his or her intention to perform the behaviour and the intention is, in turn, determined by a person's attitude and his or her subjective norms towards the behaviour in question (Fishben & Ajzen 1975:302). Therefore, this means that a person's intention to behave in a certain way is based essentially on two factors: the attitude and subjective norms.

Attitude can be defined as a positive, negative or neutral feeling, belief, position or view towards an object, behaviour, opinion, situation, event, etc. Attitude refers to the result from individual beliefs regarding behaviour and their consequences, as well as the importance of these beliefs (Fieshbein & Ajzen, 1975:303). The attitude of a person toward behaviour is determined by his or her beliefs, which are defined by a person's subjective probability that performing a particular behaviour will produce specific results (Davis et al., 1989:984).

Subjective norm reflects how the consumer is affected by the perception of some significant referents, for example, relatives, friends or colleagues (Fieshbein & Ajzen, 1975:303). Fishbein and Ajzen (1975:302) define subjective norms as a person's perception that most people who are important to him or her think about his or her behaviour.

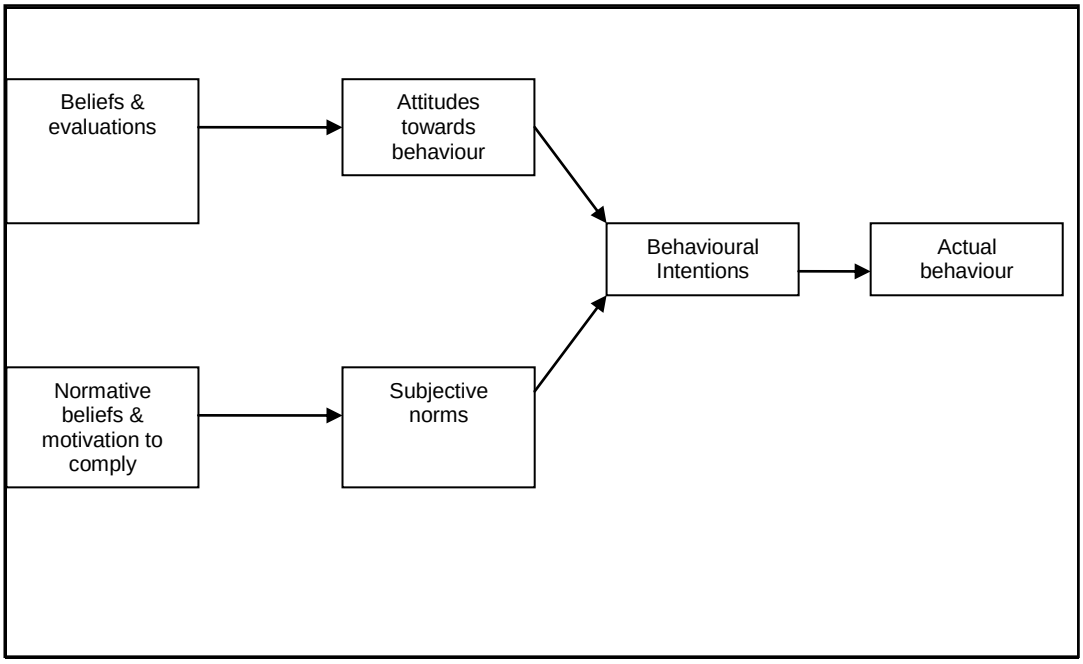


Figure 3.1: Theory of Reasoned Action (Davis et al., 1989:984)

This means that, for a person to act in a specific way, they usually think about the reactions of other people who are important to them towards their behaviours or actions. Subjective norms are therefore determined by beliefs about how people they care about will view their behaviour in question. All these two factors will then lead to intentions, which, in turn lead to actual behaviour as illustrated in Figure 3.1 above.

3.3. Theory of Planned Behaviour

Theory of Planned Behaviour, shown in Figure 3.2 below, was adapted from the Theory of Reasoned Behaviour and was proposed by Ajzen's (1985). Like the Theory of Reasoned Behaviour, the model (Theory of Planned Behaviour) uses direct measures of attitudes and subject norms. Taylor and Todd (2001:149) maintain that this is an extension of the Theory of Reasoned Behaviour because, in addition to attitudes and subjective norms, it uses also direct measures of perceived behavioural control.

The major difference between Theories of Reasoned Action and Planned Behaviour, therefore, is the addition of the third determinant of behavioural intention to the former, namely, Perceived behavioural control. Perceived behavioural control indicates that a person' s motivation is influenced by how difficult the behaviours are perceived to be, as well as the perception of how successfully the individual can or cannot, perform the activity.

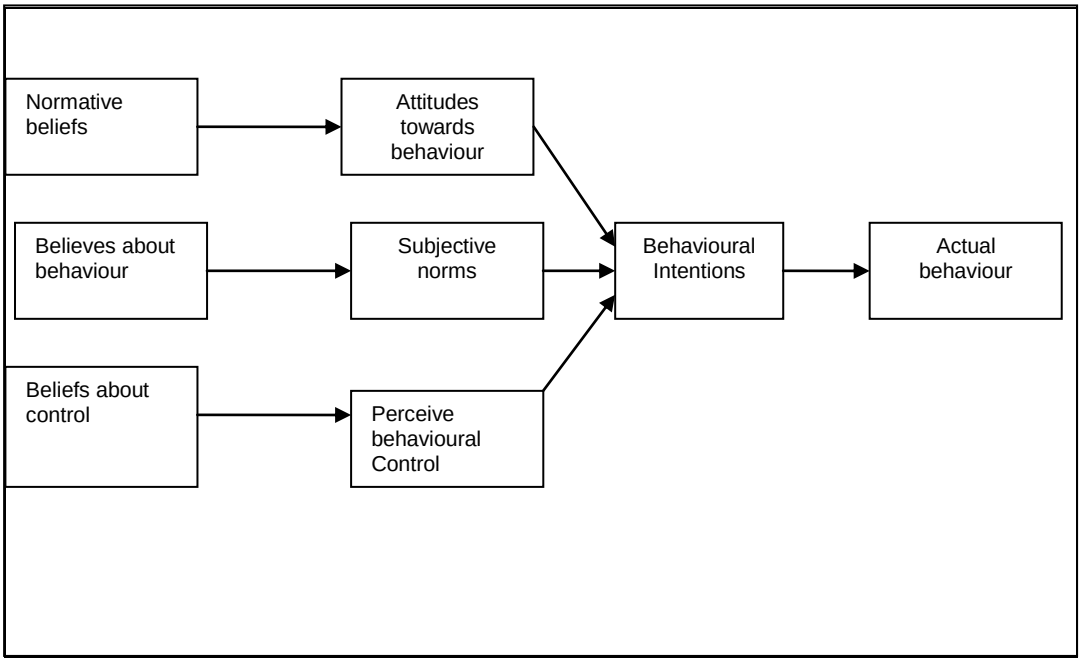


Figure 3.2: Theory of planned behaviour (Crespo & Rodriguez del Boque, 2008:3)

Perceived behavioural control is, according to Smarkola (2008:1198), the extent to which users have control over their behaviour, determined by a person's internal

variables, such as skills, and external variables, such as the availability of resources and opportunities, to predict intentions and, in turn, behaviour. This means that computer usage depends largely on whether or not the person has skills to use computers and on access to computers.

This model, therefore, emphasises attitude, subjective norm and perceived behavioural control as the determinants that help to understand the reasons or factors explaining individual actions. All these factors are based on normative beliefs, about behaviour and control, as represented in Figure 3.2 above.

According to these theories, i.e., Reasoned Action and Planned Behaviour, therefore, when explored in terms of the purpose of this study, the adoption or utilization of information technology by lawyers in their law firms will only be determined by their attitudes and their perceived subjective norms towards utilization of information technology, their skills in utilizing information technology, and access to information technology. The more positive their attitude and subjective norms are, and the more they have access and skills to utilize information technology, the stronger will be their intention to adopt and utilize information technology. The opposite can also be stated if the behaviour is negative.

3.4. Technology Acceptance Model

The Technology Acceptance Model (TAM) advanced by Davis (1989:319-339) is also rooted in the Theory of Reasoned Action, proposed by Fishbein and Ajzen in 1975, which proposes that beliefs or external variables influence activities, which in turn lead to intentions and then generate behaviours. The model postulates that "perceived usefulness" and "perceived ease of use" influence attitudes to computer technologies, which in turn influence computer technology usage as illustrated in Figure 3.1 below. Davis et al. (1989:985) define these two determinants thus:-

- Perceived usefulness as the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context. It relates to job effectiveness, productivity (time saving), and relative importance of the system to one's job; and

- Perceived ease of use refers to the degree to which the prospective user expects the target to be free from effort, in terms of physical and mental effort as well as ease of learning (Davis 1989:320). This is also coupled with user friendliness as another important factor encouraging computer usage.

It is these two beliefs; that is, Usefulness and Ease of use, according to the Technology Acceptance Model (TAM), that determine one's intention to use computers and related technologies. Therefore, perceived usefulness and perceived ease of use are fundamental determinants of in predicting an individual user's intention to use computer technology (Will Wai-kit Ma et al, 2005:388). Lu et al. (2003:207) posit that these determinants serve as the basis for attitudes towards using a particular system, which in turn determines the intention to use and then generate the actual usage behaviour. The model is therefore, is also based on the contemplation that usage or non-usage of information technology can only be recognized if attitudes towards computers or satisfaction in using computers are investigated. Attitudes refer to the tendency of an individual to respond favourably or unfavourably to an aspect of his or her world.

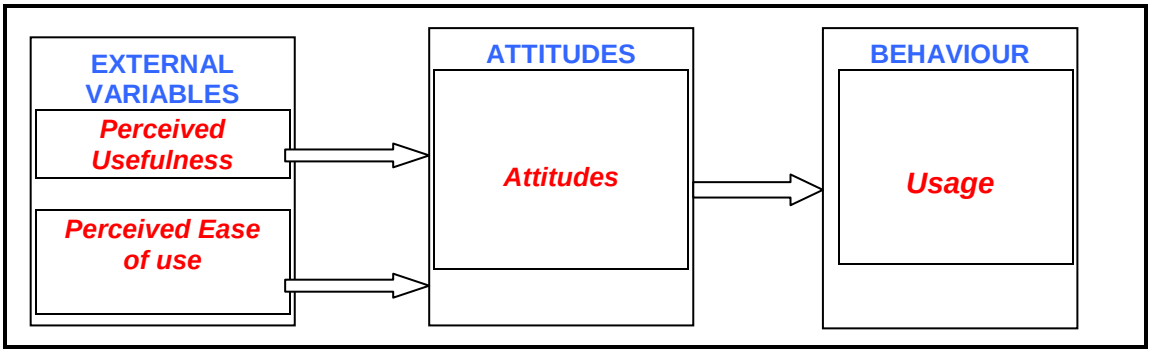


Figure 3.3: Simplified Technology Acceptance Model (Western et al 2003: 14)

Applying this explanation to the context of this study suggests that a lawyer who is using information technology is someone who is receptive to the use of information technology and open to the purported benefits of utilizing information technology. If the use of computers within the legal practice is to be considered desirable, lawyers must first accept computers in their practice; that is, they must be receptive to the presence and benefits of computers. Receptivity to computerization and openness can be summarised with reference to three concepts, namely computer anxiety, usefulness and ease of use. Computer anxiety is commonly described as the fear or apprehension

felt by an individual when using computers, or when considering the possibility of computer utilization. Such anxiety may prompt the anxious individual to withdraw from the anxiety-provoking situation, minimise the time spent operating computers and make negative remarks about computers and people who use them (Western et al., 2001: 10).

Other factors that influence the utilization of computer technology by individuals or groups of individuals are organizational support, satisfaction with information technology and perceived benefits (Western et al., 2001:10-11). Organizational support is understood as the attitude of an individual's organization towards information technology and the material support that one's organization provides to encourage adoption and use of information technology. The kind of support that an organization may provide to the individuals within it includes training on the use of computers, material support, adapting to technological changes in the environment etc. Western et al (2001:11) further reckon that satisfaction with using information technology is strongly dependent upon the user's background, especially his/her past experience with computers and the skills acquired as a result. This implies that experience and skills of using information technology are positively associated with end user satisfaction and users with little experience and poor skills in using computers are less likely to embrace information technology.

In summary, organizational support in the form of providing necessary infrastructure, incentives, training, and creating an environment conducive to change encourages individuals to accept computers. User background will also influence one's receptivity of computer usage. Prior experience and a positive assessment of one's own skills tend to be associated with higher levels of user satisfaction. Finally, potential users must first and foremost perceive the system to be useful, if use is to be made of it.

3.5. Diffusion of innovations

The other different model which can be used for examining technology usage in organization is the diffusion of innovations. Higgins and Hogan (1999:61) maintain that this model has been widely studied across a broad spectrum of disciplines,

including the social sciences, marketing, engineering and management. According to Rodgers (1995: 5), diffusion is the process by which an innovation is communicated among the members of a social system. It can also be defined as the study of how, why and at what rate the new ideas and technology spread across cultures. Minishi-Majanja and Kiplan'at (2005:211) and Rodgers and Scott (1997:4-5) analyse this concept by identifying the four main elements prevailing in its definition; namely, innovation, communication channel, time, and social system.

An innovation is defined as "an idea, practice, or an object perceived as new by an individual (Frambach, 1993:22). Innovation theorists postulate that certain characteristics determine the rate at which an innovation is adopted by a social system thus:

- Relative advantage: the degree to which an innovation is perceived as better than the idea it supersedes;
- Compatibility: the degree to which an innovation is perceived as being consistent with existing values, past experiences and needs of potential adopters;
- Complexity: the degree to which an innovation is perceived as difficult to understand and use;
- Trialability: the degree to an innovation may be experimented with on a limited basis; and
- Observabilty: the degree to which the results of an innovation are visible to others (Minishi-Majanja and Kiplan'at, 2005: 212).

All these characteristics; namely, relative advantage, compatibility, complexity and observability of an innovation, may singly or combined, influence its adoption or non-adoption. The innovations that are perceived by individuals as having greater relative advantage, compatibility, trialability and observability and less complexity will be adopted more rapidly than other innovations (Rodgers & Scott, 1997: 7).

The second main element prevailing in the definition of diffusion is the communication channel**.** Communication is a process in which participants create and

share information with one another in order to reach a mutual understanding (Rodgers, 1995: 5-6). A communication channel is the means through which messages get from one individual to another. Communication, therefore, has to take place through some form of a channel to disseminate information in order to introduce an innovation.

The third element is time of diffusion, which focuses on three dimensions, thus:

- The decision-making process: process by which an individual passes from first knowledge of an innovation through its adoption or rejection;
- An individual's innovativeness: the relative earliness or lateness with which an innovation is adopted; and
- The rate of adoption: the number of the members of the social system that adopt an innovation in a given period (Rodgers 1995:20).

The fourth and last element of diffusion is the social system, which is defined as "a set of interrelated units such as individuals, groups, organizations, subsystems, that are engaged in joint problem-solving to accomplish a common goal". In the social system there are leaders, change agents, who influence the diffusion process (Rodgers & Scott, 1997:8). Innovation decisions may also be optional (by an individual), collective (team-based) or authority based (imposition, expertise or status-based). Minishi-Majanja and Kiplan'at (2005:212) declare that the four main elements of diffusion are in fact components from other theories about the innovation process. Rodgers' model combined these theories in an attempt to present a unified theory by synthesizing all the most significant findings related to diffusion from a variety of disciplines. They further state that diffusion occurs over time and can be seen as having five distinct stages; namely, knowledge, persuasion, decision, implementation, and confirmation. This means that potential adopters of an innovation must first learn about the innovation, be persuaded as to the merits of the innovation, decide to adopt, implement the innovation and confirm (reaffirm or reject) the decision to adopt the innovation. The theory of Diffusion of Innovations, can therefore be seen as a continuum on which at one extreme, there are "innovators" (pathfinders), who are risk takers and pioneers in adopting an innovation very early in the diffusion process, while the other extreme are the "laggards" who resist adopting an innovation until

very late in the diffusion process (Minishi-Majanja & Kiplan'at, 2005:212). In between there are the early adopters, the early majority and the late majority.

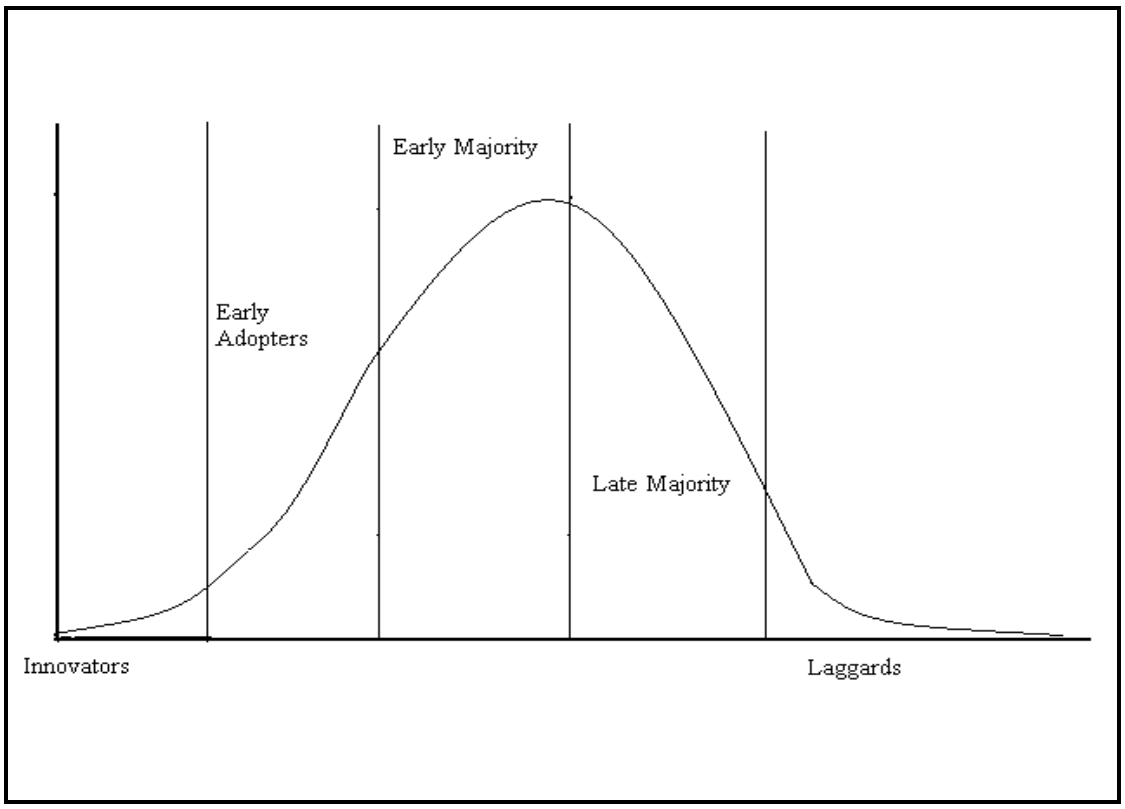


Figure 3.4: Diffusion of Innovation curve

Therefore, according to Rodgers (1995:17), Diffusion of Innovations cycle means where a new product or innovation first appeals to a few individuals, known as innovators or pathfinders who in turn make the product known to the early adopters. These early adopters subsequently influence a larger group called the early majority, who in turn influence the late majority, and soon only a few laggards remain. Innovations are, therefore, spread over time in a pattern that is similar to s-shaped bend, whereby an idea or new product first goes through sluggish embracement, then a steady growth before experiencing a period of relatively dramatic and rapid escalation, the stabilisation and finally decline. This is illustrated in Figure 3.4 above. Applying this theory to the context of this study can mean that information technology applications that are used by the majority of lawyers have been widely spread through the legal community over some time through some communication

means, and those technologies are still appealing to most of the lawyers. Technologies that are still used by few lawyers still need to be spread to the majority of the lawyers

3.6. Choice of model

Davis et al. (1989:983) contend that most of the models that attempted to explain the theories behind acceptance of information technology by human beings are without adequate theoretical background and psychometric justification. They argue that the Theory of Planned Action is well-researched intention model that has proven to be successful in predicting and explaining behaviour across a variety of domains. This means that the theory of planned behaviour is general and it is, therefore, studying the determinants of computer usage behaviour as a special case. This model was, therefore, not used in this study because it is too general and it was not designed specifically to study the determinants of computer usage behaviour.

The Theory of Reasoned Action was also condemned by Sheppard (1988:325-343) for neglecting some of the determinants of behaviour, for example, the context in and time-frame within which the behaviour is to take place. Sheppard (1988:325-343) argues that there are three limiting conditions on the use of attitudes and subjective norms to predict intentions. The use of intentions to predict behaviour; namely, ultimate goals, choice of alternative behaviours and the expected results of engaging in a particular behaviour are some of the determinants that have been neglected in this model. On the other hand, the Theory of Planned Behaviour has also been condemned by Sheppard (1988:325-343) overlooking emotional variables such as threat, fear (anxiety), mood and negative or positive feelings, whereas the theory of diffusion of innovations also seems to be general in its approach.

However, the Technology Acceptance Model attempts to overcome the shortcomings of the theories that have been discussed above. The researcher therefore chose to use the Technology Acceptance Model for the purpose of this study because it has been specifically developed to study computer usage or acceptance behaviour, unlike the other models that have been discussed. Technology Acceptance Model is less general than the Theory of Reasoned Action, and it is especially suited for modelling computer acceptance (Davis et al., 1989: 983). The other reason for choosing

Technology Acceptance Model is that this model also uses external variables such as accessibility to computers and culture in attempting to determine the usage behaviour of computers by human beings. Davis et al. (1989: 985) assert that the key purpose of Technology Acceptance Model is to provide the basis for tracing the impact of external factors on internal beliefs, attitudes and intentions.

3.7. Conclusion

This chapter described the theories that have been developed to determine the behaviour of human beings towards information technology. This chapter also served to set the basis for this research project by explaining the model on which it is going to be based. Theory of Reasoned Action posits that intentions of people to behave in a particular fashion are determined by two factors: namely, attitudes and subjective norms. The Theory of Planned Behaviour attempts to extend the Theory of Reasoned behaviour by including perceived behavioural norm as the other factor that determines intentions to behave in a certain way.

The theory of diffusion of innovation stresses the way in which new innovations are communicated and spread among members of a social system over time. Moahi and Fombad (2005:225-233) used this model to study perception of Botswana lawyers about the use of Information and Communications Technologies in law firms in Botswana. Even though all the theories that have been discussed above are proficient to determine the technology acceptance behaviour of human beings, it seems there no one who has employed one of the models to investigate the usage of information technology by legal professionals, except the one cited above.

Technology Acceptance Model, which emphasizes perceived usefulness and perceived ease of use as determinants of computer usage behaviour, has therefore, been chosen as the basis upon which this study will be based. Although the researcher chose this model out of intuition, the main reason for choosing for this choice is that it was specifically developed to determine information technology acceptance. In the next chapter, therefore, the data collection approach, specifically are based on this particular model is discussed.

CHAPTER FOUR
RESEARCH METHODOLOGY

4.1. Introduction

This chapter deals specifically with research methodologies that were employed to collect data and information in this research project. The chapter concentrates mainly on research approaches that are generally found in research literature; namely, quantitative and qualitative research methods. To be able to conduct the quantitative and qualitative research methods for the purpose of this study, a survey research methodology in the form of questionnaire and interviews were adopted. Content analysis research technique was also adopted as a data collection method in this study.

This means that out of all the data collection methods at one's disposal, the researcher selected the questionnaire, interviews and content analysis for the purpose of this research project. The main purpose of this chapter is to discuss in detail these research methods and how they were developed and implemented in this research project. This also includes the reasons for choosing these data collection methods. This chapter also covers the description of the area in which the study was conducted, as well as the characteristics of population around which this study is based. Before the area of study, and the characteristics of the population to be studied are discussed, it is necessary to explain what quantitative and qualitative research approaches entail.

Leedy (1997:104) defines quantitative research as an inquiry into a social or human problem, based on testing a theory composed of variables, measured with numbers and analysed with statistical procedures in order to determine whether the predictive generalizations of the theory hold true. This research approach is characterised by explaining and predicting; confirming and validating; and testing theory. It attempts to establish relationships between variables in order to explain causes and then predict outcomes.

According to Chappel (2001:1), quantitative research typically discerns a cycle of successive phases of hypothesis formulation, data collection, analysis, and interpretation. Using a deductive approach, quantitative research seeks to establish

facts, make predictions and test the hypothesis or assumption that has already been stated. This study attempted to seek quantitative data on the utilization of information technology by lawyers to support information and knowledge management in law firms. The quantitative research approach was adopted because it makes it possible to seek quantitative data on the utilization of information technology by legal professionals. The other reason for the selection of quantitative research approach is that it is the most commonly used research approach. The most commonly used research method in quantitative approach is the questionnaire.

Qualitative research, on the other hand, involves an in-depth understanding of human behaviour and the reasons that govern human behaviour. Unlike quantitative research, qualitative research relies on reasons behind various aspects of behaviour. It investigates the why and how of decision-making or behaviour, as compared to what, where and when of the quantitative research (Leedy, 1997:105).

This approach was therefore also adopted because the researcher wanted to confirm the reasons behind the results found in the quantitative approach. Qualitative research differs from quantitative research in that it does not rely on the analysis of numerical or quantitative data, but more on text (literature) and other mediums of communication that are not in numbers. The main reason for selecting the qualitative research approach is that this approach can be used to describe, explain and explore a phenomenon or situation and to supplement the conclusions reached in quantitative research approach. The most commonly used methods in qualitative research methods in this study are the interviews.

This research project is about explaining and exploring how optimally lawyers, attached to Polokwane Law firms, utilize information technology to support information and knowledge management. The qualitative research methods that have been used in this research project are interviews and content analysis of websites. The purpose of using these research methods is to explain the reasons behind the utilization or non-utilization of information technology by lawyers to support information and knowledge management in law firms in Polokwane City. One of the questions that were asked in the questionnaire was, for example, in relation to whether

or not these law firms use the internet for website development, e-mail, managing expert knowledge, marketing the firm, intranets development, accessing databases etc. Interviews and website content analysis seeks to confirm if the answers that were provided in the questionnaire were true, by matching the responses provided in the questionnaire with the responses provided in the interviews and by studying the contents of the law firm websites.

4.2. Study area

The study investigated the usage of information technology to support information and knowledge management by legal professionals attached to law firms in Polokwane, the capital city of Limpopo Province in the Republic of South Africa. Limpopo Province, which was formerly known as the Northern Province, is one of the nine provinces that came into existence in 1994, when all-race elections were held for the first time in South Africa.

The province shares international borders with three countries; namely, Botswana to the west; Zimbabwe to the north; and Mozambique to the east. On its southern flank, it shares a border with the Gauteng Province. Limpopo Province, which is the far north province of South Africa, is divided into six districts; namely, Bohlabela (Eastern), Mopani, Vhembe, Capricorn, Waterberg, and Greater Sekhukhune.

In this study, attention is focussed on Polokwane City, the capital city of Limpopo Province, in the Capricorn District Municipality (CDM). The Capricorn District Municipality (CDM) was established in terms of the provisions of the Constitution of South Africa (Act 108 of 1996), Municipal Demarcation Act (Act No. 27 of 1998), Municipal Structures Act (Act No. 17 of 1998) and the Municipal Systems Act (Act No. 32 of 2000). The municipality's physical location is in Polokwane. Polokwane is the capital city of Limpopo, primarily because of its strategic location, on the N1 Highway.

With rail and air links, the city is ideally situated and readily accessible to all regional markets and is just three hours drive from Gauteng. Therefore, this research project focuses its attention on the Polokwane Municipality (city) because it is where most of

the lawyers in the province are to be found. Most of the law firms are in the city centre and some are located in the Polokwane suburban areas that are portrayed in the map or Figure 4.2 below.

Figure 4.1 Polokwane City Map

4.3. Population

The study surveyed the usage of information technology by lawyers or attorneys in the area outlined above. By law, all attorneys in South Africa are compelled to belong to one of four (4) Provincial Law Societies, the Law Society of the Northern Province, the Law Society of Kwazulu/Natal, the Law Society of Free State and the Law Society of Cape of Good Hope. The Law Society of the Northern Province manages four Provincial Circles in each of the provinces under its jurisdiction; namely, those of Mpumalanga, Gauteng, Limpopo and North-West. According to the Law Society home page (http://www.northernlaw.co.za) retrieved on the 3rd October 2006, there are about 8 695 practising lawyers affiliated to the Law Society. Attorneys who are practicing in Polokwane City belong to the Circle Council of Limpopo, which is in

the Provincial Circle of the Law Society of the Northern Province, formerly known as the Transvaal Law Society.

A list of attorneys, affiliated to the Law Society of the Northern Province, Circle Council of Limpopo was also retrieved from the website http://www.pietersburg.net/Ptgb/Prof-ser/attorneys.htm on the 3rd October 2006. According to the list, there were about sixty (60) attorneys practising in the city. Some of the lawyers were working as partners whereas others work individually. There were also two different types of lawyers in the province, those who are in private practice and those who work for other organizations, for example, government departments and non-government organizations, such as Lawyers for Human Rights and the Legal Aid Board.

4.4. Data collection methods

As it has already been mentioned, two approaches can generally be found in research literature; namely, quantitative and qualitative research. This study adopted both research methodologies: quantitative research approach in the form of a questionnaire and qualitative research approach, in the form of interviews and content analysis of websites. This means that the three data collection methods adopted for this study triangulate. Triangulation in social science research is a technique that is often used to indicate that more than one method of research is used in a study with a view to double (triple) checking the results (Altrichter et al., 1996:48). The idea of triangulation is that the researcher can be more convinced with the result if different methods of research lead to the same results (Bogdan & Bilken, 1992:107).

In this study the questionnaire was adopted as the dominant method of research. In order to check if the results that would be found in the questionnaire hold true, the researcher adopted the other two methods of research: the interviews and content analysis of websites. This can be illustrated in a form a triangle in Figure 4.2 below.

Therefore, interviews and questionnaires; with the former dominant, and content analysis of websites were selected as the most convenient data collection methods for this study. These methods were chosen because they complement each other. Where

the one method has shortcomings, the other method addresses that shortcoming. For instance, the interviews supplement the questions that were not responded to. This is seen as complementary because, with interviews, the presence of the interviewer reduces the chances of the interviewee not answering and throwing away or casually just filling in the questionnaire.

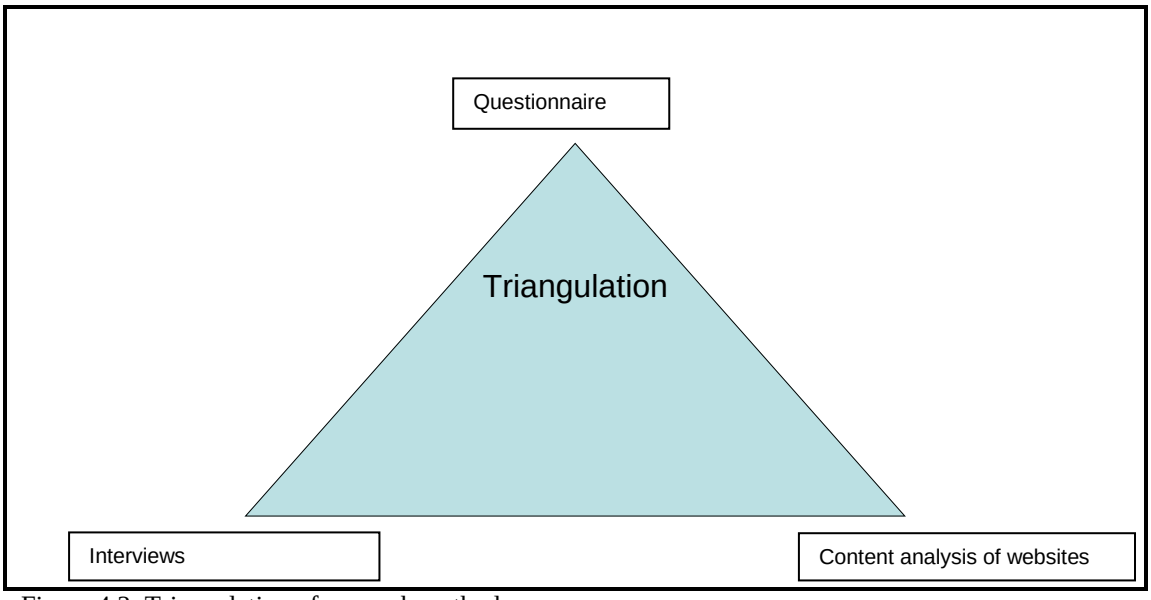


Figure 4.2: Triangulation of research methods

Content analysis of websites would serve to determine if these law firms have features of information and knowledge management tools on their web pages.

4.4.1. Questionnaire

A questionnaire is a research technique consisting of a series of questions and other prompts for the purpose of gathering information from respondents. In most cases, a questionnaire consists of a number of questions that the respondent has to answer in a set format. There are two types of questionnaires: open-ended and closed-ended questions. An open-ended question asks the respondent to formulate his own answer, whereas a closed-ended question has the respondent pick an answer from a given number of options. This study adopted a closed-ended questions type of questionnaire. The respondents were requested to answer questions by choosing answers from a number of options.

In order to collect quantitative data for this study, a survey method through the use of the questionnaire was therefore adopted as the most appropriate for this kind of investigation. The survey method was adopted because it would provide hard quantitative data that would be relatively easy to collect and analyse (Cuffe, 2002:5). The main reason for selecting the questionnaire format was that the questionnaire is very suitable for quantitative research and it can be used effectively where respondents are in different buildings or offices or locations. Leedy (1997:191) affirms that a commonplace instrument for observing data beyond the physical reach of the observer is the questionnaire. Questionnaires may be sent out to people thousands of miles away, whom the research may never see.

The questionnaire was therefore dominant over the other methods that were adopted for this study. The reason for selection of the questionnaires to be dominant over the interviews and content analysis was that, interviews, even if employed, would not be as feasible as the questionnaires due to costs and time constraints. It was also more convenient for this investigation because it would be cost-effective and practical to administer. A discussion of how the questionnaire was developed will follow.

The survey questionnaire was divided into five different sections. Firstly, there are factors that might influence the extent to which legal professionals utilise information technology in their work. These factors include age, experience, and previous computer experience and training and were raised when the theoretical background to this study was discussed. The purpose of Section A of the questionnaire is therefore to solicit information about the variables that might have an influence on the extent of information technology usage among the target population.

Section A also seeks to determine general details of each law firm. In order to determine the size of each law firm, data were also sought about the number of partners, support staff and branch offices. They were also asked a question about the availability of positions of people who are responsible for information and knowledge management in their law firms. People in positions for information and knowledge management in law firms may include librarian, information officer, knowledge manager, information manager, and documents manager.

Section B of the questionnaire was initially intended to look also into availability of computer facilities used in each law firm. However, the results of the pilot study showed that this would have no effect on the investigation as most of the lawyers did not answer the question. Perhaps it was because most lawyers are not well conversant with the technical aspects of computers and related information technology. This question was therefore eliminated from the questionnaire. Section B, therefore, looked only into the purposes for usage of information technology, in particular, computers in the law firms. Aspects that were looked into in this section included word processing, typing, research, accounting, billing, information management, case management and electronic mail (e-mail).

The second part of Section B attempted to look into what problems firms encounter when considering investment in information technology. The aspects that were looked at in this section included the issue of finance, access to computers, security, IT personnel. This variable was also deleted because the results of the pilot study also showed that there were no law firms that indicated that they are not using computers.

It was also necessary to determine availability of the internet in each law firm and for what purpose the law firms are using the internet, for example, research, marketing, access to databases, e-mail, and intranet. They were, therefore, also asked about the availability of computer systems for managing information and knowledge in Section B of the questionnaire. Section C of the questionnaire focussed on the attitudes of the lawyers with regard to the use of information technology in their firms. Likert scaling was used to measure the attitudes of lawyers towards information technology. Likert scale/scaling is a method though which the respondents are requested to indicate their degree of agreement or disagreement with the statement or any kind of subjective or objective evaluation of the statement. It is used to measure either positive or negative response to a statement and is applicable in questionnaire research method. The scale for the responses ranges from 2-10 point scale, depending on how the researcher intends to use the data.

In this research project, the researcher chose to use a five point scale method because it is the most commonly used scale. With five-point scale the points can be labelled, strongly agree, agree (somewhat) either agree or disagree (neutral), disagree (somewhat), strongly disagree. The five-point scale is used in this research because it allowed the respondents to choose the middle respond in case they are not sure about the extent to which they agree or disagree with the statement. Respondents were, therefore, asked to indicate the extent to which they agreed or disagreed with the statements that were formulated (some extracted from the Technology Acceptance Model discussed in the previous chapter) about usage the of information technology in law firms using the following scale:

1 = strongly disagree
2 = disagree
3 = neither agree nor disagree
4 = agree
5 = strongly agree

The respondents were also asked about the importance or value they attach to the utilisation of information technology in their firms. They were requested to indicate how they rate the usage of information technology by stipulating:

1 = not important at all
2 = not important
3 = not sure
4 = important
5 = very important

The fourth part (Section D) of the questionnaire attempted to establish if these legal practitioners were familiar with the concepts and applications that are often used in information technologies to support information and knowledge management by asking them the extent to which they know about these concepts and applications. Only concepts and applications that are within the researcher's knowledge were used

to determine this. The following scaling was used to determine the extent to which the respondents are familiar with information technology concepts and applications:

1 = to no extent at all
2 = to no extent
3. = to some extent
4 = to a large extent
5 = to a very large extent

In order to determine the culture of their firms with regard to information and knowledge management, the respondents were also asked to answer the questions about the frequency with which information and knowledge management are discussed or put in the agenda in their law firms or in the Law Society to which they are affiliated in Section E of the questionnaire.

Leedy (1997:192) proposes that every researcher should give a questionnaire to at least half a dozen friends or colleagues to test whether they have difficulty in understanding the questions or whether any question is asking exactly what the writer of the questionnaire is seeking to determine. Punch (2003:34) also argues that, unless the survey questionnaire, in its entirety, is the same as the one that has already been used and field tested, the pilot study is always a necessity. Questions need to be tested for comprehension, clarity, lack of ambiguity and difficulty in responding to them. It must be ensured that data collection questions work in the sense that people or respondents can quickly, easily and confidentially respond to them. The questionnaire also needs to be tested for length, and for time and difficulty to complete. Care taken during the pilot study is likely to help increase the response rate. A pilot study is also an initial or preliminary investigation designed to test the research hypothesis and the feasibility of using the selected data collection method (Punch, 2003:34).

A pilot study was therefore also carried out to test the validity of the questionnaire. In the first instance, the questionnaire was sent to some selected legal academics in the School of Law, University of Limpopo, where the researcher is also employed. The criterion that was used for selecting these academics was predominantly based on the

fact that, apart from teaching and research, they are law academic staff members who are also practising as lawyers and have private practices.

The preliminary questionnaire was therefore sent to about twelve of those academics in the School of Law and were also running private practices. A covering letter explaining the purpose of the questionnaire was also included. Unfortunately, none of them responded, perhaps because they did not have time to complete the questionnaire. A second effort was made by requesting some part-time students who were also practising as lawyers who were attending some programmes or courses where the researcher is employed. A sample of these lawyers was requested to complete the questionnaire in order to test its validity and consistency before the major study was undertaken. About twenty (20) copies of the questionnaire were given to the coordinator of the programmes that the students were attending. The purpose of the questionnaire was also explained to the student lawyers in a session where the researcher was offering a legal information retrieval skills course for the students.

Out of twenty (20) questionnaires, fourteen (14) completed questionnaires were received. This means that there was about seventy percent (70%) response rate to the pilot questionnaire. The results of the pilot study, however, showed that there were some questions that needed to be changed for reliability, consistency and ease of response. Wording in some of the questions or items needed to be changed so that the respondents could understand the questions more easily, particularly in questions where the respondents were to be asked to choose between “yes” or “no” and in questions where the respondents will be required to choose between all applicable variables. The fact that some respondents did not respond to some of the questions and items also showed that there are some of the questions that need to be discarded to make the questionnaire shorter. The questions about the hardware (types of computers), operating systems and internet browsers were discarded from the questionnaire. Emphasis was therefore only given to systems that support information and knowledge management in law firms. The question on reason for non-utilization of computers in law firms was also removed because there was no respondent who indicated that they do not use computers in their law firms.

The other most important characteristic of a survey method is choosing the population for the study. Leedy (1997: 203) expresses the view that the results of a survey are no more trustworthy than the quality of the population or representativeness of the sample. Population parameters and sampling procedures are of paramount importance and become critical factors in the success of a study. Chappell (2001: 1 - 2) maintains that, in order to obtain statistically meaningful data in quantitative research, the researcher must use large enough samples. An attempt was therefore made by the researcher to cover, as comprehensively as possible, all the law firms that are affiliated to the Law Society of the Northern Province, Circle Council of Limpopo, operating in Polokwane city. If too few lawyers were to be selected for this survey it was likely that most lawyers, by the nature and scope of their work, might not have time to respond to the questionnaire and too few responses could thus not be sufficient to allow the researcher to draw conclusions. An attempt was therefore made to cover all the law firms whose offices are located in Polokwane.

The limitation attributed to this particular research study was that there was no control on who should respond to the survey in the law firms, more especially in law firms where there were more than one partner. To attribute the responses of an individual to the whole law firm could be questionable. To address this limitation, the survey was addressed to the senior managing partner or as written on the list of law firms. An instruction was also made that the one attorney or lawyer, preferably a senior managing partner should complete the questionnaire.

After the design and development of the data collection method, the final questionnaire was sent to the lawyers through the Law Society of the Northern Province, Circle Council of Limpopo. The researcher approached the Vice President of the Council of Limpopo, who took it upon his law firm to ensure that the questionnaire is distributed to the majority of the lawyers in the city. In order to solicit approval from the members of the Council, a letter was also written to the Vice President of the Limpopo Law Council to allow the researcher to collect data from the members of the Council. The questionnaire was therefore delivered at the law firm of

the Vice President who, in turn, distributed it to all the members of the Council to complete it. Sixty (60) questionnaires in all were distributed.

The respondents were each requested to fill in the questionnaire and seal it in the envelope that was provided. The person who distributed the questionnaire was in turn requested to collect the completed questionnaires on a specified date from their law firms or, alternatively, the respondents were also requested to place the completed questionnaire in the mail box, usually called pigeonhole, of the Vice President of the Council.

4.4.2. Interviews

Interviewing is a data collection technique whereby the researcher asks questions to respondents verbally, face to face, or by way of a telephone conversation. The participant's responses are recorded either on tape, or notes are taken during the conversations (Letshela, 1999:139). There are two types of interviews, namely, unstructured and semi-structured interviews. Unstructured interviews are used when the researcher knows little about the topic under discussion. There are no prepared questions, since the researcher does not know what to ask. As a result, participants are given time to tell their story, with little interruption. On the other hand, semi-structured interviews are used when the researcher is familiar with the topic under investigation and consequently knows the questions to ask (Letshela, 1999:139).

This study used both unstructured and semi-structured interviews because some of the envisaged answers to the questions might need further explanations. Moahi and Fombad (2005:227) also believe that a combination of both structured and unstructured interviews enables the strengths of one method to counteract the weaknesses of another.

For the interviews to be conducted with the attorneys who are attached to law firms in the city, a letter was first sent to the all the law firms, requesting the lawyers attached to those law firms to give permission to the researcher to interview them. This letter was sent through the office of the Vice President of the Law Society of the Northern Province, Circle Council of Limpopo.

Initially, the researcher was planning to have a formal one-to-one interview with the lawyers at their law firms so that observations could also be undertaken. Unfortunately, this could not work due to both the limited time that the lawyers have at their disposal and their unwillingness to allow the researcher to visit their offices. Moahi and Fombad (2005:227) also indicated that the choice of a lawyer to be interviewed depended on the willingness of the lawyer to participate in the study and any other insight that was to be gained afterwards. This problem was experienced as the researcher was attempting to set appointments with the lawyers. Appointments were set with some of the lawyers, but the researcher did not find most of them when he went to their offices.

The researcher therefore decided to interview them telephonically, instead of setting appointments with them, but the same problem of unwillingness was still experienced, since some lawyers who promised to call the researcher at a later stage did not return their calls. Therefore, the researcher decided to select few familiar lawyers and conducted telephone interviews with them. A total number of fifteen (15) lawyers were interviewed.

The main purpose of the interviews was to determine and solicit information about their actual utilization of information technology to support information and knowledge management in their daily work. Apart from the questions that were in the questionnaire, the researcher also attempted to solicit information about the type of case management and billing software systems that they usually use. The information regarding the use of the Internet in their firms was also solicited, as well about as their information seeking behaviour; for instance, when there are some legal cases or legislation that they need to consult.

After it was deemed that the interview results were not sufficient to supplement those of the questionnaire, it was decided to conduct further interviews based on the questions that were posed in the questionnaire. The lawyers were requested to answer almost all the questions that were posed in the questionnaire so as to double check if the results that were revealed by the questionnaire will be the same with the results

revealed by the interviews. Although the problem of unwillingness on the part of the lawyers persisted, this time the researcher managed to informally interview thirteen (13) lawyers. The interviews were structured according to the following set of questions:

The first set of questions that were posed to the interviewees was in relation to the variables or factors that might have an influence on the usage or non-usage of information technology by the interviewees. They were asked some questions about the type of settlement from which they grew up, their ages; the year during which they qualified as lawyers, sizes of their law firms, availability of information and knowledge management tools in their firms, availability of positions for people responsible for information and knowledge management functions in the firms, previous computer training, and experience.

The second set of questions dealt with the purposes for which lawyers utilize information technology in their law firms. Among some of the purposes that the interviewees were asked if they are using or not using information technology for, were word processing (typing of documents), research, client billing, website and intranet development and e-mail communication. These questions also dealt with the availability of Internet access in the law firms, as well as the availability of information and knowledge management tools. Interviewees who answered that they have internet access in their law firms were further asked about the purpose for which they are utilizing the Internet. Among some of the purposes that the interviews were asked about the Internet was research or accessing databases, e-mail, developing law firm website, portal or intranet.

In the third set of questions, the researcher was interested in establishing the attitudes of the interviewees towards utilization of information technology in their law firms. They were asked about how they view the importance of computers in law firms by saying agreeing or disagreeing with some of the statements that were formulated about the importance of computers in law firms. The researcher also asked the interviewees about their skills with regard to information technology tools and concepts. It was, however, impossible to employ the Likert scaling as in the

questionnaire. The interviewees were, therefore, only requested to answer "yes" or "no" for most of the questions during the interview process.

In the last and fourth set of questions, the researcher attempted to establish the extent to which information and knowledge management activities are taken into consideration in these law firms. They were requested to answer the question about the way information technologies are discussed in their law firms and also as to whether sharing of information with other law firms, forms part of the culture of those law firms.

4.4.3. Content analysis of websites

Content analysis is a standard methodology in the social sciences for studying the contents of recorded human communication such as books, paintings and other forms of communication. The method of content analysis enables the researcher to systematically identify and study the properties of large amounts of textual, image, audio and video information. Weare & Lin (2000: 272) state that although content analysis as a research method has existed for centuries, its development and diffusion have been primarily spurred by the rise of mass media, in the 19th century and the electronic media in the 20th century and that this form of scientific inquiry has been adopted by a wide variety of disciplines such as communication, psychology, sociology, organizational theory and political science. The rise of the internet and computers and related technology in general present researchers with more significant opportunities (Weare & Lin, 2000:272).

In this study, content analysis was conducted by identifying and studying the contents of the websites of some of the law firms in the city of Polokwane, as well as that of the law society to which these law firms are affiliated. This is done mainly to find out if there are any information and knowledge management tools on these websites, which law firms use to publicize and market their services to their clients and exchange information among themselves. The specific research question that needed to be answered by content analysis in this study was whether there are any information and knowledge management tools that can be identifies on the law firms' websites. The method of research where the contents of the web site are evaluated is

also referred to as webometrics investigation, usually conducted to determine the Web Impact Factor (WIF), that is, measurement of the impact that a site has on the web users or measurement of its information value to the users (Lee & Lee, 2002:158).

This method of research (webometrics) probably came as a result of a growing number of companies and enterprises worldwide having established websites to publicize their firms, better serve their clients or customers, assist in information exchange with their customers and suppliers, share information and increase sales with online channels (Xi et al., 2007.389). Most content analysis of website researches, therefore, seek to evaluate the websites in order to determine how well they meet the above-mentioned functions, that is, publicity of the firm, service to clients, information exchange, and sales increases with online channels.

In this study, the content analysis of websites was adopted in order to identify information and knowledge management tools of law firms that have websites or appear on the internet. The main reason for analysing the contents of law firms' websites is because a corporate website is an accurate place to come across the features of information and knowledge management tools such as web portals, extranets, intranets, blogs, wikis etc. If it would be found that these information and knowledge management tools appear on the law firms' websites, it would then entail that these law firms are using some web technologies to support information and knowledge management that in turn serve to publicize their law firms, communicate with customers, and exchange information and knowledge amongst themselves.

Xi et al (2007: 393-395) explains the criteria that can be used to evaluate the contents of the website based on their contents, functions and user satisfaction. These include features such as frequency of content update, consistency of information, response speed, interactivity, security, sale process, tools to aid the user, customization, ease of use, and complexity. This study, however, first focussed on the availability of information and knowledge management tools such as web portals, intranets, and extranets on the websites, rather than on how well does the information satisfy the users of the website. There was, therefore, no research that was done with the visitors or users of the law firms' websites to find out how well they are satisfied with the

contents of their law firm websites. This study only identified law firms that have websites or appear on the Internet, and then glimpsed at whether there are any information and knowledge management tools that could be identified on their websites.

In identifying the law firms that have websites or appear on the internet, the researcher searched and retrieved the list of attorney from the Polokwene Professional services website (http://www.pietersburg.net/ptgb/prof-ser/attorney.htm) on 3rd October 2006. The names of law firms appearing on the list were searched through the Google search engine (http://www.google.co.za) to find out if there are any law firms that have their own corporate websites on the Internet. The website of the Law Society of the Northern Province found at http://www.northernlaw.co.za, was also used to find out if it has any links to other websites of law firms in Polokwane. On this website, the "Find an attorney" facility was used to search this information by entering the name of the law firm. The findings of the content analysis of these websites will also be provided in the chapter dealing with presentation of results.

4.9. Conclusion

In this chapter, the research approaches, and data collection methods that used were discussed. The reasons for adopting both quantitative and qualitative research approaches were advanced. The interview and questionnaires, with the latter dominant, as well as content analysis of were selected as the data collection methods for this study.

The questionnaire attempted to gather data on the factors that influence the usage or non usage of information technology, the purposes for which information technology is used by law firms, the competency levels and attitudes of lawyers towards information technology. The interviews with the lawyers were also conducted to gather data to confirm and supplement data collected in the questionnaire. The interviews also collected data to find out the reasons behind usage or non-usage of information technology by lawyers attached to Polokwane law firms. Content analysis of websites was also conducted to determine if there are any information and knowledge management tools that could be identified on the law firms' websites.

Before the data collection methods could be developed and implemented, the area of study was also explained with the map attached. The population for the study; that is, the lawyers attached to Polokwane law firms was also discussed. The next chapter will therefore deal with the results that were received from the respondents.

CHAPTER FIVE
PRESENTATION OF RESEARCH RESULTS

5.1. Introduction

In the previous chapter, the methods that were used as well as the procedures followed to collect data for this study were discussed. The purpose of this chapter is, therefore, to present the research results that were revealed through the methods and techniques that were discussed in the previous chapter. The research results are represented with descriptive statistics and are presented in the form of graphs, pie charts, and tables. Data that have been collected through the questionnaire were entered and analysed with the aid of a computer spreadsheet, using Chart Wizard. These results will be followed by descriptive analysis and interpretation of responses and will be presented in the sequence followed in the questionnaire. This chapter discusses the response rate followed by the presentation of results and findings that were solicited from the five sections of the questionnaire, followed by the results revealed by the interviews and then content analysis of websites.

Section A addresses the results of the questionnaire responses, Section B addresses interview responses whereas Section C addresses content analysis results. The results of the questionnaire are presented in a descending order, that is, from the highest to the lowest number of scores, for each item in each question. The results of the interviews will also be presented in descriptive format in this chapter, followed by the presentation of the results for content analysis of websites, also in descriptive format.

5.2. Results of the questionnaire

The first set of questions for the questionnaire deal with variables that might have an influence on the usage or non-usage of information technology among the population. These variables include location, age, previous computer experience and training, period qualified as lawyer, specialization, as well as sizes of their law firms. The second set of questions looked into the purposes for which law firms utilize information technology, for example, word processing or typing documents, research; accounting, billing, case management, e-mail, intranets and portals. The third part of the questionnaire focused on the attitudes and competencies of the lawyers towards

utilization of information technology in law firms. The fourth part of the questionnaire attempted to establish if these legal practitioners are familiar with information technology concepts and applications that are often used in information technology and knowledge management. The fifth question, attempted to determine their responsiveness towards information and knowledge management technologies. They were asked to answer some questions about the frequency and degree with which information and knowledge management technologies and activities are discussed or assessed in their law firms or in the Law Society to which they are affiliated.

5.2.1. Response rate

According to the list of professional services firms in Polokwane, of which the list of attorneys was found at http://www.pietersburg.net/Ptgb/Prof-services, there are approximately sixty (60) attorneys in Polokwane city. It was, however, interesting to hear in passing that there are in fact more than one hundred (100) attorneys operating in Polokwane City. As a result, sixty (60) questionnaires were distributed to all attorneys appearing on the list as explained in the previous chapter. Out of sixty (60) questionnaires that were distributed, only twenty-three (23) responses, that is, completed questionnaires were received.

This means that thirty-seven (37) attorneys did not respond to the questionnaire. This number, that is twenty-three (23), represents thirty-eight percent (38%) of the total respondents, as against thirty-seven (37) respondents, which represents sixty-two percent (62%) of the lawyers that did not respond to the questionnaire. The value and percentages of the response rate are illustrated in Figure 5.1 below.

Deductions from the number of responses received, that is, twenty-three (23), representing thirty-eight percent (38%) of the responses received, can be taken as sufficient to allow the researcher to draw conclusions regarding the usage of information technologies to support information and knowledge management by lawyers attached to law firms in Polokwane city. This is because the conclusions deduced from the results of this questionnaire are supplemented by qualitative results gathered from interviews and content analysis of websites. It was also mentioned in

the previous chapter that the main purpose of using different data collection methods in this study was to ensure that they complement one another.

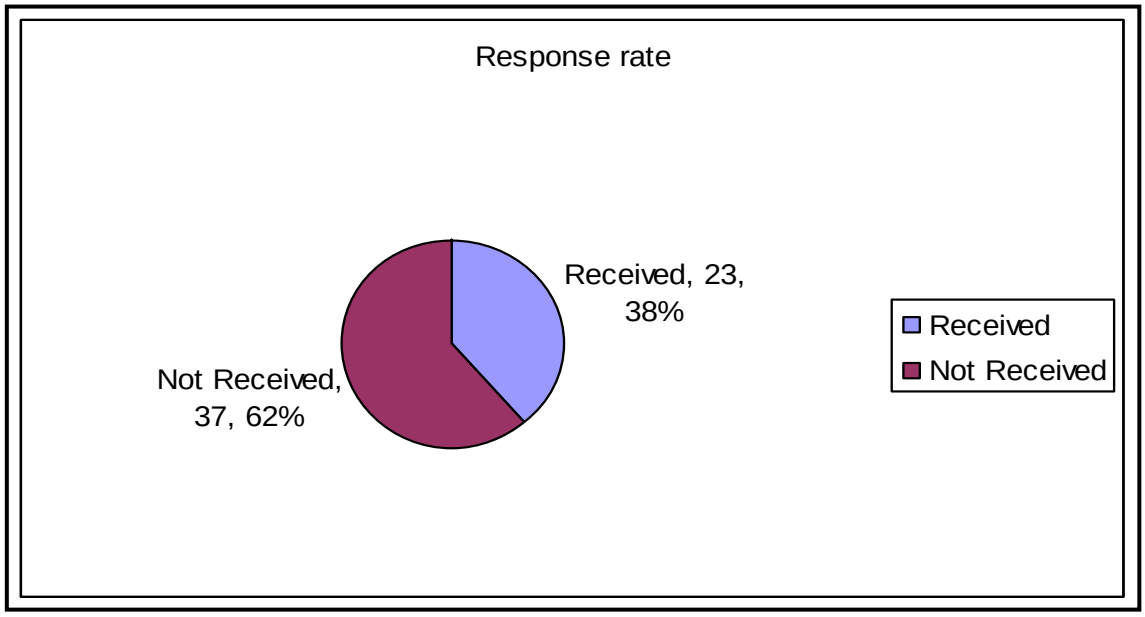


Figure 5.1: Response rate

It is, however, important to speculate on some of the reasons for the low number of responses. One of the reasons might have been the time required to complete the questionnaires on the part of most lawyers. The nature of the job of lawyers is very demanding. Lawyers spend much of their time in courts, and when they are in their offices they spend most of the day preparing for the upcoming cases in which they should represent clients. Riley (2005:2) surmises that attorneys generally bill their clients at hourly rates and are thus inclined to be reluctant to engage in non-billable activities, such as completing a questionnaire. It is therefore contemplated that most lawyers did not have time to complete their questionnaires because of the demanding nature of their job. Therefore, twenty-three (23) out of sixty (60) should be sufficient to make deductions considering the demanding nature of the lawyer's job.

The other possible reason attributable to the low response rate might be the fact that some of the attorneys might be practising in one law firm. The list that the researcher used only had the names of attorneys and did not specify which attorneys were working in a particular law firm. Therefore, there is a possibility that one attorney

might have completed the questionnaire on behalf of other attorneys with whom he or she is working.

5.2.2. Factors affecting usage or non-usage of IT

According to literature on usage of information technology, there are a number of factors that may contribute to the usage or non-usage of information technology. This may include the type of residential settlement from which the potential user grew up; age; previous computer experience and training; size of organization; culture and type of the organisation to which the potential user is attached. Lawyers were therefore requested to respond to some questions related to these factors, so that the researcher should obtain sufficient evidence to determine how much these factors contribute towards their usage or non-usage of information technology.

5.2.2.1. Type of residential settlements where respondents grew

Firstly, lawyers were asked about the type of settlements from which they come. There are generally three types of settlements in Limpopo, namely, rural, urban city and urban villages. Out of twenty three (23) responses that were received, 11 (48%) are dwelling in rural areas of Limpopo.

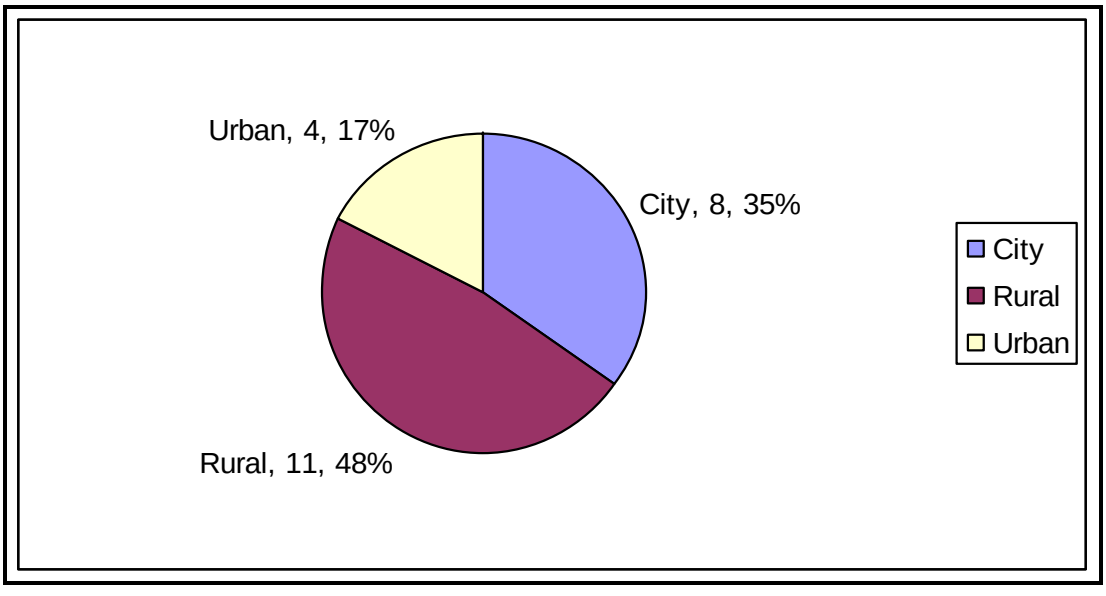


Figure 5.2: Types of residential settlements where respondents grew up

This shows that lawyers who grew up in rural areas in the vicinity of Polokwane are more than those who grew up in the city itself and in the urban areas around the city, even if their law firms might be operating in the city. On the other hand, 8 (35%) of the lawyers come from the city itself whereas, 4 (17%) come from urban villages in the locality of the city. These results are shown in Figure 5.2 above.

5.2.2.2. Age ranges of respondents

Lawyers were asked to indicate their ages by choosing between the age ranges to which they belong, starting from the age range of below twenty-five years old to the age range of above sixty years old. The results showed that a large number of respondents which represents 10 (44%) of the respondents belonged to the age group of between 36 and 45 years old.

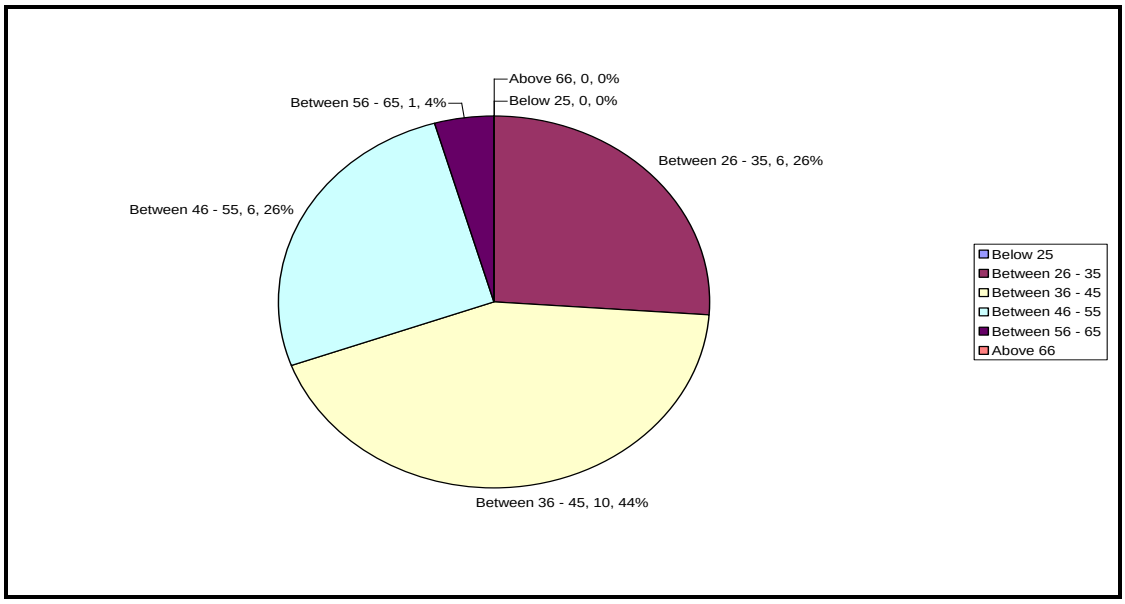


Figure 5.3 Age ranges of respondents

This means that most the lawyers in the area are in their middle age. Lawyers whose age group ranges between 26 and 35 years old as well as between 46 and 55 years old, each represent 6 (26%) of the respondents, whereas lawyers whose age group ranges between 56 and 65 years old represent 1 (4%) of total respondents. There were no respondents whose age group was either below twenty five (25) years old or above sixty six years (66) years old, respectively. The results concerning the age ranges to which respondents belong are represented in Figure 5.3 above.

5.2.2.3. Year of qualification as lawyer

The respondents were also asked to indicate the year in which they qualified as lawyers. Most of the respondents, that is 13 (57%), qualified as lawyers between 1981 and 1990. This was followed by 4 (17%) respondents who qualified as lawyers between 1991 and 2000. Those who qualified as lawyers between 2001 and 2004 represent 3 (13 %) of the respondents. This is different from 2 (9 %) of the respondents who qualified as lawyers between 1971 and 1980. Only 1 (4 %) respondent qualified as a lawyer after 2004, and there was no respondent who qualified as a lawyer before 1970, as indicated in Figure 5.4 below.

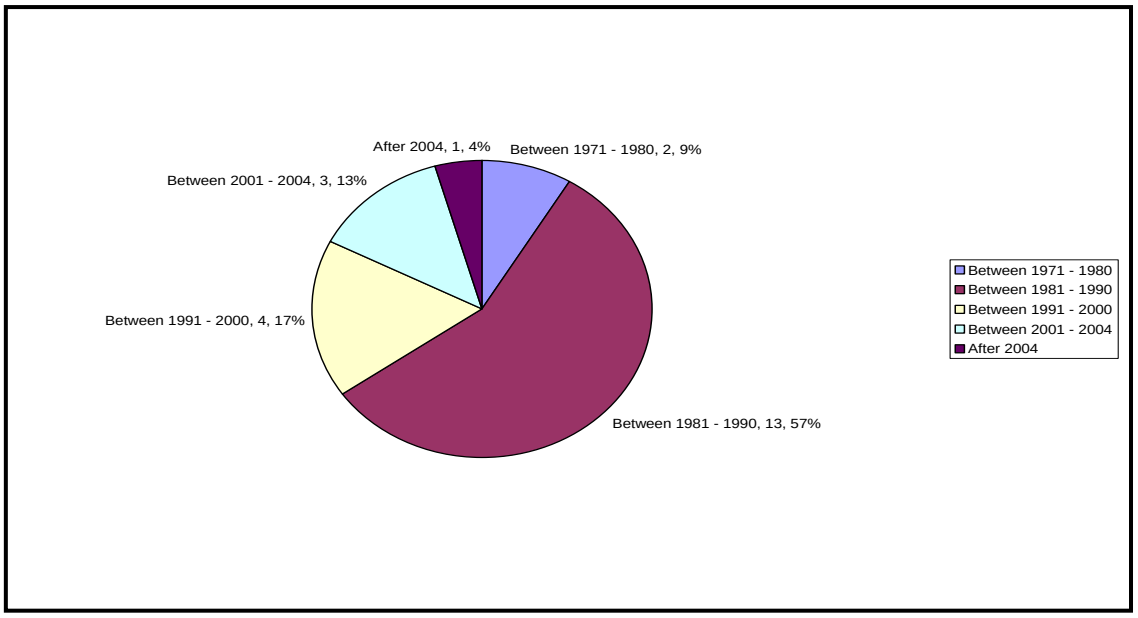


Figure 5.4 Year of qualification as lawyer

5.2.2.4. Number of partners

In order to determine the sizes of law firms to which the respondents are attached, the participants were asked to indicate the number of partners or fee earners in their law firms. It was found that the majority of the law firms, represented by 19(83 %) respondents, are small with about 1 to 5 partners as against 4 (17%) of the respondents with 6 to 10 partners. This is reflected in Figure 5.5 below.

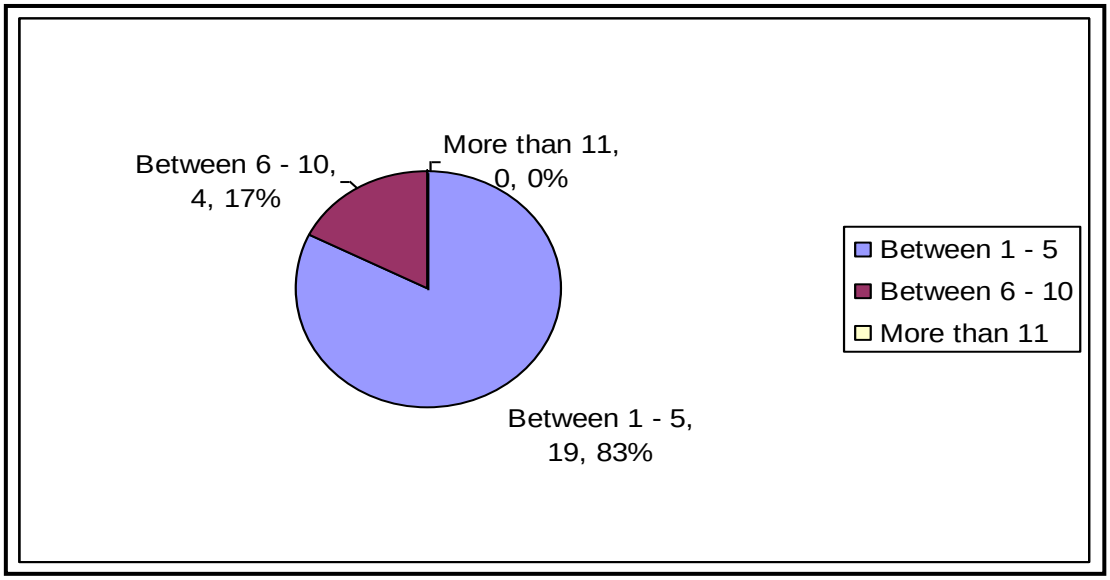


Figure 5.5 Number of partners

5.2.2.5. Branches

To further determine the sizes of the law firms to which the respondents were attached, the respondents were also asked to indicate if their law firms have any branches or not.

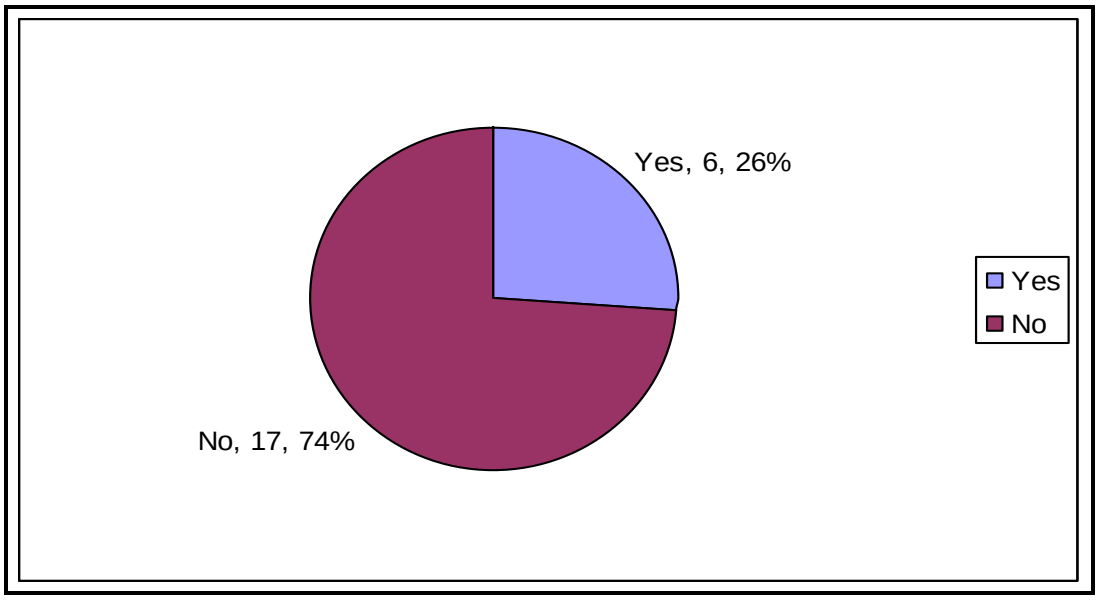


Figure5.6 Branches

The results showed that the majority of law firms represented by 17 (74%) respondents had no branches as against 6 (26%) law firms which had branches, as indicated in Figure 5.6 above. These findings reveal that most of the law firms in the area are relatively small in size. Those who had branches were not asked to indicate the number of branches they have.

5.2.2.6. Type of organization practising legal work

There are some types of organizations in which lawyers can practise their legal work. These include private law firms, companies, government departments as well as non-governmental organizations, such as the Legal Aid Board, Legal Resource Centre, and Lawyers for Human Rights etc. Therefore, the respondents were also asked to indicate the type of organizations in which they are practising as lawyers.

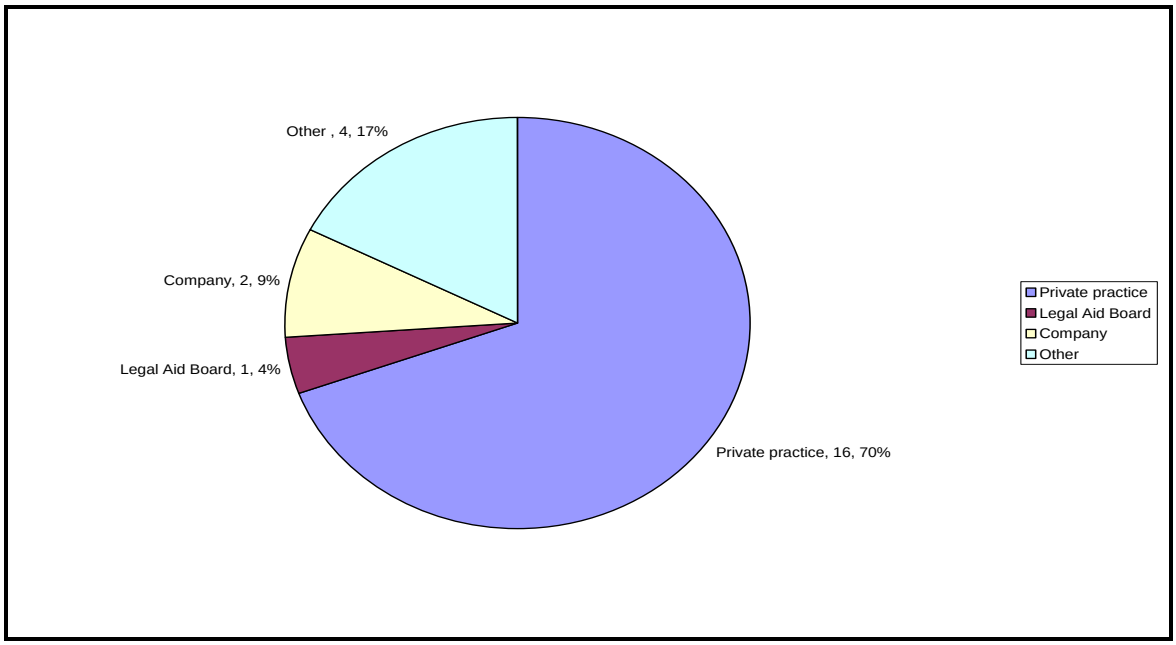


Figure 5.7 Type of organization practising as lawyer

The majority of lawyers, that is 16 (70 %) of them, indicated that they are practising their legal work in private firms. The respondents who practise legal work in other organisation other than the ones mentioned in the questionnaire constitute 4 (17 %) of the participants. They mentioned that they were practising in organisations such as Lawyers for Human Rights, National Prosecuting Authority and the Department of Justice. Those who practise their legal work in companies represented 2 (9%) of the

respondents whereas 1(4%) works for the Legal Aid Board. This is shown in Figure 5.7 above.

5.2.2.7. Availability of I & KM positions

The respondents were asked to indicate if they have certain positions in their organisational structures for staff responsible for information and knowledge management function. The results of this question indicated that most of the law firms did not have information and knowledge management functions or people responsible for these functions. Most of the firms have only administrative or support staff in their employ.

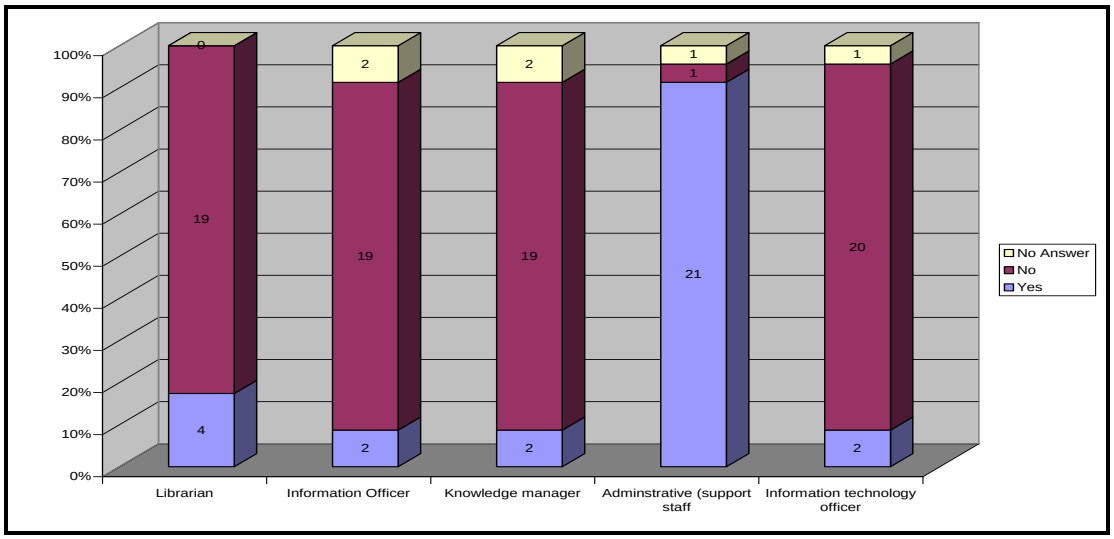


Figure 5.8 Availability of Information and Knowledge management positions

This is clearly indicated in Figure 5.8 above and is analysed according to the positions which the participants were asked about.

(i) Librarian

Out of twenty three respondents 19 (83%) indicated that they do not have librarians in their employ whereas 4 (17%) indicated that they do have librarians in their organizations.

(ii) Information Officer

The respondents who do not have a position of information officer in their employ is composed of 19 (82 %) respondents as against 2 (9 %) respondents who do have the position of information officer in their organizational structure. The other 2 (9%) respondents did not give an answer.

(iii) Knowledge Manager

The same as above applies also to the position of knowledge manager, that is, 19 (82%) law firms do not have knowledge managers, whereas 2(9%) law firms do have knowledge managers in their employ. The other 2 (9%) did not provide an answer.

(iv) Administrative or support staff

As for the position of administrative or support staff, it is shown that 21 (92 %) respondents represent law firms which have the position of administrative or support staff in their employ as against 1 (4 %) law firms who do not have administrative or support staff, whilst 1 (4%) did not give an answer.

(v) Information technology officer

Law firms that do not have the position of information technology officer in their employ are represented by 20 (87 %) respondents as against 2 (9 %) law firms which have such a position in their structures. Only 1 (4 %) respondent did not give an answer.

5.2.2.8. Previous computer training

The respondents were also asked to indicate if they did or did not receive any computer training at school, university, computer school, in-service or on the job. Generally, it is shown that most of the respondents did not have previous computer training and experience, neither at school, university or computer school, as shown in Figure 5.9 below. Most of the respondents seem to have gained their computer experience while on the job or through in-service training.

(i) School

It was shown that 19 (83%) respondents did not receive any computer training at school as against 3 (13%) respondents who did receive computer training at school. The remainder, which forms 1 (4%) of the respondents, did not answer the question.

(ii) University

Figure 5.9 above also indicates that 12 (53%) respondents received computer training at the university, whereas 10(43%) respondents did not. The other 1 (4%) did not answer the question.

(iii) Computer School

Out of twenty-three (23) responses that were received, 18 (78%) respondents disagreed having gone through computer training at a computer school, whereas only 3 (13%) respondents agreed to have received their computer training at a computer school. Those who have not answered this question represent 2 (9%) of the respondents.

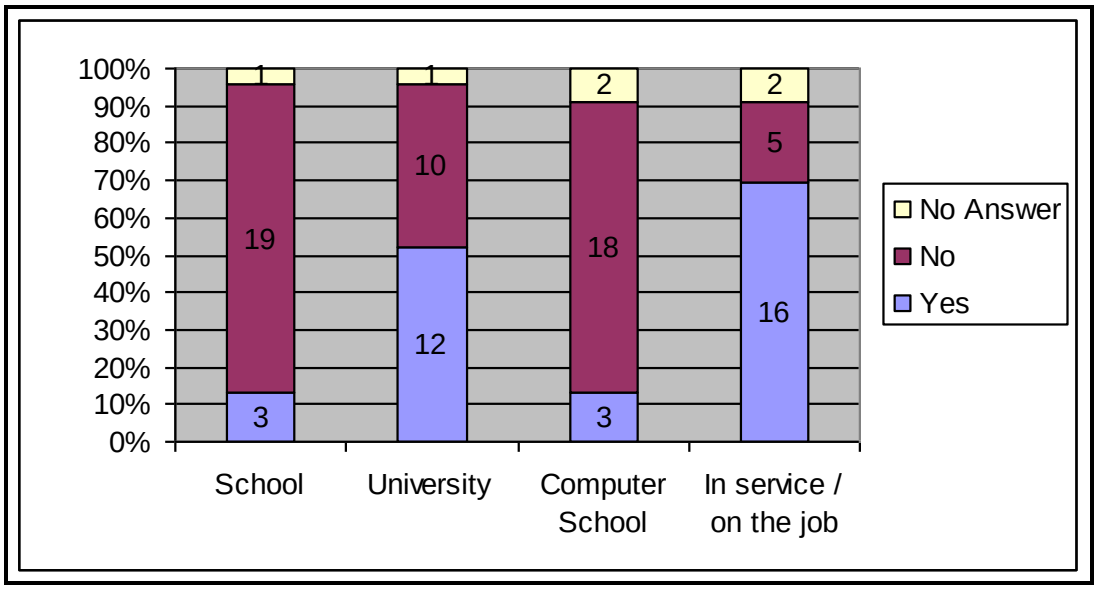


Figure 5.9 Previous Computer training

(iv) In-service / on the job

Those who did their computer training whist on the job constitute 18 (69%) of the respondents whilst 5 (22%) respondents did not receive their computer training on the job, and 2 (9%) did not answer the question.

5.2.3. Purposes for usage of IT in law firms

This section attempted to determine the purposes for which law firms or lawyers in the area utilize information technology. This is closely related to perceived usefulness as discussed in the Technology Acceptance Model (TAM). In order to determine the purposes for which law firms or lawyers in the study area utilise information technology, a list of purposes for which computers could be used in law firms was developed. Respondents were requested to answer "yes" if they are using a computer for a particular purpose or to answer "no" of they are not using a computer for a particular purpose. The results are shown in figure 6.10 below. Generally, it is portrayed that most of the law firms are using most of the applications, with word processing, research through the internet, client billing and e-mail being the highest and research through CD ROMs receiving the lowest scores. The intranets and portals are the least utilized computer applications.

5.2.3.1. Word processing

The majority of lawyers represented by 21 (91%) participants agreed that they use computers for word processing or typing purposes, as against 2 (9%) participants who did not.

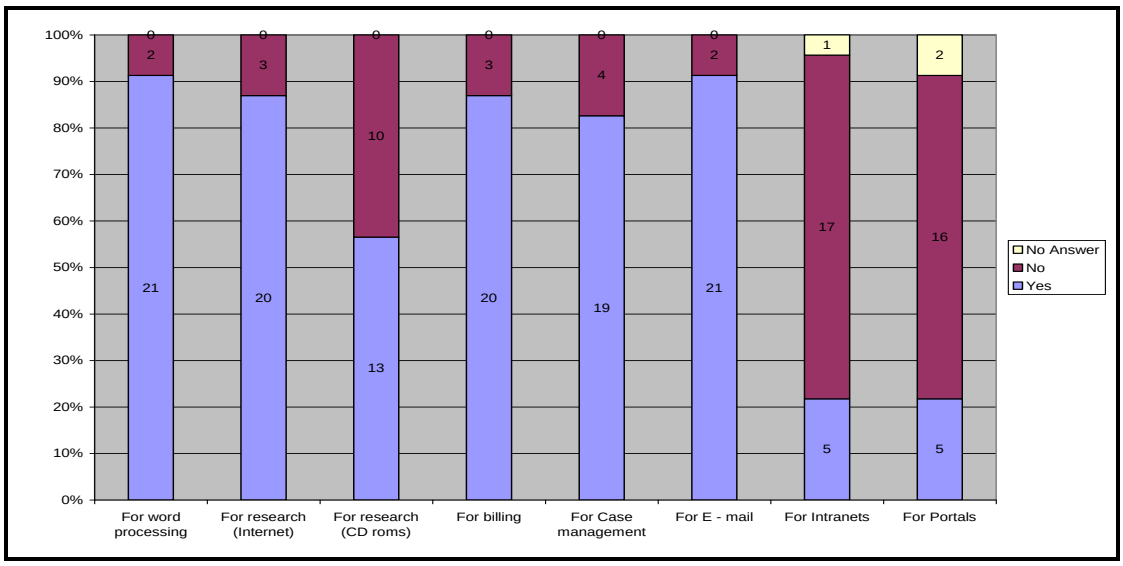


Figure 5.10 Purposes for utilising information technology in law firms

5.2.3.2. Research through the Internet and CD ROMs

Those who use computers for research through the Internet represent 20 (87%) of the respondents as against 3 (13%) respondents who do not, whereas 13 (57%) respondents use computers for research through the CD ROMs as against 10 (43%) respondents who do not.

5.2.3.3. Client billing

Most lawyers represented by 20 (87%) respondents, use computers for billing clients, whereas 3 (13%) respondents are not utilising any client billing software or computers for client billing purposes.

5.2.3.4. Case management

It is also shown in Figure 5.10 above that the majority of the lawyers represented by 19 (83%) respondents use computers for case management purposes as against 4 (17%) respondents who do not use computers for case management.

5.2.3.5. E-mail

The results, as shown in Figure 5.10 above, also indicate that 21 (91%) of the respondents use computers for e-mail communication purposes, as against 2 (9%) respondents who do not.

5.2.3.6. Intranets

Intranets are used by 5 (22%) of the respondents whereas 17 (74%) respondents do not use intranets. The other representing 1 (3%) of the respondents did not give an answer.

5.2.3.7. Web portals

Web portals are also used by 5 (22%) respondents as against 16 (69%) respondents who do not use web portals in their firms. The remaining 2 (9%) did not answer the question.

5.2.4. Frequency of using computers

The respondents were also asked about how often they use computers to execute selected functions, including to type documents, to search information, to do client billing, to update website or intranet and to communicate through e-mail. The results are expressed in Table 6.1 below.

	Computer function	**Never**	**Seldom**	**Sometimes**	**Always**	**Almost always**	**No Answer**	**Total**
1	To type documents	2 (9%)	0 (0%)	2 (9%)	4 (17%)	15 (65%)	0 (0%)	23 (100%)
2	To search Information	2 (9%)	2 (9%)	5 (22%)	6 (26%)	8 (34%)	0 (0%)	23 (100%)
3	Client billing	5 (22%)	1 (4%)	2 (9%)	10 (43%	5 (22%)	0 (0%)	23 (100%)
4	Update our website & Intranet	12 (53%)	5(22%)	0 (0%)	4 (17%)	1 (4%)	1 (4%)	23(100 %)
5	E- mail communication	2 (9%)	2 (9%)	3 (13%)	6 (26%)	10 (43%)	0 (0%)	23(100 %)

Table 5.1 Frequency of using computer applications

The following scale was used to determine the incidence or frequency at which the respondents use the selected computer applications.

- 1 = Never
- 2 = Seldom
- 3 = Sometimes
- 4 = Often
- 5 = Almost always
- 6 = No answer

5.2.4.1. Almost always

It is shown that a large number of respondents, that is 15 (65%) respondents, use computers to type documents "almost always." This is followed by those who use it for e- mail purposes with 10 (43%) respondents. Only 8 (34%) respondents use computers to search information "almost always," whereas those who use computers for client billing purposes "almost always" represent 5 (22%) of the respondents. Only 1 (3%) respondent uses the computers "almost always" to update the firm's website or intranet.

5.2.4.2. Often

The highest numbers of respondents who "often" use the computer are those who use it for client billing purposes with 10 (43%) respondents, followed by those who "often" use it to search information and for e-mail communication, both represented by 6 (26%) respondents. The respondents who "often" use computers to type documents and update website, both represent 5 (15%) of the respondents.

5.2.4.3. Sometimes

The highest number of respondents who "sometimes" use the computer includes those who use computers to search information with 5 (22%) respondents, followed by those who use it for e-mail purposes with 3 (13%) respondents. Those who "sometimes" use computers to type documents and for client billing purposes, each are represented by 2 (9%) respondents. There were none of the respondents who "sometimes" use the computer to update their website or intranet.

5.2.4.4. Seldom

It was also shown that the highest number of lawyers are those who "seldom" use a computer for the purpose of updating the website represented by 5 (22%) of the respondents followed by 2 (9%) respondents who each "seldom" use computers for searching information and for e-mail communication. Only 1 (4%) of the respondents "seldom" uses a computer for client billing, and none of them "seldom" use a computer to type documents.

5.2.4.5. Never

On the extreme side, the respondents who had "never" used a computer to update their website or intranet are represented by 12 (36%) respondents, followed by those who had "never" done client billing with 5 (22%) respondents. Those who had "never" used a computer to type documents, to search information and to communicate via e- mail, each made up 2 (9%) of the response rate.

5.2.5. Availability of I & KM systems

Lawyers were also requested to agree or disagree in respect of the availability of certain information and knowledge management systems in their firms. They were asked to answer "yes" if they have certain information and knowledge management systems or "no" if they do not have those systems or to answer "unsure" if they are not sure about the availability of those systems in their firms or organizations. Such systems included the following:

- Systems for managing documents;
- Systems for managing expert knowledge;
- Systems for managing client cases;
- Systems for searching legal information; and
- Systems for communicating information.

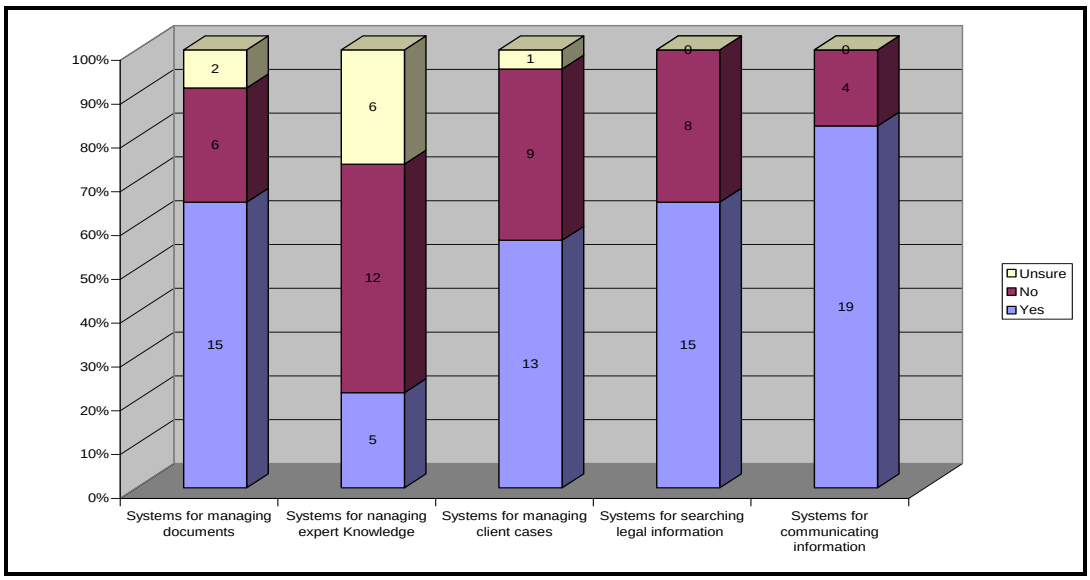


Figure 5.11 Availability of Information and Knowledge management systems

The results showed that most of the law firms have most of the systems in place as shown in Figure 5.11 above. The analysis results concerning the availability of each system will also follow.

5.2.5.1. Systems for managing documents

Out of 23 respondents, 15 (65%) agree that they have systems for managing documents in their firms as against 6 (26%) respondents who do not have such systems. The other 2 (9%) respondents were unsure about the availability of such systems in their firms.

5.2.5.2. Systems for managing expert knowledge

As far as the availability of systems for managing expert knowledge is concerned, it was shown that only 5 (22%) of the respondents have systems for managing expert knowledge in place whereas 12 (52%) respondents do not have such systems and 6 (26%) respondents were unsure about the availability of such systems in their firms.

5.2.5.3. Systems for managing client cases (precedents)

It is shown in Figure 5.10 above that 13 (57%) respondents agree that there are systems for managing client cases in their firms as against 9 (39%) respondents who

do not have them. The remaining respondent, that is 1 (4%), was not sure about the availability of such systems.

5.2.5.4. Systems for searching legal information

It is also indicated that 15 (65%) respondents have systems for searching legal information whereas 8(35%) have no such systems in their firms or organizations.

5.2.5.5. Systems for communicating information

The majority of the respondents, represented by 15 (83%) indicated that they have systems for communicating information in their firms or organizations, whereas 8 (35%) respondents do not have such systems or tools.

5.2.6. Internet availability and access

The respondents were also asked about the availability of the internet in the firm. They were requested to answer "yes" if the internet was available or "no" if the internet was not available in their firm. The results showed that most of the firms have access to the internet. According to Figure 5.12 below, it is indicated that most of the law firms represented by 17 (81%) respondents have access to the internet in the firm whereas 4 (19%) have no internet access. Seventeen (17) respondents whose law firms have access to the internet were further asked a question about the purpose for which they utilise the internet in their firms. They were requested to answer "yes" if they use the internet for each selected internet purpose or "no" if they are not using the Internet for each of the selected internet purposes.

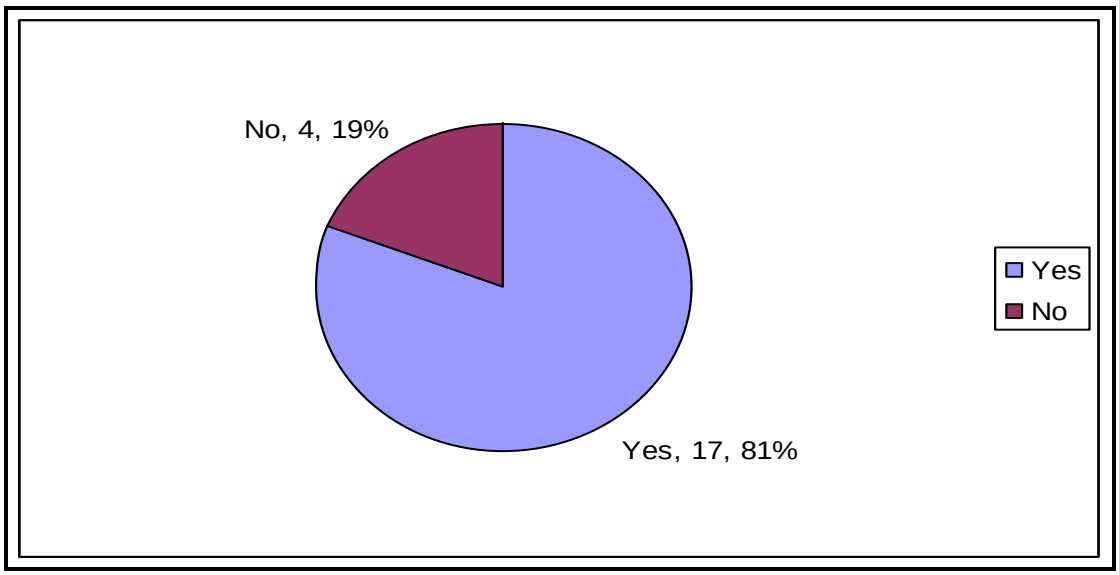


Figure 5.12 – Internet availability and access

The internet purposes which were selected for this question included the following:

- Research;
- Marketing;
- access to databases;
- e- mail;
- corporate website; and
- Intranet.

The results are shown in Figure 5.13 below and this will be followed by an analysis of the results for each purpose. Only seventeen (17) responses of those who indicated to have access to the internet in the previous question are analysed.

5.2.6.1. Research

The results showed most of the respondents, represented by 15 (88%), admit to using the Internet for research purposes. The other 2 (12%) did not give an answer to this question.

5.2.6.2. Marketing the firm

In Figure 5.13 above, it is shown that the law firms which admit that they use the Internet for marketing their firm constitute 8 (47%) of the respondents, whereas those who do not use the Internet for such purpose form 7 (41%) of the respondents. The other 2 (12%) respondents did not answer the question.

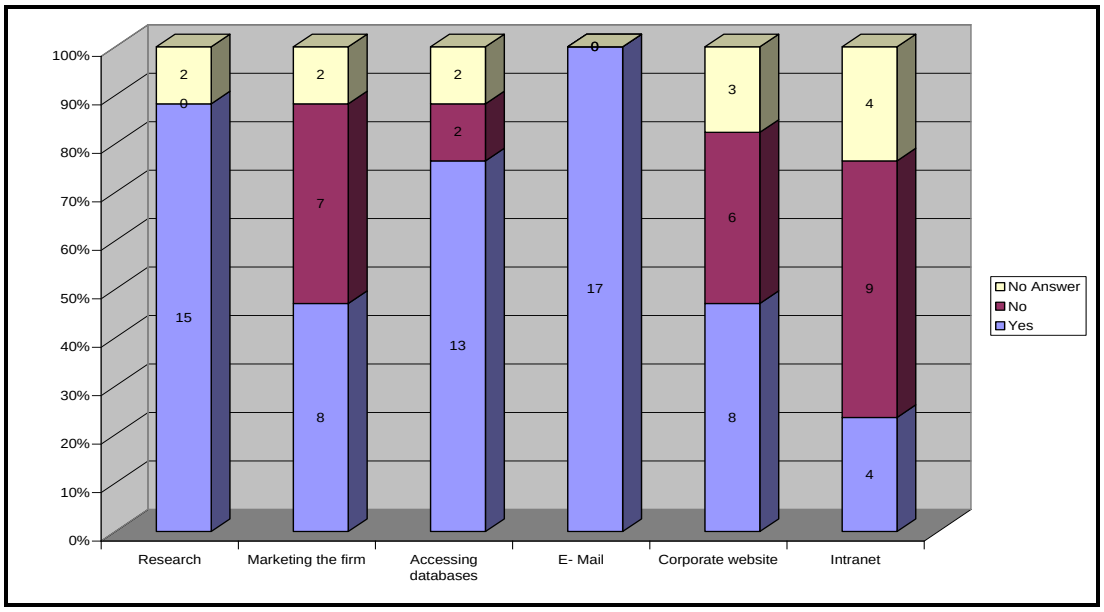


Figure 5.13 Purpose for utilizing the Internet

5.2.6.3. Accessing databases

The majority of the respondents, that is 13 (76%) of them, admitted that they also use the Internet for accessing databases, as against those who do not admit to using the Internet for accessing databases and those who did not answer with 2 (12%) respondents each.

5.2.6.4. E-mail

All the respondents who have access to the internet agreed that they use their internet for e-mail purposes. This means that 17 (100%) respondents use the internet also for e-mail purposes.

5.2.6.5. Corporate website

The respondents who have the websites of their firms on the internet represent 8 (47%) of the respondents. It is also shown that those who do not have their own corporate websites represent 6 (35%) of the respondents, whereas 3 (18%) respondents did not provide an answer to the question.

5.2.6.6. Intranets

Lastly, 4 (24%) respondents agree to use the internet for their intranet purposes whereas 9 (52%) respondents do not. The other 4 (24%) did not answer the question.

5.2.7. Measurement of decree of importance towards IT

The next stage in this research was to focus on the attitudes and personal feelings of lawyers towards information technology in their law firms or offices. Firstly, they were asked about the degree of importance they attach to the utilization of information technology, more specifically of computers in law firms. The following scale was used to determine the degree of importance that lawyers attach to the use of computers in law firms:

1. = Not important at all
2. = Not important
3. = Not sure
4. = Important
5. = Very important

The results as represented in Figure 7.14 below show the degree of importance that lawyers attach to the use of computers in law firms. According to the results, the majority of respondents, that is 19 (83%), view the use of computers as "very important" in law firms, followed by 4 (17%) respondents who view the use of computer in law firms as only "important". None of the respondents viewed computers in law firms as "not important" or as "not important at all". This reveals that the majority of lawyers view the computer as a very important investment for law firms.

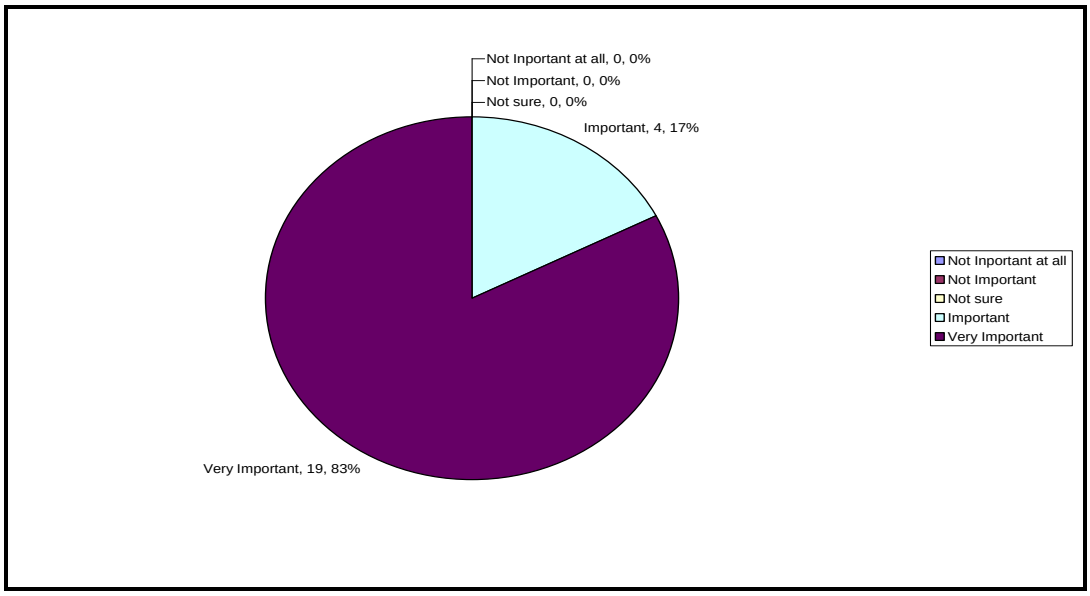


Figure 5.14: The degree of Importance attached to computers in law firms

Lawyers were also requested to respond to some qualitative statements that were formulated about the importance of computers in law firms. They were requested to answer by agreeing or disagreeing to such statements that were formulated regarding the importance of information technology in law firms. The following scale was used to determine the degree to which the respondents agreed or disagreed with the statements:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Not sure
- 4 = Agree
- 5 = Strongly disagree

Figure 5.15 below indicates that the majority of attorneys "strongly agree" or "agree" with the statements that were formulated regarding the importance of computers and related information technologies in law firms in terms of value only. The analysis of each statement in terms of value and percentages also follows:

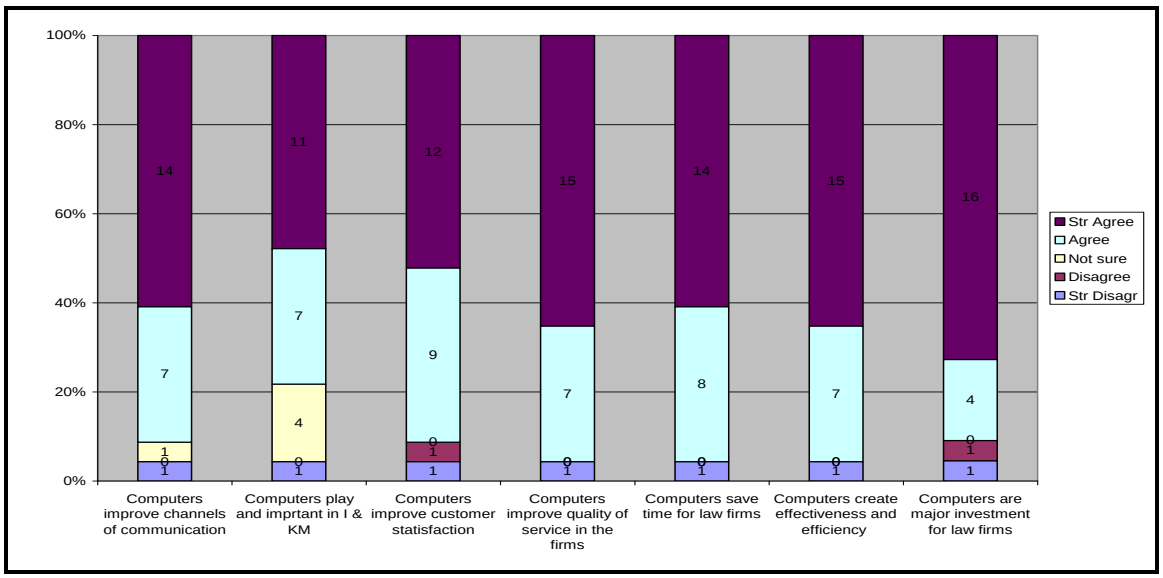


Figure 5.15 Responses to statements about the importance of IT in law firms

5.2.7.1. Computers improve the channels of communication in the law firm

The respondents who "strongly agree" that the computers improve the channels of communication in the firm constitute 14 (62%) of the respondents, followed by 7 (30%) of the respondents who "agree" with the statement. Respondents who are "not sure" and "strongly disagree" with the above statement represent 1 (4%) respondents each.

5.2.7.2. Computers play an essential role to support I & KM in law firms

Those who "strongly agree" to the statement that computers play an important part in information and knowledge management form 11 (49%) of the respondents, followed by 7 (30%) respondents who also "agree" with the above statement. Some respondents who are "not sure" about this statement constitute 4 (17%) of the respondents, whereas 1 (4%) respondent, "strongly disagree" with the statement.

5.2.7.3. Computers improve customer satisfaction in the law firm

It was also found that 12 (53%) respondents "strongly agree" and 9 (30%), "agree" with the statement, respectively. Those who "strongly disagree" and those who "agree" with the above statement, are represented by 1(4%) respondents each.

5.2.7.4. Computers improve the quality of service in the law firm

This statement mentioned above was "strongly agreed" upon by 15 (66%) respondents and "agreed" upon by 7(30%) respondents. Only 1 (4%) respondent, "strongly disagrees" with the statement.

5.2.7.5. Computers save time for the law firm

Those who "strongly agree" with the above-mentioned statement were14 (61%) respondents, followed by 8 (35%) respondents who "agree" with the statement. Only 1 (4%) respondent "strongly disagrees" with the above statement.

5.2.7.6. Computers create effectiveness and efficiency in the firm

The respondents who "strongly agree" with the above-mentioned statement formed 15 (66%), whilst those who "agree" were 7 (30%). Those who "strongly disagree" represent 1(4%) of respondents.

5.2.7.7. Computers are a major investment for each law firm

The majority of the respondents, that is, 17 (72%), "strongly agree" that computers are a major investment for any law firm. Those who "agree" with the statement constitute only 4 (18%) respondents.

5.2.8. Measurement of personal feelings towards computers

In order to determine the personal feelings of the respondents towards the computers, some statements were formulated on how people usually feel about the use of computers. The respondents were requested to either agree or disagree with the statements expressing feelings about the use of computers. The following scale was used to determine the degree to which the respondents agree or disagree with the feelings:

- 1 = Strongly Disagree
- 2 = Disagree
- 4 = Not sure

- 4 = Agree
- 5 = Strongly Agree

Figure 5.16 below reveals the results on what the respondents feel or say with regard to their interaction with information technology, and more specifically, computers. These are followed by an analysis of responses for each statement that was formulated. When these results are analyzed critically, they reveal that most of the respondents "strongly disagree" with the statements that are negative, and on the extreme, "strongly agree" most with statements that are positive about their personal feelings with regard to computers and related technologies.

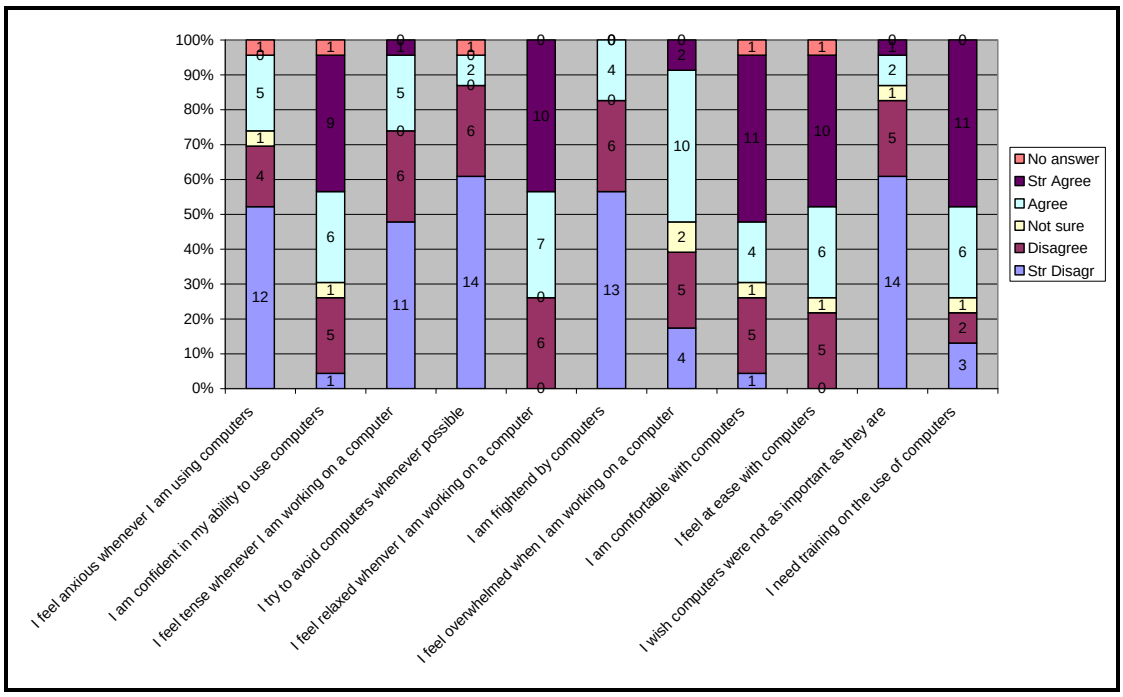


Figure 5.16 Measurement of personal feelings about computers

5.2.8.1. I feel anxious whenever I am using a computer

As represented in Figure 5.16 above the majority of the respondents, comprising of 12 (52%) of respondents, "strongly disagree" with the above statement whilst 5 (21%) respondents "agree" to the statement, followed by 4 (17%) who "disagree" with the statement and 1 (4%) respondent is "not sure" and then the other 1(4%) who did not provide an answer.

5.2.8.2. I am confident in my ability to use computers

In Figure 5.16 above, it is also shown that 9 (39%) respondents “strongly agree” that they are confident in their ability to use computers, whereas 6 (26%) of them are “agree” that they have confidence in their abilities to use computers and 5 (21%) agree with the statement above. Those who “strongly disagree”, “not sure” and did not provide an answer with the statement constitute 1(4%) of the respondents each.

5.2.8.3. I feel tense whenever I am working on a computer

It is shown in Figure 5.16 above, that 11 (47%), “strongly disagree” whereas 6 (26%) respondents “disagree”, 5 (21%), “agree”, and 1 (4%), “strongly agree” with the statement.

5.2.8.4. I try to avoid computers whenever possible

Most respondents that is 14 (60%), “strongly disagree”, whilst 6 (26%), “disagree” with the statement that they try to avoid computers wherever possible. The respondents who “agree” with the statement, as well as those who did not provide an answer, constitute 2 (8%) and 1 (4%), respectively.

5.2.8.5. I feel relaxed whenever I am working on a computer

Figure 5.16 above also shows that the respondents who “strongly agree” with the above statement, represent 10 (43%), whereas those who “agree” represent 7 (30%) of the respondents, and 6 (26%) “disagree” with the statement.

5.2.8.6. I am frightened by computers

Lawyers who “strongly disagree” with this statement, make up 13 (56%) whereas those who “disagree” comprise 6 (26%) of the respondents. Lawyers who “agree” to this statement make “4 (17%) of the respondents. This is shown in Figure 5.16 above.

5.2.8.7. I feel overwhelmed when I am working on a computer

It is shown in Figure 5.16 above that the respondents who “agree” that they are overwhelmed when they are working on a computer comprise 10 (43%), whilst those who “disagree” comprise 5 (21%) of respondents, and those who “strongly disagree”

with the above statement comprise 4 (17%) of the respondents. Respondents who are "strongly agree" and who are "not sure" constitute 2 (8%) of respondents each

5.2.8.8. I am comfortable with computer

Some of the lawyers, constituting 11 (47%) of the respondents "strongly agree" that they are comfortable with computers, followed by 5 (21%) respondents who "strongly disagree". The other lawyers, constituting of 4 (17%) "agree" with the statement, whereas the lawyers who "strongly disagree", who are "not sure" and those who did "not answer" constitute 1 (4%) each as shown in figure 5.16 above.

5.2.8.9. I feel at ease with computers

Figure 5.16 above shows that 10 (43%) "strongly agree" that they feel at ease with computers, followed by 6 (26%) who "agree" with the statement. The lawyers who "disagree" that they feel at with computers constitute 5 (21%) respondents and those who are "not sure and who did not answer constitute 1 (4%) respondents each.

5.2.8.10. I wish computers were not as important as they are

The majority of the respondents, that is 14 (60%), "strongly disagree", whilst 5 (21%), "disagree" and only 2 (8%) is not sure whether to "agree" with the statement. The other respondent, that is 1 (4%) each, those who "strongly agree and who are "not sure" about this statement.

5.2.8.11. I need training on the use of computers

Most of the respondents need training on the use of computers as shown in Figure 6.16 above. Out of twenty-three (23) respondents, 11 (47%), "strongly agree" that they need training on the use of computers whereas 6 (26%), agree to this statement. There were only 3 (13%) who "strongly disagree", followed by 2 (8%) who "disagree" to the statement. The last respondent, that is, 1 (4%) is "not sure" if he/she needs training on the use of computers.

5.2.9. Reasons for non-usage of computers

To establish if there are any factors attributable to the non-usage of computers by law firms in the city of Polokwane, they were requested to either agree or disagree with

some statements that were formulated which are perceived to be factors attributable to non-usage of computers. The following scale was also used to determine the extent to which lawyers agree or agree with the factors attributable to the non-usage of computers:

- 1 = Strongly Disagree
- 2 = Disagree
- 4 = Not sure
- 4 = Agree
- 5 = Strongly Agree

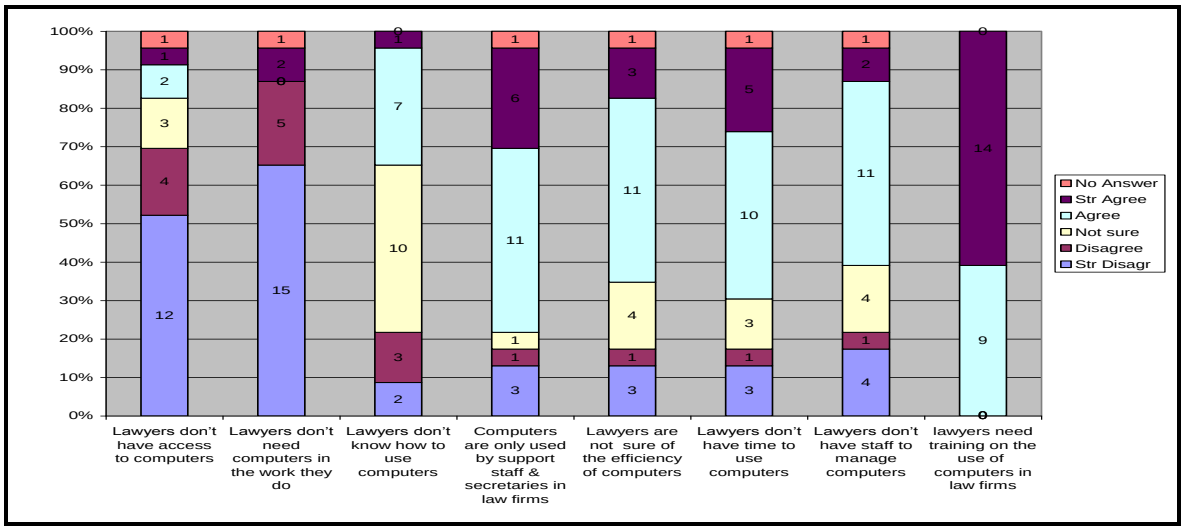


Figure 5.17 Responses to factors for non-usage of computers

The results are indicated in Figure 5.17 above, followed by analysis of response to each perceived factor or reason.

5.2.9.1. Lawyers do not have access to computers

It is shown in Figure 5.17 below that 12 (52%) of the respondents "strongly disagree", followed by 4 (17%) respondents who "disagree" with the statement, and then 3 (13%) respondents who are "not sure". The lawyers who "agree" with the above statement make up 2 (8%) of the respondents whereas 1 (4%) respondent "strongly agree" and the other 1(4%) respondent did not provide an answer.

5.2.9.2. Lawyers do not need computers in the work they do

Most of the respondents, that is, 15 (65%), “strongly disagree” with the statement that “lawyers do not need computers in the work they do,” followed by 5 (21%) respondents who “agree” to the statement and then 2 (8%) who “strongly agree” and 1(4%) who did not answer.

5.2.9.3. Lawyers do not know how to use computers

The large number of lawyers, that is, 10 (43%) are “not sure” about the above statement, whereas 7 (30%), “agree” to the statement, followed by 3 (13%) respondents who disagree. Respondents who “strongly disagree” with the above statement and those who did not provide an answer make 2 (8%) and 1 (4%), respectively.

5.2.9.4. Computers are only used by support staff and secretaries in law firms

It is also shown in Figure 5.17 above that 11 (47%) respondents “agree” that computers in law firms are only used by support staff and secretaries, followed by 6 (26%) who “strongly agree” to the statement, whereas 3(13%) respondents “strongly disagree”. The respondents who “disagree”, who are “not sure and who did not answer constitute 1(4%) each.

5.2.9.5. Lawyers are not sure of the efficiency of computers

The lawyers who “agree” to the above statement constitute 11(47%) respondents, whereas 4 (17%) of them are “not sure”. Those who “strongly disagree” and “strongly agree” with the statement make up 3 (13%) respondents each, whereas 1(4%) respondent “disagree” and 1 (4%) did not answer.

5.2.9.6. Lawyers do not have time to use computers

The lawyers who “agree” with the statement constitute 10 (43%) respondents, followed by 5 (21%) who “strongly agree”. Those who “strongly disagree” and those who are “not sure” constitute 3 (13%) respondents each, whilst those who “disagree” and did no answer also constitute 1(4%) each.

5.2.9.7. Lawyers do not have staff to manage computers

Out of twenty-three respondents, 11 (47%) of them "agree" that they do not have staff to manage computers, followed by 4 (17%) who "strongly disagree" and who are "not sure" each.

5.2.9.8. Lawyers need training on the use of computers

In as far as the need for training on the use of computer is concerned, 14 (60%) respondents "strongly agree" and 9 (39%) "agree" with the statement.

5.2.10. Measurement of competencies and knowledge

The respondents were also requested to choose only one statement from the four that were formulated about their competency regarding the use of computers.

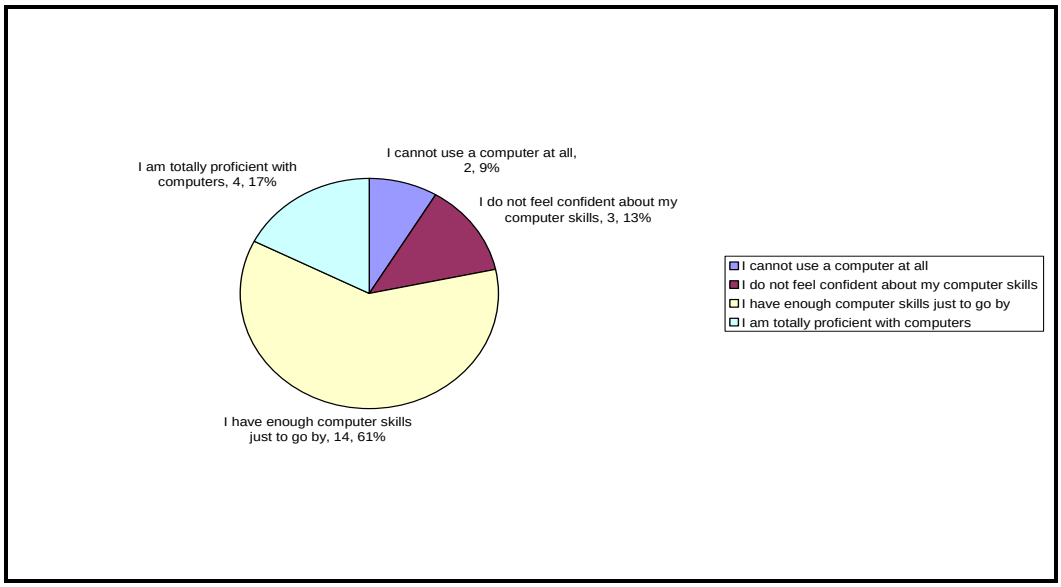


Figure 5.18: Computer competency of respondents

The results in Figure 5.18 above, showed that 14 (61%) of respondents have enough computer skills just to get by; 4 (17%) are totally proficient with computers; 3 (13%) respondents do not feel confident about their computer skills; lastly, 2 (9%) cannot use a computer at all.

5.2.11. Knowledge of IT concepts and application

The respondents were also asked to respond on the extent to which they possess skills in respect of information technology and knowledge management applications thus:

- 1 = to no extent at all
- 2 = to no extent
- 3 = to some extent
- 4 = to a large extent
- 5 = to a very large extent
- 6 = No answer

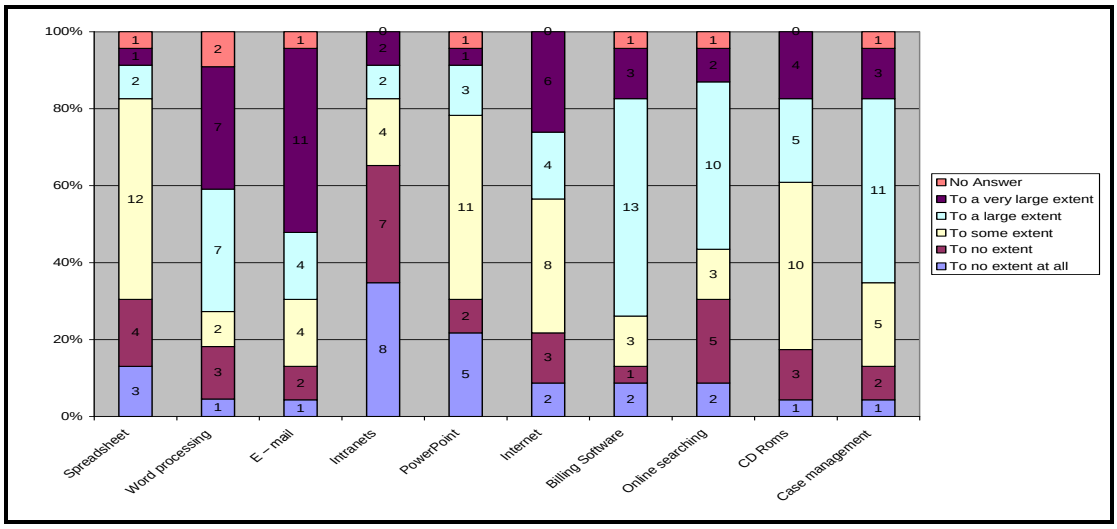


Figure 5.19 Knowledge of respondents with regard to IT concepts and applications

The applications which the respondents were asked about were, namely, spreadsheet, word processing, e-mail, intranets, PowerPoint, the internet, billing software, online searching, CD ROMs, and case management. The results indicate that, in as much as there are lawyers who know "to a very large extent" about information technology applications, there are some who know about these applications "to no extent at all". The graphic presentation of results is depicted in Figure 5.19 above. An analysis of each computer application will also follow.

5.2.11.1. Spreadsheet

There were 12 (53%) respondents who “to some extent” know about the spreadsheet and 4 (17%) respondents who “to no extent” know about this application. Those who responded “to no extent at all” about this application constitute 3 (13%) respondents whereas 2 (9%) respondents know “to a large extent” about the spreadsheet application. Only 1 (4%) knows “to a very large extent” about the spreadsheet application and the last respondent 1 (4%) did not answer the question.

5.2.11.2. Word processing

Figure 7.19 given above demonstrates that a large number of respondents who know “to a very large extent” constitute 8 (35%) of the respondents, followed by 7 (30%) respondents who know “to a large extent” about word processing applications. This shows that most of the lawyers are at least familiar with word processing applications. Those who replied “to no extent” about the word processing application constitute 3 (13%) respondents, whereas those who know “to some extent” form 2 (9%) together with those who did not provide an answer. The remainder, which forms 1 (4%) of the respondents does not know “to no extent at all” about the word processing application of a computer.

5.2.11.3. E-mail

Those who know about the e-mail “to a very large extent” form 11 (49%) of the respondents. Respondents who, “to some extent” and “to a large extent,” know about the e-mail form 4 (17%) of the respondents each; whereas those who replied “to no extent” about this facility form 2 (9%) of the respondents; followed by 1 (4%) who does not know about the e-mail application to any extent at all. This shows that the majority of the lawyers are, at least, familiar with the e-mail facility. The remainder; that is, 1 (4%) is the respondent who did not provide an answer.

5.2.11.4. Intranets

With Intranets, it seems the majority of the respondents don’t know about the application. A large number of respondents say they know nothing, that is, “to no extent at all” and “to no extent” about the intranets with 8 (35%) and 7 (30%)

respondents. respectively. Those who “to some extent” know something about the intranets constitute 4 (17%) of the respondents whereas those who say they know “to a large extent” and “to a very large extent” about this application form 2 (9%) of the respondents each.

5.2.11.5. PowerPoint

Figure 5.19 above also indicates that a total number of 11 (48%) respondents know “to some extent” about PowerPoint, followed by 5 (22%) respondents who “to no extent at all” know about this application. There are the other 3 (13%) respondents who said they know “to a large extent” about PowerPoint as against 2 (9%) respondents who “to no extent” know anything about the application. Only 1 (4%) respondent knows “to a very large extent” about PowerPoint presentation application whereas the other 1 (4%) respondent did not provide the answer to the question.

5.2.11.6. Internet

There were 8 (35%) respondents who know “to some extent” about the internet followed by 6 (26%) respondents who know “to a very large extent” about the internet. This shows that the majority of lawyers, at least know about the internet because there were 4 (17%) respondents who also know “to a large extent” about it. Those who do not know about the internet, that is “to no extent” constitute 3 (13%) of the respondents, followed by 2 (9%) respondents who replied “to no extent at all” about this application.

5.2.11.7. Billing software

The majority of lawyers, that is 13 (57%) respondents, know “to a large extent” about the billing software applications, followed by 3 (13%) each, who know “to a very large extent” and “to some extent” about the billing software. Only 2 (9%) of the respondents replied “to no extent at all”, followed by 1 (4%) respondent who also replied “to no extent” about the billing software. The other remaining respondent forming 1 (4%) of the respondents did not give an answer.

5.2.11.8. Online searching

The largest number of responses belongs to those who know “to a large extent” about online searching with 10 (43%) respondents, followed by 5 (22%) respondents who replied “to no extent” about the online searching systems, whereas 3 (13%) respondents know “to some extent” about online searching systems. Those who know “to a very large extent” about online searching are equal to those indicating “to no extent,” namely, 2 (9%) respondents each. The remaining 1 (4%) respondent did not answer the question.

5.2.11.9. CD ROMs

It is shown in Figure 5.19 above that CR ROM technology is also popular among the legal professionals. Most of the lawyers made up of 10 (44%) respondents know “to some extent” about CD ROM technologies, followed by 5 (22%) and 4 (17%) of those who know “to a large extent” and “to a very large extent,” respectively, about these technologies.

5.2.11.10. Case management systems

With case management, it is shown that most the lawyers know much about these systems. Most of the respondents, that is 11 (48%) of them, know “to a large extent” about the systems, followed by 5 (22%) and 3 (13%) respondents who know “to some extent” and “to a very large extent” respectively about the case management systems. Those who responded “to no extent” and “to no extent at all” form 2 (9%) and 1 (4%) of the respondents, respectively. The other remaining 1 (4%) respondent did not provide an answer.

5.2.12. Frequency at which I &KM activities are discussed

In order to determine the culture of the law firms with regard to information and knowledge management technologies, the lawyers were asked some questions about the frequency, with which these technologies are discussed or assessed in their firms. They were also asked about how they prioritise information and knowledge management technologies, and how they share information and knowledge, not only in their law firms, but also within the law society to which they belong or are

affiliated to. A larger group of the respondents, that is 9 (40%), expressed the view that information and knowledge management technologies are infrequently discussed in their law firms or in the law society to which they are affiliated. This is followed by 6 (26%) respondents who state that information and knowledge management technologies are never discussed or assessed in their firms or law society. Those who say that these technologies are hardly ever or seldom discussed or assessed constitute 4 (17%) of the respondents, whilst 3 (13%) respondents say these are frequently discussed or assessed and 1 (4%) respondent says "almost always". These results are shown in Figure 5.20 below.

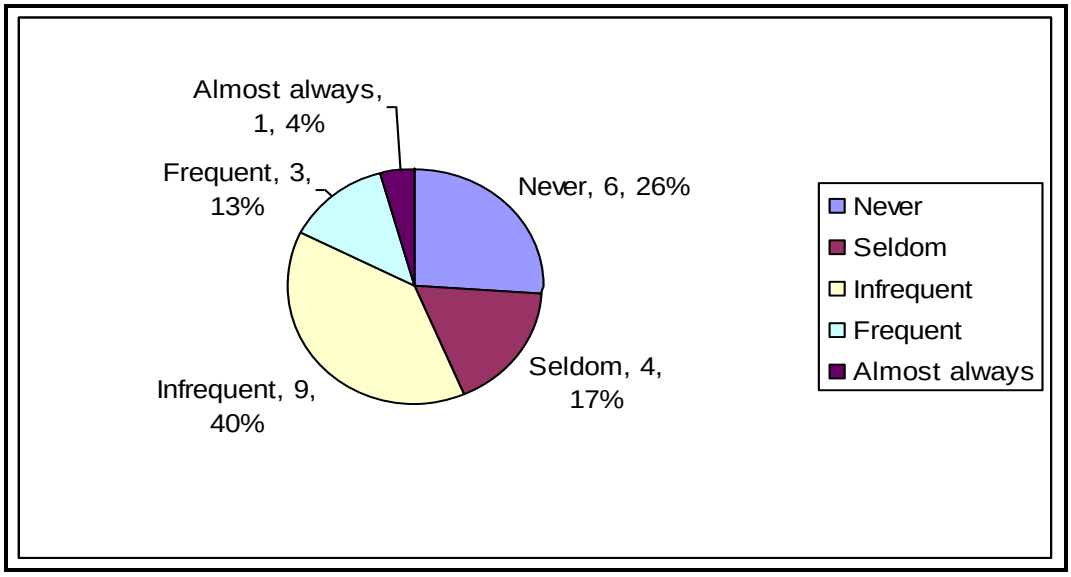


Figure 5.20 Frequency with which I & KM technologies are discussed or assessed

5.2.13. Prioritization of I and KM technologies

The respondents were also asked about how information and knowledge management technologies are prioritized with other key success factors in their firms or law society. It was found that most the respondents say that information and knowledge management technologies receive no priority with 10 (42%) respondents. This is followed by 6 (25%) respondents who state that information and knowledge management technologies receive third priority in their firm and 5 (21%) respondents who say they receive second priority as against 2 (8%) and 1 (1%) respondents who say that information and knowledge management technologies and activities receive

fourth priority and first priority, respectively. The results are shown in Figure 5.21 below.

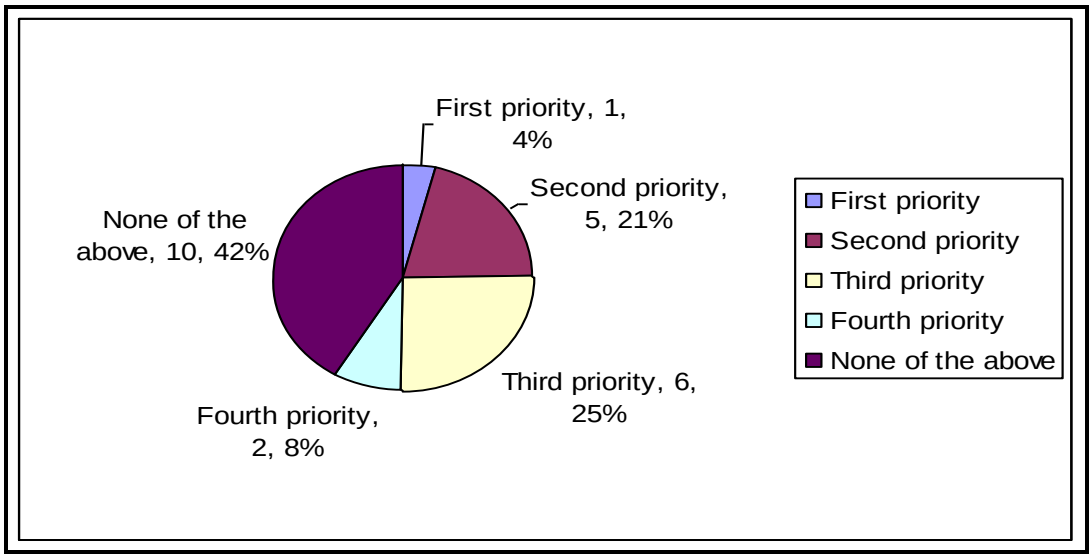


Figure 5.21 Prioritisation of I & KM activities

5.2.14. Information and knowledge sharing

The respondents were also asked to agree or disagree to a statement that was formulated thus: "sharing information and knowledge electronically with other law firms in the vicinity is part of our firms' culture". They were requested to choose one response with which they agree most from:

1 = strongly disagree;
2 = disagree;
3 = neither agree nor disagree;
4 = agree; and
5 = strongly agree.

It was found that most of the respondents, that is 12 (52%) of them, "neither agree nor disagree" with the statement, whilst 5 (22%) of the respondents "agree" and 4 (17%) strongly "disagree" with the statement. Those who "strongly agree" with the statement constitute 2 (9%) of the respondents whereas none of the respondents "disagree" with the statement as shown in Figure 5.22 below.

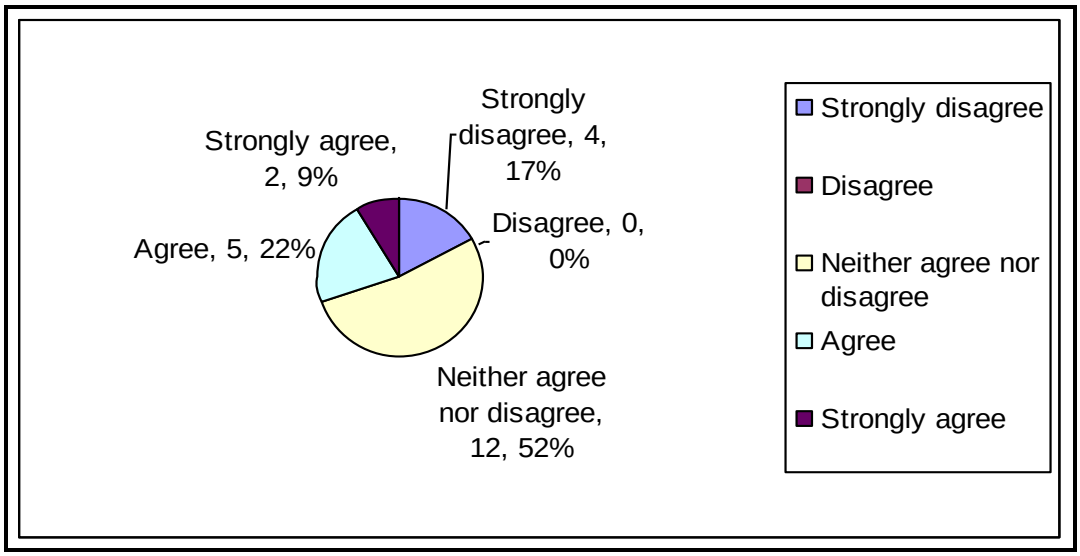


Figure 5.22 Measurement of culture for sharing information and knowledge

5.3. Results of the interviews

The main purpose of conducting the interviews with the respondents was to supplement and confirm the results that were solicited from the questionnaire responses. The first set of questions that the interviewees were asked dealt with external variable influencing technology usage or non-usage, such as type of settlement, age range, sizes of law firms, etc. Most of the lawyers indicated that they grew up in rural communities as it was also revealed in the questionnaire. Out of thirteen lawyers (13) that were interviewed, 10 (76%) interviewees grew up in rural areas whereas 3 (23%) of them grew up in rural cities. The majority of the interviewees; that is, 8 (61%), were within the age range of 36-45, followed 3 (23%) whose age range falls within 46-55 and the 1(6%) interviewee whose age range falls within 56-65. Out of thirteen (13) lawyers interviewed, only 2 (12%) have branches, whereas 11 (88%) law firms do not have any branches.

In as far as availability of information and knowledge management systems is concerned, the interviews revealed that most of the law firms are not utilizing case management systems as opposed to what of most them have indicated in the questionnaire. The lawyers were asked if they used any electronic case management systems to file their precedents, and it has been found that most law firms are still utilizing manual filing of their precedents. Out of thirteen (13) lawyers who were

interviewed, 9 (69%) indicated that that they still used manual filing systems as against 4 (31%) lawyers who said they used electronic case management systems.

The interviewees were also asked if they have any people responsible for information and knowledge management activities in their firms. It was also revealed that almost all law firms have their computers used by support staff and secretaries. When they were asked about the availability of people responsible for information and knowledge management positions in their law firms, all lawyers, indicated that they draft the legal documents, such as memos, clients' invoices and other documents by hand and give them to the secretaries and support staff to type. This situation was also revealed in the study by Moahi and Fombad (2005:230) that lawyers rely on secretaries to execute most of the tasks requiring the use of computers.

The interviews also revealed that all the lawyers, or 13 (100%) who were interviewed utilize computers mainly for word processing, that is, to type documents. When asked who does most of the typing, 10 (76%) of them indicated that typing is done by the secretaries whereas 3 (23%) interviewees said that they do typing on their own. The interviews again revealed that, for legal research, some lawyers would use the internet, as well as CD-ROMs from Butterworth and Juta. Out of thirteen (13) interviewees, 9 (69%) of them said that they use the internet and CD ROMs for searching information. It was, however, also revealed that lack of familiarity with search techniques hinders those who use the electronic search systems from using the Internet optimally to search legal information. It was interesting to find that some lawyers are not even aware that there are some legal databases that they could use for research, and also that there is free legal information on the Internet.

For most of the interviewees, that is 12 (94%), e-mail has become a regular benefit of using the internet in most law firms. Three (3) of the interviewees, (23%) mentioned that they also rely on some hard copy materials of Statutes and Law Reports that they have in their offices. With regard to these materials, the interviews revealed that there were no people or librarians responsible to organise materials such as Statute books, Law Reports and some textbooks and journals that they have in their offices. The support staff and secretaries are the ones responsible for organizing such materials

and updating loose leaf materials. They also pointed out lack of finances to subscribe to some legal databases. The interviewees were asked some questions about the importance of information in their law firms. They were asked to answer "yes" if they agree or "no" if they do not agree with the statements that were formulated about the importance of information technology in law firms. Most of the interviewees have a positive attitude towards information technology, as it was also revealed in the questionnaire. There was, however, some evidence of lack of training on the use of computers in law firms. Almost all the interviewees, 13 (100%), indicated that they need training in the use of computer.

The interviewees were requested to describe their firms' information and knowledge management technology strategies in the next one to two years. They were asked to describe what they intend doing about the technology to support information and knowledge management within the next one to two years. It was again evident that most of the lawyers need training on the use of computers before engaging in such strategies. For instance, one lawyer indicated that they first need to train themselves on the usage of computers in law firms, whereas others said that their firm needs information and knowledge about computers before they can implement. The other lawyer said that, with the knowledge of technology, their information would be widened and there would be efficiency in their work.

Some interviewees indicated that their law firms are not responsible for information technology because a lawyer from one law firm indicated that its website is updated in Pretoria, and the other indicated that there is a department responsible for looking into information technology tasks. Those who have departments responsible for information technology are apparently those operating in government departments.

There was also some evidence of law firms who are working towards adoption of information technology. One lawyer from a certain law firm indicated that they update whenever necessary due to technological advances and the other said that they endeavour to update themselves with new information and knowledge management strategies. "Basically we will improve the standard of IT usage in our firm" is what was said by one of the interviewees.

There was also a partner from the other law firm who indicated that their website is still under construction. An element of lack of support on the part of management was also evident when one of the interviewees said that they would discuss with the employer the need for information technology in their office and that more funds should be allocated to it. There was one interviewee from a certain law firm who declined to reveal what their information and knowledge management strategy is, because that information was confidential.

5.4. Results of content analysis of websites

The main purpose of content of websites was to identify the law firms that have websites or appear on the internet, and then determine if there are any information and knowledge management features that could be identified on those websites. The results of content analysis of websites revealed that there are presently only four law firms that have websites in the area. In Appendix 3, the underlined names of attorneys or law firms serve as an indication that those law firms have websites.

The purpose of the information contained in all these four websites is apparently to market the law firms; since they contain information about where and how to find them in case one has a legal problem. The type of information contained in those websites is only the contact details in the form of telephone and fax numbers, e-mail addresses, postal and street addresses. There are no further links on these websites that direct the user to more information. One of law firm's website has information about the company's profile as well as the names of directors, their qualifications and their specialities, whilst the other website outlines the firm's mission and vision statements. This clearly shows that the attorneys working in those firms designed the websites for the purpose of marketing the firm. This is mainly because the contents of those websites serve to identify the law firm, its location and its lawyers. The only link that appears in the website is only the e-mail addresses of its lawyers, as shown in figure 5.23 below.

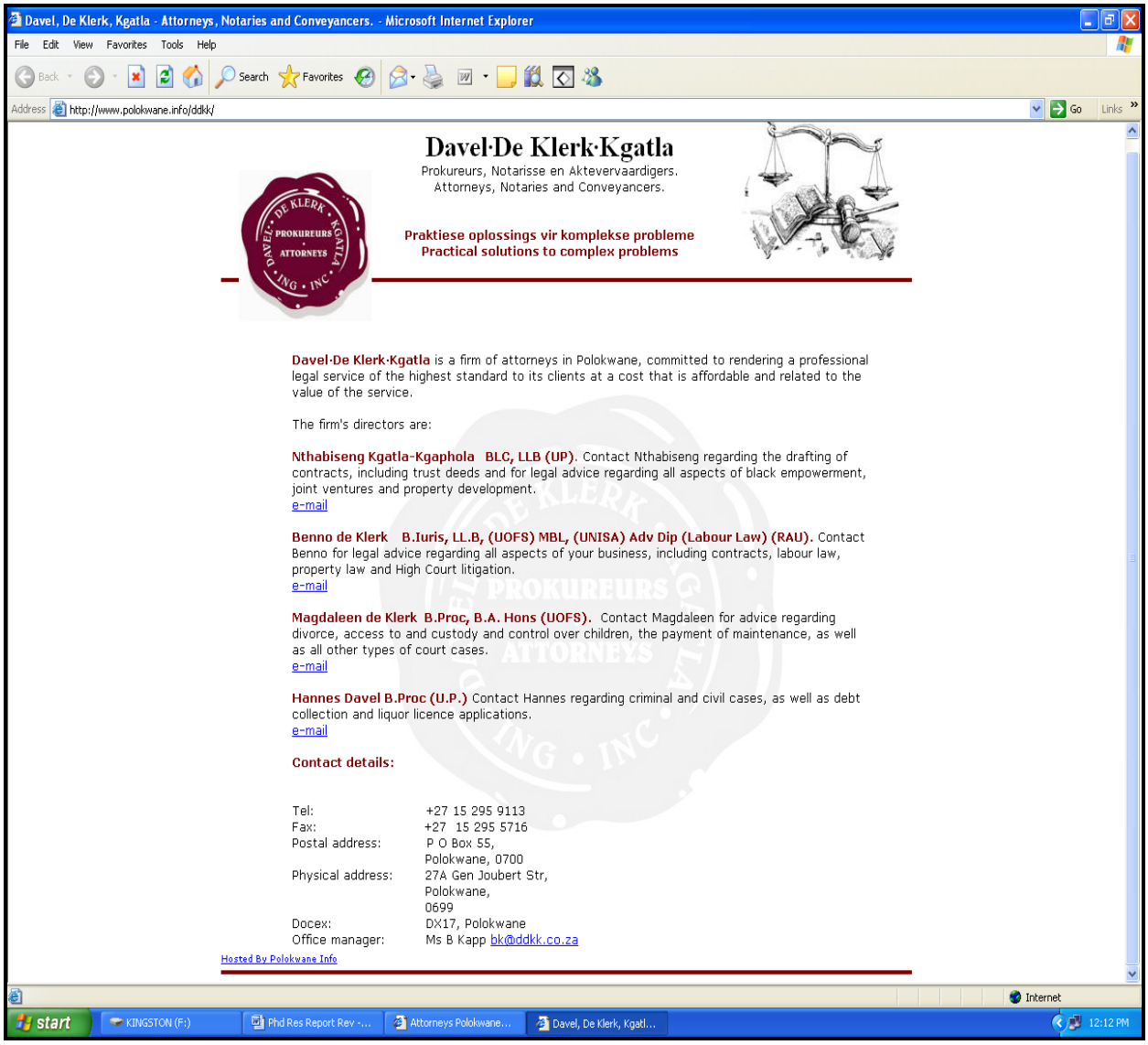


Figure 5.23: An example of law firm website

Perez (2007:1) says that it is not enough to simply have a few lines of text describing the law firm's or attorneys' practice areas, because potential clients are looking for information, and the more informative the site is having, the more the law firm looks like an expert in the field that the potential client is experiencing a legal problem. The content must therefore be compelling and essentially needs to convince the potential client that the law firm can handle his or her legal matter. Perez (2007:1) further sates that most law firms fail to incorporate all the elements that are crucial to successfully market their law firms on the internet. Martin (1994: 1-5) points out five reasons why law firms should be on the Internet thus:

- Clients and potential clients are on the Net;
- Other law firms and lawyers are also establishing themselves on the Net;
- Conversation of lawyers and their clients about legal issues is also taking place on the Net;
- Cost-effective access to information can also be obtained on the Net; and
- Cost-effective global communication of data of all sorts also takes place on the Net.

The other website that was critically analysed for the purpose of this study was the website contents of the Law Society to which most of the law firms in Polokwane city are affiliated, namely, the Law Society of the Northern Province. The reason for analysing the contents of this website is to give a picture of how the law firm website should look like. The Home page of this website shows some links to the websites of other Law Societies in South African; namely, The Kwazulu Natal Law Soiciety, Cape Law Society, Gauteng and Limpopo Law councils. This is shown in Figure 5.24 below.

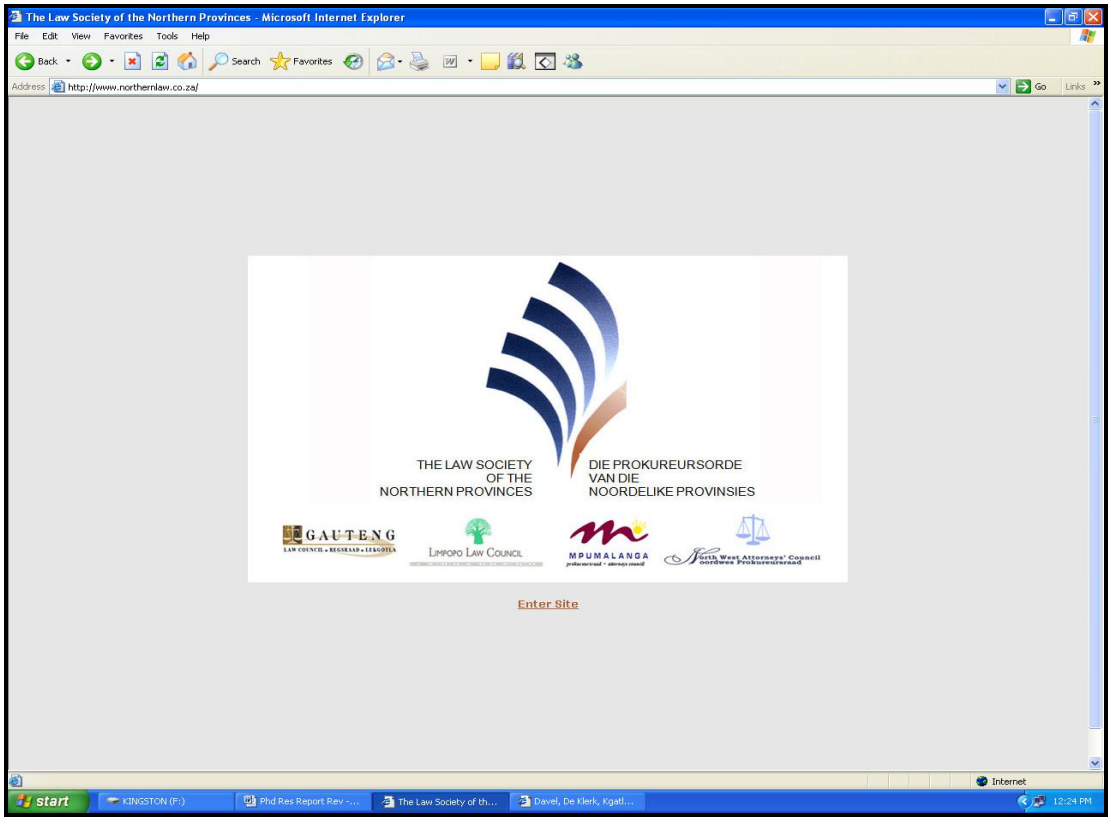


Figure 5.24 Web page of the Law Society of the Northern Provinces

With one click on the "enter site" icon appearing in the home page, one is able to get access to the first page of the Law Society of the Northern Provinces, shown in Figure 2.25 below. The home page for this website has some links to the most important pieces of information that users (clients and lawyers) could access. The links that appear on the home page are general information, professional affairs, member affairs, disciplinary, finance, society news and committees. Some of the information is useful to the clients of the lawyers belonging to this Law Society, whereas some of the information contained in the website is useful to the lawyers themselves.

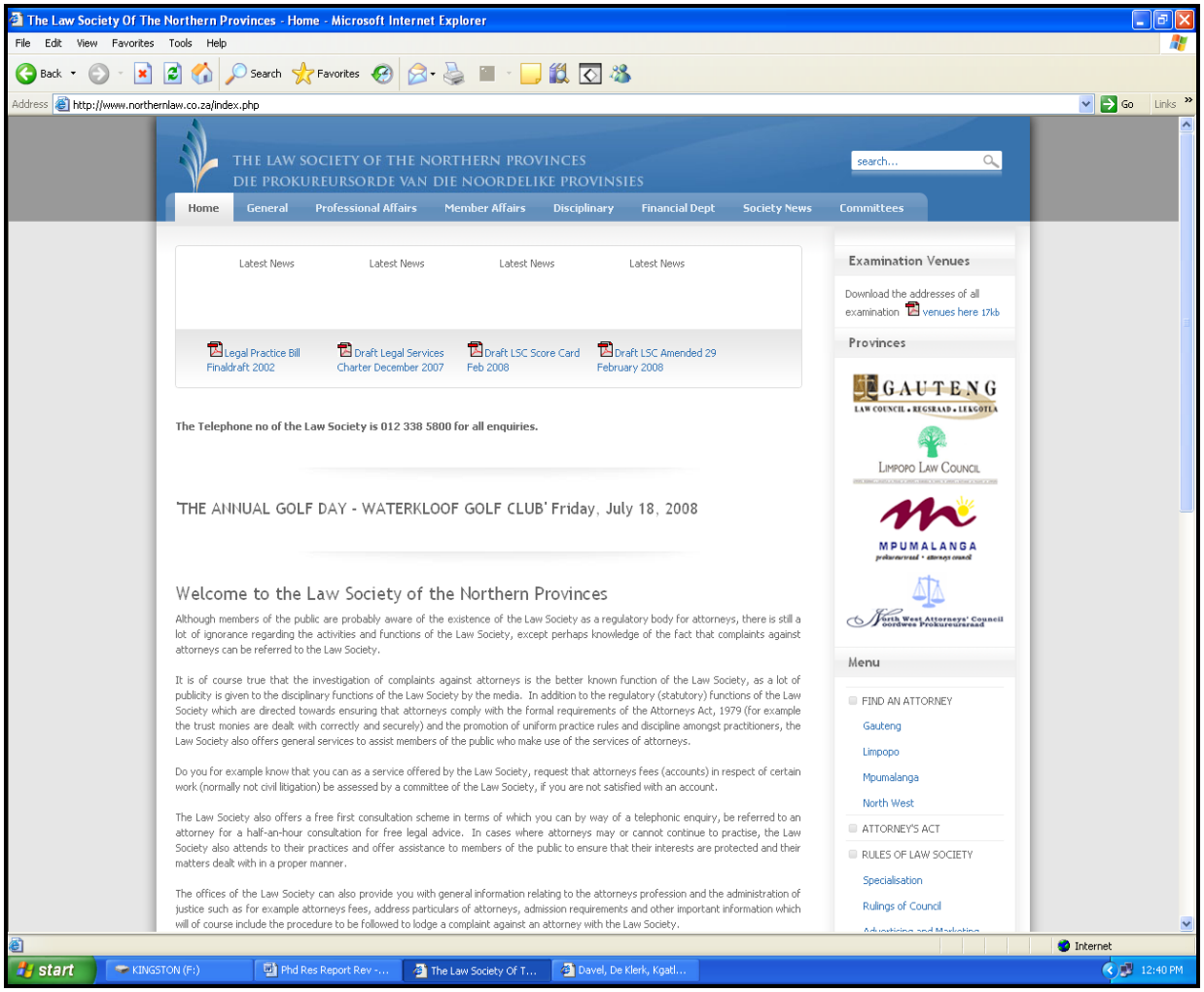


Figure 5.25 First page of the Law Society of the Northern Provinces

Under general, there is information about the Law Society, Contact details, Map, useful links, calendar, and information on the relationship between clients and attorneys. Under professional affairs, there is information on Frequently Asked

Questions (FAQ); what steps attorneys should take when opening a practice and opening a law firm; as well as information about precedents of a contract. There are also some links to government departments such as Department of Justice, South African Revenue Service, Parliamentary Monitoring Group, Department of Trade and Industry, The South African Law Reform Commission and The Commission for Conciliation, Mediation and Arbitration as shown in Figure 5.26 below.

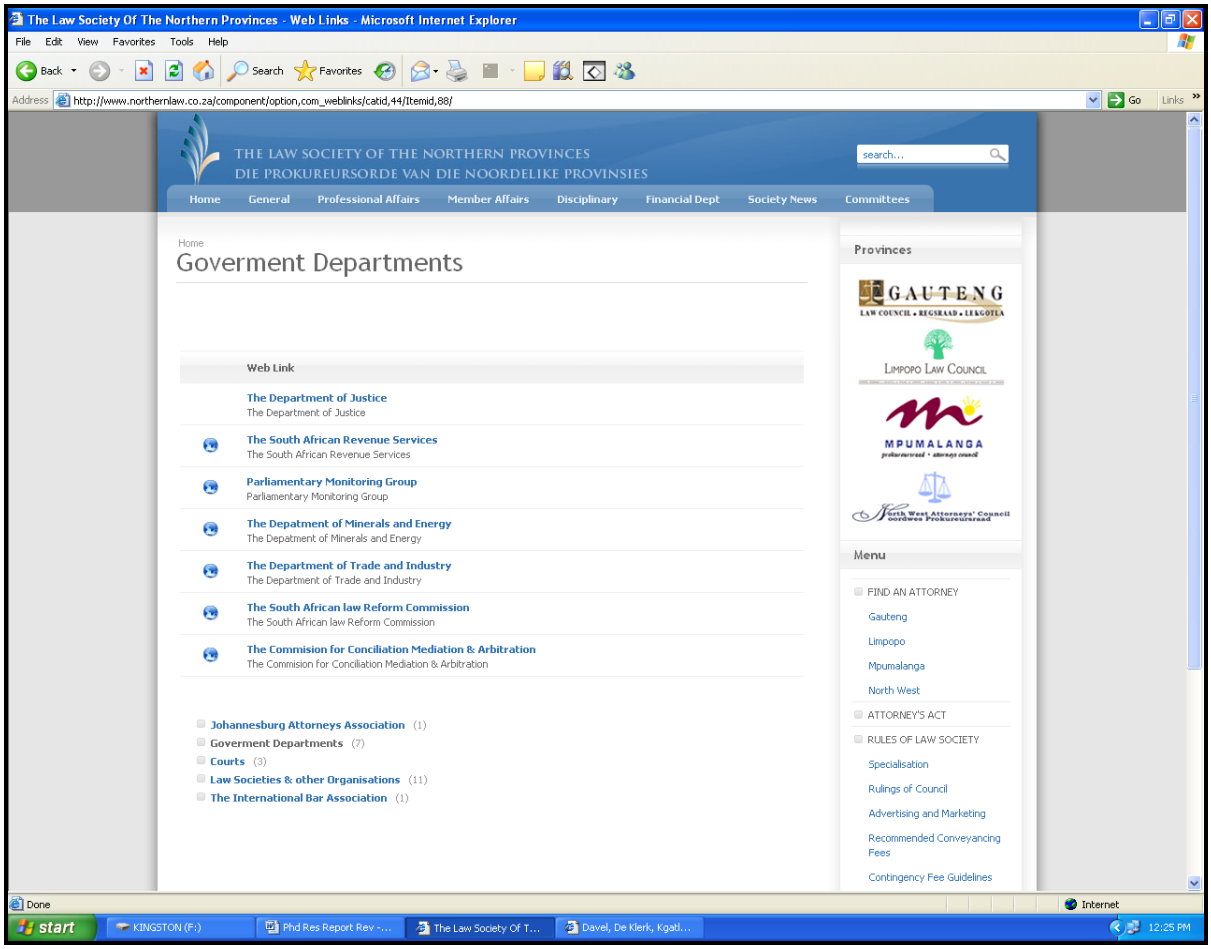


Figure 5.26: Links to the other websites

Other links that appear in Figure 5.26 above are:

- Courts: Constitutional Court; Labour Court of South Africa and the Supreme Court of Appeal of South Africa; and
- Law Societies and other organizations such as SARS e-filing, Attorneys Fidelity Fund, The Law Society of South Africa, De Rebus Attorneys' Journal, Worldwide legal directories, The International Bar Association, The Law

Society of England and Wales, Pretoria Society of Advocates, and the Pension Lawyers Association of South Africa.

There is also a link to the society's newsletter that is published at regular intervals as shown in Figure 5.28 below. The contents of these newsletters were also analysed to determine the type of information contained in it. It was found that there are very few articles on information technology and the legal practice, and nothing about the role and importance of information and knowledge management in law firms. This confirms the results that were revealed in the questionnaire that information and knowledge management activities and technologies receive neither appreciation nor recognition in the law society to which most of the lawyers attached to law firms in Polokwane City are affiliated.

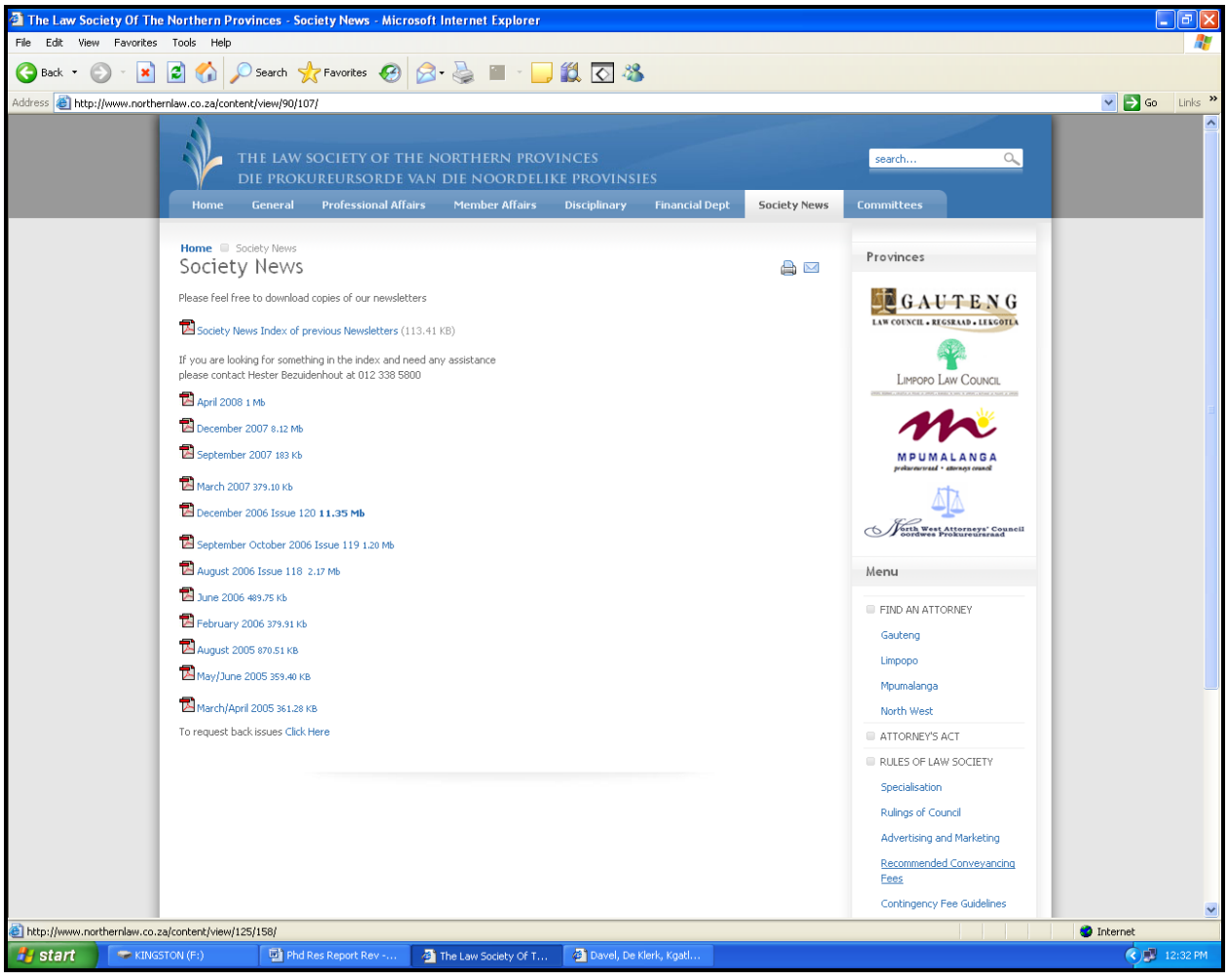


Figure 5.27: Links to newsletters

Most of the articles in the Law Society of the Northern Province newsletter are strictly on current legal issues. Forthcoming conferences, seminars, and workshops are also advertised through this newsletter. However, there are some few advertisements in the newsletter on new legal information technology products advertised by companies such as Sabinet Online, Juta, and Butterworth.

An element of intranet technology is also apparent in the website, in that there are some links and information where only members of the Law Society and authorised user or clients have access to. Users are required to enter their user names and passwords in order to gain access to some of the information that is not available to the general public as shown in Figure 5.28 below. The purpose of these user names and passwords is to protect the confidentiality, integrity, and availability of information contained in a website. In every website there are, therefore, some links or information that ordinary visitors to the website are not allowed to view or to access.

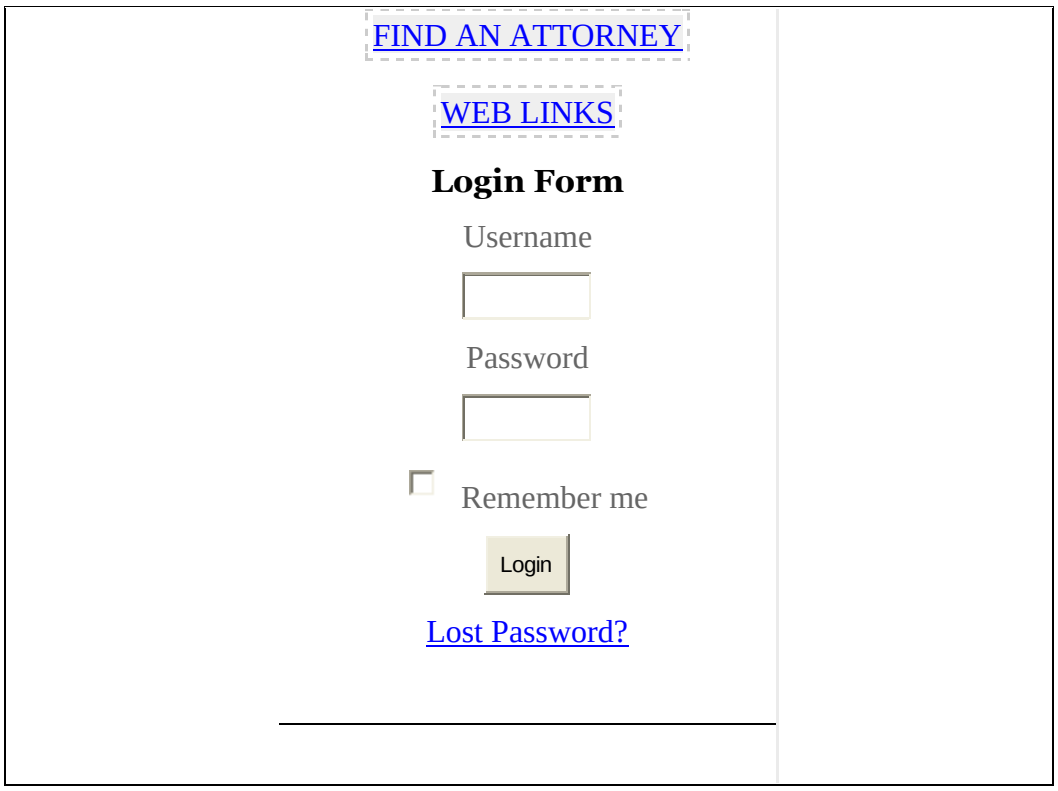


Figure 5.28 Login form for attorneys (Law Society of South Africa Northern Province website)

There is also "Find an Attorney" facility where contact details of all the law firms that are affiliated to this Law Society can be retrieved. By just entering the name of the law firm or the surname of lawyer, as well as the province to which the lawyer or law firm belongs, one is able to find only the contact details of that lawyer or law firm. This facility is depicted in Figure 5.29 below.

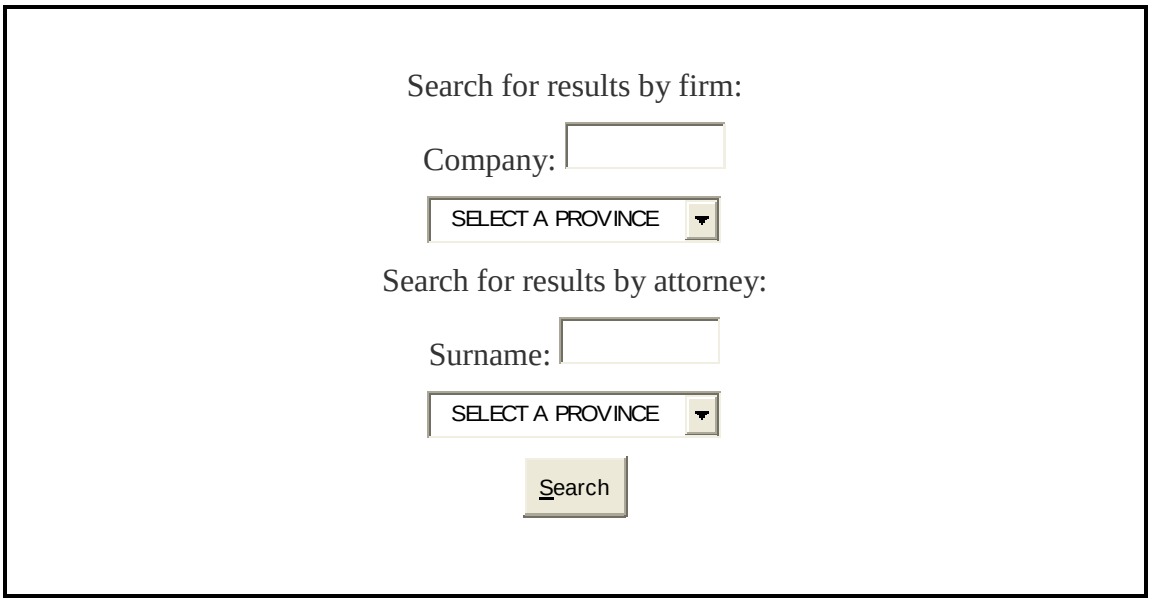


Figure 5.29: Find an attorney facility (Law Society of South Africa Northern Province Website)

5.5. Conclusion

The focus of this chapter was on presenting and analysing the results, based on the responses that were received. In total, twenty-three (23) respondents out of sixty questionnaires participated in the study and their responses analysed. The results showed that most of the lawyers are familiar with some basic information technology applications and are constantly utilising those technologies such as word processing, e-mail, the internet, billing software and case management. The only technologies that most of the respondents are not familiar with are web technologies, such as the intranets and web portals. It has been revealed that most of the lawyers are not even aware of these technologies as information and knowledge management tools. This paints a picture of a profession that does not depend largely on information technology (Fombad & Moahi, 2006:233).

However, when asked about attitudes towards information technology, it was shown that most of them have a positive attitude towards information technology. It has been established that most of the lawyers have positive attitudes towards the utilisation of information technology in law firms, even if they are, to a certain extent not familiar with most of the information technology applications and concepts.

The results of the interview revealed almost the same results as those that were found in the questionnaire. It was revealed in the interviews that most of the lawyers attached to law firms in the city need training in the use of information technology in their firms. Content analysis website showed that only few law firms have established their presence on the internet. Law firms that have established their presence on the Internet have very little information on their websites, unlike the Law Society to which these law firms are affiliated; that is, the Law Society of the Northern Provinces whose website is rich with information for both the lawyers and clients.

In the next chapter, an attempt is made to interpret these results, based on the literature concerning the utilization of information technology by lawyers to support information and knowledge management in law firms.

CHAPTER SIX
INTERPRETATION OF THE RESULTS

6.1. Introduction

In the previous chapter, the results of the research were presented using descriptive statistics in the form of graphs, pie charts, and tables. The conclusion that has been arrived at is that most of the lawyers attached to law firms in Polokwane are utilizing basic information management tools, such as word processing, e-mail, internet searching, and client billing, rather than knowledge management tools or more advanced tools such as intranets, extranets and web portals. The fact that most law firms do not utilize knowledge management tools has been revealed by the fact that most of them do not have websites, as shown in the content analysis of websites.

The purpose of this chapter is to interpret and relate some answers to these findings as presented in the previous chapter, as well as to confirm the theories that have been established in as far as the utilization of information technology to support information and knowledge management by lawyers is concerned. The results of the study as solicited from the data collection methods used in this study are therefore interpreted in accordance with the available literature or established theories on the utilization of information technology by lawyers to support information and knowledge management in their law firms, and as well as in accordance with the model on which this research work is based.

Firstly, this chapter looks into the findings regarding the variables that might have an influence on the utilization or non-utilization of information technology to support information and knowledge management. These include variables such as the type of environment under which these lawyers grew, like the digital divide and the generation gap, the sizes of law firms they are attached to, as well as organizational support. Secondly, the chapter will also interpret the results about the purposes for which law firms utilize information technology, for example, word processing or typing documents, and research on the internet. Thirdly, the findings about the attitudes and competencies of lawyers towards utilization of information technology in their law firms are also discussed and interpreted in this chapter as well as their

familiarity with information technology concepts and applications. This is followed by the discussion of the results pertaining to the responsiveness of lawyers towards information technology and knowledge management, that is, their cultural attitudes towards information and knowledge management technologies and activities. All these facets are based on the sections of the questionnaire and are guided by the Technology Acceptance Model (TAM), advanced by Davis (1989). These results are interpreted in accordance with the findings that were arrived at through the questionnaire, interviews, and content analysis of websites.

6.2. Variables that influence the usage of information technology

According to the model on which this study is based, namely, Technology Acceptance Model, advanced by Davis (1989), there are some external variables which serve as the basis for attitudes towards usage or non-usage of information technology. In this research, external variables such as type of settlement, age, size of the law firms, previous computer training as well as organisational support were used to test the utilization of information technology applying this theory or model. The discussion of the interpretation of the results in terms o these external factors follows.

6.2.1. Digital divide

The first question in this study was intended to solicit information about how well the lawyers attached to law firms in the city of Polokwane were exposed to computers and related information technology in their early lives. This type of information is required because it is believed that the type of environment from which human beings grew or in which they live can have an influence on their attitude towards usage or non-usage of information technology. In this study, therefore, the lawyers were asked a question about the type of settlements from which they grew up as children in both the questionnaire and interviews.

Polokwane city is located in one of the provinces in South Africa which is largely rural. The province has few urban cities and towns. Even though these lawyers are practising their legal profession in the city, where the technological infrastructure is more sophisticated and advanced, it has been established that most of them come from rural areas in parts of the Limpopo Province, as attested by the results of the

questionnaire and interviews in the previous chapter. The questionnaire revealed that out of twenty-three (23) respondents, eleven (11) of them grew up in rural areas, eight (8) in the city and four (4) in urban areas in the vicinity of the city. The interviews on the other hand revealed that out of thirteen (13) lawyers that were interviewed, 10 (76%) interviewees grew up in rural areas whereas 3 (23%) of them grew up in rural cities.

It has, therefore, been shown that most of the lawyers operating in the city of Polokwane come from rural areas in the vicinity of the city, where they were never exposed to computers and related information technologies. There is, therefore, a gap that exists in as far as exposure to information technology is concerned, commonly referred to as "digital divide". "Digital divide" concerns the gap or unequal access to exposure to and usage of new information technologies. This gap exists between communities that have reasonable opportunities to access technological tools and those that do not have such opportunities. The Department of Public Service and Administration (1999:16) laments that empirical research in all nations confirms the growing gap between the rich and the poor, as well as the educated and the poorly educated users of information technology.

Lawyers practising legal work in the city also consist of those who are technologically advantaged and those who are technologically disadvantaged. Most of the lawyers in this study belong to rural communities who are categorised as technologically disadvantaged or as those who do not have access to digital technologies (Sikhakhani & Lubbe, 2003:1). Western et al. (2001:10) contend that people with little exposure to computers are less likely to embrace information technology. Therefore, one of the contributory factors to the non-optimal utilization of information technology by lawyers in the city is the fact that they are technologically disadvantaged, in as far as exposure to information technology is concerned during their early years. This is despite the fact that their law firms are operating in city or urban area, where the technological infrastructure is more advanced.

6.2.2. Generation gap

Gaining a better understanding of age is also important, particularly as it relates to user acceptance and usage of new information technology systems or applications. Therefore, one of the factors that might have an influence on the utilization or non-utilization of information technology by lawyers is the "generation gap", generally associated with age. The term "generation gap" is used to describe differences in behaviour between members of a younger generation and members of the older generation. This gap occurs when older people and younger people do not understand each other because of their different behaviours. These behaviours are inspired by the era in which a person is born or has grown up in and has a lasting influence on their value system, which in turn shapes behaviours (Codrington, 2004:36).

In this study the lawyers were asked a question about their ages to solicit information about their behaviours that occur in as far as the usage of information technology between older people and younger people is concerned. It is believed that younger lawyers will utilize information technology more readily than older ones. Rosen (2004:1) describes four generations of people in the world that are in existence today, namely, the silent generation, baby boomers, generation X and the Net generation. Those who were born before 1946 make up the "Silent generation". Baby Boomers are the generation of people who were born between 1946 and 1964, followed by the Generation X, born between 1965 and 1980 and the Net Generation who were born after 1980.

The Silent Generation was raised without the modern information technology. Information technology was foreign to them. Baby Boomers formed the first technological generation with computers on the horizon. Most of the members of this generation learned technology after their schooling, that is, when they started working in organizations where computers were utilised. Generation Xers were the first to become computer literate and the Net Generation has been intertwined with technology from birth. According to Rosen (2004:1), these generations differ in the way they use technology and they even navigate the web in different ways.

However, Codrington (2004:36) has a different view in as far as the generations of people are concerned. According to this author‘s view, the silent generation were born before and during the Great Depression and World War II, that is, between the 1920s and 1940s. Baby Boomers are the post-war generation, between the 1940s and 1960s, whereas the Xers grew up during the era of crises (from Watergate to June 16, 1976; from the energy crisis to the collapse of communism) that is, between the 1960s and 1980s. This shows that there is no exact definition of generations of people around the world. The description or explanation of four generations of people around the world is largely dependent upon who is using the term, where and when. Codrington (2004:36) is probably using this theory of the generations of people in South African context.

Coming to the essence of this research the questionnaire found in this study that lawyers who belong to the age range of between 36 and 45 years old constitute 10 (44%) respondents, followed by those whose ages range between 46 and 55 years old as well as between 26 and 35 years old with 6 (26%) each. The interviews on the other hand revealed that the majority of the interviewees, that is 8 (61%), were within the age range of 36 – 45, followed by 3 (25%) interviewees whose age range falls within 56-65.

These results show that the majority of the lawyers in this study fall within the Baby Boomers and Generation Xers. According to Codrington (2004:36), baby boomers grew up in the era of information technology, but are not entirely reliant on information technology, whereas Xers have been exposed to computers and seem to be comfortable with a variety of electronic equipment. One might generalise by stating that lawyers belonging to the two types of generations above (Baby Boomers & Generation Xers) have a common orientation towards information technology. The difference is that the former generation has been less widely exposed to computers than the latter.

On the extreme, the older generations have never been in touch with computer technology, as stated by Balogh (1997:3). Therefore, older lawyers appear to be non-

users of information technology not because they are intimidated by computers, but rather probably because computers will shift more work into their hands than into the hands of their support staff. Staudt (2003:2) also argues that lawyers are well supported with clerical staff because their time is valuable.

Kritzer (1999:7) also maintains that lawyers regularly delegate legal research tasks to paralegals and legal assistants, because of the new developments in information technology, which make it possible for even persons with much less sophisticated understanding of legal principles to perform at least rudimentary legal research. Perhaps it is faster and more productive for lawyers to delegate to their support staff any new effort that interferes with their means of working. Therefore, it has been difficult to introduce into law firms new technologies that directly affect the way lawyers themselves perform their professional tasks (Kritzer 1999:7).

Furthermore, the lawyers were also asked about the years during which they completed their legal degrees or qualified as lawyers. The questionnaire revealed in this study that most of the lawyers completed their legal degrees or qualified as lawyers between 1981 and 1990 represented by 13 (57%) respondents, followed by only 4 (17%) respondents who completed their legal education between 1991 and 2000. It was also shown in the interviews that most of the interviewees completed their legal education during this period, that is, between 1991 and 2000. Probably it was during this period when most of the organizational systems were being automated or computerised. Therefore, the lawyers, who completed their studies between 1981 and 1990, probably started using computers after completion of their studies. They seem to have learned most of their computer skills when they were already in their jobs.

6.2.3. Size of law firms

The size of the law firms is also seen as one of the external variables that can have an effect on the usage or non-usage of information technology by the lawyers of a particular law firm. Small law firms will in most cases serve individual clients whereas larger firms will serve mostly corporate clients. Singh (2002:1) contends that larger law firms serving corporate clients are more inclined to utilize information

technology because they are being pressurised by their clients who are willing to communicate with them electronically than are smaller law firms.

In this study, it has been found in the questionnaire that most of the law firms appear to be small with about 1-5 partners, that is, 19 (83%) of the respondents, whereas the interviews revealed that out of thirteen (13%) lawyers who were interviewed, only 3 (12%) have branches, whereas 11 (88%) do not any branches. These law firms, therefore, seem to be very small and do to have branches at all as attested by the findings of the questionnaire and interviews in the previous chapter.

Small law firms, therefore, might lack the financial muscle to purchase more advanced or sophisticated technologies. Lack of financial resources, therefore, is regarded as one of the obstacles to the usage of information technology in most of the law firms. In the study conducted by Moahi and Fombad (2005:231), limited financial resources were pointed out as one of the factors that impede the adoption and utilization of information technology by lawyers. The study conducted by Singh (2002:6) also revealed that funding was probably one of the first factors that law firms have to consider when investing in information technology. Balogh (1997:3) also mentioned illegal copying of software wherein users are forced to copy the software in an illegal way because of the shortage of funds.

The main focus of this research project was to investigate the usage of information technology by lawyers operating in private legal firms. However, the lawyers operating in organizations such as the Legal Aid Board, government departments, and other bodies were also targeted to determine if there are any differences that exist in as far as usage of information technology to support information and knowledge management by these groups of lawyers is concerned. It has been explained that the purpose of doing this was to stimulate future research.

Even if the lawyers operating in the private legal firms were in the majority, it was found that most of the lawyers operating in other bodies, like the ones mentioned above, were more advanced technologically than the ones operating in private legal firms. This might be because of the fact that lawyers operating in other bodies like the

government departments are at a more advantageous position in as far as funding and support for technological equipment is concerned. Small and medium-sized enterprises are, therefore, significantly different from large organizations because large organizations generally have funding, resources, expertise to pursue technology innovation and adoption, or if not, they can outsource needed expertise. There is also a line of reasoning that lawyers in the private law firms serve non-computer literate clients whereas lawyers in the organizations mentioned above might be serving computer literate clients who put them under pressure to communicate with them electronically.

To further determine the sizes of the law firms, the population was also asked to indicate if they had any positions in their organizational structure responsible for information and knowledge management functions. It was found that law firms do not have positions such as librarian, information officer, knowledge manager, and information technology officer, both in the questionnaire and the interviews. The only positions that most of the law firms have in their organizational structure are for administrative or support staff, represented by 21 (92) respondents in the questionnaire and by 13 (100%) lawyers in the interview, who most of them mentioned that they draft legal documents, such as memos, client invoices, and other documents and give them to their secretaries and support staff to type. This therefore confirms the statement by Staudt (2003:2) that lawyers delegate most of their computer-related tasks to the administrative staff or secretaries, whilst they themselves deal with professional tasks like legal research and legal counsel. Some of the lawyers, however, mentioned in the interviews that they type documents that are more confidential on the own.

Meyerowitz (2003:1) explains that a key player in any law firm's Intranet team should be the firm's librarian. The role of the librarian in the law firm is to ensure that information and knowledge in the law firm are arranged in such a way that users are able to identify and retrieve them with ease. Since most of the firms in this study do not have librarians, information officers or knowledge managers, it was found that most of them do not have intranet, extranets and web portals, because they do not have people delegated to perform those information and knowledge management

functions. These results are revealed in the questionnaire, interviews and more strongly in the content analysis websites.

6.2.4. Previous computer training

According to Western et al. (2001:10), people with limited computer skills are less inclined to use computers than those who have computer skills. The lawyers were therefore asked if they had received any computer training at school, university, computer school or on the job. The questionnaire showed that most of the respondents, that is 16 (69%), received training on computers whilst on the job. They were also asked in the interview about where they started using computers. Most of them, that is, 10 (76%) interviewees revealed that they started using computers when they were already working whilst 3 (24%) started using computers at university or tertiary level. The fact that most of the lawyers did not get training on the use of computers at school is still closely related to the "digital divide" and "generation gap" as some of the variables that influence the usage or non-usage of information technology by lawyers.

It is also vital to note that positive attitudes towards information technology arise only through exposure to the equipment and access to training on the use of such equipment. Lawyers who have a relatively high level of training on the use of computers will therefore show a positive attitude towards them. As can be expected, negative attitudes towards computers correlate strongly with limited or low access to training opportunities and exposure. Lack of training on the use of computers in South Africa as a whole is not only attributable to the end users, but might be attributable also to educators who must provide this training. It seems there are very few teachers qualified to teach information and communication technology in South African schools. In the study conducted by Moahi and Fombad (2005:231), lack of in-house expertise was rated as the strongest factor that hinders the adoption and use of information technology by most of the law firms.

6.2.5. Organizational support

Organizational support, according to Western et al. (2001:11), is the attitude of the individual organization to make available to the employees incentives and the

material support to encourage the adoption and utilization of information technology in an organization. This means that for the lawyers of a particular law firms to utilize information technology to support information and knowledge management, they must have those technologies at their disposal. In addition the law firm should also provide support such as training in the use of computer systems. According to Al-Gahtani and King (1999:281), the measurement of organizational support is incorporated in two major categories: firstly, application development support, which includes availability of development assistance and specialised instruction and guidance in developing and using applications. Secondly, general support, which includes top management's encouragement and allocation of resources.

In this research, lawyers were firstly asked about the availability of systems specifically designed for information and knowledge management functions in their law firms. The questionnaire found that most of the law firms, that is 15 (65%), have systems for communication of information, systems for searching information, systems for managing documents, and systems for managing client cases with 13 (57%) respondents. Systems for managing expert knowledge are one of the systems that most of the law firms do not have, with 12 (52%) respondents reflecting this.

The interviews on the other hand, found the opposite because most of them did not know about these systems, except the systems for searching information and for communication of information. They, however, only knew of these systems after the interviewer explained and clarified to them what those systems are for. The fact that it was revealed that most of the lawyers who responded to the questionnaire and participated in the interviews received training on the use of the computer whilst already on the job or though in-service training, also shows that most law firms provide organizational support in terms of training and development of their employees towards information technology.

When lawyers were asked about the availability of the Internet in their law firms, it was found that the majority of the law firms, that is, 17 (81%) have Internet access, which shows that organizational support towards making information and knowledge management tools available is a priority in most of the law firms. This also shows that

the Internet is gaining popularity as a tool for faster access to information. It is, however, interesting to find out that most law firms have access to the Internet, but very few of them have websites. Content analysis of websites revealed that only three law firms have websites, but there were no information and knowledge management features or tools that could be identified on those websites.

6.3. Purposes for utilizing information technology in law firms

In order to find out about the "perceived usefulness" of information technology in law firms, the respondents were asked about the purposes for which they are utilizing information technology in their law firms. "Perceived usefulness", according to Western et al. (2000:11), is the degree to which the system is helpful to the user or group of users. If a user believes or perceives that a particular computer system or software is helpful, then that user is more likely to utilize the system or the software.

In this study, it has been found through the questionnaire that the common information technology applications that most of the law firms, utilize are word processing, represented by 21 (91%) respondents, e- mail communication, represented by 21 (91%), research, represented by 20 (81%) respondents, billing clients, represented by 20 (87%) respondents and then case management, represented by 19 (83%) respondents.

The interviews on the other hand found that all the lawyers, that is, 13 (100%) utilize computers mainly for word processing. When asked, who does most of the typing, 10(76%) indicated that typing is done by their secretaries, whereas 3 (23%) said they do typing on their own. Out of thirteen interviewees, 9 (69%) of them said they use the Internet and CD Roms for searching information.

To support these findings, Warner (1991:10-12) also names word processing, accounting, pricing, office (case) management, mailing lists and databases as computer office efficiency tools which compelled most firms to automate their systems. Word processing tops all other purposes. Every legal document, be it letters, contracts, wills, cases, deeds, and pleadings is the by-product of word processing or typing activities. Shuey (1991:90) states that the practice of law for almost everyone

is the process of capturing thoughts in some manner of written form, which is word processing. Larkan (1989: 813) states that too many systems installed in law offices are used as glorified typewriters rather than fully fledge office automation tools taking full advantage of everything the technology has to offer.

Word processing is the ability to create, edit and print documents using a computer. The great advantage of word processing is that a user can make changes on the document without having to retype, like with the typewriter. Therefore, word processing or typing is an important skill that every lawyer should have. Shuey (1991: 90) also believes that every lawyer, support, and administrative staff person should have word processing power at his or her fingertips.

However, when asked about the frequency with which these tools are utilised, it was found the electronic mail (e-mail) is used “almost always” by 10 (43%) of the lawyers. Electronic mail is therefore also considered to be the most important tool in most law firms because it increases cooperation not only with colleagues but with other lawyers in the surrounding area, as well as with the clients.

Electronic mail (abbreviated "e-mail”) is a store and forward method of composing, sending, storing, and receiving messages through electronic communication systems. It allows someone sitting at one computer to send messages to another computer, where they are placed in an electronic mailbox until retrieved (Shuey, 1991: 90). E-mail was vastly accepted by the business community as the first broad electronic communication medium and was the first ‘e-revolution’ in business communication. It is very simple to understand and just like the ‘good old letter’, e-mail solves two basic problems of communication, namely, the problem of traveling and that of synchronization.

Effective internal and external communication through the use of e-mail has therefore become a critical success factor for law firms. It should also be stressed that business professionals today spend between 20% and 50% of their working time in communicating through email: reading, ordering, sorting, re-contextualizing fragmented information and, of course, writing e-mails. Further e-mail

communication is likely to increase considerably in future due to trends of globalization, distribution of organizations (customer closeness), collaboration, outsourcing, the knowledge economy etc (Hofman, 1997:21). Law firms, as knowledge economy organizations, are no exception to this contention.

The use of information technology for research and database access also shows that most of the lawyers endeavour to keep abreast of latest developments in law. Widdinson (1995:4) states that research may involve hunting for an answer from within the vast quantity of electronically published information from the internet. It is possible to access a substantial number of law library catalogues from the Internet. On-line access to a number of primary materials such as legislation, case reports, treaties, conventions, constitutions etc and secondary materials such as electronic journals, research papers, newsletters etc can be tracked down through the Internet. This study also found that lawyers also use information technology to conduct legal research through the Internet and CD Roms.

Du Plessis and Du Toit (2005:7) stress that legal research is one of the critical skills that lawyers employ on behalf of their clients and that competency in legal research is essential to any lawyer, regardless of the area or type of practice. They emphasize that lawyers have a professional responsibility to research and know the law to serve the clients and the public‘s best interest. In addition, legal research is one of the activities that are impossible to delegate to support staff, but it should be done by lawyers themselves. The use of information technology to support legal research by lawyers should therefore be seen as obligatory.

As far as the use of information technology for client billing is concerned it is observed that in any business or organization, there is a substantial amount of administration that needs to be done. Apart from marketing the law firm, another important administrative task is that of client billing or accounting. Periodic billing can be generated automatically by a law firm’s accounts system and then communicated electronically to the client (Widdinson, 1995:9). Each law firm is responsible for the administration of its funds to become competitive. Terret (1998:72) reckons that one of the goals of each law firm is financial success and

growth, apart from outstanding client service and professional satisfaction. The results of both the questionnaires and interviews revealed that law firms use computers for client billing and administrative purposes.

The results of the questionnaires also revealed that the majority of lawyers, that is 19 (83%), use computers for case management purposes. This was, however, contrary to the results of the interviews that showed that most of the lawyers are not utilizing case management systems. Case management should be regarded as another purpose that has been rated highly by most of the lawyers who utilize information technology. In as far as case management is concerned, there are a number of programmes designed to help law firms to manage their cases. This means that law firms use different case management systems. Case management software contains client information, notice dates, court dates, follow-tasks and appointments. These serve as storehouse for data related to cases for which the law firms are responsible. Case Management is also referred to as calendaring, which is closely related to what is referred to as "to do" list. This is very important for lawyers because it helps them not to miss their appointments or their important assignments.

Intranets and web portals are the least tools utilised by most of the researched law firms as revealed by the results of the study in general. It was found questionnaire that in the previous chapter that only 5 (22%) respondents out of twenty-three (23) respondents utilize information technology for intranet and web portal purposes each, whereas content analysis of websites revealed there was no even a single law firm utilizing web portal and intranet technologies. Features of the intranets, extranets and web portals could only be identified on the website of the law society to which these law firms are affiliated.

Cloete and Snyman (2004:47) account that we are in the middle of the information age, suffering from information overload on the one hand and a lack of knowledge on the other. It is, therefore, speculated that lawyers might also be suffering from information overload and lack of knowledge about information and knowledge management tools such as intranets, extranets, web portals and very recently blogs and wikis. Sergeant (1988:129) also reckons while computers appear to be the

obvious answer to minimizing the tedious performance of tasks, the proliferation of new makes and models of hardware and software is such as to render any careful analysis an almost impossible task. Bennet (2006:1) also maintains that although most lawyers can turn on computers, send and receive e-mails, create documents, surf the internet, more advanced functions are often reserved for information technology specialists. Sergeant (1988:129) adds that it is possible for law firms to consider calling in a consultant who will do a full feasibility study of the firm's requirements and look for appropriate solutions from the computer and software suppliers. This is because it might be difficult for lawyers to consider what computer hardware and software might be suitable for their firms, since they are not information technology specialists.

6.4. Attitudes of lawyers towards information technology

The attitude of an individual towards a certain information technology system also plays an important role in influencing their subsequent behaviour towards it (Al-Gahtani & King, 1999:277). Balogh (1997:3) states that there are great differences between people in respect of their knowledge of information technology and their attitudes to it. In this study, the attitudes and personal feelings of lawyers towards information technology were measured by asking them about the degree of importance they attach to the utilization of computers in law firms. Generally, it was shown through the questionnaire that most of the lawyers have a positive attitude towards information technology utilization in law firms, which means that lawyers accept that computers are important and useful tools for law firms.

According to the Technology Acceptance Model, for people to use a particular system, they must first accept that the system is useful and would enhance their job performance. The usage of a system by an individual or a group of individuals, therefore, depends largely on how useful the system is or how it improves his or her job performance. This belief is referred to as "perceived usefulness" as explained in the Technology Acceptance Model by (Davis, 1989:985; Al-Gahtani & King, 1999:278; Western et al., 2001:10; Lu et al., 2003:207) and serves as the basis for attitudes towards using a particular system, which in turn determines the intention to use and then generates the actual usage behaviour. "Perceived usefulness", according

to Phillip et al. (1994:18) comprises two dimensions, namely, “perceived usefulness” to the organization and “perceived usefulness” to the individual. To the organization, usefulness usually means economic benefits, like increased productivity, enhanced product, cost saving and improved market share, resulting from the adoption of new technology. To the individual in the adopting organisation, usefulness results in improved job performance and the associated intrinsic and extrinsic rewards.

To confirm this theory about the determinants of attitudes towards the use of information technology in law firms, lawyers were also asked to respond to some statements that were formulated about the importance of computers in law firms. It was found those most of them “strongly agree” and “agree” with the statements that were formulated. In addition, to determine their personal feelings towards the use of computers, some positive and negative statements, expressing feelings, that is, on how people feel about the use of computers, were also formulated. Most of the lawyers agreed with the statements that were positive and disagreed with those statements that were negative with regard to their feelings about information technology utilization in law firms.

In addition to “perceived usefulness”, the other determinant of attitudes towards information technology is the “perceived ease of use”, which is described as the degree to which a person believes using a particular system would be free from of effort. This means that an application perceived to be easier to use is more likely to be accepted by the end-users than the application which is too hard to use. “Perceived ease of use” therefore has a direct and positive effect on “perceived usefulness” of the technology.

From the discussions given above, it is deduced that word processing, e-mail, online research, client billing and case management applications are widely used because they enhance the performance of law firms and are easy to use. intranets, expert systems and web portals are not being used because they might be perceived as being not useful to the law firms and as being hard to use.

6.5. Competency and knowledge with IT concepts and applications

In attempting to extend the TAM to include competency and knowledge components in this study, the lawyers were requested to choose one statement from the four that were formulated about their competency in respect of their use of computers. It was shown that, at least, most of the lawyers, represented by 14 (61%) respondents, have enough computer skills just to get by. It is assumed that the computer skills that most of the lawyers are knowledgeable in and competent on are those that have been disclosed above, namely, e-mail, word processing, online searching, case management and client billing. The results also showed that very few lawyers, represented by 4 (17%) who responded to the questionnaire, are totally proficient with computers.

To further assess the knowledge of lawyers about computers, they were also asked about the extent to which they know about some of the information technology applications. This was done because it is believed that a person who knows about information technology application or system is more likely to use that application or system, than the one who does not know anything about the information technology application or system. Lu et al. (2003:213) contend that the knowledge of the characteristics of a system or application has been widely accepted in technology acceptance research. System knowledge exhibits an indirect effect on usage behaviours or intentions through their relationship with perceived usefulness and perceived ease of use (Davis, 1989 in Lu, 2003:213). Just as in the results above, it has been shown that most of the lawyers are "to a very large extent" knowledgeable in respect of applications such as e-mail, and word processing and "to a large extend" with billing software, online searching and case management. Some lawyers showed that they know "to some extent" about spreadsheets, PowerPoint and CD ROMs.

6.6. Information and knowledge management culture in law firms

Corporate culture plays an essential role in the development and maintenance of an organization's information and knowledge management programmes. Corporate culture encompasses values, belief, attitudes, and behaviour of individuals and groups within an organization. It is how things are done in an organization. It is, therefore, important to understand the cultural aspects of an organization towards information and knowledge management programs. Ndlela and Du Toit, in Davel and Snyman

(2005:2) maintain that is important to consider the type of culture residing within an organization, since the cultural habits of members of an organization affect the way in which it could persuade or discourage individuals to make use of knowledge management techniques to create, codify, and share knowledge.

In this study culture towards information and knowledge management programmes will involve the way in which the law firms create systems and procedures to support and facilitate identification, creation, capture, organization, dissemination, and utilization of information and knowledge to meet the objectives of a law firms. The frequencies at which information and knowledge management programmes are discussed or assessed, as well as the rate at which they are prioritised in law firms can be used to determine the cultural aspects of law firms towards information and knowledge management programmes. These determinants can also have an influence on usage or non-usage of information and knowledge management tools. This means that in law firms where information and knowledge management technologies and activities are always discussed and come top of the agenda in meetings, the lawyers attached to those firms are therefore likely to utilize them.

It has been shown in the previous chapter, however, that most of the law firms, represented by 9 (40%) respondents infrequently discuss information and knowledge management programmes in their meetings. This is the case even in the Law Society to which these law firms are affiliated. Furthermore, it has also been shown that information and knowledge management activities and technologies receive low priority in most of the law firms, as well as in the Law Society to which these law firms are attached. It can therefore be concluded or deduced that there is minimal information and knowledge management culture in most of the law firms in the city of Polokwane.

It the researcher's belief that the ultimate aim of information and knowledge management is to share. If a law firm has a low culture or levels of sharing information and knowledge, it is less likely to succeed. Van der Walt et al., (2004:1-2) wrote that in order to stimulate innovation and create new products and services, attitudes towards sharing information and knowledge need to change. Heather

(2003:3) contends that information sharing refers to ways and means to distribute information and knowledge, and encourage colleagues to share and reuse knowledge in the firm.

An attempt was also made to determine if there is an information and knowledge sharing culture within and among the law firms that were researched. It was found that the law firms that "neither agree nor disagree" with the statement that was formulated were in the majority, represented by 12 (52%) of the respondents. This shows that most of the lawyers do not know where they stand in terms of sharing information with other law firms in the vicinity. This also goes back to the findings revealed by Du Plessis (2004:71) that law firms might be passively or unconsciously practicing information and knowledge management by sharing information.

6.7. Conclusion

The main purpose of this chapter was to interpret and rationalize the results of the research as presented in the previous chapter. It has been found that there are various reasons behind utilization or non-utilization of information technology by lawyers to support information and knowledge management activities. Among some of the reason that have an influence on the usage or non-usage of information technology by law firms in the city of Polokwane were external variables such as age, digital divide, size of law firms, and organizational support; purposes for utilization of computers in law firms; attitudes towards information technology; knowledge and competencies of lawyers with regard to information technology; as well as the culture of law firms towards information and knowledge management activities.

The explanations regarding the usage or non-usage of information technology in law firms is also supported or confirmed by the literature as reported. In general, this research, supported by literature has revealed that lawyers attached to law firms in Polokwane are not optimal users of information technology. The apparent reason for non-utilization of information technology by lawyers might be that they do not have time to concentrate their efforts on information and knowledge management activities. On top of that, lawyers are not information technology experts and do not

perceive usage of information technology as something that can affect their professional success (Moahi & Fombad, 2005: 231).

This research project therefore serves as an attempt to turn the situation around by proposing a model that would encourage lawyers to utilize information technology to support information and knowledge management activities. The proposal of such a model will be done in the next chapter of this research project.

CHAPTER SEVEN

DESIGN OF A MODEL

7.1. Introduction

It has been mentioned at the beginning of this research report that the main aim of this research project is to find out how optimally lawyers attached to law firms in the city of Polokwane in Limpopo Province utilize information technology to support information and knowledge management activities in their daily operations. It has been revealed through the review of literature, the results of the questionnaires and interviews, as well as through the analysis of the contents of law firms' websites, that most of the law firms in the area, generally, do not utilize information technology optimally to support information and knowledge management. This inference was also evidenced by lack of literature on the subject.

This chapter therefore serves as an attempt to turn this situation around. The chapter, therefore, endeavours to suggest an information and knowledge network model which is intended to be utilised collaboratively by lawyers attached to law firms in Polokwane city to support information and knowledge management through the utilization of information technology. An information and knowledge network model, in the form of a Wireless Local Area Network (WLAN) where a remote access technology will allow law firms to connect to a remote server and run some of the applications from single points is suggested.

A typical LAN model, depicted in Figure 7.1 below, will have one computer which is designated as the file server which stores all of the software that controls the network, as well as the software that could be shared by the computers attached to the network. Computers connected to the file server are called the workstations. These workstations can be less powerful than the file server and may have additional software on their hard drives.

However, for the successful design and implementation of such a model, there are four interrelated factors that must be taken into consideration, namely, ICT

infrastructure and connectivity, usable content, collaboration and human capability. These factors have a direct influence on the design and implementation of the information and knowledge network model and they can also be regarded as Key Success Factors in designing information and knowledge network system. Before going into the details of the envisaged model, it is therefore necessary to discuss those factors.

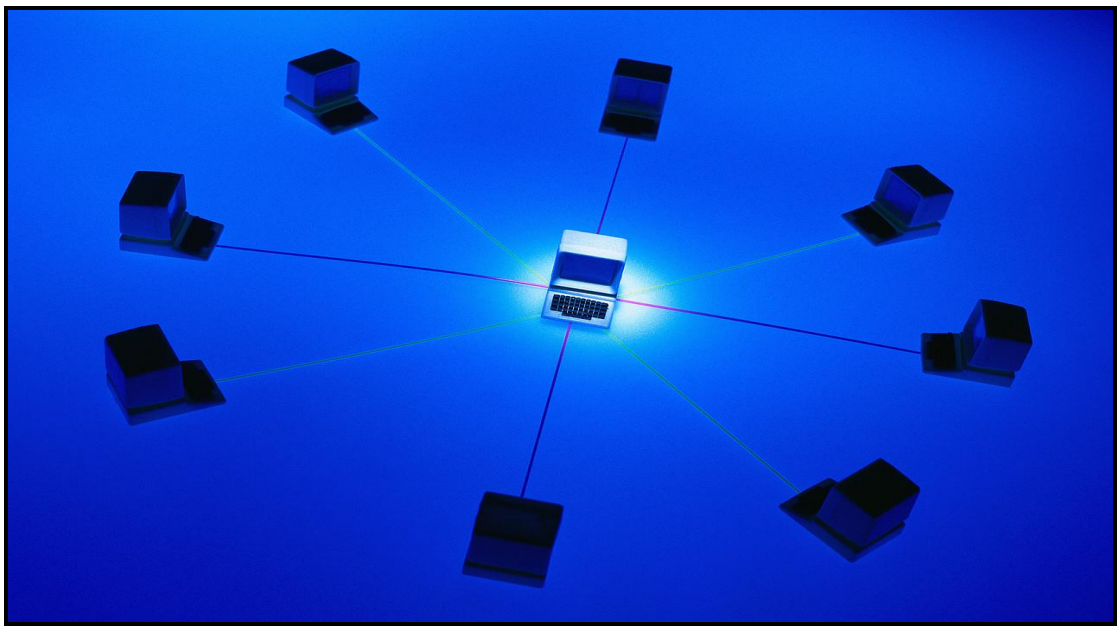


Figure 7.1 Typical Local Area Network model

7.2. ICT and connectivity

Firstly, features like ICT and connectivity can be cited as some of the characteristics that distinguish the Polokwane city from other cities in South Africa. The question that needs to be answered with regard to ICT and connectivity is whether there is any information and communication technology infrastructure in the area to support the implementation of this information and network model. ICT and connectivity, therefore, apply to the telecommunication infrastructure in the city, as well as the legislation and policies that are available in the country to operate computerised networks. These include elements such as telephone lines, bandwidths, how the Internet service providers are structured as well as the telecommunication service providers (Letshela, 1999:175). The implementation of this model therefore depends largely on good telecommunication infrastructure, cheap and fast access to the

internet, affordable computers and appliances, and appropriate legislation. Law firms in Polokwane operate in an environment where the technological infrastructure seems to be moderately advanced, even though there is an apparent conviction that the infrastructure might not be stable. Probably, the bandwidth is also low and just like any other city in South Africa there is a tendency to depend on only one telecommunication service provider, namely Telkom. However, today wireless technology is gaining popularity as the commonly used telecommunication service in South Africa.

With wireless technologies hundreds of buildings can be linked by means of antennae on their roofs instead of laying cables. Buildings of up to 25 km apart can be connected. Other advantages of the wireless technology are that hardware can be moved around and still remain connected. New workstations can be added or removed with ease without interfering with the cables. Maintenance can be performed without the need to dig up cables and guests who are coming to make presentations can also gain access to the network by simply slotting a removable wireless card into their laptops (Ludik, 2005:41). Therefore, numerous organizations today have invested in or are investigating the use of Wireless Local Area Networks because they seem to be inexpensive and easy to deploy and use.

However, Ludik (2005:43-44) states that the ease of use and the inherent nature of wireless communication can result in numerous risks that need to be identified, assessed and addressed. The most prominent of these is the increased security risk. Wireless communication systems use airwaves and the major problem with wireless technologies is the fact that airwaves are not restricted and therefore are available to all. In addition, advances in software and hardware are outpacing security measures that have been put in place to curb unauthorised access. Therefore, when opting for Wireless Local Area Network, electronic documents and data as well as information technology systems should always be protected from unauthorised access. Firewall devices should be put in place between the host server and the users so that users should first use logins and passwords to obtain access to sensitive information, and to control unauthorised access into the system. With these logins and passwords it is possible to count the number of visitors to the server and to determine the content that

is being used frequently. With regard to legislation and policies relating to the regulation of information technology usage, there are some laws and legislation that have been passed by Parliament to comply with. Most these acts stipulate how electronic information must be managed, stored and enforced while doing business electronically. Some of these acts include:

- Electronic Communications and Transactions Act (Act No. 25 of 2002)

To provide for the facilitation and regulation of electronic communications and transactions, to provide for the development of national e-strategy for the Republic; to promote universal access to electronic communications and transactions and the use of electronic transactions by SMME's (Government Gazette No. 23708, 2002: 2).

- Electronic Communication Act (Act No. 36 of 2005)

To promote convergence in the broadcasting, broadcasting signal distribution and telecommunications sectors and to provide the legal framework for convergence of these sectors; to make new provisions for the regulation of electronic communications services, electronic network services and broadcasting services (Government Gazette No. 28743, 2005:2).

- Telecommunications Act (Act No. 103 of 1996)

To make new provisions for the regulation of telecommunication activities other than broadcasting, and for the control of the radio frequency spectrum and for that purpose to establish an independent South African Telecommunications Regulatory Authority and Universal Service Agency (Government Gazette No., 1869:2)

There is also a venture or endeavour by the Department of Public Service and Administration towards e-governance, e-services and e-business policies. E–governance is the application of information technology to intra-governmental operations, including the interaction among central, provincial and local government. E-service is the application of Information Technology to transform the delivery of Public services from standing in line to online: anytime, anywhere, by any means and in interactive mode. E-business is the application of information technology to

operations performed by government in the manner of business to business transactions and other contractual relations (Public Service IT framework, 2001:4).

With these new developments in the picture, law firms are also likely to take these opportunities to have access to information and communication technology infrastructure and connectivity. With regard to legislation about networking and telecommunications, legal professionals are well equipped with information and knowledge of how to make best use of the above-mentioned laws or legislation in order to set up information and knowledge telecommunications networks for themselves.

7.3. Usable content

Secondly, the issue that needs to be taken into consideration is the usability of the information that is intended to be deposited into the information and knowledge network system for law firms. The question that needs to be answered here is whether the informational content that is intended to be deposited into an information and knowledge network or base will be utilized repeatedly by the majority of lawyers and clients in the city.

Usable content therefore applies to the usability of information that is deposited into the network system or knowledge base. Britz et al. (2006:44) point out that the information put on the network or knowledge base should be affordable, timely, relevant, readily assimilated and in the language users can understand. Hasanali (2002:3) maintains that establishing great content involves having processes in place to acquire, manage, validate and deliver relevant information, when and where it is needed. Worley (2006:205) states that, no matter how well one can get a system up and running, it is the content that will make or break it. Usability is not about making the website pretty and attractive, it is about making it easy to use and saving the clients' and employees' time.

In the legal network setting, the information that is intended to be deposited into the information and knowledge network server might include decisions or judgements of the regional court and online information retrieval systems for judgements, legislation

and any other useful information. These are some of the resources that are regarded as the indispensable tools which every lawyer should have and utilize to provide best services to their clients.

Content	Purpose
Background to the Network	To provide users with information about how the network was developed and the objectives of the network
Member information	To provide users with the links to the members of the network
Online Legal databases and CD ROMs	To provide access to legal information such as cases, legislation as well as indexes and abstracts to legal journals, legal textbooks, law office precedents
Client files	To provide access to information by clients about their accounts and any other information that might be useful to the clients, such as frequently asked questions and answers, law firms contact details, law offices locations, standard forms etc.
Links to other useful information	To provide clients and lawyers with any other information that might be useful, such as experiences of other lawyers, contact details of other law firms and Law Societies, other legal information and knowledge networks in the world etc.
Network news and events	Important news to the clients and lawyers

Table 7.1 Contents of the Information and Knowledge network

For lawyers to work effectively, they will always want to know if there are any documents created within the firm that deal with the situation they find themselves faced with (Worley, 2006:200). If there are no documents within the firm that deal with the situation the lawyers find themselves faced with, it is then that they will have to access those documents from the relevant external sources or databases in the form of legislation, cases or regulations. Making such materials readily accessible through the information and knowledge network server is therefore always essential. Beckman and Hirsch (2005:2) state that there is no limit to the substantive content lawyers could put on the Network.

Balogh (1997:6) further advises that the information deposited in an information and knowledge network can be divided in either full-text and indexed systems. The full-text system contains, in the same database, all the necessary data on the Act or judgement and the text of the document. The indexed system contains only data needed to find the documents in paper format. Online information retrieval systems such as CD ROMs can also be mounted on the server of the host site.

This will require a network linkage (wireless) between the host site and the work station(s) of the user(s), that is, the law firms. If there are any changes that need to be made to the information, updating can be done on the host computer. Table 8.1 above, provides a summarised version of the proposed contents and their purposes.

7.4. Collaboration and trust

Thirdly, the other question that needs to be answered is in relation to collaboration and trust among the legal professionals in the area. The questions that need to be answered is whether or not the lawyers attached to law firms in Polokwane are willing to share and exchange information and whether or not there are any platforms that will give confidence to lawyers in the area to exchange information and knowledge. The implementation of the information and knowledge network model will not be possible without cooperation and collaboration between lawyers in different offices throughout the city.

Several authors have stressed the value of collaboration among law firms. Heather (2003:2) stresses that competitive alliances are formed when potential rival law firms come together in a collaborative effort to share information and knowledge. Coleman (1998:16) is also of the same opinion, stating that without solid foundations in the culture and technology for collaboration knowledge management programmes are doomed or will never become successful. Faulconbridge (2007:927) states that one of the principal aims of law firms is to develop structures for cooperative activities. Gottschalk (2000c:119) emphasises that trust seems to be the most dominating facilitator of inter-organizational knowledge exchange and further defines trust as the confidence in the goodwill of the other.

Most of the lawyers in the area are affiliated to the same Law Society, that is, Law Society of South Africa (Northern Province). This Law Society should therefore serve as a good platform for collaboration among the lawyers. The level of participation of law firms in the activities of the Law Society will determine the extent of collaboration between the law firms. Collaboration also depends on the size and geographic spread of an alliance. Law firms that are close to each other are in a good position to form a stronger alliance than those that are far from each other.

Heather (2003: 1) identifies the primary issues that need to be addressed in forming a strong alliance between law firms. These include understanding the aim and purpose of the law firm alliance, identifying and focussing on information and knowledge that is a priority for the alliance and aligning the information and knowledge management tools to the aim and purpose of the alliance. The information and knowledge sharing culture of individual law firms will also influence the application of information and knowledge management elements across the alliance. Fawcett et al. (2007: 360) comment that organizational theory suggests that company culture influences how willing its people are to share information. This is based on the fact that the culture that exists in a law firm that joins the alliance will influence its members' willingness to collaborate and share information and knowledge with other law firms in the alliance or within the surrounding area.

Collaboration and sharing culture is likely to be hindered by the fact that the alliance is formed by competitors (Heather, 2003:2). As a result, many individuals or companies are unwilling to share information that they perceive may place their organization at a competitive disadvantage (Fawcett et al., 2007:359). To alleviate this perception Aviram and Tor (2004:531) suggest that when firms decide on whether to participate in an information sharing alliance, they should first consider their private welfare. This implies that the lawyers should first decide on the type of information they would like to share with other lawyers and information that they would like to maintain as private. Law firms should, therefore, eliminate what is confidential and emphasize what is useful to potential clients.

It is the culture of some organizations that they put in place some financial incentives for members who share their information and knowledge with other law firms in the vicinity. Gurteen (1999:4) suggests that an ideas database should be created and people should be paid for the contributions they make into that database. Lawyers who share their information and knowledge with others, in the form of conferences, seminars, workshops, publishing articles etc., should also be rewarded for their efforts.

7.5. Human capability

Fourthly, there is a question of human capabilities to utilize the information and knowledge network system. This involves the ability and level of computer usage among the legal community to optimally utilize the proposed information and knowledge network or base. Whatever the actual investment in intranets, there is little to no return on that investment if it is not used at all or there is lack of expertise to use it effectively (DiMattia, 2002:42).

This research revealed that most of the lawyers attached to law firms in the city seem to be non-users of information technology. The use of computers to load information and knowledge, as well as to search information from information and knowledge network would probably be a first time experience to most of the lawyers. The interface adopted for this model should therefore be simple in such a way that it can be used easily to encourage usage. Hasanali (2002:3) cautions that if it takes more than three clicks to find information and knowledge on the system, users will get frustrated. The researcher proposes the appointment of a full-time information and knowledge management specialist. This person would ensure that lawyers in the area are trained to use the system. Other duties of the full-time information and knowledge management specialist would be website design and management, as well as to attend to technical problems that the LAN may encounter, and to advise and update the lawyers in the area with hardware and software developments in the legal profession.

To reward this person, law firms could contribute a certain percentage of the money, which would as well be used for the maintenance of the network and for the subscription to databases. This will, to a large extent assist small law firms who are

unable to subscribe to databases on their own. The databases to subscribe to should include those that cover broader subjects, so that other users from the communities could be charged a minimal fee for using the services of the network (Letshela, 1999:185). Electronic learning programmes could also be loaded onto the system server to allow lawyers and other users to learn information technology skills on their own.

7.6. The model

The main purpose of this research project is to propose or suggest a possible information and knowledge network model for law firms. An information and knowledge network can be defined as a group of persons and activities that co-operate and exchange information (Gottschalk, 2000c:119). A Local Area Network (LAN) model is suggested for the purpose of this research project. A LAN is a computer network covering a small geographic area, like a home, office, or group of buildings. In this work a network covering a group of buildings is suggested.

The suggested model can use Wireless Local Area Network (WLAN). A WLAN is a local area network linking two or more computers without using wires. Communication between two or more computers takes place through radio air waves. On the other hand, there is a wired LAN is a network that links computers or devices through the cables or wires. However, wired LAN can only be possible in the same building. The researcher, therefore, opts for a wireless Local Area Network because it is the most commonly used today and it is less expensive than the wired Local Area Network

The proposed information and knowledge network model appears to be cheaper because the software only needs to be installed on one application server instead of each workstation, the software is configured in the same way, upgrading of software only needs to be done on the server and the costs of licensing software for an applications server are less than the cost of many stand-alone versions. This network will also provide opportunities for members of an alliance to consult with their peers regarding issues facing the legal profession. Therefore, the networked information and communication system provides partners in the network to directly communicate and

share information and knowledge with each other. The setting will therefore be in such a way that the users (clients and law firms) are linked to a host computer or server where they will be able to access information from a remote location or alternatively, through wireless technologies that will enable communication between computers in the area. The suggested model includes establishing a seamless technology network that provides lawyers operating in the city with the same access to documents such as standard forms, e-mail, databases with cases, legislation, journal articles, law office precedents etc and other types of information sources.

It is also suggested that each document or information deposited into the network for other lawyers to use, should have a short outline of what it is about, that is, an abstract, because a lawyer needs to know at first glance why the document they received is good and how it could be relevant to their situation. In addition, Gottschalk (2000c:120) affirms that one advantage of information and knowledge networks among law firms is that they share a common language and that law firms should be motivated to join forces by the increase in cross-border business, and that networks help law firms go global.

The strategic and carefully developed information and knowledge network would probably offer clients remote access to their files, but with carefully constructed firewalls so that only authorised clients are able to have access to their files in the system. Standard forms for clients and frequently asked questions and answers, could be put on an intranet or extranet for all law firms operating in Polokwane city and be accessible to clients via the internet.

Bosse (2004:2) also admits that clients' expectations could be met through the law firm's website where they could log on to their personal portfolio and within such environments have access to information such as the status of their matters, their account balances, manuals and calendars. This will, however, require carefully constructed information security procedures. The law firms will have to decide which documents they regard as confidential so that they should not deposit them on the system for security reasons. The law firms could even come together and decide on a policy about the usage of the network system.

Other information that can be put on the website for the benefit of both clients and lawyers is the information relating to attorney biographies, practice descriptions or specialities, and client success stories. The law firms will have to decide for how long such type of information should be on the website before it is removed or archived. This will save clients considerable time and money because they can access the information themselves without having to call their lawyers or to go directly to their offices (Asner, 2006:2-3). Aresty (2005:1-2) highlights that law firms elsewhere have began to redefine their legal service, by putting up websites with tremendous amounts of free legal information for the benefit of their clients. This is very easy to do since much legal information is already available in digital format.

According to the model as illustrated in Figure 9.2 below, the lawyers gather information from clients, in-house precedents, statutes, cases, witnesses, and legal databases, and from other lawyers in the form of discussion groups etc. This information is then processed and converted into knowledge that lawyers use to solve clients' problems, and then broadcast to others in the form of letters (to clients), briefs, court arguments, meetings, invoices etc. Some of the information generated is deposited back into the server for the clients and other lawyers to utilize. This means that law firms would also be allowed to mount their content onto the network, which clients and other lawyers would have to search to find information and knowledge that they need. This model should, therefore, be viewed as an attempt to create a platform where lawyers and clients could generate, organise, access, retrieve, and share information and knowledge.

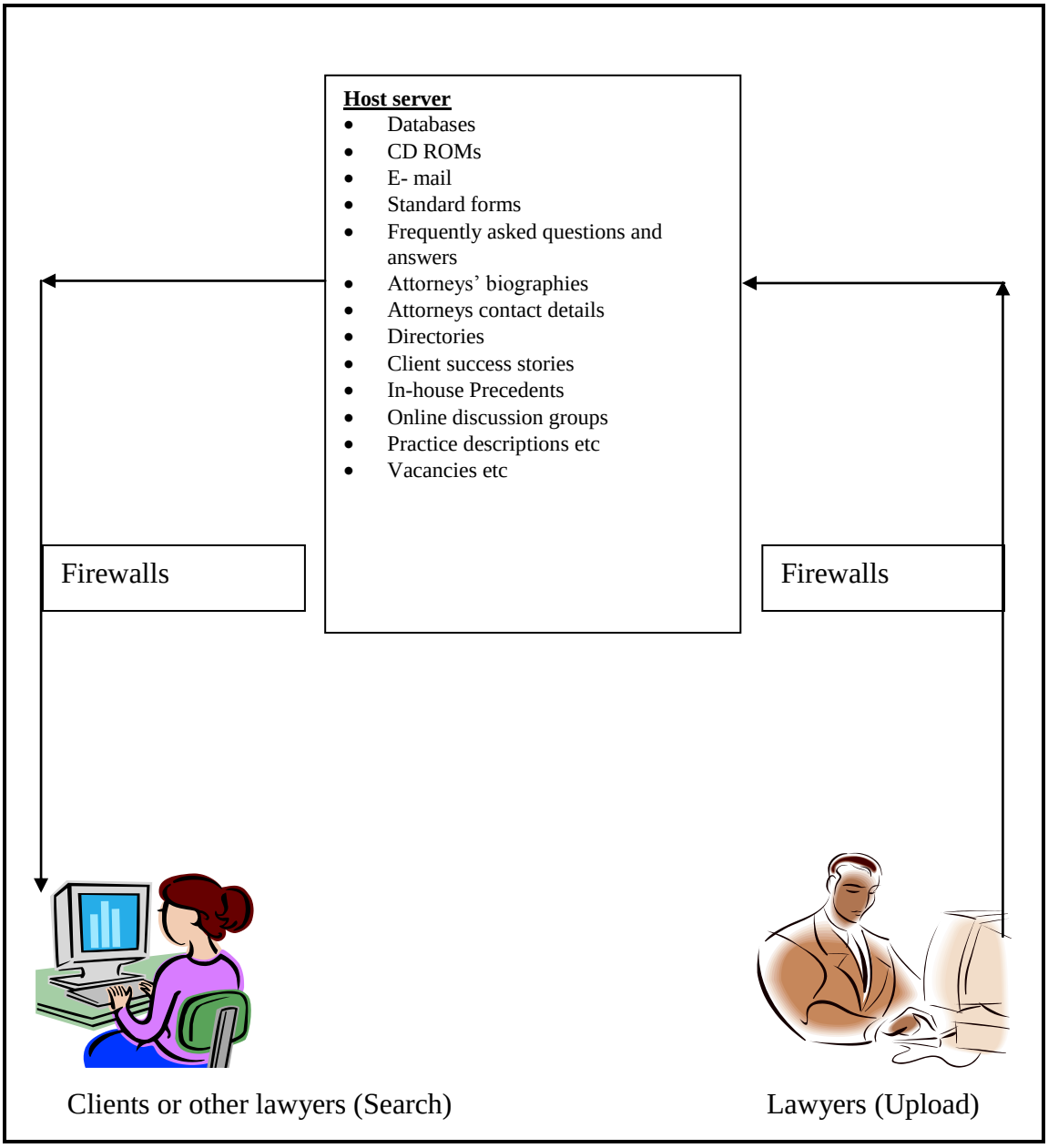


Figure 7.2: Proposed information and knowledge LAN model

The key problem associated with LAN is that technical problems of the hard drive can sometimes render the entire system inoperable, more especially during downtime. Although a network will generally save money over time, the initial cost of installation can be expensive as it may require the services of a technician. Proper maintenance of the network also requires time and expertise. Training of the employees who have to utilize the network should also be taken into consideration.

7.7. Conclusion

In conclusion, the design and implementation of the information and knowledge network model for law firms is a huge task even if there is a good telecommunications infrastructure; cheap and fast access to the Internet; and affordable computers and appliances and appropriate legislation in place. It requires strategic planning and coordination, development of IT skills for lawyers, good customer relationship management and marketing. It is, therefore, important to put in place a policy framework which spells out the information and knowledge network vision and mission, clearly define how progress is to be measured and set priorities by identifying focus areas for immediate attention.

Feature	Proposal
Location	Polokwane city
Purpose	Serve as a platform for lawyers to access information and share information and knowledge amongst themselves and to provide for access to information by clients or the public.
Members	All lawyers operating in Polokwane city and their clients
Security of information	Clients and lawyers to be provided with logins and passwords
Contents	Home page, Databases, CD ROMs, forthcoming events, Standard forms, newsroom, Public resources, Frequently asked questions and answers, Attorneys' biographies, Attorneys contact details, Directories, Client success stories, Online discussion groups, Practice descriptions , Vacancies etc
Staffing	Network administrator or Information and knowledge management specialist
Funding	Lawyers to contribute a certain percentage money towards the maintenance of the network
Connectivity	Wireless connection is proposed

Table 7.2 Summarised I & KM Network Model

A summarised version of the suggested information and knowledge network model is provided in Table 7.1 above.

CHAPTER EIGHT

SUMMARY, CONCLUSION AND RECOMMENDATIONS

8.1. Introduction

This study was carried out to investigate the extent to which lawyers attached to law firms in the city of Polokwane utilize information technology to support information and knowledge management in their daily operations. In order to provide for an empirical foundation for this study, questionnaires, interviews, and content analysis of websites were employed as data collection methods. An in-depth literature review and study on utilization of information technology to support information and knowledge management in law firms were also conducted to collect more information about the topic.

The purpose of this chapter is to provide some concluding remarks to this study. In order to provide the reader with the essence of this research, a brief summary of each chapter in the research report is presented, followed by final discussion of the conclusions and inferences that have been arrived at, and then the recommendations and suggestions on the basis of the findings that were revealed in the investigation. Since there is an apparent lack of literature with regard to the utilization of information technology to support information and knowledge management in law firms in the country (South Africa), some recommendations and suggestions on future research with regard to this topic are also provided at the end of this research report.

8.2. Summary

The first chapter served as an attempt to introduce the reader to the topic of this study. Background information, statement of the problem, aim of the study, research question, objectives of the study, as well as the scope or delimitation of the study were introduced in Chapter One of the study. The general assumption for the study; a theoretical background on which this research project is based; and data collection methods that were adopted in this research project, were also briefly introduced in the same chapter.

Conceptual analysis is one of the most prominent approaches to study a phenomenon. Chapter Two, therefore, attempted to analyse the key concepts or terms that frequently appear in the research project, namely, law firm, knowledge and knowledge management, information and information management, as well as information technology. The main purpose of analysing these terms was mainly to provide working definitions for these key concepts or terms, that is, for the purpose of this research project. The interrelationships between these concepts were also provided in Chapter Two of the research project.

The analysis of concepts was followed by a review of literature on information and knowledge management in law firms in the same chapter. Since the purpose of this study was to investigate about the utilization information technology or tools, it was therefore, also necessary to focus attention on the role of information and knowledge management in law firms, as well as the features of information and knowledge management tools. Information and knowledge management tools such as case management systems, research tools, web portals, intranets, e-mail etc were discussed. A discussion of how well these tools are utilised in law firms to support information and knowledge management was covered in Chapter Two of this research project.

Chapter Two also provided the review of literature from researches that were conducted in the past, with regard to the utilization of information technology by law firms to support information and knowledge management. This review of literature was conducted internationally, regionally and locally. The chapter presented a comprehensive discussion of the literature explaining the findings from the previous studies on the topic. The purpose of explaining the previous findings was to enable the researcher to relate these findings to the results that were revealed at the end of the current study. This was also done to provide a yardstick against which the utilization of information technology to support information and knowledge management in Polokwane law firms could be measured.

Chapter Three presented some theoretical frameworks on which this research project is based. Theories concerning adoption of information technology, namely, Theory of

Reasoned Behaviour, Theory of Planned Behaviour, Technology Acceptance Model and diffusion of innovations theory were explained in the same Chapter Three of the study. Technology Acceptance Model, which explained the interaction between people and information technology and how well external variables and beliefs serve to lead to intentions that in turn generate behaviours to use or not to use information technology, was chosen as the theoretical background on which this research project is based.

The next step towards determining the extent to which law firms in the city utilize information technology to support information and knowledge management was to discuss the research approaches that were adopted in this research project. Chapter Four, therefore, presented a detailed discussion of the research techniques as well as the steps that were adopted by the researcher to collect data and information. The research approaches that were used in this research project are quantitative in a form of a questionnaire and qualitative in the form of interviews and content analysis of websites. The area for the study, and the characteristics of the population for the study were also described in this chapter.

The presentation of the results of the study in the forms of tables, graphs and pies was covered in Chapter Five of the research report. The presentation of the results of the questionnaire comes first, followed by the presentations of the findings from the interviews and the presentation of findings from content analysis of websites comes last. Following the presentation of the results, the researcher attempted to find the reasons behind those results by interpreting the findings in Chapter Six of the research project.

In Chapter Seven of the research report, the researcher attempted to design an information and knowledge Local Area Network model for law firms in Polokwane. An information and knowledge network, where lawyers in the city could deposit information and knowledge that they could share with their clients and other lawyers respectively was suggested. Chapter Eight of this study attempts to come up with conclusions and recommendations.

8.3. Conclusions

This study attempted to confirm the preposition that there are limiting factors that contribute towards the non-utilization of information technology by lawyers in Polokwane city. It was found that those factors that are perceived to be hindering the usage of information technology by people in general are also applicable to the lawyers attached to the law firms in the area. Those factors include variables such as digital divide, generation gap, law firm size, previous experience and training, as well as organizational support. The Technology Acceptance Model, on which this research project is based, also cites these factors as the external variables that influence the usage or non-usage of information technology, not only in law firms, but in other industries as well.

Some explanations on how these factors influence the usage or non-usage of information technology were provided in Chapter Six of this research project. For instance, it was mentioned that lawyers attached to law firms in the city appear to be non-users of information technology not only because of ignorance, but because most of them probably grew up in rural areas surrounding the city, where they were not exposed to computers at their early ages. Most lawyers seem to have studied their legal degrees a long time ago, in an educational environment whereby information technology skills were not part of the curriculum, and consequently they did not acquire those skills that are required from them when they assume responsibility as legal professionals.

It has also been established that most law firms are very small in size and appear to be serving non-computer literate clients. Subsequently, they are not being pressurised to resort to information technology applications in order to serve those clients. The other hindering factor contributing towards the non-utilization of information technology by lawyers attached to law firms in Polokwane is the unavailability information and knowledge management tools in those law firms. If there were some tools designed for information and management activities in the law firms, then there would be likelihood that the members of those law firms would utilize them. This, however, would depend much but on whether they are being encouraged to utilize those tools and are provided with necessary support in the form of training on information

technology skills. It was also established in this research report that lawyers utilise information technology systems or applications that appear to be common, such as word processing, e-mail, searching legal information and client billing. The results of the questionnaires showed that these applications are used by the lawyers themselves, whereas the results of the interviews showed that these applications are being used by the secretaries and other support staff, but on behalf of the lawyers. According to the researcher, this contradiction might be resulting from the fact that there are possibly confidential documents that lawyers are forced to type, process or e-mail on their own, and other documents that are not confidential, that are being typed, processed or e-mailed by secretaries or support staff.

With regard to the theoretical background on which this research project is based, these applications are probably perceived by lawyers as the most useful applications in every law firm. Information and knowledge management tools, such as Intranets, extranets and web portals, appear not to be used by law firms in the area. The main reason for not utilizing such systems seems to be unfamiliarity with web technologies. Even though there are law firms that have established their presence on the Internet, they appear not to be using the Internet optimally, like establishing Intranets, extranets and Portals for other lawyers and for their clients. They only seem to be using their internet presence only for marketing purposes. Those that have access to the Internet, they utilize it for e-mail and information searching purposes. Their information searching performances using the Internet might be slowed down by the fact that they appear not have adequate skills to search for information from the Internet.

The attitudes of lawyers towards application of information technology in law firms appear to be positive. The only problem that seems to be holding them back from exposing their positive attitudes towards information technology is their probable unfamiliarity with most of the applications that are used for information and knowledge management activities in law firms. This was obvious when the lawyers who responded to the questionnaire were asked to indicate the extent to which they are familiar with some information technology applications and concepts.

Generally, this research project revealed a picture of a profession that appears to be very much behind in as far as utilization of information technology to support information and knowledge management is concerned. This is especially so when they are compared to legal professionals attached to other cities in South Africa, such as Pretoria and Johannesburg, who have collaboratively established their Internet presence. The situation becomes even worse when the legal professionals are generally compared to other professions, such as health and insurance industries, in information technology utilization. Granat (1998:7) affirms lawyers have fallen far much behind other professions and businesses in society with regard to the utilization of information technology.

Therefore, according to the researcher's observation, borne out of the findings of this research project, the legal professionals in the city of Polokwane appear not to have time to probe into the benefits or investments of utilizing information technology in their practices. They are still in the nineties when attorneys used computers as word processors and to run accounting packages. To most of the lawyers in the area, having a personal computer on one's desk and for their secretaries, and being connected to the Internet to be able to send and receive e-mails and to search information, is more than sufficient. There is an apparent lack of awareness on the importance of information and knowledge that they generate in their daily contact with clients. Their reactions to clients' problems seem to be instinctive and spontaneous as Du Plessis (2004:71) discovered, and they seem not to rely much on the precedents when they are faced clients' problems.

The results of this study also give an impression that most of the lawyers in the area still counsel clients on one-to-one basis; negotiate and mediate disputes in face-to-face meetings; draft legal documents and then pass those documents to their secretaries to type; and search law information from law books located in their offices or libraries. It is therefore precise to state that lawyers are still at the beginning of a transition period from print to electronic technology. The legal profession in the city is almost certainly an enterprise at its infancy in moving from print technology to electronic technology.

Law firms will optimally utilize information technology to support information and knowledge management only when they change their perception of how they think about the role of the profession and its correlation to information and knowledge. Good law firms are likely to become more common when more lawyers understand the power of information and knowledge management tools. There is, therefore, some anticipation that younger lawyers graduating from legal schools today are and will be more technologically adept. A minimum level of computer literacy is already possessed by most of these younger lawyers or students who are graduating from law schools. Probably most of them have personal computers and seem to be more comfortable in using computer applications such as word processing, spreadsheet and PowerPoint and mostly seem to be more comfortable in using the internet for e-mail both in class and to communicate with friends and relatives. It is, therefore, envisaged that the utilization of information technology by younger lawyers graduating from law schools today will improve.

8.4. Recommendations

The recommendations mentioned below may address some of the problems related to the non-usage of information technology by law firms to support information and knowledge management in the city. These recommendations would also strengthen the process of designing and developing an information and knowledge network model for law firms in the city that was suggested in the previous chapter.

8.14.1. Legal education

The legal education system should include in the curriculum a course on the role of information technology in the legal practice. Several legal practice textbooks that also cover the role of information technology in law have been published, but it seems the legal schools and educators are not interested in the topic. What the legal schools and educators are interested in more than the role of information technology in legal education is only the legal content. Most law schools appear to offer little formal technology skills training. It is, therefore, recommended that introductory legal writing classes should teach students to use information technology and its role in the legal practice. Legal students should also be taught how to conduct computerised legal research, by using a “paper first” approach. This implies that students should

first be taught to use print materials, for example, printed indexes and abstracts, legal encyclopaedias and other reference works, and then be introduced to computerised systems only after they have mastered the paper-based system. Whitt (2001:2) states that in order to provide competent legal services, lawyers will have to re-learn new skills and acquire new knowledge that has been absent from the legal curricular of the traditional law schools. Fombad and Moahi (2005: 232) are also of the same opinion and they recommend that the legal education system should play a key role in enabling lawyers to appreciate the importance of information technology.

Therefore, law students should be taught about the use of computers in legal practice and how to do their own simple word-processing so that they should be able to type letters and memorandums on their own. They should also have knowledge on how to use the Internet for legal research purposes and have familiarity with some case management systems and calendaring software. Legal practitioners ought to be aware of the ability to use the Internet for a wide range legal research.

However, Law School training should not be limited to learning computerised legal research or basic word-processing skills only. Law students should learn about key elements of technology that may shape their future careers. They must learn also about advanced electronic information retrieval and electronic communications skills. An electronic information retrieval skill is a broader concept than understanding how to find a particular case or legislation from Juta or Butterworths. The lawyers should also understand that the legal world consists of a set of databases, both within and outside the law firm. They should be able to understand that these databases contain information on clients and prospective clients, cases, documents and previous firm's work products, attorneys within the firm and in other firms, judges and courts, internal and external financial information (Granat, 1998:9).

Another critical skill that lawyers should learn is to understand how to communicate electronically. Communication is the heart of the legal enterprise. Lawyers communicate to other lawyers, to clients, to courts and agencies. Knowing how to use the electronic communication tools is also a broader idea than simply knowing how to use an e-mail, although this is regarded as the starting point. Knowing how to

communicate electronically includes skills such as knowing how and when to use e-mail; how to set up facilities so that clients can provide feedback to the firm on client services; using telecommunications to cement relationships with clients by providing electronic notice of events; and marketing the firms' services through electronic means to attract new clients (Granat, 1998:9).

It is, therefore, also recommended that the law schools should also maintain good relationships or liaise with the information studies, computer science, and library departments in tertiary institutions so that law students should be offered some lessons on advanced electronic information retrieval skills. Cross-disciplinary or joint law/computer science programmes permitting the interaction between law students and computer science students might also be useful. Internship programmes for new legal graduates should also be introduced in law firms. The nature of law as information and knowledge intensive industry as well as the role of information and knowledge management in law firms should also be emphasised to students. In this sense, lawyers should learn about the essential value of collaboration and networking.

8.4.2. Training

It is also central that all lawyers who are already in the profession that their computer skills are developed on a continuous basis. Bosse (2004:2) believes that when a business has well trained, informed and happy employees, productivity, efficiency and effectiveness are unparalleled. Law firms should therefore move away from the perception of employees as a cost item on the income statement and rather view them as an asset on the balance sheet. Buys (2000b:1) also cautions that managing partners in law firms should not employ new personnel without adequate training in the use of both hardware and software, and goes on to mention that they should not introduce new hardware or software without sufficient training for current personnel.

In-house training should be provided by other lawyers who are experienced. Training should also be provided by outside companies that deal with training on the use of information technology. In order to develop information technology skills of fee-earners, law firms could also rely on the Internet training manuals and training programmes such as:

- Intoweb at http://www.intoweb.co.za/et-training-it-regional.html
- Verhoef training at http://www.verhoef.co.za/
- The State Information Technology Agency at http://www.sita.co.za/
- LR group: http://www.lrg.co.za/ etc

Seminars, workshops, and conferences should also be organized by law firms in the area to show one another the techniques that they use with various software and hardware. It is important that every law firm should participate in these activities. Law firms should also establish links with the Law Society to which they are affiliated so that the Law Society could organise computer seminars, workshops and some courses in basic and advanced computer skills for lawyers. Law firms should also start forming discussion groups among themselves, so that they should be able to allow for an interchange of information and ideas between practitioners. Updating oneself with information technology magazines and newsletters is also useful.

8.4.3. Information technology strategic planning

Information technology is a major investment for any law firm. In order to make the best use of that investment, law firms should prepare an information technology plan against which the expenditures and results will be measured. The main purpose of the information technology strategic plan is to support the short term and long term plans of the law firm. The technology resources that the law firm should invest in should always be guided by the factors such as the number of offices, lawyers and support staff, legal practices and the volume of the business for the next few years (Buys, 2000b:1).

Buys (2000b: 1-2) recommends that information technology strategic plan for a law firm should include the following:

- A description and assessment of the firm's current information technology resources;

- A description of how current resources must be enhanced during the life plan and the realistic benefits expected from such enhancements;
- Major issues that the law firm will need to address in the short term such as what level of computerization to provide to lawyers;
- An analysis of procedures that must be developed, including a administrative , decision-making and budgetary procedures;
- Projected user training requirements; and
- Disaster avoidance and recovery plan.

Buys (2000b:2) goes on to recommend that a five-year plan is most useful to most firms because it is realistic useful life of technology investments from both functional and accounting point of view. Once the information technology plan is approved and implemented, firms should make a thorough assessment of information technology strength and weaknesses to maintain the plan. Continuous evaluation should also be conducted to measure how ell the firm's information technology plan support their areas.

Schlein (2003:1-3) suggests that law firms should plan for at least three or four years cycle because Microsoft has a three-year life cycle for each version of Windows, which means that after three years, Microsoft ends consumers' ability to purchase the current version of its operating systems on new computers. Upgrading to the next version is simpler and less expensive than holding back and being forced to upgrade several versions at once. Schlein (2003:1-3) further suggests that the information technology strategic plan should also take into cognisance different types of disasters that can occur and develop strategies for each. Backups enable a law firm to restore data to its condition before the catastrophe, and off-side backups can save the law firm data and information in case something happens to the building or office. Floods, fires, theft, sabotage by fired or disgruntled employees are some of the most important reason for having regular, reliable and off-site contingency plans such as off-site backups (Schlein, 2003:1-3).

8.4.4. IT consultants

Law firms that employ the services to the technical expert to assist them in the adoption of information technology and its use in their law firm should select a reputable dealer and negotiate very specific contractual arrangements with that dealer. Factors such as expertise of the system being used, proximity to the law firm offices, and the availability of back up at short notice should be taken into consideration. Law firms should scrutinise the profile of the dealer and take the trouble to call other people that expert has dealt with to find more about the reputation of the dealer. It is also recommended that people responsible for information technology in the firm should operate an in-house help-line whereby secretaries and other personnel in the firm could get immediate assistance if required.

8.4.5. Implementation of the model

It is also suggested that law firms operating in Polokwane city should consider adopting the suggested model carefully. If law firms opt for the model that has been proposed, it is recommended that the model should be launched to determine its usability after it would have been implemented. This will also allow for flexibility of the Network as well as coming up with contingency plans should the network experience problems. Policies with regard to the usage and gaining access to the network should also be developed before it is implemented.

8.5. Recommendations for future research

This study attempted to investigate the utilization of information technology in general by law firms to support information and knowledge management. Future studies that are more specific could therefore be conducted, for example, on the usage of the Internet resources such as intranets or web portals, to support information and other knowledge management tools in law firms in South Africa. For example, the attitudes of lawyers towards the internet and other knowledge management tools in South Africa could also be investigated.

The utilization of information technology in law firms operating in the city of Polokwane might also not be the same as the usage of information technology by law

firms operating in other cities of South Africa, such as Johannesburg and Pretoria. Future research could therefore also be conducted in other cities.

This study also concentrated more on lawyers or attorneys who are operating in private law firms. Future research could therefore also be conducted on the usage of information technology by lawyers operating in public institutions like government departments and non-governmental institutions. Some comparisons with regard to the utilization of information technology by lawyers in the private practices, as against those in the public institutions, could also be made. The legal professionals could also be compared with other professionals in as far as the utilization of information technology is concerned.

Developments in information technology are also not static. New information and knowledge management tools that are web-based are being developed and thus replacing technology applications built and installed on-site. Future research could also be conducted on how law firms utilize these web-based technologies to support information and knowledge management. In addition, today the knowledge-intensive industries are living in an era of new information and knowledge management tools like wikkis and blogs. Wikkis are communally created web pages while blogs are personal based web pages. Future research could therefore also be conducted on how these tools could be used in law firms to share information and knowledge.

This research did not cover the utilization of information technology in court proceedings. Therefore, future research could also be conducted on the utilization of information technology by attorneys, not only in their law firms but also in the court room. These type of researches will, at the same time, enhance the government or the Department of Justice's e-justice programme, that supports the fundamental reforms necessary to establish a more fair, accessible and efficient justice system in South Africa.

This study was based on only one model theoretical background; viz., Technology Acceptance Model. Other studies could still be conducted, based on other models or a combination of all models. This study did not take into cognisance the usage of

information technology by the lawyers belonging to the other group, referred to as the technologically advantaged. The researcher felt that investigating the usage of information technology along racial lines is sensitive. Future research is, therefore, also recommended on the usage of information technology among lawyers belonging to different racial groups so as to find out if there are any prevailing differences.

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Appendixes

Appendix 1

Questionnaire on Usage of Information Technology in law firms

Dear Sir/ madam

This questionnaire serves to survey the usage of information and communications technologies to support information and knowledge management by law firms in the Limpopo Province. Your law firm has also been selected to participate in the survey. You are therefore cordially requested to answer the following questions and seal the completed questionnaire in the envelope provided, AND address the envelope to Mr S.T. Bopape (Univ. of Limpopo Library). The person who delivered the questionnaire will come and fetch it on any day between 11th and 22nd September 2006.

Thanking you in anticipation.

S.T. Bopape

Please read the questions carefully. Be sincere and open. Confidentiality is guaranteed in that you don't have to write your name on the questionnaire. This is to be completed by one attorney (lawyer) in each law firm

Section A: About yourself and the law firm / office.

Please put a cross inside the box that describes your response.

1. In what type of settlement did you grow up? Please choose one.

1	City/Large town	
2	Rural village	
3	Urban Village	
4	Other(Specify below)	

2. How old are you? Please choose a range to which you belong

1	Below 25	
2	Between 26 - 35	
3	Between 36 - 45	
4	Between 46 - 55	
5	Between 56 - 65	
6	Above 66	

3. During which period did you qualify as a lawyer?

1	Before 1970	
2	Between 1971 - 1980	
3	Between 1981 - 1990	
4	Between 1991 - 2000	
5	Between 2001 - 2004	
6	After 2004	

4. How many Lawyers (partners) are working in your law firm / office? Please tick appropriate range.

1	Between 1 – 5	
2	Between 6 – 10	
3	More than 11	
4	Unsure	

5. Does your law firm have any branches?
6.

1	Yes	
2	No	

7. In what type of organisation are you practising as a lawyer?

1	Private practice	
2	Legal Aid Board	
3	Company	
4	Other (Specify below)	

Do you have the following positions in your law firm /office? Please tick "YES" or "NO" for every item.

	Position	Yes	No
1	Librarian		
2	Information officer		
3	Knowledge manager		
4	Administrative (support) staff		
5	Information technology officer		

8. Did you receive any computer training at…? Please tick "YES" or "NO" for every item

		Yes	No
1	School		
2	University		
3	Computer school		
4	In service/on the job		
5	Never		
6	Other (Specify below)		

Section B: About usage of computers in the firm / office

9. Do you agree or disagree with the following purposes for usage of the computers in your firm / office?

		Yes	No
1	For word processing (typing documents)		
2	For research (Through the Internet)		
3	For research (Through the CD ROMs)		
4	For Billing (Client accounts)		
5	For Case Management		
6	For E - Mail		
7	For Intranets		
8	For Portals		

10. How often do you use a computer to do the following? Please the following scale>

1. = Never
2. = Seldom
3. = Sometimes
4. = Often
5. = Almost always

		1	2	3	4	5
1	To type documents					
2	To search Information					
3	Client billing					
4	Update our website and intranet					
5	E- mail communication					

11. Do you have the following computer systems in your firm? Please tick "YES" or "NO" or "UNSURE" for every item.

	System used	Yes	No	Unsure
1	Systems for managing records or documents			
2	Systems for managing expert knowledge			
3	Systems for managing client cases			
4	Systems for searching legal information (Internet & CD Roms)			
5	Systems for communicating information (E- mail)			

12. Do you have access to the Internet in your law firm / office? Please tick "YES" or "NO"

1	Yes	
2	No	

13. If YES, for what purpose are you using the Internet? Please tick "YES" or "NO" for every item.

		Yes	No
1	No Internet in our firm		
2	Research		
3	Marketing the firm		
4	Accessing databases		
5	E – mail		
6	Corporate website		
7	Intranet		
8	Not sure		

Section C: About your attitude towards computers in the law firm

14. What degree of importance do you attach to the use of computers in law firms? Please choose 1 item by putting a cross inside the box that describes your response.

1	Not important at all	
2	Not important	
3	Not sure	
4	Important	
5	Very important	

15. What are your thoughts about the following statements on the importance of computers in your firm? Please put a cross inside the box that describes your response using the following scale:
1 = Strongly disagree
2 = disagree
3 = Not sure
4 = Agree
5 = Strongly agree

	Statement	1	2	3	4	5
1	Computers improve channels of communication in the firm					
2	Computers play an important role in Information & knowledge management					
3	Computers improve customer satisfaction in the firm					
4	Computers improve quality of service in the firm					
5	Computers save time for the law firm					
6	Computers create effectiveness and efficiency in the firm					
7	Computers are a major investment for any law firm					

16. What are your personal feelings about the ideas expressed below? Use the following scale:

1. = Strongly disagree
2. = Disagree
3. = Not sure
4 = Agree
5. = Strongly agree

	Expression	1	2	3	4	5
1	I feel anxious whenever I am using computers					
2	I am confident in my ability to use computers					
3	I feel tense whenever I am working on a computer					
4	I try to avoid using computers whenever possible					
5	I feel relaxed when I am working on a computer					
6	I am frightened by computers					
7	I feel overwhelmed when I am working on a computer					
8	I am comfortable with computers					
9	I feel at ease with computers					
10	I wish computers were not as important as they are					
11	I need training on the use of computers in law					

17. Please choose one statement with which you agree most

	Statements	
1	I cannot use a computer at all	
2	I do not feel confident about my computer skills	
3	I have enough computer skills just to go by	
4	I am totally proficient with computer skills	

18. Do you agree or disagree with the following statements about the reason for non-usage of computers by lawyers? Use the following scale:

1 = Strongly disagree
2 = Disagree
3 = Not sure
4 = Agree
5 = Strongly Disagree

		1	2	3	4	5
1	Lawyers don't have access to computers					
2	Lawyers don't need computers in the work they do					
3	Lawyers don't know how to use computers					
4	Computers are only used by support staff & secretaries in law firms					
5	Lawyers are not sure of the efficiency of computers					
6	Lawyers don't have time to use computers					
7	Lawyers don't have staff to manage computers					
8	lawyers need training on the use of computers in law firms					

Section D: About your knowledge of information technology concepts and applications

Please put a cross inside the box that describes your response.

19. To what extent do you know about the following information technology concepts and applications? Please use the following scale:
1 = to no extent at all
2. = to no extent
3. = to some extent
4. = to a large extent
5. = to a very large extent

	Application	1	2	3	4	5
1	Spreadsheet					
2	Word processing					
3	E – mail					
4	Intranets					
5	PowerPoint					
6	Internet					
7	Billing Software					
8	Online searching					
9	CD Roms					
10	Case management					

Section E: About information and knowledge management technologies in your law firm/ office

Please put a cross besides the description that mostly fits you and your law firm / office/ law society.

20. How frequent are Information and knowledge management technologies discussed or assessed in your firm / office / law society? Please choose one by putting a cross inside the box that matches your response.

1	Never	
2	Seldom	
3	Infrequent	
4	Frequent	
5	Almost always	

21. Information and knowledge management technologies have the following priority in our law firm / office/ law society. Please choose one by putting a cross inside the box that matches your response.

	Priority	
1	First priority	
2	Second priority	
3	Third priority	
4	Fourth priority	
5	None of the above	

22. Information and knowledge management is on the agenda in our law firm / office/law society. Please choose one by putting a cross inside the box that matches your response.

	Frequency	
1	Everyday	
2	Every week	
3	Every month	
4	Every year	
5	Every meeting	
6	None of the above	

23. Sharing information and knowledge with other law firms in the vicinity electronically is part of our firm's culture. Choose only one with which you agree most, by putting a cross inside the box that matches your response.

1	Strongly disagree	
2	Disagree	
3	Neither agree nor disagree	
4	Agree	
5	Strongly agree	

Thank you very much for your participation.

Appendix 2: List of interview questions

1. In what type of environment did you grow up as a child? Rural, Urban, or city?
2. What is your age?
3. In what year did you complete your legal degree/ studies?
4. Does your law firm comprise of branches? If yes, how many?
5. Do you have any electronic case management system that you use in your firm? If yes, what kind of electronic case management system do you use
6. Do you have any employees responsible for computer related tasks in your firm?
7. Who is responsible for the purchasing, organization, maintenance and distribution of legal materials (books, statutes, casebooks, journals etc.) in your firm?
8. Who types documents that you draft in your firm?
9. For what purpose do you use computers in your firm? Do you use them for typing document?-for legal research through the internet and CDRoms? - For e-mail purposes?
10. Does your law subscribe to any databases for accessing legal materials? If yes, which databases does your law form subscribe to?
11. Do you think information technology in a good investment for any law firm?
12. Do you think you need training on the use of computers in your law firm?
13. What do you intend doing about information technology in your law firm within the next two to three year?

Appendix 3: Letter of request for interviews and observations

UNIVERSITY OF LIMPOPO
TURFLOOP CAMPUS

Private Bag X1106
Sovenga,
0727
Tel: (015) 268 2604
Fax: (015) 268 2941

The manager
_____
_____
_____
_____

Dear Sir/Madam

VISIT BY MR S.T.BOPAPE, PhD CANDIDATE

The bearer of this letter, Mr S.T.Bopape, is a PhD candidate of this University in the School of Languages, Culture and Communication working under my supervision on a dissertation entitled:
"An empirical investigation into the utilization of information technology to support Information and Knowledge management by lawyers attached to law firms in Polokwane, Limpopo Province of South Africa."

Mr Bopape has been advised to extend and add value to his research on this topic by conducting face-to-face interviews with members of law firms as well as undertaking observational visits to the firms which were earlier included in the research as well as some which did not respond to his original questionnaire.

Your most kind assistance to Mr Bopape in this continuation of his research project will be most sincerely appreciated. He will be calling you in order to arrange a visit to your law firm between 25th September 2007 and 12th October 2007.

Yours collegially

Dr S.A.Brink

Senior Lecturer and Study Leader

2007-09-19

African Excellence - Global Leader

Appendix 4: List of attorneys

Firm	Telephone	Postal Address	Address
AM Anderson	015 293 8627	1 Libra Avenue, Pietersburg	1Libra Ave.
Booysen du Preez & Boshoff	015 295 4887 / 9	Po Box 3444, Pietersburg	.....
Botha Horak Ingelyf	015 291 2147	Po Box 3615, Pietersburg	....
Cachalia S	015 291 4215	Po Box 5758, Pietersburg North	.....
TAR Attorneys	.....	Po Box 6165 Pietersburg North	A16 Excelsior Str.
Carrim A M	015 297 1769	Po Box 2334, Pietersburg	.....
Chuene M	015 295 3555	Private Bag 5026, Pietersburg	.....
De Klerk's	015 295 4017	Po Box 23915, Pietersburg	.....
Diamond Attorneys	015 295 8986	Po Box 937, Pietersburg	.....
Du Toit, Swanepoel & Steyn	015 291 1751	Po Box 181, Pietersburg	.....
Espag, Hatting & Ludwig	015 297 5374	Po Box 387, Pietersburg	.....
Geldenhuys Prokureurs	015 295 9304	Po Box 2977, Pietersburg	.....
TJ Grobler	015 295 6046	Po Box 4379, Pietersburg	.....
Henstock Van den Heever	015 295 9110/1/2	Po Box 65, Pietersburg	.....
I W Grant Attorneys	015 291 3450	Po Box 1610, Pietersburg	.....
Kampherbeek, Twine & Pogrund	015 295 4716	Po Box 3555, Pietersburg	.....
Lawyers for Human Rights	015 291 5309	Po Box 394, Pietersburg	.....
Kganyago & Matlala Attorneys	015 297 3637/8	Po Box 5921, Pietersburg North	.....
Lourens S Lee	015 295 9247	Po Box 27, Pietersburg	.....
LG Ledwaba	015 291 5929	Po Box 5929,Pietersburg	.....
Legodi Phatudi	015 291 2173	Po Box 55213,Pietersburg	.....
Mahlase, Nonyane-Mahlase	015 291 2450	Po Box 5819, Pietersburg	....
John Mahoto	015 291 1510	Po Box 4366, Pietersburg	.....
Mankoe & Magabane	015 295 5055	Po Box 1679, Pietersburg	.....
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Magistrate's Court

Magistrates Court	015 291 2804	Private Bag X9320, Pietersburg	....

Small Claims Court

Small Claims Court	015 291 2804	Private Bag X9320, Pietersburg	....

Sheriff of the Supreme Court & the Magistrate's Court

Sherrif of the Supreme Court & the Magistrate's Court	015 291 3820	Po Box 4073, Pietersburg	....

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