

Utilisation of Intranet in South African Organisations as a Knowledge Management tool

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By

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This report is dedicated to my Lord and Saviour Jesus Christ, my lovely wife Florence Khoza, our dear son Nathan Khoza, my MBL study group (Kollan Pillay, Thabo Sepuru, Thakane Tsiane, Thabo Bopape, Gugu Mvemve, Beryl Mogotsi, Ben Maditsi, Daphne Thwala) and my study leader Bryton Masiye. Thank you for your encouragement, support and guidance. I sincerely thank you and appreciate your contribution in my life.

I certify that, except as noted above, the report is my own work and all references used are accurately reported.

Signed

David Khoza

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Abstract

Purpose – To investigate the utilisation of intranet as a knowledge management (KM) tool in South African organisations

Findings – The intranet is under utilised in many South African organisations, only 25 percent of the organisations represented in the survey has indicated to have been using the intranet as a tool to facilitate knowledge management. Most respondents indicated that emails and meetings were most effectively utilised as knowledge management tools in their respective organisations. The study also reveals that the content on the intranet is mainly focused on policies, employee contacts and communication bulletins. Employees do not contribute directly to the intranet content, hence the content on the intranet is mainly generic in nature; Information Technology (IT) teams, management and Human Resource (HR) teams are the main contributors of the intranet content.

Research limitations/implications – Further research is needed to compare and deduce the benefits of utilising the intranet as a knowledge management tool with regard to business performance indexes such as, competitive advantage, market share, profits, long term growth, bottom line, sales, turnover, cost savings, etc.

Keywords

Knowledge management, intranet, intranet utilisation, knowledge management tool, utilisation of intranet as a knowledge management tool, South African organisations

1. INTRODUCTION

Many senior executives have a decidedly negative opinion of the relationship between IT and business performance, this led to dissatisfaction with the IT investments and information use in their companies (Marchand et al 2000, p. 10). Due to rapid change of technology and the complexity of implementing new technology, organisations find themselves hopping around with technology. Before the company find its ground on particular technology, another company puts a better product in the market that renders previous technology obsolete. Therefore such developments bring about a commotion within leaders of the organisation and hence develop a negative sentiment towards IT investments. Marchand et al (2000, p. 10) cited that companies spend billions on IT worldwide with no clear link to improve macroeconomic productivity or business performance.

Due to high costs and short life cycle of owning application specific knowledge management tools and also additional costs incurred by the organisation to licence each and every individual user to gain access to the system and also to train them on how to use that specific application software; organisations are therefore forced to limit the number of users who can have access to the system in order to minimise costs and hence have the majority of its employees excluded from generating, sharing and utilising organisational knowledge that is gained within an organisation to be utilised by employees to improve performance on their work related tasks.

Employees are increasingly frustrated (and less engaged) as it becomes more difficult to find the resources and information they need to do their jobs within the organisation (Holtz, 2008).

When access to organisational knowledge is limited and certain individual employees are excluded, misalignment or disconnection between management and employees regarding implementation of strategies that the organisation is pursuing is inevitable; employees who are deprived access to information develop a sentiment of distrust and job dissatisfaction. Employees without access to information are often faced with a challenge of only knowing what is prescribed in their tasks or what they need to deliver, but are never in the loop about what the organisation is intending to achieve and the rationale behind the decisions that are being made.

Many organisations are gearing to adopt strategies to build organisation-wide customer orientation, knowledge management and business intelligence (BI) to ensure that the organisation produces products and services that better meet the needs of customers and to also out-perform their competitors. To effectively execute these strategies, the organisation must offer better mechanism to generate, share, manage and communicate information. Therefore, intranets offer new ways to manage and communicate data, information, and knowledge in an organisation, (Guenther, 2003).

The researcher has observed the use of intranet in several organisations to post advertisements within the organisation and how organisational members at all levels fully utilised this tool or platform to buy or sell stuff to each other. This has led the researcher to investigate the utilisation of intranet to actively engage organisational members to post business related information and knowledge intended for sharing. Hence, Guenther (2003) cited that a successful intranet system is built by all affected employees.

Edwards et al (2005) did a research study in which the role of technology (both actual and desired) in knowledge management within organisations was investigated. One of their findings was that there was a clear emphasis on the use of general information technology tools (such as email, shared databases and intranets) to support knowledge management activities rather than the use of tools specific to KM.

In South Africa, not much research has been conducted on the subject of utilisation of intranet as the knowledge management tool within organisations. A research study limited to South African academic libraries was conducted by Mphidi and Snyman to investigate intranet utilisation as KM tool in academic libraries and the research outcome of the study was that the three academic libraries in which the study was based on did not utilise the full potential of the intranet to manage KM (Mphidi and Snyman, 2004). In many organisations, there's a tendency of utilising the intranet only for basic information such as, staff telephone directory, policies and manuals, application forms, general announcements, etc. which has little or no effect in improving employee's efficiency, effectiveness or performance to contribute to the success of the organisation.

1.1 Problem statement

The researcher proposes to investigate the utilisation of intranet in SA organisations as a knowledge management tool and to recommend ways in which SA organisations can make best use of intranet to gather, store, share and disseminate business information and business knowledge to all employees and other stakeholders within the organisation to improve business performance.

1.1.1 The objectives of this study

The first subproblem is to investigate the ways in which the intranet is currently used within selected organisations.

The second subproblem is to investigate ways in which employees in selected organisations share their organisational know-how and experience and the challenges they experience using the current methods.

The third subproblem is to analyse the information gathered during research to make deductions about the utilisation of intranet, and also to discuss and make recommendations from data obtained from the literature study about the organisational benefits that can be achieved by utilising the intranet as a KM tool to gather, store, share and disseminate business information to employees and other stakeholders within the organisation.

1.1.2 Guiding questions

How many employees in an organisation do have access to intranet?

What information is currently residing on the intranet?

What is intranet mainly used for?

How do employees share knowledge amongst themselves?

What are the main sources of knowledge that help employees to become more productive?

Where to find information about current projects or focus areas within the organisation and the team members involved?

1.1.3 The delimitations

The study will not attempt to compare the use of intranet (performance, features or costs) with the use of specific KM and BI systems used within a particular organisation.

The study will not attempt to design, build, implement or evaluate the intranet KM systems as the means to substantiate research results.

1.1.4 Definition of terms

Knowledge Management (KM) – A systematic process of capturing, sharing, using and creating knowledge to add value to the organisation (Balcombe, 1999, p.1: Mphidi & Snyman, 2004).

Intranet – A private computer network that uses Internet protocols and network connectivity to securely share part of an organisation's information or operations with its employees (Wikipedia).

1.1.5 Abbreviations

BI – Business Intelligence

ICT – Information and Communication Technology

KM – Knowledge management

SA – South Africa

BIS – Business Information System

IT – Information Technology

HR – Human Resources

1.1.6 Assumptions

The first assumption is that due to increasing life cycle cost and complexities of implementing KM and BI systems with application specific systems, is increasingly becoming of more concern to organisations and hence organisations are seeking ways to minimise the impact of these issues and to utilise systems they already have.

The second assumption is that the intranet is an infrastructure that is widely available and commonly used in many organisations in South Africa.

The third assumption is that more than 90 percent of computers in an organisation have the capability to connect to the intranet facility.

1.1.7 The importance of the study

Many organisations are investing a lot of money in building and maintaining the IT infrastructure (in which the intranet is part of) as the way to share information within an organisation. However, the intranet infrastructure is under utilised and to a large extent it contains irrelevant information that the organisation and its employees need in order to make sound business decisions that will elevate the organisation and help it to gain and maintain a competitive advantage through knowledge gathered, processed, shared and disseminated by employees.

Many organisations are re-inventing the wheel (that is, firstly by experiencing failures that the organisation experienced in the past in which lessons learned were not captured and propagated throughout the organisation to avoid failure from happening again, secondly by not effectively capturing the knowledge gained in past successes and propagating it to all employees to even create a better way of doing things for the future), hence, this study will help organisations to identify the intranet as one of the most simple, cost effective and robust tools in gathering, sharing and disseminating knowledge between employees and other stake holders within the organisation.

The importance of this study is to help organisations to utilise the majority of its employees from various functional groups within the organisation to participate in KM activities and not only rely on a few isolated individuals or departments.

1.2 Ethical considerations

There are few ethical considerations to consider during this research namely; First and foremost protecting the anonymity of our respondents and their organisations. Therefore the names of people and their respective organisations who participated in this research survey will not be disclosed.

Secondly, Participation in the survey will be entirely voluntary and all emails related to survey will contain a clear narrative describing the purpose of the study as well as a guarantee that the information provided would not be used for any other purpose other than stated.

1.3 Perceived limitations

At this stage there is one perceived limitation to the proposed study, i.e. the size of sample chosen for investigation in this research is relatively very small when compared with the total number of organisations that are currently active in SA.

1.4 Reporting Framework

The final report of the research study will consist of the following chapters listed below;

Chapter 1: Chapter 1 is effectively a review and refinement of the research proposal.

Chapter 2: Updated literature review on the uses of intranet as a knowledge management within organisations.

Chapter 3: Methodology indicating questionnaire development, data collection process, observations, response rate, Data coding and Analysis.

Chapter 4: Research Results indicating the outcome of the research study.

Chapter 5: Discussion of Results and deductions

Chapter 6: Conclusions

2. LITERATURE REVIEW

The literature review will include the following areas; (1) review on concepts of knowledge management (KM) and business intelligence (BI), (2) review on uses of intranet within organisations, (3) review on studies relating to utilising the intranet as KM tools and (4) review on ways to increase intranet usage in organisations.

2.1 Review on knowledge management and business intelligence concepts.

Knowledge is a function of data, information and experience, while knowledge management is the process used to manage organisational knowledge that is relevant to employees or stakeholders within the organisation to conduct business activities.

Herschel et al (2005), describes knowledge management as a systematic process of finding, selecting, organising distilling and presenting information in a way that improves an employee's comprehension in a specific area of interest and also it helps an organisation to gain insight understanding from its own experience. Specific KM activities help focus the organisation to gain insight on acquiring, storing and utilising knowledge for such as, problem solving, dynamic learning, strategic planning, and decision making (Harneed, 2004).

KM is also defined as systematically capturing, sharing, using and creating knowledge to add value to the organisation (Balcombe, 1999, p.1: Mphidi & Snyman, 2004). KM also refers to effectively identifying, acquiring, developing, resolving, using, storing and sharing knowledge to create an approach for transforming tacit knowledge to explicit knowledge (Shanhong 2002, p. 13: Mphidi & Snyman, 2004).

Boca et al (2006, p. 28) defines knowledge management techniques and tools for collecting and disseminating knowledge within an organisations, while all of the above description or definitions of KM are consistent, and have the objectivity of sharing knowledge within an organisation to help the organisation and its members to gain insight understanding from knowledge that is captured or developed within an organisation to create value.

In the context of this study, KM is described as systematic process of capturing, sharing, using and creating knowledge to add value to the organisation.

Business intelligence, sometimes called corporate intelligence or competitive intelligence is described as an approach towards gathering a range of information to ensure that an organisation is able to keep pace with competitors (Boca 2006, p 29). Business Objects Company (2008), describes BI as the use of an organisation's disparate data to provide meaningful information and analysis to employees, customers, suppliers, and partners for more effective decision making. Schneider (2008) describes BI as the ways in which an organisation store and use business information, while encompassing the technologies, applications, and means for collecting, integrating, analyzing, and presenting business data.

In most KM and BI literature, BI is defined within the context of BI system (BIS) and the encompassing technologies. Therefore in the context of this study, BI and BIS are defined separately.

In the context of this study, BI is described as data or information that has been processed in various ways, (human intuitive and technological processing) within an organisation which gives distinct insight to an organisation and its employees about both its internal environment (i.e. products, knowledge, technology, capabilities, and new innovations, etc) and external environment (competitor moves, economic trends, new products in the market, customer requirements, customer complains, product substitutions, new players, new technology, new demands, market condition, etc), to help the organisation improve decision-making and organisational performance.

While BIS is described as the ICT technology (used to store, reuse and share information) together with specific software application used to process data to produce BI. To put it in simple terms, BIS is a tool to produce business intelligence from captured data.

BI emanates from proper knowledge management within the organisation. Therefore it is important for the organisation to put measures in place to facilitate knowledge sharing and dissemination.

The main sources of KM and BI within the organisation are the individual employees who gather data and information through interaction with the organisational environment, such as reports, policies, company strategy, mission & vision, product information, market information, and so on. The information from various sources are

then digested by individuals who then apply knowledge, technology and human intuition or intelligence to process the information or data to result in organisational knowledge which can be stored, retrieved and shared within the organisation to improve business performance.

2.2 Review of intranet technology usage within an organisation.

As information overload and information handling tend to overwhelm organisations, and as organisations demand more knowledge, KM within organisations is becoming more and more important (Hadelin & Allwood, 2002). In addition, Neef (1999) argued that KM is critical to many organisations also because of the fact that they strive to become learning organisations (Hadelin & Allwood, 2002).

The intranet has emerged as one of today's most effective tool for knowledge management (Mphidi et al, 2004). According to Muller (2002) companies adopt intranets to improve internal communications, distribute information and enable more employees to access legacy systems. Most organisations offer intranet facilities as the means for management to communicate to its employees and to post information specific to the organisation. Intranets are mainly used to share various types of information such as staff phone directories, staff procedures and quality manuals, staff bulletin or news letters, information for agents, product specifications, etc (Boca et al, 2006, p. 220).

The revolution in technology, is offering better use of intranet than the way it was traditionally used, i.e. ease of use, advanced search capabilities, improved integration with other software application, etc.

The most successful intranets act as the nervous and circulatory systems for a company, supporting business processes as well as the flow of information (Guenther, 2003). Intranet plays a central role in many companies, expanding the advantage of knowledge in the organisation (Edenius & Borgerson, 2003).

Due to poor utilisation of intranet for business related issues, at most companies, the intranet is not the "go-to" source for important business documents. In fact, for many companies the intranet has no real role in how employees and managers interact day-to-day or in the overall success of the business. The corporate intranet needs to be a tool that increases workforce's productivity, morale and confidence while also improving

business's bottom line (Dare, 2008). But market giants, such as Intel, Motorola, IBM, Microsoft and others are fully utilising the intranet infrastructure to empower employees to create and share knowledge to improve business performance and foster new innovative ideas.

The introduction of new social networks on the web such as, facebook, blogging services, RSS feeds, etc, has led to the demand that intranet facilities in many organisations be upgraded to offer such services within the organisation to enable employees to network and share information valuable to the organisation. Companies like Motorola, which has given nearly 70,000 employees in 70 countries — along with some 9,200 external partners — social media tools that allow them to publish and share information, empowers employees to reach out to one another for assistance, forming communities around projects and areas of expertise, coalescing in a wholly organic way to solve problems or capitalize on opportunities (Holtz, 2008), which in turn improves and enhances the productivity of employees and other stakeholders such as suppliers and customers.

There's a trend in organisations to harness knowledge from employees using these new developments on the intranet technology. Intel has established a wiki called Intelpedia — modelled on the Web phenomenon Wikipedia — where employees are contributing their knowledge of all things in Intel (Holtz, 2008). Wachovia, the fourth-largest bank in the U.S., which is building a similar wiki that, will be called Wachopedia (Holtz, 2008). Wachovia is also building an internal social network, a Facebook-like utility that will allow employees to share information, photos, videos and documents. They will also be able to form groups around subjects that interest them (Holtz, 2008). Dell, IBM and a host of other companies are also beefing up the opportunity for employees to find and interact with one another through social networking applications offered by companies with names such as Leverage Software and Select Minds (Holtz, 2008). The big boys — Microsoft and IBM — are also releasing software that will make the introduction of social networks possible (Holtz, 2008).

Elkton Company also has developed their intranet to offer the same tools that make employees want to spend their personal time on social networking sites to get them interacting on the organisation's intranet in a way that they are comfortable with and has real business value (Dare, 2008).

Therefore, the use of intranet within organisations is no longer limited to one way use of displaying and finding information, but organisations are moving towards using an intranet as the means to create and share information at all levels in network socialised environment.

The intranet offers many benefits that support knowledge management practices within an organisation such as search capabilities, categorisation of information, information storage, information and data capturing, analysing information, presentation, information access control, knowledge sharing, ease of use, knowledge & information distribution, online training, announcements, and much more.

Other technological benefits reported by Pedley (1999) were; Platform independence in which web technologies allow a whole range of different platforms to be linked by a common interface; quick wins as it is relatively cheap but if it is well designed it can make big impact upon internal communications; and cost saving especially in terms of paper utilizations and printer toner. From the fact that intranets are based on Internet technology, Lynch (1997) cited intranets benefits as technology enablers in the following activities;

- Information retrieval, sharing and management;
- Communication and collaboration;
- Access to databases and applications.

3. RESEARCH METHODOLOGY

This study is intended to determine the utilisation of intranet within SA organisations.

The researcher proposed to conduct a survey-based research study among employees in different organisations with intranet access. The proposed sample, research instrument, data collection and proposed data analysis are discussed below.

3.1 Sample

Diamantopoulos and Schlegelmilch (2006, pp. 18), defines five stages of the sampling process namely; Defining the population, Specifying the sampling frame, Selecting the sampling method, determining the sample, drawing the sample and collecting data.

These stages are implemented as follows;

3.1.1 Defining the population

South African consists of more than five thousand organisations, (www.top500.co.za). Mugo (2008), gave six fundamental reasons for sampling instead of doing a census and these are; economy, timeliness, the large size of many populations, inaccessibility of some population, destructiveness of observation, and accuracy. Considering the above, a population sample is chosen over the census. According to Webster dictionary (1985), a sample is a finite part of a statistical population whose properties are studied to gain information about the whole. Mugo (2008) describes a sample as a set of respondents (people) selected from a larger population for the purpose of survey. Hence, there are various ways to obtain a sample for a particular population as described in section 3.1.3 below.

3.1.2 Specifying the sampling frame

Individual organisational members who will represent their respective organisations will be targeted. Individuals will be randomly chosen or selected to participate in the survey. Individuals who are interested to participate will be given options to either receive the questionnaire via email or a printed copy whichever is convenient and practical.

Firstly, this research requires that respondents give their opinion on the way intranet is utilised within their respective organisations; hence the response of people that do not have intranet access will be meaningless. Therefore, participation in this survey will be limited to respondents with intranet access only. Questionnaires of those who indicated that they do not have intranet access will be disqualified.

Secondly, blue collar workers, i.e. people whose work or job is predominantly labour intensive, are ineligible to participate, since their day-to-day jobs does not require the effective use of knowledge to perform their work activities but rather labour skills are required for effective execution of their work related tasks.

Therefore, people who qualify to participate in this survey are those who have intranet access and also their work related activities relies on the effective use of knowledge to execute their tasks or duties effectively. The targeted participants are those within the following professional streams; IT, engineering, designers, technology, finance, management, human resource, administration, professionals, consultancy, project management, planners, artisans, technical, academic, etc. commonly classified as white collar workers.

3.1.3 Selecting the sampling method

Diamantopoulos and Schlegelmilch (2006, pp. 14) describes various sampling methods that can be used to obtain a population sample, namely; convenience sampling, judgemental sampling, quota sampling, snowball sampling, random sampling, stratified sampling, etc.

Leedy and Ormrod (2005, pp. 86), hinted that often researchers overlook practical issues related to data availability or the availability of respondents. Therefore, taking these factors into consideration a convenience sampling method was therefore deemed adequate for this study to ensure sufficient data collection to meet the objectives of this research study as indicated in section 1.1.1.

Diamantopoulos and Schlegelmilch (2006, pp. 14), describes a convenient sample as sample members that are chosen on the basis of being readily available and accessible to the researcher. On this basis, a convenient sampling method was chosen because of availability of the targeted respondents in various organisations.

3.1.4 Determining Sampling Size

As indicated above, that South Africa consists of more than five thousand organisation both in the private and public sectors. The presuppositions found in the Theorem of Central Limit (Gimenez and Junior, 2006) ensure that the average sample represents the population average of a large population; hence a sample of $n \geq 30$ would be statistically significant with a 95% level of reliability.

Therefore, a sample size of at least 30 individual participants representing 30 different South African organisations was chosen for this study. To ensure that at least 30 organisations are represented in this research study, only one entry from a particular organisation was considered, because the focus of this research study is the organisation and not the individual respondents, therefore each individual respondent represent their respective organisations.

3.1.5 Drawing the sample and collecting data

The total duration for distributing and receiving back the questionnaires from all respondents was two weeks. One week for distributing the questionnaire and one week for follow-up. The respondents were given a maximum of one week to return the questionnaires to avoid pressurising them, while the questionnaire only need ten to fifteen minutes of the respondent's time.

Therefore, the steps used to draw the sample and collect data were as follows;

Step 1: The researcher distributed questionnaires via email to targeted individuals and requested them to participate in the research survey. The email contained detailed information on how to fill the questionnaire on a PC, when the questionnaire was due, and where to email it back once the questionnaire was completed. Contact details were also given in case the respondent's needed further clarification.

Step 2: The first email reminder was sent two days before the due date.

Step 3: The second and the final reminder was sent on the day that the questionnaires were due.

Step 4: No further correspondences were sent past the due date.

3.1.5.1 Bias in research sampling

According to Leedy and Ormrod (2005, pp. 208), bias is described as any influence, condition, or set of conditions that singly or together distort the data.

The researcher acknowledges that, though not intended, the presence of bias cannot be entirely eliminated. Leedy and Ormrod (2005, pp. 209) cited that research bias can creep into the research project in a variety of subtle and undetected ways and can attack the integrity of facts. Leedy and Ormrod (2005, pp. 210) suggested several strategies cited by Rogelberg and Luong (1998) for identifying possible bias on the research questionnaire;

- a. Carefully scrutinising the questionnaire for items that might be influenced by ones educational level, interest in the topic or other factors that frequently distinguish respondents from non respondents
- b. Compare the responses on questionnaire that were returned quickly with responses that were returned later, perhaps after a second reminder letter or after the deadline imposed. The late ones may, to some extent, reflect the kinds of responses that non-respondents would have given. Significance differences between the early and the late questionnaire probably indicate bias in the questionnaire.
- c. Randomly select a small number of non respondents and try to contact them by mail or telephone. Present an abridged version of your survey, and, if some people reply, match the answers against those in your original set of response.

The above guidelines will be used by the researcher to minimise and detect bias as reasonable as possible.

When distributing questionnaires, all individuals solicited to participate in the research; participation was voluntary and anonymous.

3.1.6 Research Instrument

Leedy and Ormrod (2005, pp. 184), cited that survey research typically employs a face-to-face interview, a telephone interview or a written questionnaire. Face-to-face interview and telephonic interview may not be practical where large samples are

important and may also require a lot of time to arrange appointments for interviews and the response rate maybe quite low. Therefore, a survey questionnaire was used as the research instrument for data collection to target as many respondents as possible to ensure that the sample size specified above is realised. However, due to the disadvantages of low return rate associated with questionnaires, a constant follow-up was implemented as cited in section 3.1.5 above to ensure that the minimum response target is reached.

3.1.6.1 Mapping research problem to questions asked in the questionnaire

A questionnaire has been design (see Appendix A) to be used as an instrument for data collection that will enable the evaluation of the research problems identified in section 1.1.1 of this document.

Questions that are related to the evaluation of the first subproblem in the questionnaire are the following; B1, B2, B3, B6, C1, C3, C4, C5, C6 and D3.

Questions that are related to the evaluation of the second subproblem in the questionnaire are the following; B1, B2, B3, B4, B5, C2, C6, C7, D1, D2 and D4.

The third subproblem will be evaluated based on the outcome of the results of the first and the second subproblems, and the recommendations resulting from the outcome of the literature study.

3.1.6.2 Questionnaire design

The questionnaire uses the combination of a checklist and a rating scale (Likert scale) to facilitate both the evaluation and the quantification of responses from participants. Due to the complexities associated people's behaviours, attitudes, characteristics and opinions, on the surface these cannot be easily evaluated, Leedy and Ormrod (2005, pp. 185). Therefore, a checklist is very effective and useful in listing the behaviours, attitudes, characteristics or opinions that are investigated by the researcher, and the rating scale is useful in evaluating the investigated phenomena on a continuum of, say, inadequate to excellent, never to always, etc.

To validate the questionnaire, the following process was followed; after an initial draft was completed, the questionnaire was given to two independent people to review and

comment as to whether the questions in the questionnaire were clear, unambiguous and appropriate to answer the stated research objectives. This review resulted in a number of modifications, which were incorporated in the final version of the questionnaire.

The selected research study is a qualitative assessment of the use of intranet within the South African organisations for knowledge management. A qualitative analysis is interpretive; therefore the researcher will answer the research problem by making specific observations on data collected and draw inferences based on inductive reasoning on a larger community of organisations later in this report.

3.1.7 Proposed data analysis

Data collected during survey will be analysed using qualitative methods to determine relevance of the research questions.

Data will be sorted and analysed according to responses in relation to the research questions, to aid in making observations and inductive reasoning for presenting the findings of the research study.

Computer-based data analysis tools such as 'MS Excel spreadsheet' will be used for appropriate analysis such as indicated below.

3.1.7.1 Frequency distribution

When a checklist is provided to guide the respondent to select from a particular list of options, the frequency of occurrence of selecting a particular item in that list relative to other given options will be analysed. For example, if out of 40 responses, option A was selected by 10 respondents and option B was selected by 20 respondents. Therefore it implies that 25 percent of the respondents selected option A and 50 percent of the respondents selected option B. This is obtained by dividing the number of times an option is selected by the total responses and multiplying the ratio by 100 to obtain the relative percentage in which option A and B are selected from sample population.

This type of analysis will give insight as to which option has the most popular selection amongst the sample population, and which option has least popular selection amongst the sample population.

This will help to make inferences on the entire population. For example, if option A indicates number of people using dial-up internet connection and option B using mobile HSDPA internet connection, therefore the following inferences are made; the survey research indicates that 40 percent of people living in Gauteng are using a dial-up internet connection while 50 percent of the people living in Gauteng use HSDPA internet connection, etc.

Absolute frequency will be used as simple counts, relative frequency, i.e. percentages, will be used to provide the significance of responses to help make inferences and cumulative frequency distribution to show in absolute or relative terms how many observation take values that are less than or greater than a specified value.

3.1.7.2 Graphical representation of frequency distributions

It is often said that, 'a picture speaks a thousand words'. Bar chart graphs will be used to represent variations of various responses from the respondents, for example, a graph showing the number of organisations represented by individual respondents that are currently using the intranet as knowledge management tool and those who do not use the intranet.

This type of data representation helps to quickly grasp the attention of the reader on the results that are presented.

3.1.7.3 Mode

The mode is the measure of central location, which is identified as the most frequently occurring value. The mode is particularly useful in summarising nominal data. Therefore the mode will be calculated to determine the most frequently occurring response among respondents.

4. RESEARCH RESULTS

The spreadsheet with all analysis data is attached on Appendix C of this report.

4.1 Questionnaire administration

The survey was administered using the procedure cited in section 3.1.5. Email was used to distribute questionnaires. The distribution email included the purpose of the study, the importance of the respondent's participation, and the timeframe within which to return the survey. All respondents were assured that their responses would be kept confidential.

The research survey questionnaires were distributed to 126-targeted individual from various organisations via email, as part of step 1 process indicated on section 3.1.5 above. The identified people were reminded twice to return the completed questionnaires namely; two days before the due date and on day the questionnaires were due. The questionnaire distribution and collection process took two weeks to complete as described in the process cited in section 3.1.5 above.

4.2 Response rate

All questionnaires were captured onto a spreadsheet for analysis purposes. The number of responses with their respective percentages relative to the originally distributed questionnaires is indicated in Table 1 below.

Variable	Frequency	Percentage
Total Questionnaire distribution	126	100.0%
Returned	50	39.7%
Total from Gauteng (SA)	42	33.3%
Total from Other (SA)	2	1.6%
Not from SA	1	0.8%

No intranet	5	4.0%
Valid entries	44	34.9%
Multiple respondents from same organisation	8	6.3%
Usable response rate	36	28.6%

Table 1 Variables, frequency and percentages relative to the total distributed questionnaires.

The graphical representation is shown in Figure 1 below.

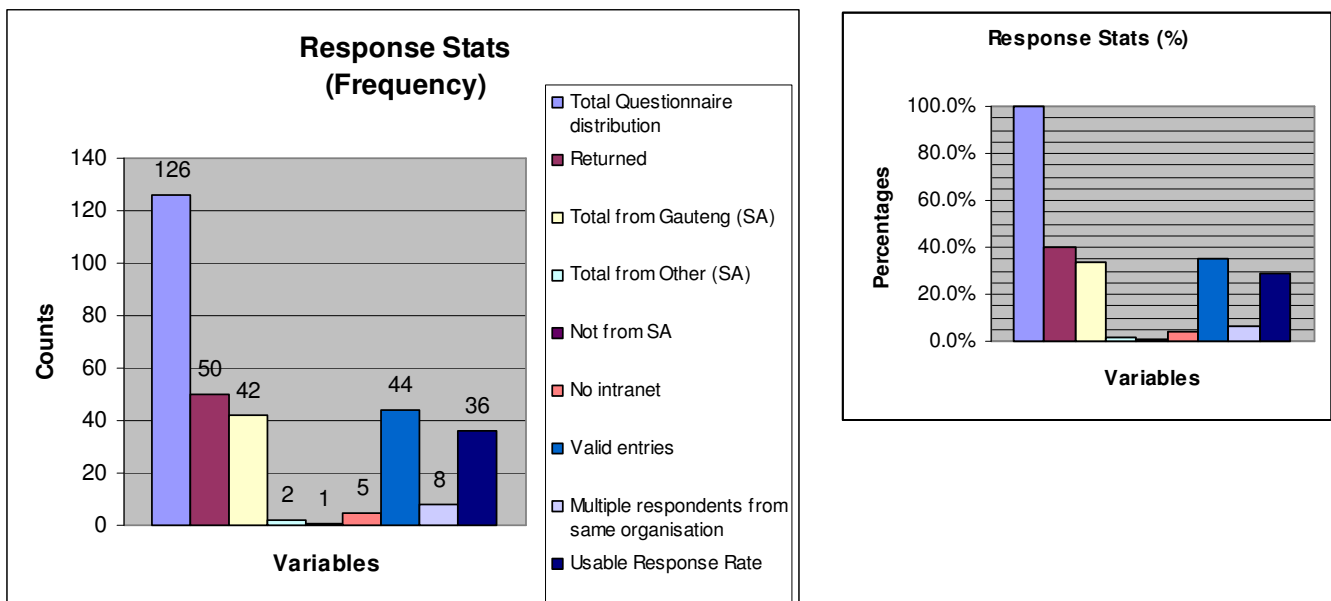


Figure 1 Graphical presentation of response stats.

Table 1 and Figure 1 show various demographics of individuals who returned the questionnaires. Out-of-the one-hundred-and-twenty-six (126) questionnaires that were distributed by email; fifty (50) questionnaires were returned. Of the fifty that were returned, forty-two (42) questionnaires were from individuals representing organisations situated around the Gauteng province in South Africa, two (2) questionnaires were from individuals representing two (2) organisations in the Western Cape province, making a total of forty four (44) valid questionnaires that could be used for research analysis. From the forty-four (44) valid questionnaires, eight (8) questionnaires could not be used for analysis, because their organisations were already represented, i.e. multiple respondents from the same organisation. In a case where multiple questionnaires were

received from the same organisation, the questionnaire with the most missing data was excluded. Otherwise, questionnaires were randomly excluded to allow only one individual to represent only one organisation.

Therefore, only thirty-six (36) usable responses remained to be used for analysis in this research study. These thirty-six (36) questionnaires represented thirty-six (36) unique organisations to be analysed.

Furthermore, five (5) semi-completed questionnaires were returned indicating that the individuals had no intranet access and hence the questionnaires were automatically disqualified for analysis purposes.

One questionnaire was representing an organisation that was not based in South Africa; hence the questionnaire was also disqualified.

Table 2 below shows the percentages of the respondents' demographics discussed above with percentages relative to the returned questionnaires and its graphical representation is also shown in Figure 2 below.

Variable	Frequency	Percentage
Returned Questionnaires	50	100.0%
Total from Gauteng Province (SA)	42	84.0%
Total from other provinces (SA)	2	4.0%
Not from SA	1	2.0%
No intranet	5	10.0%
Valid entries	44	88.0%
Multiple respondents from same organisation	8	16.0%
Usable response rate	36	72.0%

Table 2 Response demographics relative to the returned questionnaires

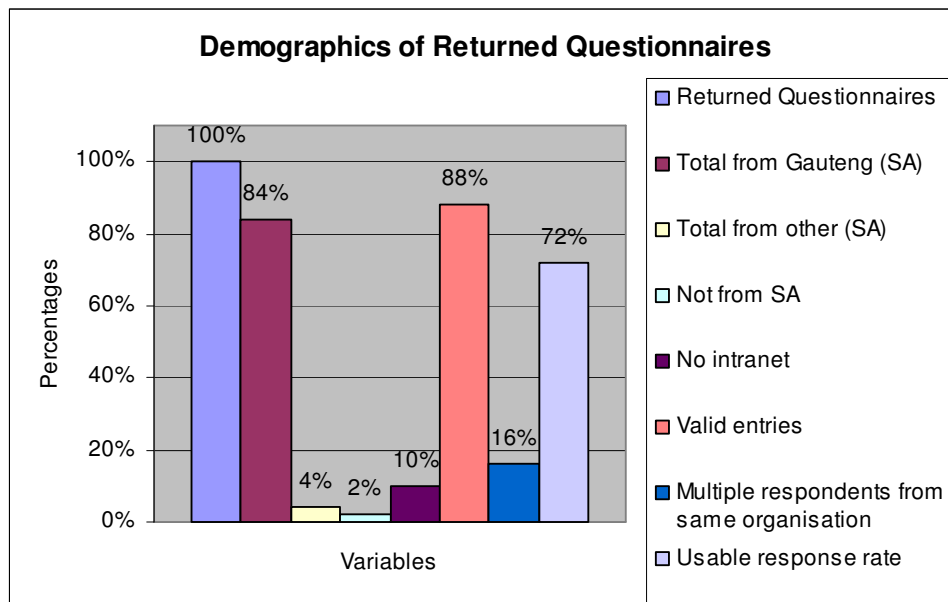


Figure 2 Graphical representation of the table above.

As shown in Table 2 above, only seventy-two (72) percent of the returned questionnaires (indicated as usable response rate) qualified to be used for analysis.

4.3 Assessment of non-response bias

In order to assess non-response bias, the following procedure was employed; Firstly, eight (8) non-respondents from organisations already represented in the survey were contacted telephonically and asked why they never responded to the survey. All of the eight (8) contacted non-respondents indicated that they were very busy and could not find time to complete the survey. Eleven (11) other non-respondents from various other organisations not represented on the survey were also contacted telephonically and were asked the same question as to why they never responded to the questionnaire. Ten (10) of the respondents also indicated that they were busy at the time the questionnaire was sent to them, and hence they could not return the questionnaires on the specified time frame. One respondent indicated that his/her organisation had no intranet facilities, thus his/her response was no going to add any significant value to the survey.

Secondly, responses between those who responded earlier and those who responded after the final reminder was sent were compared on the same set of factors – as

suggested by Rogelberg and Luong (1998). This assessment also yielded no discernable significance between early and late respondents. Thus, no discernable bias could be deduced.

4.4 Size of the organisation

The questionnaire listed four options of the organisation sizes to choose from, i.e. less than 50 people, greater than 50 but less or equal to 100 people, more than 100 but less or equal to 500 people, and more that 500 people). An option to give the best estimate of the organisation size was also included to give the researcher a ballpark estimate; this figure is available but not used anywhere in the analysis.

The eighty-three (83) percent (30 out-of 36) of the respondents, as shown in Figure 3 below indicated that the size of their organisations consisted of more than 500 people and seventeen (17) percent (i.e. 6 respondents) indicated that their organisation consist of people more than 100 but less than 500 people. Figure 3 below shows the graphical representation of the results obtained.

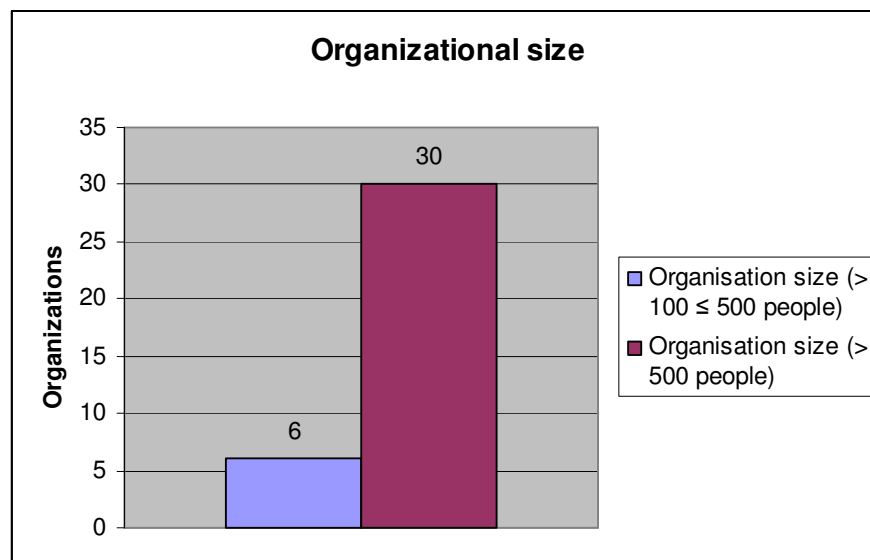


Figure 3: Graphical representation of sizes of organisations

4.5 Organisation types or industry

The organisations represented by the individual respondents were from diverse industry background as shown in Table 3 below. Seven (7) respondents were from the engineering sector, six (6) from the banking/finance sector, three (3) from the government sector, while other organisations were from various other sectors as indicated in Table 3 below.

Organisation Type	Frequency	Percentage
Engineering	7	19.4%
Banking / Finance	6	16.7%
IT	2	5.6%
Insurance	1	2.8%
Manufacturing	2	5.6%
Consulting	1	2.8%
Academic	2	5.6%
Mining	2	5.6%
Government	3	8.3%
Acquisition	1	2.8%
Safety & Security	1	2.8%
Services	1	2.8%
Public Entity	2	5.6%
Agriculture	1	2.8%
Electricity	1	2.8%
FCMG	1	2.8%
Education	1	2.8%
Construction	1	2.8%

Table 3: Respondents per industry sector / organisation type

4.6 Individual roles within the organisation

As shown in Table 4 below, fifty (50) percent of the respondents (i.e. 18 respondents) were in the management positions, 27.8 percent were from technical positions and 8.3 percent from the advisory or consultative positions. The rest of the respondents were from various others roles as indicated in Table 4.

Role within Organisation	Frequency	percentage
Management	18	50.0%
Technical	10	27.8%
Designer	1	2.8%
Adviser / Consultant	3	8.3%
Education	1	2.8%
Financial Accountant	1	2.8%
Human Resources	1	2.8%
Management Information Architect	1	2.8%

Table 4: Responses per individual role within the organisation

4.7 Intranet access

To determine the level with which organisations offer intranet access to its employees and the intranet usage thereof by employees, a number of questions were asked as detailed in section B of the questionnaire. All respondents participated in the survey had intranet access.

Therefore this section will discuss the following results; number employee workforce in an organisation with intranet access, how frequent employees access the intranet, who in the organisation is responsible for posting information on the intranet, and how familiar are the respondents with the information posted on the intranet, i.e. how familiar are they with the site map.

4.7.1 Number employee workforce in an organisation with intranet access

Seventy-five (75) percent of the respondents indicated that 80 to 100 percent of the employees in their respective organisation had intranet access, while seventeen (17) percent indicated that between 50 and 80 percent of the workforce in their respective organisation had intranet access. The last 8 percent indicated that between 20 and 50 percent of their workforce had intranet access. The tabulated and graphical representations of results are shown in Table 5 and Figure 4 below respectively.

Index Nr.	% of people with intranet access (B2)	Frequency	Percentage
1	10-20% intranet access	0	0%
2	20-50% intranet access	3	8%
3	50-80% intranet access	6	17%
4	80-100% intranet access	27	75%

Table 5: Organisation members with intranet access

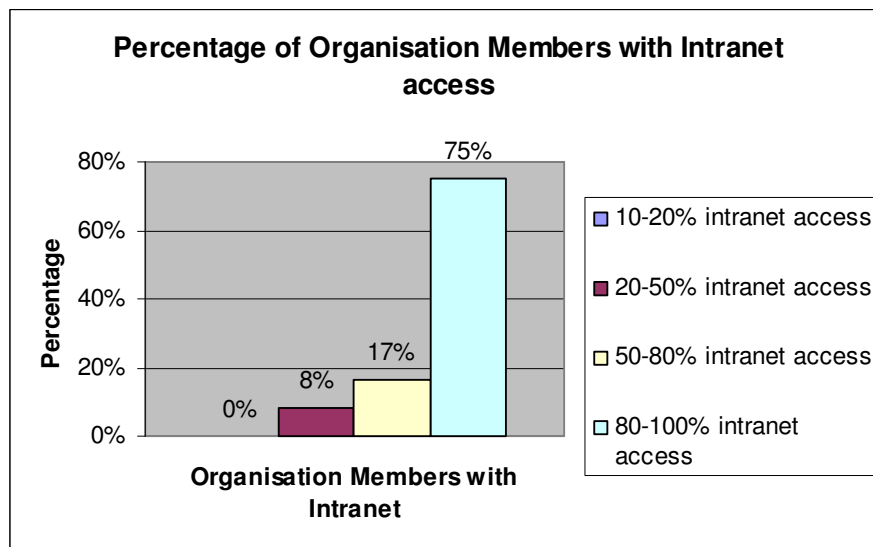


Figure 4: Organisation members with intranet Access

The cumulated percentage of index Nr. 3 and 4 on Table 5 indicates that more than 92 percent of represented organisation has intranet access of more than 50 percent.

4.7.2 How frequent do respondents access the intranet

Intranet tools may be given to employee members within the organisation, but it is the usage of these tools that enables the organisation to fulfil its knowledge sharing objectives. Therefore the objective of this question that was asked in the questionnaire is to help to assess if the tools provided are being effectively utilised.

Table 6 and Figure 5 show a tabular and graphical representation of the results obtained. Forty-seven (47) percent of the respondents indicated that they always access the intranet to find information, followed by thirty-one (31) percent who indicated more than average usage, and seventeen (17) percent indicated average usage. Three (3) percent indicated that they rarely used the intranet and another three (3) percent of the respondent's indicated that they never access the intranet.

Index Nr.	Intranet usage (B3)	Frequency	Percentage
1	Not used	1	3%
2	rarely used	1	3%
3	average usage	6	17%
4	used often	11	31%
5	always	17	47%

Table 6: Intranet usage

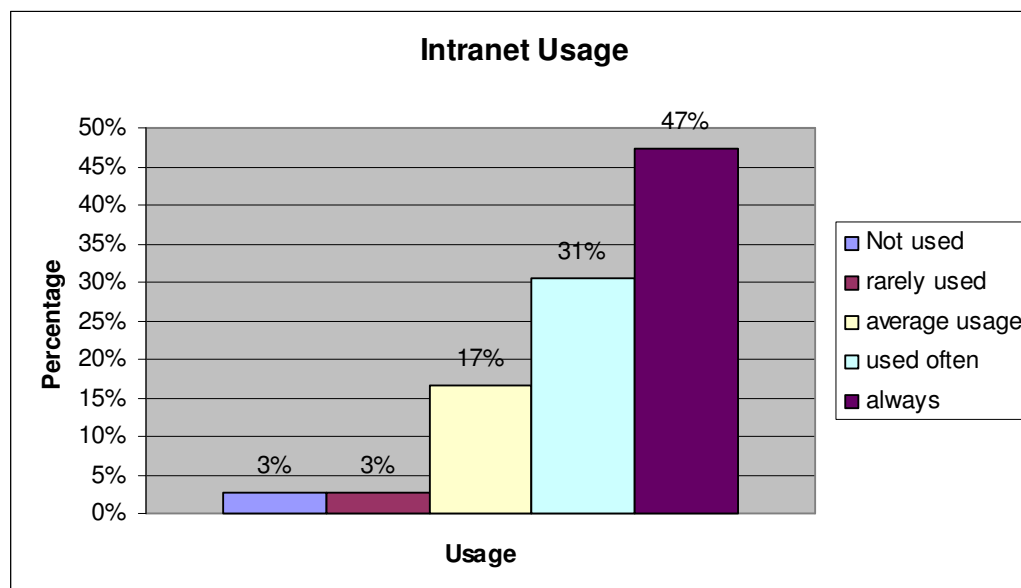


Figure 5: Intranet usage (graphical representation)

The cumulative response of index Nr. 3 to 5 in Table 6 indicates that 94 percent of the respondents have a fair usage of intranet ranging from average usage to always.

The results shown in Table 7 and Figure 6 indicates a cumulative percentage of more than 80 percent of respondents, (i.e. 44 percent and 36 percent) being familiar with the intranet site map which is a key driver for users to locate required/needed information from the intranet.

Site map (B6)	Frequency	Percentage
Not familiar	7	19%
Familiar	16	44%
Very Familiar	13	36%

Table 7: Site map familiarity response

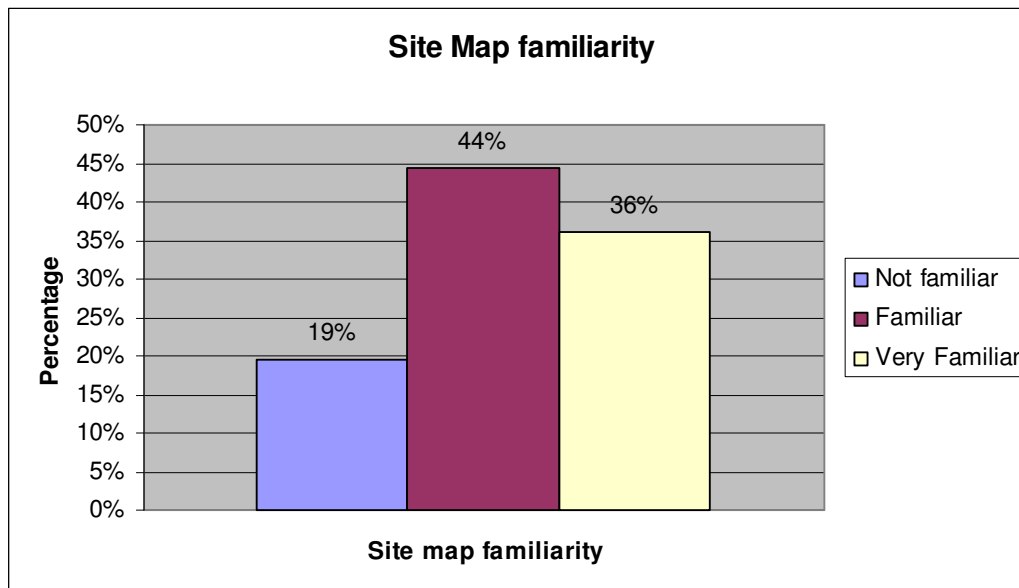


Figure 6: Site Map Familiarity response (graphical representation)

4.7.3 Posting information on the intranet

For an organisation to become a successful learning organisation, an organisation needs to cultivate a learning culture through the process of sharing knowledge and

information. In order to build a learning organisation it requires that an organisation encourage employees to generate and share information/knowledge with other employees.

When asked if the respondents were able to post information on the intranet with the aim of determining if the respondents took part in contributing to the knowledge of the organisation, the following results were obtained; Fifty (50) percent of the respondents indicated that they were able to post information on the intranet and the other fifty (50) percent indicated that they were unable to post information. The results of the respondents are shown in Table 8 and Figure 7 in both tabular and graphical form.

Can post info on the intranet (B5)	Frequency	Percentage
Yes	18	50%
No	18	50%

Table 8: Respondent who can post information on the intranet

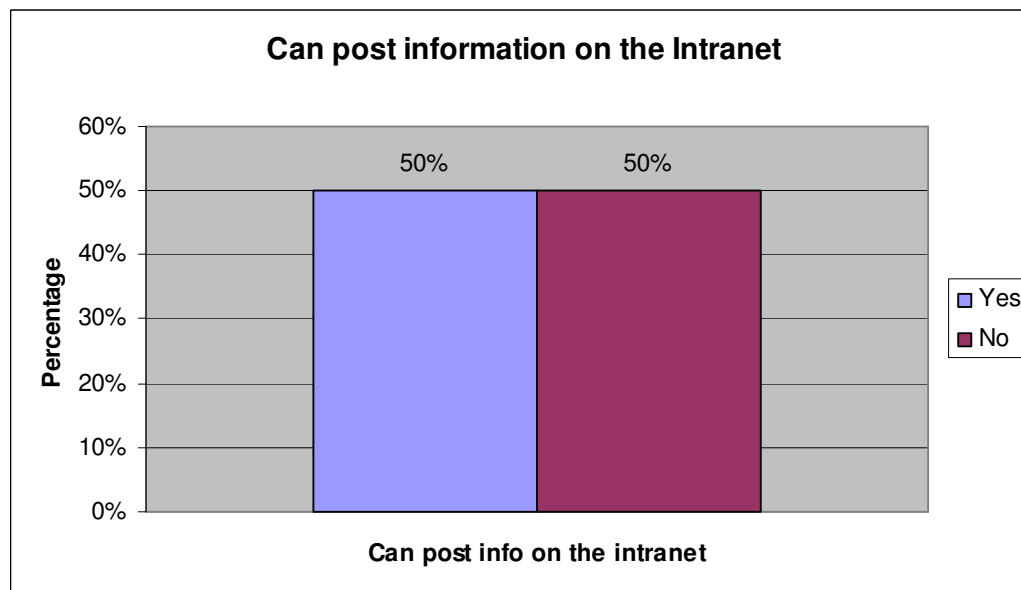


Figure 7: Graph presentation of respondents who can post information on the intranet vs. those who can't

In contributing information to the intranet, seventy-five (75) percent of the respondents indicated that only management/IT/HR teams are responsible for posting information to the intranet. Seventeen (17) percent of the respondents indicated that they are able to post information on intranet, while only three (3) percent indicated that everyone in the

organisation is capable of posting information on the intranet. The results are shown in Table 9 and Figure 8 below.

Contribution to intranet (B4)	Frequency	Percentage
IT/Management/HR	27	75%
Self/Team/colleagues	6	17%
All	3	8%

Table 9: Employee groups contributing information to the intranet

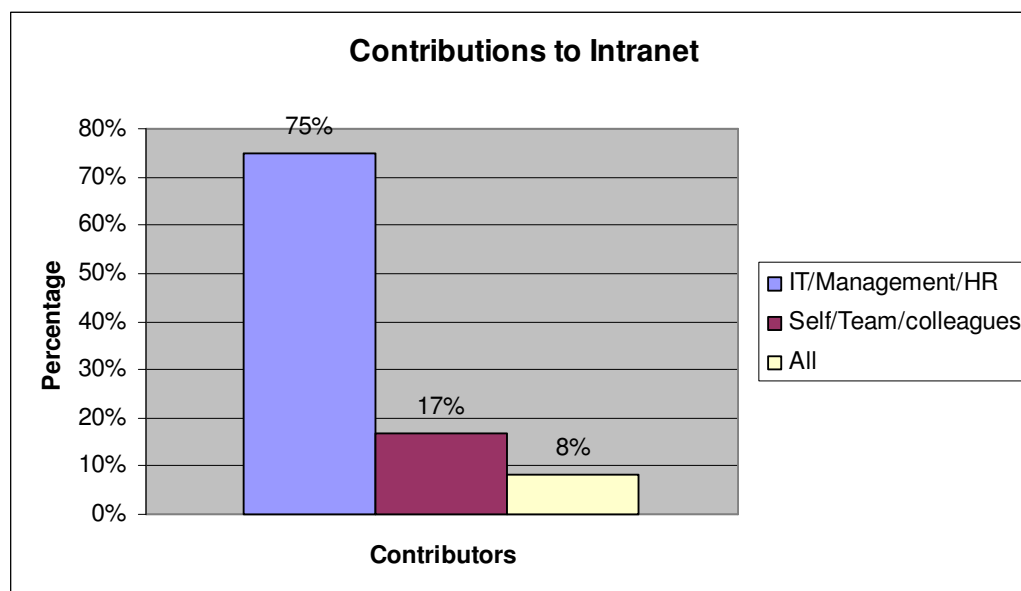


Figure 8: Graphical representation of percentage of employee groups contributing information to the intranet

4.8 Results on the use of intranet

A number of questions were asked in section C (attached in Appendix A) of the questionnaire to assess the manner in which organisations currently uses the intranet and the integrity of the information currently residing on the intranet as to whether it is relevant, up-to-date, reliable, dependable, and helpful in executing their work related tasks/activities.

The following results are reported below namely; (1) what information is currently available on the intranet, (2) the availability of the required/needed information, (3) the state of information currently residing on the intranet, (4) and the prevailing perceptions among the respondents in response to specific questions asked.

4.8.1 Information currently available on the intranet

To assess the information that is currently available on the intranet, respondents were given an option to select from the checklist the information that was currently available.

Table 10 and Figure 9 below shows the result of the selected information from the highest number of selections to the lowest number of selections.

Description	Percentage
Policies	86%
Communication bulletins	78%
Contact information:	75%
Vacancies	67%
Business products and information	67%
Manuals	64%
Leave forms	61%
Links to technical literature / standards	58%
Business reports:	56%
Key performance indicators	50%
Work instructions / procedures	50%
Active projects	47%
Knowledge database:	44%
Quality management System Documentation	44%
Adverts	42%
Work related information:	42%

Description	Percentage
Project information:	33%
Expert database:	14%

Table 10: Information currently available on the intranet

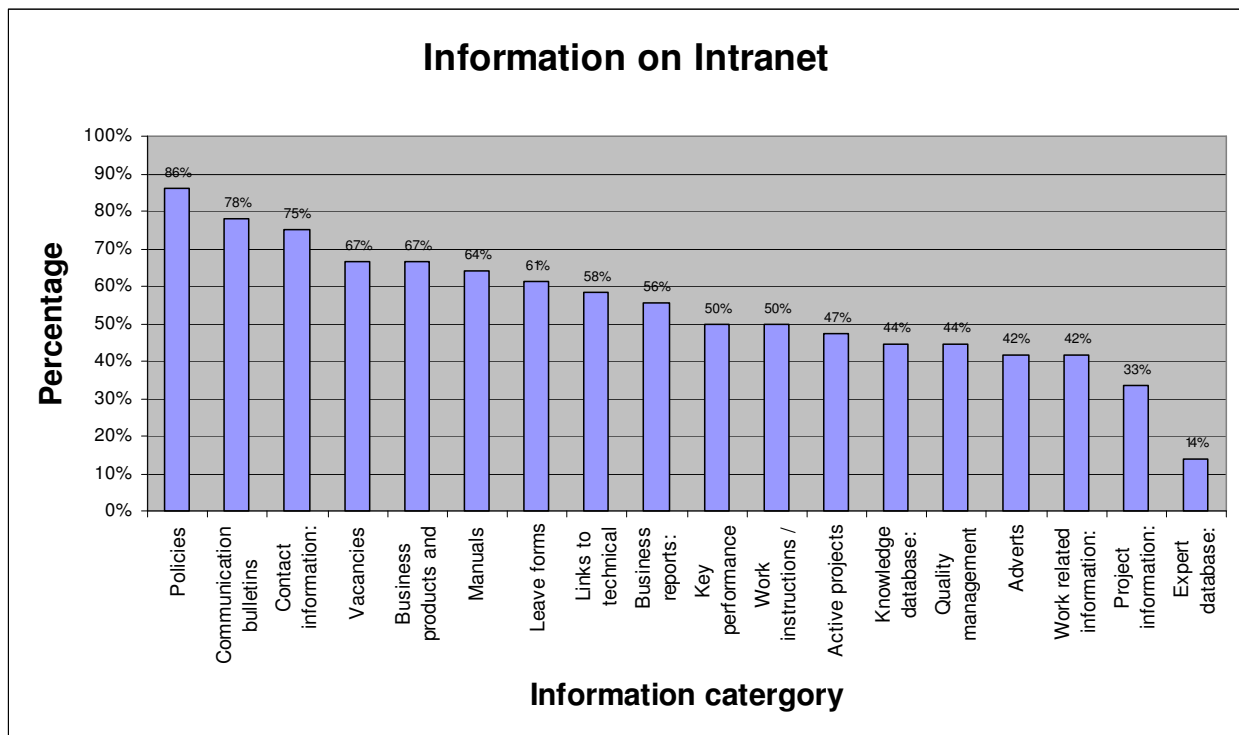


Figure 9: Graphical representation of information currently available on the intranet

The most available information on many intranet facilities is organisational ‘**policies**’; this information is featured in eighty-six (86) percent of the organisations that were represented in this survey. The second highest available information set is the ‘**communication bulletins**’ with a selection rate of seventy-eight (78) percent, and the least sets of information available is the ‘**expert database**’ of key personnel and ‘**project information**’ with selection rate of fourteen (14) percent and thirty-three (33) percent respectively.

4.8.2 Intranet information integrity

The integrity of information was categorized in to five areas namely; relevant, reliable, up-to-date, dependable and helpful to execute their respective jobs. These category were rated from a five point scale of 1 to 5 (with 1 = Extremely bad, 2 = bad, 3 = just-ok, 4 = good and 5 = extremely good). The ratings for respective categories are shown in Table 11 below.

Index Nr.	Rating	Relevant	Reliable	Up-to-date	Dependable	Helpful to execute Job
1	Extremely bad	6%	6%	6%	6%	8%
2	Bad	0%	0%	3%	3%	11%
3	Just-OK	25%	22%	25%	19%	22%
4	Good	42%	36%	28%	33%	36%
5	Extremely Good	17%	19%	22%	22%	3%
6	Good to better	58%	56%	50%	56%	39%
7	Bad to worst	6%	6%	8%	8%	19%
8	Mode	Good (4)	Good (4)	Good (4)	Good (4)	Good (4)
9	Missing Data	11%	17%	17%	17%	19%

Table 11: State of information currently residing on the intranet

The mode shown in Table 11 Index Nr. 8 of the responses were analysed and resulted in a rating of four (4) which means '**Good**' based on the scale given above. This implies that the average response of the respondents indicates that the data currently residing on the intranet is generally regarded as '**Good**' in the respective categories as mentioned above. Figure 10 shown below, shows the graphical plot of the data and all graphs shows a peak around a '**Good**' rating.

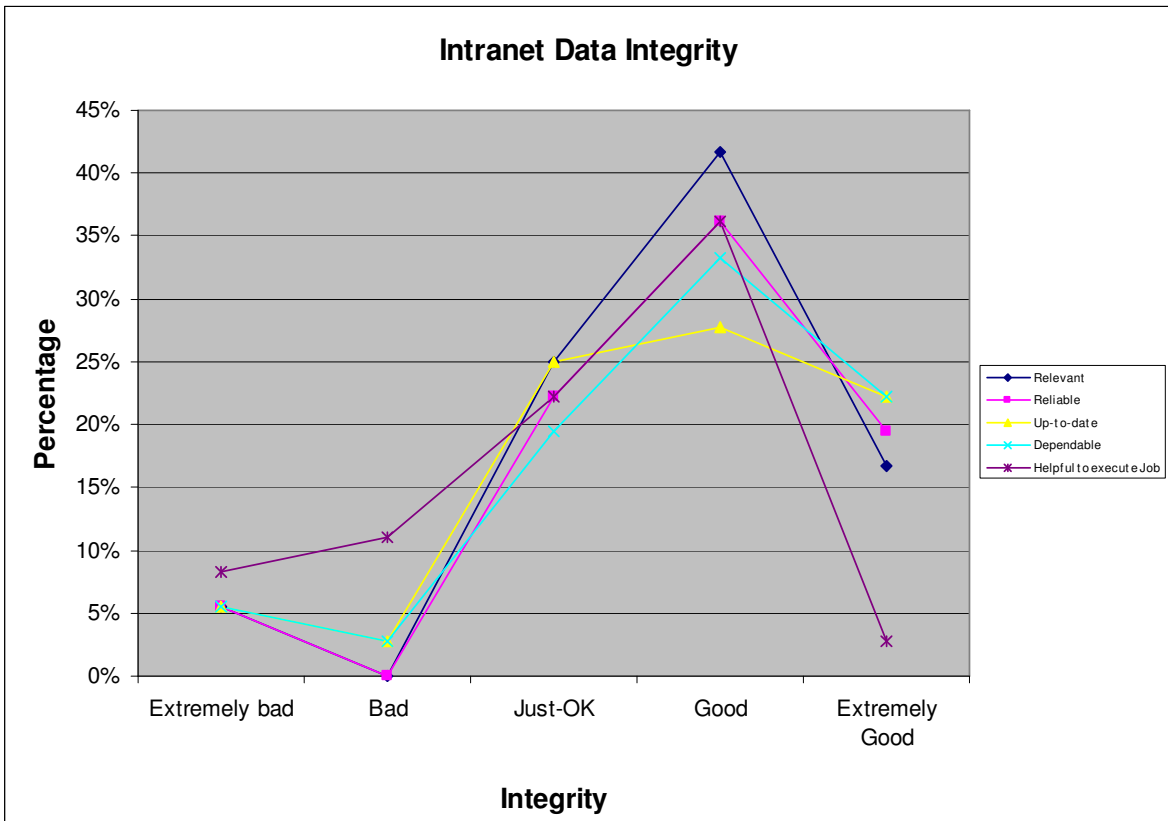


Figure 10: Intranet information integrity (for current information)

However, not all respondents gave a rating on all four categories. The missing data was also characterized and is shown in Index Nr. 9 on Table 11 above and Figure 11 below. Missing data was excluded from the analysis.

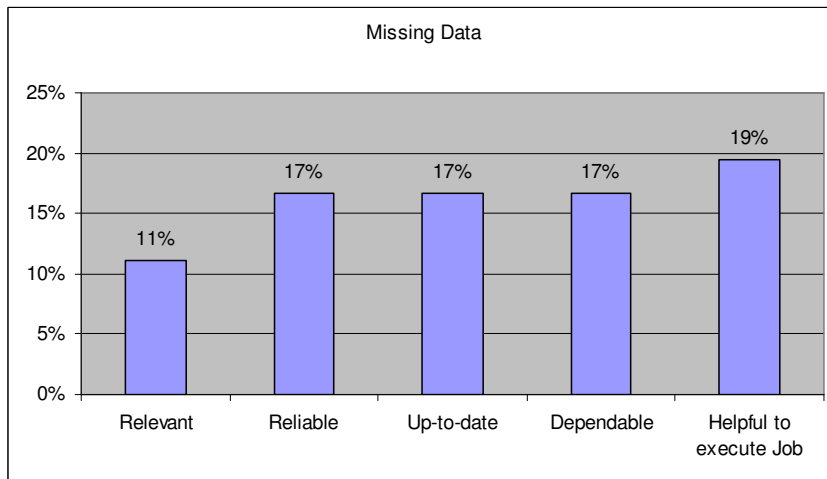


Figure 11: Missing data

4.8.3 Required information to help respondents to their jobs effectively

Respondents were asked to list the three (3) most important set of information that they require to see on the intranet to help them do their jobs effectively. Respondents listed specific information that they required/needed to see on their respective organisations' intranet. Sixty-four (64) percent of the respondents indicated that the information was already available and the remaining thirty-six (36) percent indicated that the information was not available. Refer to Appendix B for a consolidated list of information given by the respondents.

The information listed in Appendix B is an all-inclusive list; some information may or may not be applicable to certain organisations. Information like Maps, Legislations, Acts, etc., may be more applicable to government sector organisations such as municipalities while information like policies, procedures, contact information, etc., may be important and applicable to all organisations.

Respondents who indicated that their three most important information set was available on the intranet were also requested to rate the integrity of that specific information from a five point scale of 1 to 5 (with 1 = Extremely bad, 2 = bad, 3 = just-ok, 4 = good and 5 = extremely good) similar to the rating given in section 4.8.2 above. The rating results are shown in Table 12 below.

Index Nr.	Rating	Relevant	Reliable	Up-to-date	Dependable	Helpful to execute Job
1	Extremely bad	0%	0%	4%	4%	4%
2	Bad	0%	0%	0%	0%	4%
3	Just-OK	9%	22%	30%	26%	17%
4	Good	57%	52%	48%	52%	57%
5	Extremely Good	35%	26%	17%	17%	17%
6	Good or better	91%	78%	65%	70%	74%
7	Bad to worst	0%	0%	4%	4%	9%
8	Mode	4	4	4	4	4

Table 12: Intranet data integrity for key information related to work

The mode shown in Table 12 Index Nr. 8 of the responses was analysed and resulted in the rating of four (4) which means ‘**Good**’ based on the scale given above. This implies that the most frequently occurring response from the respondents indicates that the information currently residing on the intranet is generally rated as ‘Good’ in the respective categories as mentioned above. Figure 12 below, shows the graphical plot of the data and all graphs shows a peak around a rating of ‘**Good**’, which implies a reasonable fair amount of confidence on the information that is residing on the intranet.

The results indicating the responses for given categories are shown in Figure 12 below.

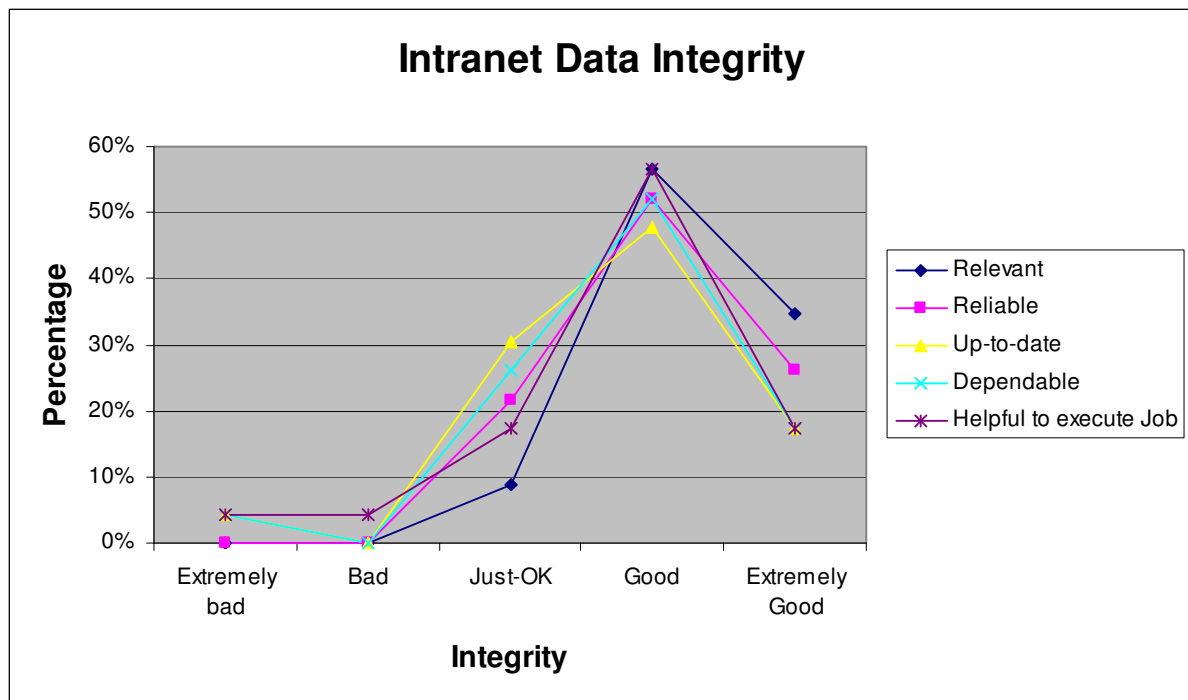


Figure 12: Intranet information integrity (for key information)

Again the results of Figure 12 are similar to those obtained in Figure 10 above. The responses indicate that in all categories (from extremely bad to extremely good) the integrity of key information available on the intranet has a peak on the ‘**Good**’ rating, which means that the information is regarded as relatively ‘Good’.

4.8.4 General perceptions about intranet within organisations

A number of questions were asked in section C6 of the questionnaire to determine general perceptions of the current information on the intranet for aiding in making

certain findings and deductions that are to be included when discussing the results in the results section of this report.

Index Nr.	Description	Strongly disagree	Disagree	Agree	Strongly Agree	Mode	Are the results favourable to the current use of intranet?
1	helping to do my Job	11%	22%	28%	36%	Strongly agree	yes
2	I can find information I need	6%	19%	36%	33%	Agree	yes
3	up-to-date	3%	11%	39%	44%	Strongly agree	yes
4	Relevant	11%	14%	33%	33%	Strongly agree	yes
5	Can contribute to intranet	19%	39%	14%	19%	Disagree	no
6	Reliable	6%	11%	33%	44%	Strongly agree	yes
7	difficult to find information	28%	36%	22%	11%	Disagree	yes
8	intranet is useless	47%	28%	14%	6%	Strongly disagree	yes
9	Can search for info	3%	17%	33%	42%	Strongly agree	yes
10	Prefer internet	14%	25%	25%	31%	Strongly agree	no
11	Seldom use intranet for work	25%	28%	28%	17%	Disagree	yes
12	Better intranet may be helpful	8%	6%	25%	58%	Strongly agree	yes
13	Productive information on intranet	6%	19%	28%	44%	Strongly agree	yes
14	Information is trustworthy / current	0%	6%	53%	39%	Agree	yes

Table 13: General perceptions to information on the intranet

Respondents were requested to rate a given statement according to their perception from a four point scale of 1 to 4 (with 1 = strongly disagree, 2 = Disagree, 3 = Agree and 4 = strongly disagree) to indicate if they agree or disagree with that particular statement.

The results of the responses are detailed in Table 13 above. The mode of the given responses was then calculated and listed in the mode column of Table 13. The purpose of analysing the mode is to determine the most frequent response among the respondents. A column was also added which indicated if the response was favourable to the current use of intranet or not. The 'yes' on the column indicate that the general response on the statement is favourable to the current use of intranet and the 'no' indicated that the general response is unfavourable. All but two responses were favourable as indicated in the appropriate column of Table 13 above. Responses that are favourable imply that some value to most of the organisations is derived in creating a culture of information sharing via the intranet, while an unfavourable response indicates otherwise.

The internet is a resource centre for all kinds of information; however the internet is not the right tool for harnessing organisational knowledge/information. In most cases, the information available on the internet is general in nature, and does not have the key knowledge/information that is unique to the organisation. Hence, the organisation must facilitate knowledge sharing via the internal systems such as intranet for maximum organisational value. High reliance on intranet for executing work related tasks/intranet indicates a poor management or distribution of information within the organisation. All information on the internet identified by employees to be relevant to their work related activities in the organisation must be localised by making the information or links to that information to be available on the intranet; hence the preference of internet over intranet is regarded as unfavourable.

A culture of knowledge sharing or a learning organisation must empower employees to contribute knowledge/information for distribution within the organisation. Therefore, when employees are not empowered to post information on the intranet, the organisation is deprived of the ability to harnessing tacit knowledge from its employees that could be valuable to the organisation.

4.8.5 Intranet search capabilities

A question about intranet search capabilities was also asked in the questionnaire to determine how the intranet is geared to support knowledge sharing. Fifty-eight (58) percent indicated that the intranet in their respective organisation do have intranet

search capabilities while forty-two (42) percent indicated that there was no intranet search capabilities in their organisation's intranet. The graphical results are shown in Figure 13 below.

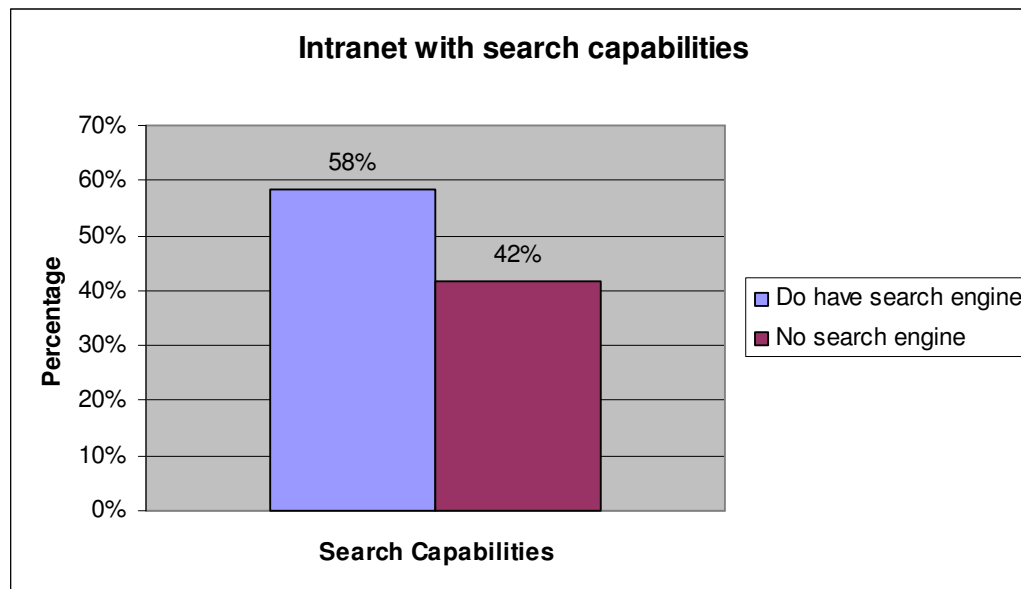


Figure 13: Response on intranet search capabilities within various organisations

An intranet with search capabilities is very useful in helping employees to find relevant information; hence a searchable intranet site offers many advantages which are related to user-friendliness, repeated use, easy access to information, fast access to needed information.

4.9 Knowledge sharing within organisations

The questionnaire listed a number of knowledge sharing and knowledge management tools that are normally used to share information within organisations. The respondents were requested to select the appropriate knowledge sharing and knowledge management tools that are being used in their respective organisation and also to indicate which of those are most effective in managing and sharing knowledge in the respective organisations.

The results of their responses are shown in Table 14 and Figure 14 below.

Index Nr.	Knowledge Management & Sharing Tools	Percentage used to share knowledge (%)	Most effective (%)
1	Emails	94%	58%
2	Meetings	81%	36%
3	Informal Communication	56%	8%
4	Telephone	56%	6%
5	Company Training programs	42%	6%
6	Work Sessions	33%	3%
7	Intranet	25%	19%
8	Central database	25%	0%
9	Internet	8%	0%

Table 14: Knowledge management tools in organisations

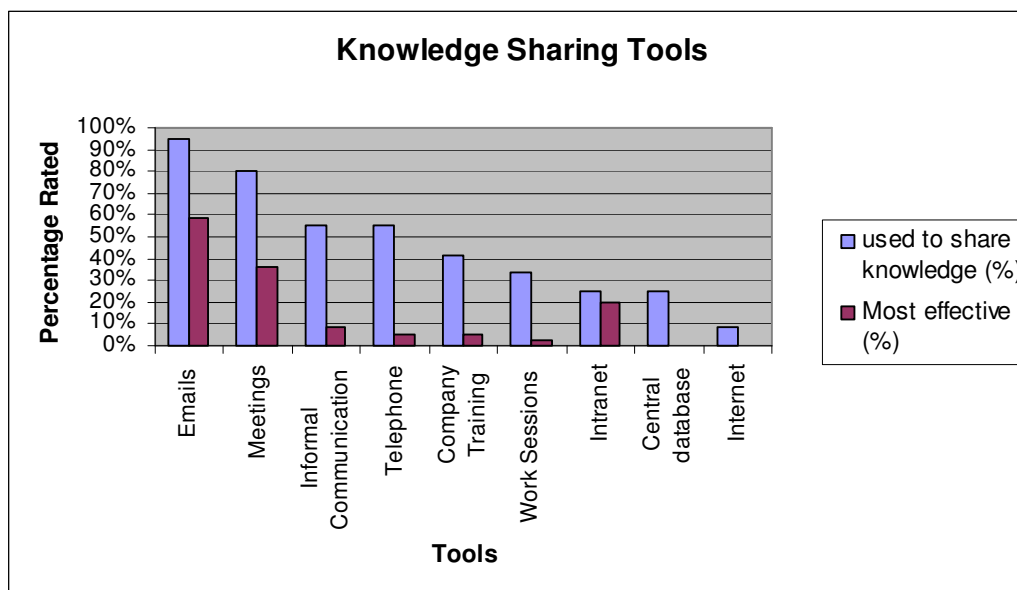


Figure 14: Knowledge management tools in organisations (graphical representation)

The **'email'** received the highest selection rate as a tool used for managing and sharing information in many organisations. The results presented in Table 14 and Figure 14 above indicates that ninety-four (94) percent of the organisations represented in the survey use email for managing and sharing knowledge among employees. **'Meetings'**

received a selection rate of eighty-one (81) percent and is second to email. **'Informal communication'** and **'telephone'** received a selection rate fifty-six (56) percent each positioning them in the third and fourth position of the most selected tools.

The **'intranet'** received a selection rate of only twenty-five (25) percent of the organisations represented in the survey as one of the tools used to manage and share knowledge, and thus obtaining the seventh or eighth position together with **'central database'**. **'Company training'** and **'work sessions'** received a selection rate of forty-two (42) and thirty-three (33) percent, positioning them on the fifth and the sixth positions respectively.

The **'internet'**, however has received the lowest selection rate of eight (8) percent as a tool to manage and share knowledge in organisations.

The **'email'** also received the highest selection rate of fifty-eight (58) percent as the most effective tool for managing and sharing knowledge followed by **'meetings'** with a selection rate of thirty-six (36) percent. The intranet received the third highest selection rate of nineteen (19) percent as the most effective tool for managing and sharing knowledge. The above-mentioned results are also present in the appropriate column of Table 14.

In order to assess the view of respondents if intranet access was a factor in improving employee's productivity, sixty-seven (67) percent of respondents answered **'yes'** and thirty-three (33) percent answered **'no'**. The results are shown in Figure 15 below.

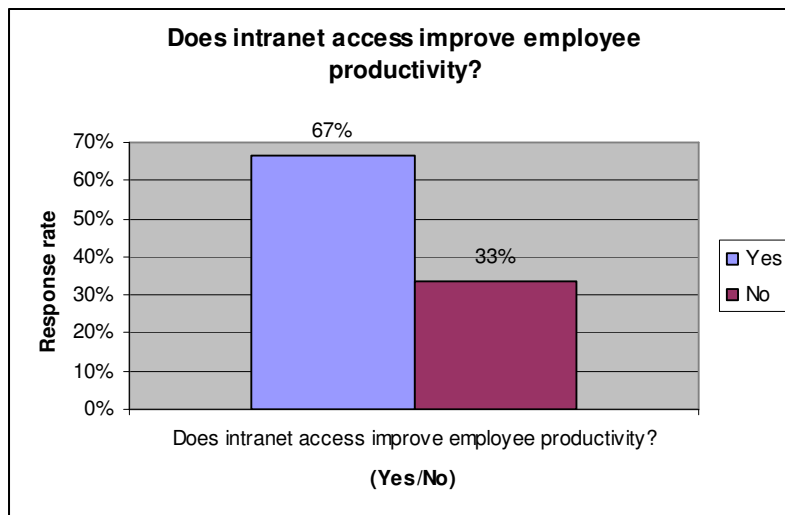


Figure 15: Respondents view on intranet as improving employee productivity

4.9.1 Actions/factors that can facilitate knowledge sharing in organisations

The following items listed below were some of the things mentioned that could facilitate knowledge sharing within an organisation.

- Incentives for knowledge sharing
- Expert database and contacts
- Department/project based WebPages with links on the intranet
- Allow employees to post and edit information on intranet
- Create culture of learning and sharing information
- Make intranet user friendly, add or constantly improve search engine capabilities
- Increase intranet awareness by alerting employees when new information is added or updated
- Create accessible online body of knowledge resources per functional areas
- Publish electronic newsletters via intranet
- Constant information updates
- Encourage employees to contribute to the intranet by modifying job description to include the responsibility of writing stuff that can add value to the organisation or to colleagues for publishing on the intranet.

5. DISCUSSION OF RESULTS

The purpose of this research as cited in section 1.1 of this report, is to investigate the utilisation of intranet in South African organisations as a knowledge management tool and to recommend ways in which South African organisations can make best use of intranet to gather, store and disseminate business information and business knowledge to all employees and other relevant stakeholders within the organisation to improve business performance.

The research problem was broken down into three (3) main objectives detailed in section 1.1.1. Therefore, this section is aimed at discussing the results to determine if the three (3) main research objectives were realised and make recommendations.

5.1 The first research objective

The first research objective was to investigate ways in which intranet is used in various organisations. As cited in section 3.1.6.1, the following questions or parts of the questions thereof in the questionnaire were relevant in evaluating this objective, i.e. B1, B2, B3, B6, C1, C3-C6 and D3.

The research results indicate that more than seventy (70) percent of the organisations represented in this research study provide intranet access to more than eighty (80) percent of their workforce, (see Figure 4). It can therefore be deduced that the intranet can be an effective medium to disseminate information and reach a relatively high number of employees within an organisation.

Seventy-five (75) percent of the respondents indicate that the information residing on the intranet is mainly contributed by management, IT and HR. Only eight (8) percent of the organisations represented in the study have enabled all their employees to post information onto the intranet, which is relatively a low percentage. This implies that managers, IT and HR teams are the main contributors if not the only contributors who decides on what information is to be posted on the intranet. However, employees may indirectly contribute via their influence in their departmental or functional meetings with their managers.

The top five category of information residing on the intranet (as reported in section 4.8.1) is as follows: listed in their descending order; (1) policies, (2) Communication bulletins, (3) employee contacts, (4) vacancies, (5) and the business product catalogue. In many organisations, such information is normally produced by managers/HR teams and thereafter this information is given to IT for purpose of posting it to the intranet.

The integrity of information residing on the intranet is generally regarded as good in terms of its reliability, relevance, dependability, timeliness and being helpful to execute/perform their jobs. Therefore, this implies that in general the information residing on the intranet is well maintained.

The usage of intranet in organisations is fairly good based on the following results; 47 percent reported to be always using the intranet for getting access to information, 31 percent indicate that they most often (or regularly) use the intranet to find information, resulting in a total of 78 percent indicating a fairly high usage of the intranet.

Given a high percentage (i.e. 75% of the respondents) indicating that management, IT and HR teams are the main contributors to the information on the intranet, this indicates that the intranet is mainly used by managers to pass down information to employees. The type of information residing on the intranet, such as policies, communication bulletins, vacancies, employee contacts, etc, provides evidence that the intranet is mainly used by managers as a communication instrument to employees about information that is of interest to management.

Therefore, the results infers that most South African organisations use the intranet mainly as a management communication tool to inform employees about the information that is of interest to management, in which employees should know or be informed about. Employees, on the other hand, use the intranet to retrieve organisational policy information/documents, to search and view new internal opportunities/vacancies, to find employee contacts, to check for latest announcements, etc. This deduction is also supported by the fact that the intranet is one of the least selected tools for knowledge sharing purposes as reported in section 4.9 of this report.

5.2 Second research objective

The second research objective was to investigate ways in which employees in their respective organisations share their organisational know-how and their experience, and the challenges they experience using the current methods. As cite in section 3.1.6.1, the following questions or parts of the questions thereof in the questionnaire were relevant in evaluating this objective, i.e. B1, B2, B3, B4, B5, C2, C6, C7, D1, D2 and D4.

The results reported in section 4.9 (see also Figure 14) indicates that employees mainly use emails, meetings, informal communications (discussions in the kitchen, canteen, corridors, or employee's desk), and telephonic conversations as the means to share and disseminate knowledge among themselves. Therefore, for these tools to be very effective requires the ability of individual employees to network with others.

From the researchers personal experience, the main challenge of using the above tools is that if your are not on a particular email distribution list in which discussions and decisions were distributed to, or maybe you were unable to attend a particular meeting, or you happen to have missed your coordinated tea break due to other pressing issues. During that particular time, when you were not available, you find that the most crucial information or knowledge that was passed on to others without you knowing could have helped you to make a better informed decision to avert a very serious risk or to put the organisation in a highly competitive position.

Such incidents lead to un-informed decision making, and hence resulting in very serious blunders that could have been easily avoided. Only to find that the organisation has experienced a similar situation in the past and a few individuals have learned a lesson which was not well propagated throughout the entire organisation and has not been documented anywhere. Many organisations are rich with tacit-knowledge that resides in the heads of a few individuals, and such knowledge and experience can easily evaporate when those who posses such knowledge are no longer available. This will result in employees new to the organisation or new in their roles to repeat the same mistakes their predecessors made in those particular positions, hence cause the company to pay over and over again for the same mistakes.

To avoid such instances of re-inventing the wheel, employees need to have a culture of learning from past experience and passing on that experience to everyone in the organisation, to avoid repeating the same mistakes in various sections, departments or functional areas of the organisation. Starburk (1992) cited that innovations arise at the intersection between flows of people and flows of knowledge. In many organisations, the most important information or organisational knowledge is deeply hidden in the email inboxes of their employees; some of these employees don't even know that they have the most valuable information in their email inboxes that was emailed a day, a week, a month, or a year ago.

Emails, meetings and telephonic conversations are very good tools for sharing and distributing information, but the value they carry in the organisation is short lived by the following issues; (1) lack of accessibility (i.e. emails are treated as personal and confidential) and (2) high potential of exclusivity (i.e. some people intentionally or unintentionally excluded in a meeting or an email distribution list). These tools (email, meetings, etc) may create more harm than good in an organisation when used in isolation, because they tend to confine knowledge to certain individuals and result in tacit-knowledge among various select groups. Therefore, a tool like intranet when used effectively can complement emails and meetings by providing a creative way of archiving knowledge or information to make it accessible to everyone who needs it, whenever they need it, i.e. providing information on-demand. Hence, the following factors such as, intranet search capabilities, proper tagging of information, a constructive critique of posted information, ownership, constant review of information, a culture of knowledge sharing, etc, can be of utmost importance to transforming the learning culture of an organisation.

5.3 The third research objective

The third and final research objective is to make deductions and conclude about the utilisation of intranet in South African organisations as a knowledge management tool and make recommendations. Recommendations will be discussed in section 5.4 below

Based on the results reported on section 4.9 (see Table 14 and Figure 14), which indicate that only 25 percent of the South African organisations represented in the

survey utilises intranet for managing and sharing information/knowledge. Therefore, **it is deduced that the majority of South African organisations are not effectively utilising the intranet to manage and share knowledge.**

The majority of organisations (more than 70 percent), as indicated in the survey results given in Figure 4 and Table 5 on this report, do provide their employees with access to intranet. Most employees do not have the responsibility of posting information directly to the intranet. The results indicate that management, IT and HR teams are the main contributors to information on the intranet, hence the possibility of regarding the intranet as a tool for management to push down information to employees.

However, the survey indicates that organisational employees do utilise intranet to get information such as policies, employee contacts, communication bulletins, etc. the survey results also indicates that most employees regards the information residing on the intranet as, relevant, reliable, dependable, up-to-date and helpful to do their respective jobs. This implies that the information on the intranet is well maintained in the many of the SA organisations.

The research further indicates that emails and meetings (as reported in Table 14 and Figure 14) are currently the most effectively utilised tools to manage and share knowledge/information in organisations. However, the email and meetings has two main drawbacks, i.e. (1) lack of accessibility and (2) high potential of exclusivity as explained in section 5.2 above, which can impede the realisation of KM objectives.

Given the poor utilisation of intranet by SA organisations, there is however, potential and opportunities that SA organisations can pursue to use the intranet as a strategic tool for managing and sharing organisational knowledge to improve productivity and the performance of the business. The next section outlines a series of recommendations that organisations can do to build and effective intranet system for facilitating knowledge management, sharing and distribution.

5.4 Recommendations

Chait (1999) proposes that knowledge management requires the concurrent management of four domains namely; culture, content, process and infrastructure, (Kruger and Snyman, 2005).

To effectively manage knowledge in order to influence knowledge creation activities in the setting of an organisation, upper management needs to play very important role in encouraging employees to create and share knowledge. Management must create a knowledge management strategy that will be supported throughout the organisation.

Tiwana (2000) states that knowledge is the only source of innovation and sustainable competitive advantage, therefore the benefits of strategising on knowledge management and effectively executing this strategy may result in the organisation gaining a competitive advantage over its competitors in serving a particular market, hence realising huge economic benefits.

5.4.1 Giving ICT and knowledge management a strategic emphasis

Firstly, upper management must give ICT and knowledge management a strategic emphasis in the organisation. This means that the goals of ICT and knowledge management strategies should be reflective of the goals of an organisation. Kruger and Snyman (2004) cited that in order for an organisation to be successful in the exploitation of their knowledge assets, an appropriate “fit” between the organisation’s mission and objectives and its knowledge management strategy should be found.

The ICT infrastructure such as emails, intranet, extranet, internet, etc, must be designed and implemented to ensure that they will effectively support knowledge management activities such as, storing, archiving, searching, access control to sensitive information and information dissemination throughout the entire organisation, to improve its business execution processes. This can be done by putting knowledge management processes in place that will ensure that knowledge is captured in every department and in every project that is executed within the organisation. When a project is carried out, knowledge, experiences and lessons learned must be captured in all phases of the

project until its end of life and be available for use to improve the current projects or the new ones on the pipe line.

Organisations must have processes in place to ensure that operational experience of projects or work related tasks/activities is enforced when carrying out new projects. For example, comparison must be made between old and new projects when it comes to project similarities, assumptions, project plan, scheduling, budget, cost, risks, resources, profit margins and other factors. Based on the outcome of the comparison, differences must be reconciled through proper justification processes. This will result in an organisation that is continuously learning and improving the way it executes its tasks or activities.

When decisions are made in the organisations by various teams, departments, management, etc, based on current constraints, risks, market conditions, etc; these decisions must be well documented and archived in a central place such as the intranet so that the information is accessible, searchable, and available on demand, i.e. available as and when it is needed. This will ensure effective utilisation of organisational knowledge for improving business performance.

5.4.2 Management and employees actions in facilitating knowledge management

Management must encourage a culture of sharing information between employees and ensure that employee efforts to create and share knowledge are recognised and rewarded appropriately.

Management must coordinate knowledge creation activities to encourage and motivate functional areas, teams, projects, departments, etc, to take ownership and create knowledge base resources in areas of their speciality and publish the information on the intranet to keep the organisation up-to-date and abreast with current organisational information and activities that are taking place.

Employees must take initiatives to screen and extract useful information from various sources such as, internet, intranet, emails, meetings, communication bulletins, informal discussions, conferences, and so on. This information must then be packaged intelligently with all its sources and uses well identified for future usability.

Create expert databases across all functional areas of the organisation that will help to guide employees on who possesses what skills and expertise within the organisation to ensure that when decisions are made, relevant people are called in to participate in that decision process to improve the quality of decisions taken by the organisation at various levels.

Employees' job descriptions and performance appraisal must reflect the responsibilities and rewards that are related to knowledge creation and knowledge sharing task/activities that supports the strategic objectives of the organisation.

Employees must interact across disciplines in the organisation to encourage innovation and synergy with other members of the organisation, as cited by Starburk (1992) that innovations arise at the intersection between flows of people and flows of knowledge. This implies that the more people interact, the more the knowledge flows, hence innovation is inevitable in such an environment.

5.4.3 Intranet features to facilitate knowledge management

There are various intranet features that must be put in place to enable effective knowledge management via the intranet. Some of the features may not be in place, and they won't happen overnight. These features require a gradual implementation, and the organisation must have a strategy to put them in place. The utilisation of intranet as a knowledge management tool is not an option but a need. Intranet has a huge potential in becoming a highly effective tool to manage and share knowledge in an organisation. This can be seen from the way the internet has revolutionised the world and hence open new ways of sharing knowledge and information with the entire world. The intranet has therefore, the same capabilities as those on the internet, they just need to be utilised effectively within organisations.

Davenport and Prusak (1998, p.17) states that, a knowledge advantage *for an organisation (emphasis mine)* is a sustainable advantage because it generates increasing returns and continuing advantages. Tiwana (2000, pp. 100) states that knowledge is the only competitive advantage that cannot be copied, because knowledge is protected by organisational context. Therefore, organisational efforts to create, manage and share knowledge are never in vain, when the organisation matures

in its processes of creating, managing and sharing knowledge the full benefits will be realised.

The following are the list of intranet features that will enable effective utilisation of intranet as a knowledge management tool.

Advance search capabilities, i.e. to search for information via keywords, date, author, department, project name, lessons learned, operational experience, etc.

People must be able to comment on the information posted on the intranet and give their remarks, such as, very useful, used on project xy, outdated, superseded by, good work, etc. Comments and remarks can therefore be used to assess and/or improve the quality of information.

The author must be able to edit and updated his/her information to reflect new developments.

All employees must be able to add and modify their own content on the intranet, which they perceive to be adding value to the organisation in their own discretion.

Employees must critique the content on the intranet and information like the author's reputation, comments and remarks by others, meetings and discussions with key people around the information, and so on, to assess the integrity of information posted on the intranet ensure that the use of information is appropriate.

Advanced intranet features featured in web 2.0 or intranet 2.0 such as, online discussions, online forums, online meetings, online video, etc, must be gradually introduced as intranet technology further develops, in order to create stronger networking groups within the organisation to facilitate the flow of knowledge and hence create an innovative environment.

6. CONCLUSION

Organisations are creating a lot of useful knowledge through its unique activities, in the form of lessons learned from past experiences, collective decision making, unique organisational resources, skills and capabilities, unique interaction between employees in the context of a unique environmental setting of the organisation, etc. These unique factors can help the organisation to develop and create distinctive knowledge resources and capabilities that can be passed on to the entire members of the organisation to result in a highly effective and innovative organisational setting/context. It is the effective use of such knowledge that can create sustainable competitive advantage with capabilities that are hard or impossible for competitors to copy, hence enjoy endless economic benefits.

However, many organisations prove to be ineffective in capturing such knowledge and experiences, hence they continue to re-invent the wheel by repeating the same mistakes that were committed in the past. As a result, organisations continue to operate in a vicious cycle that is unending, because of poor knowledge management.

This research study highlights the fact that organisations may have the most powerful tools in their toolboxes which can be utilised effectively to facilitate knowledge sharing and knowledge management to elevate the performance of the organisation.

Organisations continue to spend large sums of money in investing in ICT infrastructure, such as emails and the intranet, but never utilises them effectively.

The author has deduced from this study that intranet in many organisations is under utilised to facilitate knowledge management in South African organisations.

Organisations continue to invest large sums of money to build, implement and maintaining the intranet infrastructure, but its capabilities remains under utilised to serve the strategic objectives of the business.

South African organisations must start to harness what is termed to be tacit knowledge, i.e. knowledge residing in the heads of individual employees, by creating a culture of knowledge creation and knowledge sharing among employees. The intranet among others is one of those enabling tools that are being used by the most successful and innovative organisations around the world for knowledge management purposes. Big

organisations, such as Microsoft, Intel, Motorola, IBM, etc, are taking advantage of the intranet capabilities to improve their knowledge management and knowledge sharing culture to continue to innovate and stay ahead of competitors.

6.1 Limitations

The most apparent limitation of the study is that most participants were mainly from organisations centred in the Gauteng province, South Africa. The findings of the research study may therefore represent only average organisations around Gauteng South Africa. Given that the Gauteng province is the centre of the South African economic activity and that most South Africa business organisations are based in Gauteng, therefore the findings may be the true reflection of the whole South African community of organisations.

The second limitation of the study is that the organisations represented by the people who participated in the survey were spread across many industry sectors; hence there were not enough representative samples that could allow conclusive finding per industry sector.

The third limitation of the study is that the study allowed only one participant per organisation to represent the entire organisation. Most often, people have different views on the same issues, depending on background and experience of the respondents. Therefore, the results may significantly differ if those with better or worse expectations were selected relative to those who participated.

The fourth limitation of the study is that there are no quantifiable benefits that can be deduced as a result of the organisation utilising intranet for knowledge management and the lack-of those benefits from the organisations that are not utilising the intranet.

Although the study was limited to South African organisations, I believe that the findings of this study will still be representative of organisations in other developing countries like South Africa because variety of organisations are covered. This will be true unless the countries are better of, or worse of than South Africa.

6.2 Future research

This research study did not make any distinction between organisations. Therefore, the findings presented in this study may be regarded as generic. More research work can be done in a particular industry, for example, conducting the same research in organisations operating in the banking industry, and compare the business performance indexes of organisations that utilises the intranet for knowledge management and knowledge sharing purposes and to those organisations that do not utilise the intranet for knowledge management and knowledge sharing purposes. The findings can therefore be used to quantify the benefits thereof.

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APPENDIX A : RESEARCH QUESTIONNAIRE

Questionnaire

Utilization of intranet within your organisation

A. Background details

1. Your Name (Optional)

2. What is the name of your Organisation?

3. How many people are employed in your organisation?

- i. Less or equal to 50
- ii. More than 50 but less or equal to 100
- iii. More than 100 but less or equal to 500
- iv. 500 or more
- v. Best estimate of the number of people in your organisation _____

4. Organisation type

- i. Engineering
- ii. Banking
- iii. IT
- iv. Insurance
- v. Manufacturing
- vi. Consulting

- vii. Academic
- viii. Other (Specify) _____

5. What is your role in the organisation?

- i. Management
- ii. Technical
- iii. Designer
- iv. Adviser / Consultant
- v. Administrator
- vi. Personal Assistance / Secretary
- vii. Planner
- viii. Supervisor
- ix. Other (specify) _____

B. Intranet access

1. Do you have intranet in your organisation

- i. Yes
- ii. No

2. How many people have intranet access within your organisation?

- i. 10 - 20%
- ii. 20 - 50%
- iii. 50 – 80%
- iv. 80 – 100 %
- v. Your best estimate _____

3. How frequent do you access the intranet.

(1 = not used, 2 = rarely used 3 = average, 4 = most often, 5 = always)

Your rating _____

4. Who are the main contributors of the information relevant to you on the intranet?

- i. IT
- ii. Yourself
- iii. Your project team
- iv. Management
- v. Other (Specify) _____

5. Can you post information on the intranet?

- i. Yes
- ii. No

C. Use of intranet

1. What information is residing on your organisation's intranet, please tick the information that is available

- i. Employee contact information such as (Telephone directory, email addresses, etc)
- ii. Adverts (selling of secondhand items between employees)
- iii. Company policies
- iv. Vacancies
- v. Leave forms
- vi. Business products and information

- vii. Company projects that are currently active
- viii. Project information (project objectives, who's doing what, when, how and why in that project)
- ix. Company business reports (Financial reports, project or product performance, etc.)
- x. Work related information (who's doing what, when, how and why)
- xi. Expert database: to help you identify people who can give you advice to do your work effectively (i.e. who knows what within the organisation)
- xii. Knowledge database: information needed to help you do your work effectively (e.g. guidelines on designing a website, opening a new account, etc)
- xiii. Other (Specify) _____

2. What is your perception based on the intranet content of the above selected.

(1 = Extremely Bad, 2 = Bad 3 = Just ok, 4 = Good, 5 = Extremely Good)

- i. Is the above information Relevant to you?
- ii. Is the above information reliable to you?
- iii. Is the information up-to-date?
- iv. Is the information dependable?
- v. Is the information helpful in executing your job?

3. What are the three most important information content that you require from the intranet to help you and your colleagues to do your respective jobs better?

- i. _____
- ii. _____
- iii. _____

4. Is the above information available on the intranet

- i. Yes

- ii. No

5. If yes please indicate how you would rate the following based on the following scale

(1 = Extremely Bad, 2 = Bad 3 = Just ok, 4 = Good, 5 = Extremely Good)

- i. Is the above information Relevant to you?
- ii. Is the above information reliable to you?
- iii. Is the information up-to-date?
- iv. Is the information dependable?
- v. Is the information helpful in executing your job

6. Please indicate if you agree of the following statements? Based on the scale below

(1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree)

- i. The information on the intranet is helping to do my job better (_____)
- ii. I can find the information I need on the intranet (_____)
- iii. The intranet content in my organisation is up-to-date (_____)
- iv. The intranet content in my organisation is relevant to my work (_____)
- v. I can contribute my knowledge and experience via the intranet (_____)
- vi. I can rely on the information on the intranet (_____)
- vii. I can hardly find the information I need on the intranet (_____)
- viii. The intranet in my organisation is useless (_____)
- ix. I can search for information on the intranet (_____)
- x. The internet is more useful in finding work related information than the intranet (_____)
- xi. I seldom use the intranet for work related information (_____)
- xii. If the intranet in my organisation had relevant knowledge specific to my organisation and the advance search capabilities as in the internet; this will extremely improve the quality and productivity of my work. (_____)
- xiii. Intranet in my organisation has the information that helps to enhance my knowledge about the organisation. (_____)

7. Does your intranet have a search engine?

- i. Yes
- ii. No

D. Knowledge sharing within your organisation

1. Which method do you frequently use to share work related information with colleagues in your organisation (select if applicable)

- i. Intranet
- ii. Email
- iii. Telephone
- iv. Meetings
- v. Work sessions
- vi. Informal talks (talks in walkways, tearooms, colleague's desk)
- vii. internet
- viii. Company training programs
- ix. Central database (ERP, i.e. Enterprise Resource Planning such as SAP, Peoplesoft and Oracle)
- x. Other (Specify)_____

2. **Which of the above selected is most effective way of sharing information to you.**

3. **What can be done to facilitate knowledge sharing in your organisation**

APPENDIX B : LIST OF INFORMATION THAT VARIOUS RESPONDENTS WOULD LIKE TO SEE ON THE INTRANET

Index	Description
1	Policies and work procedures
2	Communication bulletins
3	Contact information:
4	Vacancies
5	Business products and information
6	Manuals
7	Leave forms
8	Links to technical literature / standards
9	Business reports:
10	Company Key performance indicators
11	Work instructions / procedures
12	Active projects
13	Knowledge database:
14	Quality management System Documentation
15	Adverts
16	Work related information:
17	Project information:
18	Expert database:
19	Library Services
20	Departmental information and services
21	Information and status of projects
22	Production and quality reports
23	Production status
24	Various Registers

Index	Description
25	Work related information
26	Issues of concerns from various departments
27	Useful links
28	Support Services and their contact details
29	Job Descriptions
30	Personnel Skills database
31	Industry standards
32	Risk management issues
33	Products offered by other departments
34	Industry Best practices
35	Relevant Acts
36	Performance management information
37	Organisational structure
38	Intranet Web forums
39	Specifications
40	Strategic issues
41	Training information
42	Technical support forums
43	General announcements
44	New technological developments
45	Information alerts
46	Datasheets and drawings
47	Guidelines
48	Legislations
49	Personnel whereabouts
50	Client and supplier information and other stakeholders

Index	Description
51	Fun and interesting
52	Useful Maps

APPENDIX C : SPREADSHEET ATTACHEMENT

Analysis spreadsheet attachment



E:\MBL 3\mb1 thesis\
Research Data - final