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HUMAN RESOURCE ISSUES IN A KNOWLEDGE MANAGEMENT ENVIRONMENT

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A research report submitted to the Faculty of Management, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Management.

February, 1999

ABSTRACT

Knowledge management only recently gained respect as a strategic business tool. Assisted by technology, the ability to gather, formulate and share data took on new dimensions. Knowledge management is multifarious and covers areas such as cognitive science, business process and human resources management. Human resources management in turn covers a wider area than knowledge management. The two areas overlap because knowledge creation is primarily a human activity.

Critical success factors and specific objectives for human resources management within a knowledge-based environment were the main outcomes derived from this research.

Human resource practitioners need to change their work practices in order to be effective in a knowledge-based environment. This was a key finding of the research. It was established that information technology management was still the main driver of knowledge management projects in organisations, but had also grown tremendously in understanding human issues within technical environments.

DECLARATION

I declare that this research report is my own, unaided work. It is being submitted in partial fulfilment of the requirements for the degree of Master of Management (Human Resources) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.

_____

Robert Kenneth Scott

This _____ day of _____, 19____

DEDICATION

To my wife Natasha and daughters Megan & Amy,

Without your words of encouragement and endless amount of support, this report may never have happened.

ACKNOWLEDGEMENTS

The author wishes to acknowledge the assistance received from the various people who gave of their time to make this research report possible:

My supervisor, Professor N. Duffy, for his guidance and support throughout the research process.

The South African panel of experts, namely Professor N Duffy, Mr A Jooste and Mr R Radley for their assistance in identifying participating organisations and respondents.

The individual respondents and their host organisations that agreed to participate in this study.

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GLOSSARY OF TERMS

PC	Personal computer. A term denoting a desktop computer that allows the user to manage the data and environment of the computer
HRM	Human resources management. The management of the activities under the direction of a human resource or personnel department
BPR	Business process re-engineering
CSF	Critical success factor
Cognitive Science	A school of science dealing with human cognition.
Data Mining	A term denoting the extraction and manipulation of large volumes of electronic data from various data bases.
Intranets	Private computer networks using a web browser to navigate.
Artificial Intelligence	The use of computer technology to simulate thinking patterns similar to the human mind.
CEO	Chief executive office. An organisational position normally regarded as the most senior in an organisational structure.
CIO	Chief information officer. A new type of organisational position responsible for the management of information and knowledge.
KBE	Knowledge-based environment. A work environment that is supported by a formal knowledge management strategy.
E.Q	Measure of emotional intelligence
Workflow	Software that runs in conjunction with other software and controls predefined business rules electronically

1. Introduction

1.1 Background to the Research

Knowledge management (KM) occurred for decades in differing forms. Storing and sharing of data was not termed knowledge management until the phrase was popularised in the early 1990's. The introduction of the personal computer (PC) made access to information easier for many people in their personal and business capacities.

In this constantly changing, highly competitive business world, the management of information and its transformation into usable knowledge can give organisations a competitive edge. Service organisations in particular identified that keeping staff knowledgeable as well as providing easy access to relevant data, provided superior service opportunities to clients.

The tremendous growth of the computer industry created much hype about the power of computer systems to provide information. Knowledge management was perceived as management of information and was drawn along with the computer information hype.

CHAPTER 1: INTRODUCTION

The introduction of knowledge management into organisations often failed as the focus of these systems remained in the realm of information technology and computers in general.

Recently, an understanding emerged that knowledge management as an organisation tool did not hinge on the technical abilities employed to manage the information, but rather on the people that were required to use the information.

This research evaluated the areas of human resources management (HRM) that are potentially affected by the introduction of a knowledge management system or the creation of knowledge-based environment.

1.2 What is Knowledge Management?

Wells, H.G. (1940) said "An immense and ever-increasing wealth of knowledge is scattered about the world today; knowledge that would probably suffice to solve all the mighty difficulties of our age, but it is dispersed and unorganised. We need a mental clearinghouse for the mind: a depot where knowledge and ideas are received, sorted, summarised, digested, clarified and compared."

Even in the 1940's, an understanding existed that knowledge management required tools to assist with the process of making the

information worthwhile and useful. Finding of a common definition for knowledge management was complicated by whether one viewed the concept from a technical perspective or a human perspective. There appears to be a gradual movement towards a common understanding that the technical and humanistic views both complement each other rather than oppose each other.

If knowledge management as a concept were fully understood, it would offer itself as a tool to manage organisational adaptation, survival and competency in a constantly changing environment. It encompasses organisational processes that seek to combine data and information processing capacity, and the creative and innovative capacity of human beings.

Hunter (1998,p1) held that " Knowledge management harvests and shares intellectual assets for breakthrough results in enterprise productivity and innovation. It is a process that involves creating, harvesting, assimilating and leveraging knowledge to produce a smarter and more competitive organisation."

As the world moves into a new age of knowledge, it remains that the human assets of the organisation become the keys to success until such time that computers can operate at the same level of the human mind. For this reason human resources management must identify

and understand their new role. These far-reaching implications make this a compelling topic.

Manville, B. & Foote, N. (1996) made the point that executing a knowledge-based strategy was not about managing knowledge, but rather about nurturing people with knowledge. Acquiring knowledge for knowledge's sake lacked performance discipline, but efforts to engineer knowledge in some mechanical way subverted the human dimensions of learning. The solution is to balance the process with the human style, by tapping the knowledge locked in people's experience. Tacit knowledge was frequently overlooked or diminished by companies. In contrast, most companies have elaborate systems to capture and share their explicit knowledge. Explicit knowledge would never translate into a winning strategy because the knowledge base would not include the real wealth (tacit knowledge) of the employees.

1.2.1 The Role of Human Resources Management

The role of HRM moved out of the industrial relations mode prevalent in South Africa during the 1980's and early 1990's. It was evident that it could not be the sole responsibilities of HRM to ensure employees were productive, challenged and rewarded correctly.

The middle 1990's saw HRM activities integrated into many LM and supervisory roles. LM could no longer divorce themselves from their own employee's human issues. The HRM role started partaking in organisational strategic issues and the function began being represented at senior levels in organisations. This new role of HRM is less concerned with being admirable to all employees, and is focussed on the holistic development of employees and the environment to align with organisation goals.

As organisations move into the era of knowledge, the HRM specialist needs to understand that a new ecology or environment is required in order for the benefits of concepts such as knowledge management to grow into viable competitive tools. The role of HRM cannot be underestimated. Knowledge management is about people, their environment and opportunities.

An understanding of the requirements of such an environment needs to be sought and integrated with the strategic objectives of the organisation. The HRM role requires dedicated and expert knowledge in the area of people dynamics, team development, social activity, learning and culture.

South African HRM has consistently received poor ratings by the world competitiveness report. For this reason, this research aims to identify the important areas that HRM should be addressing.

Seely-Brown, J. (1996) indicated that applied technologies would only be successful if the human component and interface was fully understood. He further noted that we must look to the way humans act and react to reap the benefits of a knowledge-based environment (KBE).

1.3 Importance of the Research

Organisations are constantly scanning the environment for new opportunities and ways to improve their status. Knowledge management is gaining much momentum globally as a tool that will provide a competitive edge as society and business move towards the knowledge era. One of the greatest risks for organisations is that the concept of managing knowledge was viewed in a simplistic or overly technical manner.

For organisations considering using knowledge as a competitive tool, the literature suggested that knowledge management could provide the means of achieving a competitive advantage. The literature also indicated that there is a hype around the concept of knowledge

management and it is not fully understood or appreciated in the context of understanding the holistic organisation and its human assets. It is for this reason that there is an urgent need to research this topic in order to assist strategic decision makers in the South African business environment regarding the HRM aspects involved in developing a knowledge-based environment.

The current level of knowledge in KM is low both globally and in South Africa. Most of the experienced knowledge practitioners either are academics or work in the service industries. A requirement exists to identify the existing and potential areas of impact that a knowledge-based environment will have on organisations. This research intended to add insight and provide solutions to problems for other organisations embarking on environmental changes.

This research also aimed to strengthen the notion that the people component of business must be addressed for the success of effective knowledge management. The marketing activities of software houses are perpetuating the impression that knowledge management "packages" can be bought off the shelf and implemented with ease.

The role of HRM must be adapted to ensure the correct type of support for a knowledge-based environment can be offered. This research was aimed at identifying the HRM issues that present

themselves in the development of a knowledge-based environment, with the hope of providing proactive action items for future implementations of knowledge based systems.

1.4 Research Objectives

This research aimed to identify and assess the areas of impact that the advent of a knowledge-based environment would have on HRM objectives and strategies. It was also designed to provide valuable information on the benefits of having human resources management and knowledge management strategies aligned.

Knowledge management is a relatively new field of study. A further objective of this research was to provide of as much useful information about knowledge-based environments so the concept would be better understood. The perception also needs to be altered that knowledge management is not only about technology and computer software.

1.5 Research Sub-objectives

1.5.1 The First Objective

- **To identify future human resources management objectives within a knowledge-based environment**.

This information determined the areas of development for human resources staff and created a basis for understanding the role that HRM should play in ensuring the effective development of a knowledge-based environment.

~~1.1.2~~1.5.2 The Second Objective

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- **To identify future human resources management critical success factors within a knowledge-based environment.**

This objective aimed to provide data that would identify the fundamental changes in the HRM role from a strategic management perspective. These critical success factors (CSF) were those elements that would ensure a knowledge-based environment was successful or not with respect to the people component.

~~1.1.3~~1.5.3 The Third Objective

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- **To understand the impact of a knowledge-based work environment on employees.**

Knowledge management is about people and the way they create, share and use knowledge within an environment. Employees are

required to work in different ways from the traditional silo hierarchy style. The introduction of a knowledge-based environment would require change management intervention. The outputs of this objective would give insight and guidance to the HRM role.

~~1.1.4~~1.5.4 The Fourth Objective

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- **To identify the impact that knowledge management has on acquiring, growing, retaining and rewarding of employees and potential employees.**

How does the development of a knowledge-based environment influence the human resources activity of staffing and developing the business? Will employees and potential employees demand a different approach to be effective?

~~1.1.5~~1.5.5 The Fifth Objective

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- **To develop a framework/model for managing and supporting employees in a knowledge management environment.**

This objective ascertained whether a generic model could be developed and used to manage a knowledge-based environment.

1.6 Research Questions

The five sub-objectives formulated provide a broad perspective on HRM issues in knowledge-based environments.

Information on the objectives was derived from the literature review conducted, the case study and the answers to the questions presented in the interview questionnaire.

Research Questions pertaining to objective one and two:

Q1) Broadly, what is your understanding on knowledge management?

Q2) What are the strategic issues your organisation is considering with respect to knowledge management?

Q3) What role do you see human resources management playing in supporting a knowledge-based environment? What will be their specific objectives and critical success factors?

Q4) How would you rate your HR departments service in terms of its' current effectiveness to operate in a knowledge-based environment [5 point scale]? Please support this with reasons.

Research questions pertaining to objective three:

Q1) Describe the impact of a knowledge-based environment on employees.

Q2) Describe how knowledge is managed and shared in your organisation.

Q3) How successful is knowledge management in your organisation? [Five point scale]. Reasons.

Research questions pertaining to objective four and five:

Q1) What changes with respect to company structure, culture and style did (is) your company make (ing) to support a knowledge-based environment?

Q2) What are current and future challenges your company faces in order to make knowledge management effective?

Q3) How do your employees utilise the company's knowledge repository, and how do they contribute to the growth of the knowledge base?

Q4) How is knowledge management influencing your employees? (Positive & negative)

Q5) Explain the issues in your company around acquiring, growing, retaining and rewarding employees in the context of knowledge management.

Q6) What changes is your organisation making, or what changes would you like to see in order to address the above issues?

Q7) Does your knowledge-based environment influence your staff turnover (current and future)?

Q8) What are your views on a model or tool to manage and support employees in a knowledge-based environment?

1.7 Assumptions

The researcher made the following assumptions:

- Human resources management had a strategic role in an organisation's development. The literature suggested that the HR function was experiencing a downsizing in many organisations for a variety of reasons. It however still appeared clear from the literature that specialist functions traditionally in the sphere of HRM

were still required to support organisational change and growth strategies.

- The HRM role in organisations would lead change process requirements to implement knowledge management systems or environments. The premise being that the HR specialist would have a deep understanding of human issues that were relevant to the establishment of successful knowledge-based environments.

- A properly and fully functional knowledge-based environment offered competitive advantages to organisations. This competitive advantage could translate into improved levels of client service, staff competency, organisational adaptability, easy access to relevant information, and participation in knowledge communities.

1.8 Report Outline

Chapter two of this report contains a review of the literature pertinent to the areas of knowledge management and human resources management. The chapter begins with a general background to knowledge management and its interface with human resources. It leads into a review on the various perceptions of knowledge management and describes how knowledge management integrates into business strategy.

A framework presenting the changing characteristics and components of knowledge management is covered. A future perspective of knowledge management is also provided and the human resource function is discussed in terms of their changing role and requirements.

Chapter 3 discusses the research approach, contains the research problem, the method of analysis, and describes the research information subsets in terms of the information needs as well as an expansion of the research objective questions. The chapter concludes with a discussion on the questionnaire design and analysis as well as identifying the research limitations.

Chapter 4 looks at the sample of respondents and lays out the research findings verbatim according to the questions in the questionnaire.

Chapter 5 contains a thorough evaluation of the findings from a number of perspectives. An evaluation of the findings for each research question according to the three sub-groups of the sample i.e. human resources, information technology and line management interviewees are presented.

The evaluation identified the following within the context of the report propositions:

- grouping of identical or similar issues and concepts within each population sub-group;
- identification of similar issues within the whole population; and
- discrepancies and contradictions in responses.

The chapter concludes with an evaluation against the requirements of the objectives.

Chapter 6 contains conclusions to the research and covers highlights, achievements of the objectives, recommendations and areas of future research.

2. Literature Review: The Union of Knowledge Management and Human Resources Management

Knowledge management (KM) has been happening in different forms since early man, but has only recently gained respect as a strategic business tool. Assisted by technology, specifically the personal computer (PC), the ability to gather, formulate and share data has taken on new dimensions.

KM is multifarious and covers areas such as cognitive science, logic, business process and human resources management (HRM). HRM in turn covers a wider area than KM such as compensation, recruitment and staff development. The two areas overlap because knowledge creation is primarily a human activity.

Examples of joint KM and HRM projects are:

- The compilation of a directory of experts;
- the identification of knowledge related competencies;
- the development of reward schemes to encourage knowledge sharing; and
- the implementation of activities to change the organisational culture to value and accrue knowledge.

Knowledge management covers software selection and implementation, data mining, intellectual capital management and IT architectures to support knowledge distribution.

Malhotra, Y (1998c) noted that KM should cater to the critical issues of organisational adaptation, survival and competence in the face of increasingly discontinuous environmental change. Essentially, KM embodies organisational processes that seek synergistic combinations of information technology (IT) data processing capacity, and the creative and innovative capacity of human beings.

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~~1.1~~2.1 Perceptions of Knowledge Management

The management of knowledge was carried out for many years in a variety of ways. It has only recently been highlighted as a business strategy tool. KM is not a singular technology. It is made up of technology initiatives that include intranets, groupware and information retrieval on the one hand, and is utilised, updated and manipulated by human resources on the other hand.

Knowledge management as a concept has different meaning to different people. Depending on the type of work background that one emanates from, the perception of knowledge management can generally be classified as management of information or as management of people.

~~1.1.1~~2.1.1 Knowledge Management as Management of Information

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Researchers and practitioners in this field tend to have their education in computer and/or information science. They are involved in construction of information management systems, artificial intelligence, re-engineering, and groupware. To them knowledge equates to objects that can be identified and handled in information systems. Sveiby (1998) indicated that this track was new and was growing very fast, assisted by developments in information technology.

~~1.1.2~~2.1.2 Knowledge Management as Management of People

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Researchers and practitioners in this field tend to have their education in philosophy, psychology, sociology or business management. They are primarily involved in assessing, changing and improving human individual skills and behaviour. To them knowledge equates to processes, a complex set of dynamic skills and expertise, which is constantly changing. They are traditionally involved in learning and in managing these competencies individually like psychologists, or on an organisational level like philosophers, sociologists or organisational theorists. Sveiby (1998) notes that this track was very old, and its growth was slow.

~~1.1.3~~2.1.3 General Awareness of Knowledge Management

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Most organisations, without realising it are managing knowledge and information. This is an important insight. Knowledge was "managed" at least since the first human learned to transfer the skill to make fire. Many early initiatives to transfer skills and information could be labelled as "knowledge management", libraries being one, schools and apprenticeships others. Librarians, teachers and master craftsmen could be called knowledge managers. Later, database managers were included on the list. Today's new professions include chief knowledge officers, knowledge engineers, intellectual capital directors and intellectual capital controllers.

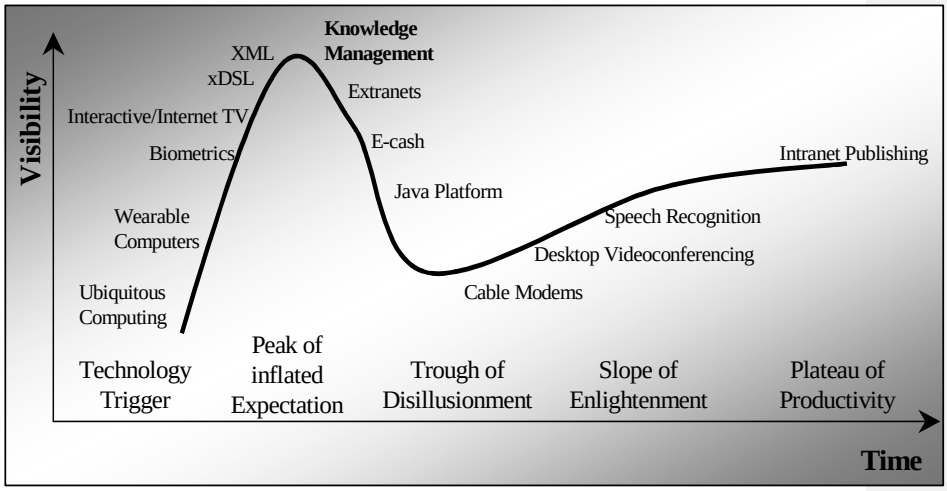
In a recent qualitative study of chief executive officers (CEO) and chief information officers (CIO) by Backweb Technologies, the diversity in views on the subject was confirmed. All of the respondents thought KM was still ill defined and represented a partial repackaging of previous trends such as learning organisations, change management and process re-engineering.

The diversity of views on KM has also created hyped expectations in the general market. Knowledge management was initially marketed as a “new technology” and was positioned as a computer based technology. The understanding of the human

interaction was overlooked to a large degree and resulted in many knowledge system failures.

In the 1998-hype cycle of emerging technologies issued annually by the Gartner Group, Brethenoux, E. & Bair, J. (1997) indicated that the concept of KM was at the peak of inflated expectations. During this phase of over enthusiasm and unrealistic projections, a flurry of well-publicised activities by technology leaders resulted in some successes of knowledge management. The fact is that there are more failures as the technology is pushed to its limits and the concept is not fully understood.

Figure 1 - 1998 Hype Curve



KM is likely to descend into the “Trough of Disillusionment” that is projected by the hype curve. It is likely to lose popularity and largely be abandoned by the media. Through focussed experimentation and hard work, some organisations will prosper in understanding the concept from both a technology, human and business perspective such that they will reach the plateau of productivity.

In the emerging knowledge era there is continued hype about the power and abilities of new information technologies. With the advent of new technologies, such as data mining, intranets, video conferencing, and web casting, several technology vendors are offering KM solutions as panaceas for the business challenges of the knowledge era. Press coverage has further added to the speed of the information technology (IT) treadmill by suggesting that increased investments in new information technologies should result in improved business performance.

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~~1.1.4~~2.1.4 Users of Knowledge Management

KM relies heavily on the creation of a suitable environment to support its existence. The effectiveness of a knowledge-based environment requires that everyone party to the environment must use and contribute to the system.

Anybody in an organisation from the CEO to the cleaner could use information derived from a knowledge system. The manner in which the information is used will differ depending on the role and level of responsibility one has in the organisation. Users may also be classified as occasional users or predominant users. The users of a knowledge system may not only be confined to the employees of that organisation. Systems can be accessible to clients and other organisations with common interests.

~~1.2~~2.2 Integration of Knowledge Management into Business Strategy

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~~1.1.1~~2.2.1 Understanding the Organisational Role and how Knowledge Management can Lend Support to its Effectiveness

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KM and HRM are both support processes in most organisations. Manville *et al.* (1996) indicated that a company should first determine its role and know what value it intended to provide and to whom. Once the organisational role definition was clear, a knowledge and human resource strategy should then be developed. Without the overall business strategy in place, all the corporate learning, technology, people development and databases become ineffective and costly diversions.

~~1.1.2~~2.2.2 Business Strategy and the Impact on Employees

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The organisational strategy should precede the delivery of a KM and HRM strategy, however the organisational management need to be cognisant of how KM and HRM would support business transformation.

Hunter, Frick & Rosser (1998) indicated that successful KM strategies would have strong ties to specific aspects of the overall business strategy as well as specific business processes, whether strategic or enterprise wide.

Hunter *et al.* (1998) also highlighted that issues such as culture and the changes required within that realm (in the development of knowledge-based environments) should be fully understood.

~~1.1.3~~2.2.3 Derived Benefits of Knowledge Management

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An important issue in the development of a knowledge-based strategy is the derived benefits. Hunter *et al.* (1998) viewed this as a major threat to knowledge management because of the difficulty in measuring the value of intangibles.

Seely-Brown (1997) indicated that organisations that focussed on technology or did not have specific objectives for their knowledge-

based environment would find that they were spending vast sums of money and seeing little returns. His following quote does however highlight the important contribution that the information technology view of knowledge management makes, but notably focuses on the human aspects of such a strategy.

Seely-Brown (1996,p12) said: "The technologies that will be most successful will resonate with human behaviour instead of working against it. In fact, to solve the problems of delivering and assimilating new technology into the workplace, we must look to the way humans act and react. In the last 20 years, US industry has invested more than $1 trillion in technology, but has realised little improvement in the efficiency of its knowledge workers, and virtually none in their effectiveness. If we could solve the problems of the assimilation of new technology, the potential would be enormous. "

~~1.3~~2.3 A Framework for Knowledge Management

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~~1.1.1~~2.3.1 Management of Knowledge as a Concept

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The management of knowledge is not a new concept. As early as the discovery of fire, primitive people found ways of transferring knowledge to others in verbal and pictorial form. Once written forms of communication were developed, information was

captured and was able to be stored. This led to the creation of libraries that stored material in a way that allowed one to navigate to a specific document or book.

~~1.1.2~~2.3.2 The Changing Characteristics of Knowledge Management

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With the advent of electronic data, information storage took on different forms and information became accessible to more people. Time and distance began to take on less important roles within the context of the spread of information. The spawning of the internet has revolutionised access to information, but brings with it problems such as quality of information.

~~1.1.3~~2.3.3 The Three Components of Knowledge Management

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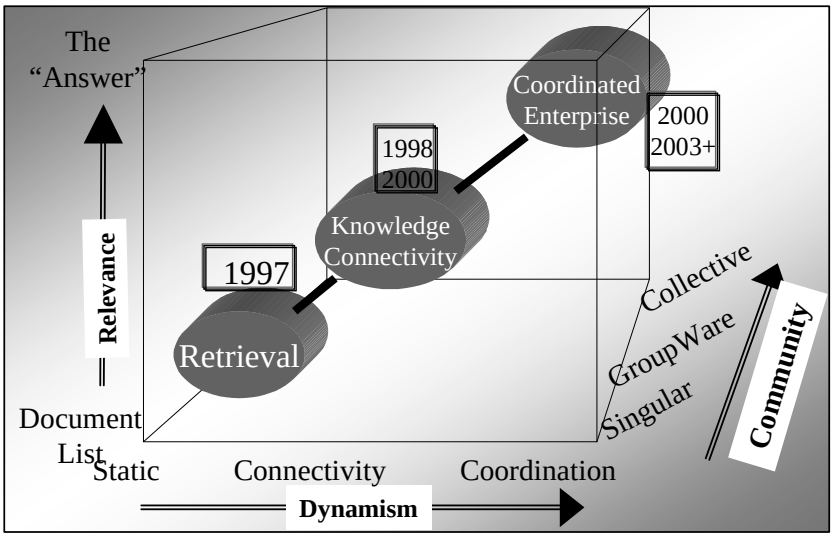
The following model developed by Brethenoux & Blair (1997) outlined the expected evolution of knowledge management. Brethenoux *et al.* (1997) viewed the evolution of knowledge management along the following three axes:

- **relevance** (the value of knowledge retrieved);
- **dynamism** (connection to business processes); and
- **community** (scope of knowledge sharing).

Figure 2 - Knowledge Management Cube



~~1.1.4~~2.3.4 Future Developmental Phases of Knowledge Management

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Within the framework of the model, there are three defined phases representing knowledge management "best practice". The retrieval phase existed from 1997-1998. In this phase, information was mainly tacit with information pools being dispersed. This phase ranked low on all axes of the KM cube. Information retrieval was restricted by web based retrieval which delivered quantity, but not necessarily quality. This phase was hindered by three information access barriers, namely, geographic distribution, time and possessiveness and culture changes spawned by the internet.

The second and current phase of knowledge connectivity highlights the importance of people in a knowledge environment. Maintenance of relationships among people and their information objects take relevance over storing and retrieving of information. Information would be online, indexed and mapped, while employees would be represented by expertise, community, skills and affiliation. A clearer definition of KM would emerge with the understanding that it could not be viewed only as a technological issue. Processes to capture tacit knowledge would be in place.

In phase three (the co-ordinated organisation), tools that model dynamic relationships based on content and events would be ready after 2003. Knowledge sharing would become the underlying tenant of organisational culture. Models (state and process) would enable communities (linked by process, interest, projects and committees) to act collectively with all the related knowledge residing in the enterprise.

The modelling technologies would capture processes across the enterprise (dynamism), including all knowledge workers (community), and would keep track of changing information and relationships.

~~1.1.5~~2.3.5 The Dynamics of Knowledge Management

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Fenn (1998) referred to the hype cycle of 1998 and placed knowledge management at the top of what he termed the "peak of inflated expectation", about to descend into the "trough of disillusionment". The concept of a hype cycle is applicable to most emerging technologies. Those that make it through the trough of disillusionment usually emerge as productive tools.

The cycle is equally applicable to HRM. As we move into the era of constant, fast paced change, the people requirements to survive in this mode will change. As mentioned by Sveiby (1998), the progression of knowledge management as a process (HR approach) had lagged behind that of the technological approach. This has also led to negative perceptions being developed around knowledge management by the process school of thought versus that of the technological school of thought.

~~1.4~~2.4 Information Management VS Knowledge Management

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The traditional paradigm of information systems is based on seeking a consensual interpretation of information based on socially dictated norms or the mandate of company bosses. This has resulted in the confusion between information and knowledge. Knowledge and information, however, are distinct entities.

While information generated by computer systems is not a very rich carrier of human interpretation for potential action, knowledge resides in the user's subjective context of action based on that information. Hence, it may not be incorrect to suggest that knowledge resides in the user and not in the collection of information, a point made two decades ago by West Churchman, a leading information systems philosopher.

~~1.1.1~~2.4.1 Fundamental Differences and Issues Affecting Knowledge Management

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Drucker (1997) noted that computers have done a great deal of harm by making managers inwardly focused. He indicated that executives were so enchanted by the internal data that computers generated that insufficient attention was focussed on external issues. This has led to a greater number of less informed company executives. The belief that systems are the answer as presented by Drucker is a good example of the differences offered by the information technology approach versus the philosophical (HR) approach.

Stear & Bair (1997) suggested that most of what was termed knowledge management in the past is better described as information management. Information management emphasises

technology as the focal point for information collection, distribution and reuse. True knowledge management on the other hand emphasises human interaction as the focal point.

Whilst the debate around information management and knowledge management is somewhat semantic, for those organisations embarking on information collection and distribution, the issue has complicated the success of knowledge management projects.

~~1.1.2~~2.4.2 Reasons for Confusion Between Information and Knowledge Management

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Stear *et al.* (1997) cited three main reasons for the confusion between information and knowledge management:

a) Knowledge management and information management uses the same technologies such as electronic workplaces, groupware, information retrieval, data mining, web browsers and intranets.

b) Vendor-sponsored confusion. In order to capture shelf space, vendors are repositioning products as knowledge management solutions.

c) Confusing databases with knowledge bases. Although KM often results in new databases, it is the process of identification, capture and sharing of the organisations explicit and tacit information assets that is important. Emphasising the creation of new knowledge (innovation), and not the specialised information systems role of capturing and processing information, is the crux of knowledge management.

Argyris, quoted by Malhotra (1998) indicated that the information management approach to KM was suitable for environments that are stable and predictable. Information management is designed around linear processes and single loop learning. It has not taken cognisance of the complexity of human thinking and has made assumptions regarding human learning. This is one of the main reasons for the need to understand that KM is vastly different from information management.

It is also for this reason that an organisation cannot introduce successful knowledge management without due consideration to the HRM processes, procedures, strategies and roles.

~~1.5~~2.5 Knowledge Management Formats

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KM can fall into one of three main types. These are categorised below.

- **Competency management:** This is one of the fastest growing areas of KM. Telecommunications giant LM Ericsson in Sweden has embraced the idea of tracking skills and competencies throughout their organisation. The company has used KM to foster consistent performance gains throughout the 1990s.

  The company, which has a presence in more than 130 countries, closely studies competencies and tracks skill gaps that could diminish performance, and drives decisions about hiring, training, compensation, outsourcing and new products based on the studies. Once a division within Ericsson identifies a critical area that requires action, it creates a task force to address specific issues.

- **Knowledge sharing**: This form of KM is currently very popular, and fits the phase one approach of the Brethenoux & Blair model described earlier. A growing number of firms are using intranets and online forums to spread knowledge. This allows extensive knowledge flow throughout the organisation. Change management programs can deliver positive results with respect to employees embracing and using the KM system.

- **Competitive knowledge management**: This area of KM blends competency management and knowledge sharing. Arthur Andersen's KM system, which utilises an intranet, allows consultants at the firm to post knowledge, workplans, methodologies, research, proposals and resumes so that others in the organisation can tap into high-level expertise on an as-needed basis. The easy access and searchability of such systems allow expert knowledge to be found quickly.

  Equally important, the system provides contact names and links the person conducting the search to specific methodologies that the organisation uses to provide solutions. The linking of people to knowledge is one of the required steps in the move towards the co-ordinated organisation or phase three of the KM cube.

  The Arthur Andersen case is an example of a company on the leading edge of knowledge management usage, yet has retained a level of simplicity in the process. The Arthur Anderson system is relatively simple, yet powerful to let workers create their own web pages, touting their skills, expertise and experience. The information can be posted on an intranet. The benefit of this approach is that the organisation collects knowledge and information beyond the official repository and begins to tap into the tacit knowledge of employees.

~~1.1.1~~2.5.1 Benefit of Formats in Different Environments

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A singular model or format is not always appropriate to all organisations and it is thus conceivable that each organisation should first determine its knowledge needs before embarking on the creation of a knowledge environment.

Computer technology is an aid in managing knowledge and can offer the control and structure that may be required.

~~1.6~~2.6 The Human Resources Function

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~~1.1.1~~2.6.1 The Role of Human Resources Management

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As with KM, the HRM function plays a supportive role to the overall company strategy. In the creation of a knowledge-based environment, aspects of the HRM function become crucial. The definition of HRM presupposes that the function is strategically oriented towards the macro HRM issues of the country/region or global company interests, as well as having a micro strategy for the organisation.

~~1.1.2~~2.6.2 The Human Resources Management Role in Organisational Design and Redesign

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The organisations of the 1930's were largely unfocussed on employees and their well being. The administration of employee

well being was confined mainly to payroll issues and was typically the responsibility of the financial function.

As organisations became aware that employees required special focus, the personnel function emerged. This function was mainly administrative, but incorporated some elements of psychology. Psychometric testing became popular in many organisations. During the 1980's, the function began developing into a human resources function, becoming involved in organisational redesign, re-engineering and cost saving exercises. The complexities of change and the problems experienced with change processes highlighted the fact that employees had needs, wishes and aspirations that if not addressed correctly could have an adverse affect on the performance of the organisation. The notion that people were the driving force behind successful companies was beginning to emerge and gain a level respect.

The inquiry into HRM's ability to add value in the organisation began emerging during the early 1990's. With the empowerment of management and employees occurring, there was a notable reduction in the number of HR practitioners. In some cases, the function was sub-contracted.

HRM should focus on the following areas in order to ensure the creation of a suitable knowledge environment.

a) Ensure that the organisation is viewed as a human community capable of providing diverse meanings to information outputs generated by the technological systems, instead of the traditional emphasis on command and control.

b) De-emphasise the adherence to the "way things have always been done" so that such prevailing practices may be continuously assessed from multiple perspectives for their alignment with the dynamically changing external environment.

c) Invest in multiple and diverse interpretations (via employees) to enable a constructive conflict mode of inquiry and minimise over simplification of issues. The multiple and diverse interpretations of information based on different subjective views would facilitate surfacing assumptions underlying current best practices and ensure that such practices are continuously renewed.

d) Encourage greater proactive involvement of human imagination and creativity to facilitate greater internal diversity in order to match the variety and complexity of the environment.

e) Give explicit recognition to tacit knowledge and related human aspects, such as ideals, values, or emotions.

f) Implement new, flexible technologies and systems that support and enable communities of practice, formal and informal networks of internal employees and external individuals based on shared concerns and interests.

g) Make the organisational information base accessible to organisation members who are closer to the action, while simultaneously ensuring that they have the skills and authority to execute decisive responses to changing conditions.

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~~1.1.3~~2.6.3 The Development of Staff Competencies

HRM should play an active role in the development of staff competencies. The development should focus on the elaboration of the skill set that will support a knowledge-based environment, and secondly the skill requirements to support the overall business strategy. The former skill set should drive the latter requirements.

Competencies that would form part of the set of skills that would enhance the knowledge environment could include the following:

- Understanding team dynamics;
- professional self-development;
- social dynamics;
- computer literacy;

- people diversity;
- lateral , imaginative and creative thinking;
- constructive conflict; and
- decision-making.

The second set of competencies should ensure that the following three areas are covered:

- Technical or functional skill;
- managerial skill; and
- enterprise, business and industry knowledge.

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~~1.1.4~~2.6.4 Conceptual Link Between Competency Management and Knowledge Management

The human interface with electronic or other systems information will produce many different outputs. This is because people have different views of the world and perceive things differently.

Organisations should not plan to dictate or control these outputs, as this will have a counter effect on the concept of a well functioning knowledge-based environment. Competency management should provide for the development of the following contexts:

a) A context for the attitude with which employees should perform their work. This is the beliefs, values and culture of the organisation with respect to its customers, employees, community, investors and other stakeholders.

b) A context for the action that guides the employee in making decisions. This is the organisation's mission, strategy and goals. Employees should be able to link their actions and decisions to these guiding principles.

c) A context for trust and authority commensurate with job scope and employee capability. This defines the boundaries for independent decision making by employees.

d) A context for participation in establishing, designing and improving the organisation's strategy, goals and processes. These opportunities convey ownership and enable employees to see the results of their contributions. Every employee should participate in quality improvement, contribute to the organisation knowledge base, mentor other employees and have a forum to provide ideas and input to business process re-engineering.

2.7 Human Resource Re-alignment

Although HRM has evolved extensively over the last decade, the function needs to align and position itself to advise on functional adaptation in a knowledge-based environment. Malhotra (1998b,p8) noted that “Information residing in the organisational knowledge bases, procedures, routines and archives in the form of pixels, bits or symbols needs to be distinguished from the constructive and dynamic view of knowledge management. West Churchman, in his classic treatise “The Design of Inquiring Systems”, noted that to conceive of knowledge as a collection of information seems to rob the concept of all of its life. Knowledge resides in the user and not in the collection. On a related note, Ikujiro Nonaka, the first professor of knowledge, has emphasised that only human beings can take the central role in knowledge creation. He has asserted that computers are merely tools, however great their information-processing capabilities may be.”

The fact that knowledge is derived from people raises concerns about the effectiveness of managing knowledge as a concept. People are diverse and complex and one set of rules does not necessarily apply to the next person. Kuhn (1970) noted that if two people stood at the same place and gazed in the same direction, one could reasonably conclude that they would receive closely similar stimuli.

People do not however see stimuli. Instead humans have sensations, and we are under no compulsion to suppose that the sensations of the two viewers are the same.

It can be concluded that very different stimuli can produce the same sensations, that the same stimulus can produce very different sensations, and finally, that the route from stimuli to sensation is in part conditioned by education and life experiences.

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~~1.1.1~~2.7.1 Complexity and Diversity of People in a Knowledge Based Environment

The previously mentioned concept of everyone seeing the world differently raises questions as to the effectiveness of any form of knowledge management. Manville *et al.* (1996a) indicated that knowledge management implies that one has control over people.

The move towards empowerment of people would imply less control over people, and therefor if KM is to be a success, one needs to reassess the concepts of control in the context of sharing information. Organisations need a new approach, one that takes them beyond KM. Such an approach would view an organisation as a human community whose collective wisdom represented a distinctive edge against competitors. Manville *et al.* (1996a) also

indicated that organisations must first shift their focus beyond process flows to the core competencies that contribute to the process.

~~1.1.2~~2.7.2 Cultural Resistance and Adjustment

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A further obstacle and challenge to the creation of a knowledge-based environment is cultural resistance. One of the causes, as quoted by Frick (1998) is the notion of “knowledge is power”. This attitude causes competition among individuals often at the expense of team performance. A shift to the attitude of knowledge sharing will become the real power. Manville *et al.* (1996a) said technology would continue to yield disappointing results until information system managers, human resources management and business executives realised that information technology must provide a way to form communities, and not simply provide communications.

The strategic payoff will happen when information technology is used to help foster knowledge development by making it easier for people to work with others who share common problems and have solutions to share.

An organisational culture that does not cater for the necessary elements of effective KM is likely to become a platform for negative KM sentiment or even KM failure. For companies contemplating entry into a knowledge ecology, Rifkin, G. (1996) noted the following statement from the CEO of Buckman Laboratories, Bob Buckman: "What's happened here is 90% culture change. You need to change the way you relate to one another. If you can't do that, you won't succeed."

Manville *et al*. (1996) indicated that organisations leverage knowledge through networks of people who collaborate, and not through networks of technology that interconnect. Despite endless media hype about groupware and the interconnectivity of the 1990s, computer technology is not the sole solution. Many IT organisations followed high-budget, visionary investment, or rolled out new e-mail systems only to find that people still did not want to collaborate to share and develop new knowledge. Interconnectivity begins with people who want to connect. After that, tools and technology can make the connection.

Culture is a not something that is decided upon in a management meeting, it is the result of many aspects of the organisation over a period of time. It is what Malhotra *et al*. (1998) calls the organisational ecology. A knowledge ecology primarily focuses on

social networks of individuals. Traditional organisational structures should thus be re-examined to determine their suitability towards creating the correct knowledge environment.

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~~1.1.3~~2.7.3 Understanding the Learning Process Inherent to Knowledge Sharing

The process of learning and the learning organisation is rich in definitions. The crux of the matter is that research has shown that learning is primarily a social activity. Stewart & Brown (1996) highlighted the study done at Xerox's Palo Alto Research centre, which showed that the best learning took place within groups. This is not to say that every group learns.

Learning groups have special characteristics. Notably they emerge of their own accord by virtue of a common social and professional force. These groups also collaborate directly and teach each other. Brook Manville, director of KM at McKinsey & Co., defined a community of practice or learning group as: "A group of people who are informally bound to one another by exposure to a common class of problem."

Stewart *et al.* (1996) noted that organisational learning often depends on these "invisible groups" (self emerging learning groups), but that they are virtually immune to management in a conventional sense. Managing them can kill them. This attribute of

people is at odds to the normal hierarchical design of most organisations and is one of the issues than need to be fully understood and acted upon in an appropriate way.

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~~1.8~~2.8 Human Resources Management Issues Affected by Knowledge Strategies

The development of a knowledge-based environment will require organisations to consider the impact on HRM activities, both directly and indirectly. The HR functions of organisations should play a leading role in ensuring the re-alignment of the following activities.

a) Staffing, Retention and People Development

Jooste, J.D.A.L. (1996) noted that a knowledge environment requires organisations to re-assess the person specification for employment purposes. An holistic approach needs to be used to ensure that the whole person is considered for the knowledge environment. The following areas should be considered:

- Personal goals and interests;
- psychological makeup and behavioural traits;
- education and training;
- experience; and
- professional roles and activities.

b) Compensation and Rewards

The creation of a knowledge environment also creates employee empowerment. It is the empowerment of employees that allows the leverage of employee knowledge and skills to achieve strategic objectives and goals while providing enhanced opportunity for growth, involvement and reward.

Effective knowledge environments naturally create highly skilled employees in their field of expertise and as such the organisation should look at the manner in which employees are offered incentives and are recognised. Compensation models should also nurture and support the knowledge environment.

c) Competency Design

The link between competency design and an effective knowledge-based environment is imperative for the success of the latter. Competencies must be aligned to the requirements of the knowledge environment and the individual technical, functional, managerial and business needs.

d) Staff Education

Employees should be educated about knowledge management benefits, risks and implications for themselves, customers and other stakeholders.

e) Training

Training should be provided on any systems that are in place to support the knowledge-based environment. This could be a manual system such as a library, or electronic data retrieval systems. The training should include the extraction and use of data as well as the input of knowledge into the system.

f) Communication

The communication of success stories, tips and news via a newsletter or intranet may help maintain interest and momentum for the knowledge-based environment.

~~1.9~~2.9 Conclusion

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No single element of an organisation can achieve what is necessary for the development of an effective knowledge based environment. The synergy required by the organisational management, information technology sector, HRM and the employees must be driven and

directed in a manner that will enhance or recreate the correct culture, beliefs and understanding amongst the organisational community. HRM has a particular and important role to play in creating the knowledge-based environment.

3. Research Approach

3.1 The Research Problem

3.1.1 Statement of the Research Problem

The rapid growth of knowledge management (KM) has required the identification and assessment of the areas of impact that the advent of a knowledge-based environment will have on human resources management (HRM) functions and strategies.

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~~1.1.2~~3.1.2 Reasons for the Research

The research problem was chosen as a point of departure into the understanding of how knowledge-based environments influence the traditional HRM activities found in organisations.

The rationale stems from a need to provide insight to organisations including the human resource fraternity regarding the impact that knowledge-based environments may have on their current environments. The intention was to provide as much information as possible that could be used to influence organisational development in the area of HRM and KM.

KM is poised to become a major tool for organisations in their endeavour to remain competitive. KM is relatively new, and to

some extent, its potential was over exaggerated. The existing success stories do however provide hope for the continued success of the principles of the topic.

South Africa has consistently been ranked in the last three positions of the world competitiveness report with respect to people issues. If knowledge management is to provide a competitive edge in the future, coupled with increased global competition, then the human resource fraternity needs to realign itself to provide an adequate level of service to the organisation.

As the literature review indicated, KM has traditionally been viewed as a technology issue. The failure of KM under the banner of information technology has primarily been caused by misunderstandings of how the human component fits into the knowledge environment.

Technology can provide information, but the transformation of the information into knowledge happens through the human interface. For this reason, HRM should understand what their role is in a knowledge-based environment. HRM strategies and objectives are influenced by the advent of a knowledge-based environment. The HRM role in turn affects the effectiveness of a knowledge-based

environment both directly and indirectly and the consequences of these actions may effect organisational competitiveness.

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~~1.1.3~~3.1.3 Research Method

The analysis carried out for this research was mainly qualitative due to the exploratory nature of the topic. It was possible to conduct some simple quantitative results on some of the responses from the questionnaire where a scale was used. The overall aim of the questionnaire/interview method used to gather that data was to provide as much useful information on the research topic as possible. By providing the information both verbatim and in an analysed form it is hoped that management and especially HRM decision making can be enhanced with respect to the introduction of a knowledge-based environment.

The relatively small sample obtained and the focus on a single industry using a semi-structured interview questionnaire has resulted in a report that may not be generalisable or definitive in nature. The results do however provide a good indication of the issues to be addressed by HRM personnel.

~~1.1.4~~3.1.4 Choice of Research Method

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Groenewald, J.P. (1986) noted that research design could be divided into various categories. He indicates that exploratory research needed input gathered from a variety of sources and that the data gathering process was unstructured in nature. As this research primarily takes on an exploratory form, a questionnaire was designed to be administered in an interview situation.

The questions were guiding and semi-structured so that other information could be obtained during the data gathering process. The question design was at times indirect to support encouragement of additional information from the respondents.

Case study material was also read to support reliability of the questionnaire as well as to add value to the questions themselves. Initial searches for case studies of Fortune 500 companies in the service industry proved difficult and the researcher resorted to a case of a sizeable American global company to satisfy this requirement. The case study was a public domain document.

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~~1.2~~3.2 Consistency Matrix

#	Research Objective	Lit. Review section	#	Research Proposition	Question Number	Method of Analysis
a)	To identify future human resources objectives within a knowledge-based environment.	2 2.1 2.1.2 2.1.4 2.3 2.5 2.6 2.7 2.8	a)	The objectives of human resource departments will require change to support a knowledge-based environment.	Sec 2(3)	Interpretation Analysis Reflective Analysis
b)	To identify future human resources critical success factors within a knowledge-based environment.	2 2.1 2.1.2 2.1.4 2.3 2.5 2.6 2.7 2.8	b)	The critical success factors of human resource departments will require change to support a knowledge-based environment.	Sec 2(3)	Interpretation Analysis Reflective Analysis

			c)	The clear understanding of how a knowledge-based environment influences human resources is lacking within HR departments.	Sec 2(1) Sec 2(2) Sec 2(4)	Interpretation Analysis Reflective Analysis Frequency Count
c)	To understand the impact of a knowledge-based work environment on employees.	2.3 2.3 2.4 2.5 2.7 2.8	d)	Organisational senior management acknowledges that the critical success factors of a knowledge-based environment are heavily weighted towards organisational design, culture and strategy issues.	Sec 3(1) Sec 3(2) Sec 3(3) Sec 4(1) Sec 4(2) Sec 4(3) Sec 4(4)	Interpretation Analysis Reflective Analysis Frequency Count
d)	To identify the impact that knowledge management has on	2.4 2.5 2.7 2.8	e)	A knowledge-based environment requires a different strategy for	Sec 5(1) Sec 5(2) Sec 5(3)	Interpretation Analysis Reflective Analysis Frequency Count

	acquiring, growing, retaining and rewarding of employees.			acquiring, growing, retaining and rewarding employees.		
e)	To develop a framework/model for managing and supporting employees in a knowledge management environment.	2.3 2.5 2.7	e)	It is possible to develop a framework/tool to manage and support employees in a knowledge-based environment.	Sec 5(4)	Frequency count

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~~1.3~~3.3 Analysis of Data

3.3.1 Qualitative Component

The initial part of the analysis explored the nature of the sample employed. A breakdown of the respondents with respect to their role, the type of staff their respective organisations employ is briefly presented. Following this, an evaluation of the findings for each of the questions is presented.

The findings were further categorised into three sub-groupings of the sample, namely human resources, information technology and line management interviewees. The reason for this breakdown into sub- groups was to ascertain the following:

- Identification of identical or similar issues and concepts within each of the population sub-groups.
- Identification of opposing views.
- Identification of discrepancies and contradictions in responses.

Finally, the overall results of the evaluation were compared against the research objectives and propositions. Comments were presented as to whether the research objectives were satisfied.

Interview information was collected in a variety of ways. During the initial contact with the respondents it was ascertained whether the person preferred a face-to-face interview or a telephonic interview. In cases where it was impossible to interview the respondent, an electronic version of the questions was e-mailed or faxed. The researcher followed up on the responses from these respondents telephonically.

Where possible the question responses were recorded verbatim with the aid of a tape recorder. The recorded information was then copied to a self-developed access database, which aided the analysis of the data as per the requirements.

The literature read for this research provided adequate insights into the areas of KM and HRM. The literature also highlighted the areas of overlap between the two functions. The readings provided sufficiently recent theory especially in the constantly changing area of technology. Personal insight and experiences from the researcher in both areas of concern added additional value to the report.

In order to ensure that the respondents were adequately informed to answer the research questions, a document was compiled from a variety of sources and presented to the respondent as reading

material prior to the completion of the questions. There was no control administered by the researcher as to whether the support document was read or not.

~~1.1.2~~3.3.2 Quantitative Component

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Certain of the research questions allowed for simple quantitative results to be presented. Quantitative analyses were used on questions where a definite yes or no was required or where a five-point scale was used to measure the responses.

The information gathered for these questions was presented either in tabular form or graphically. A breakdown similar to that of the qualitative analysis was applied. In all cases frequency count was used to analyse the data and where appropriate converted to a percentage.

~~1.4~~3.4 Research Information Subsets

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In order that the five objectives set for the research could be met, information requirements were split into four subsets. The subsets together with an explanation of the information needs for each objective is described. Additionally the questions pertaining to the

specific objective are set out and explained. The mentioned questions are the ones used to develop the research questionnaire.

~~1.1.1~~3.4.1 Information Subset: "Strategic Approach" Pertaining to Objective One and Two

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Objective 1:

To identify future human resources management objectives within a knowledge-based environment.

Objective 2:

To identify future human resources management critical success factors within a knowledge-based environment.

Information needs:

- Level of strategic thought and awareness of KM and the extent of HRM involvement.
- What knowledge management is.
- Rating of HRM effectiveness in a knowledge-based environment.
- HR critical success factors and specific objectives.

Questions Pertaining to Information subset: "Strategic Approach"

The following research questions were expanded from the information subset. These questions formed the basis of the questionnaire, however the nature of a semi-structured questionnaire allowed for follow on questions to be asked.

[The following question number refers to questionnaire section (S) and question number (Q)]

S2Q1) Broadly, what is your understanding of knowledge management?

This question offered insight to the respondent's owns understanding of knowledge management. Identification of the respondent's view of KM as information technology or a people issue was made possible by this question. Based on the answers given, the researcher was able to identify critical areas of concern that affected HRM, thus addressing the objectives.

S2Q2) What are the strategic issues that your organisation is considering with respect to knowledge management?

This question fundamentally ascertained the real commitment to developing knowledge-based environments. Aligning HRM strategies to unsupported KM strategies could lead to negative staffing issues. This question also highlighted current CSF and objectives for HRM.

S2Q3) What role do you see human resources management playing in supporting a knowledge-based environment? – Identify their specific objectives and critical success factors.

Assuming HRM did have an essential role to play in organisations, then, this together with specific objectives and critical success factors could be identified. This question allowed for the tabulation of similar results from the various respondents.

S2Q4) How would you rate your human resources service in terms of its' current effectiveness to operate in a knowledge-based environment [5 point scale]. Please support this with reasons.

This question gave a qualitative response and elicited views on HRM effectiveness in the knowledge-based

environment. The reasons were tabulated to identify risk & opportunity areas for HRM.

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~~1.1.2~~3.4.2 Information Subset: "Company Issues/Work & Environment Issues" Pertaining to the Third Objective

Objective:

To understand the impact of a knowledge-based work environment on employees.

Information needs:

- Perceptions of the impact that KM has on employees (positive and negative).
- Understand the methods of knowledge collection and sharing.
- Perceptions of KM success in organisations.
- Identify company structure and culture changes that organisations are making.
- Identify issues affecting knowledge management effectiveness.

Questions Pertaining to Information Subset: "Company Issues/Work & Environment Issues "

The following research questions were expanded from the information subset. These questions formed the basis of the questionnaire, however the nature of a semi-structured questionnaire allowed for follow on questions to be asked.

S3Q1) Describe the impact of a knowledge-based environment on employees?

This question offered insight as perceived by the respondents into how employees are affected by a knowledge-based environment. It also indicated the degree of understanding of KM. The question elicited issues, concerns, and positive or negative implications that the introduction or continued alliance to a KM system or environment has on employees.

S3Q2) Describe how knowledge is managed and shared in your organisation.

This question identified the type or form KM in the organisation. The question offered insight to the issue of

cultural and structural change in the organisation as well as insight to the involvement of people in the effectiveness of knowledge management.

S3Q3) How successful is knowledge management in your organisation? [5 point scale]

This five-point scale question allowed for a quantitative response. The question allowed for a sample sub-group comparison, and an overall respondent evaluation

S4Q1) What changes with respect to company structure, culture and style did (is) your organisation make (ing) to support a knowledge-based environment?

This question fundamentally supported whether KM influenced the way that organisations operated, as perceived by the respondents, and whether the respondents were aware of the HRM issues.

S4Q2) What are the current and future challenges your company faces in order to make knowledge management effective?

This question focused on gaining insight to the challenges that organisations perceived would make their knowledge environment effective. The question indirectly considered the impact that a knowledge environment had on the work environment and employees.

S4Q3) How do your employees utilise the company's knowledge repository, and how do they contribute to the growth of the knowledge base?

This question attempted to understand how the use of knowledge systems from an input and output perspective would change the way employees operated.

S4Q4) How is knowledge management influencing your employees? (Positive & negative)

This was a direct question to refine what effect a knowledge-based environment had on employees.

~~1.1.3~~3.4.3 Information Subset: "Specific Staffing Issues" Pertaining to the Fourth Objective

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Objective:

To identify the impact that knowledge management has on acquiring, growing, retaining and rewarding of employees and potential employees.

Information needs:

- Information pertaining to the acquiring, growing, retaining and rewarding of employees in a knowledge-based environment.
- Information of changes expected currently and in the future to address staff issues.
- Information on staff turnover.

Questions Pertaining to Information Subset: "Work & Environmental Issues" and "Specific Staffing Issues"

The following research questions were expanded from the information subset. These questions formed the basis of the

questionnaire, however the nature of a semi-structured questionnaire allowed for follow on questions to be asked.

S5Q1) Explain the issues in your company around acquiring, growing, retaining and rewarding employees in the context of knowledge management.

This question honed into specific HRM activities. Its purpose was to identify how these activities were being adapted to support a knowledge-based environment.

S5Q2) What changes is your organisation making, or what changes would you like to see in order to address the issues in the previous question?

This supported the previous question, but aimed to identify real change rather than theoretical intention.

S5Q3) Does/(Will) your knowledge-based environment influence your staff turnover? (Currently & future)

This question aimed to identify the influence of KM on turnover, but also broadly to identify if organisations were

aware of different issues affecting turnover and were actively measuring the impact.

~~1.1.4~~3.4.4 Information Subset: "Specific Staffing Issues" Pertaining to the Fifth Objective

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Objective:

To develop a framework/model for managing and supporting employees in a knowledge management environment.

Information needs:

- Information pertaining to the usefulness of a generic model or tool to manage and support employees in a knowledge-based environment.

Questions Pertaining to Information Subset: "Specific Staffing Issues"

The following research question was expanded from the information subset. This question formed the basis of the questionnaire, however the nature of a semi-structured questionnaire allowed for follow on questions to be asked.

S5Q4) What are your views on a model/tool to manage and support employees in a knowledge-based environment?

This question was posed to understand whether knowledge environments had specific characteristics that required similar responses in order to support employees in such environments. If this was the case, could a generic model or tool be developed to facilitate this support?

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~~1.5~~3.5 Population Sample

KM is a relatively new concept globally and even more so in South Africa. It was decided to identify local organisations that have established a formal KM strategy or policy. The researcher sought the advice from a grouping of South African KM experts to identify the respondent organisations.

It was identified that the service industry was the most suitable grouping of companies to approach. These organisations offered a service rather than tangible products. Globally, this grouping of organisations are the most advanced in the development of KM practices.

Data collection was accomplished by conducting semi-structured interviews or administering a questionnaire to nine organisations. Each organisation was asked to provide three employees to be part of the process. In order to meet the research objectives, one of each of the following categories of staff were selected from each organisation.

- Human resources senior manager.
- Information technology manager.
- General line manager.

The overriding criteria for selection of the employees was that the individual had to have insight into strategic planning of the organisation and was considered a decision maker in his or her respective field.

Finding respondents for the sample was not difficult once the organisations were identified and agreed to participate in the study. In most cases, the HRM identified the other two respondents. Difficulty was experience in matching the individuals in the organisations to the three predefined classes of employees.

Employee job titles were often misleading in respect to their actual activity and in some cases the organisation did not employ a person solely to do the activities the researcher had classified.

Some leeway was made to accommodate those companies who had employees doing combination jobs such as HRM and information systems.

Further difficulty was experience in identifying the level of decision making power that the individual respondents possessed. There was a specific intention to avoid the questions being answered by a low-level employee with little decision-making ability.

The original intention was to interview the thirty respondents in order to collect the data. This would have ensured consistent interviewing and similar follow-up questions being asked. The reality was that many of the respondents were extremely busy business people and preferred to complete the questions in their own time. A few of the respondents agreed to a telephonic interview. In the researchers opinion the telephonic interview was not ideal in that the respondent was often interrupted causing disruption to the flow of the interview.

All of the respondents that choose to complete the questions in their own time did have access to electronic mail. This aided the response time and allowed the researcher to compile an on-line electronic form that could be electronically sent to the respondents.

Although the final sample deviated slightly in respect of the type of respondent sought as well as the method used to gather the data, the researcher considered the data collection sufficient and closely aligned to the original goal.

~~1.6~~3.6 Questionnaire

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~~1.1.1~~3.6.1 Questionnaire Design

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The main purpose of the questionnaire was to facilitate a semi-structured interview with the thirty respondents. The manner in which the questions were designed was to elicit the maximum amount of information that would prove useful to the final report. The questions were also designed to ensure that the research questions could be adequately answered.

The majority of the questions were open-ended. This enabled the respondents to add any information that they thought was pertinent. A few statistical questions were included. The nature of the statistical questions was simple frequency counts. The statistical results are shown in their pure form or were converted to percentile values to facilitate ease of understanding. A copy of the questionnaire can be found in appendix 1.

A pilot study was conducted on the questions with a few people who had some understanding of KM. Adjustments were made to the format of some of the questions and some questions were added. The pilot interviews took longer than expected and the researcher noted the reasons. The predicted time to complete the interview was set at forty minutes, but depending on the level of input and the interest shown, it was feasible to expect the interview to last about sixty minutes.

Some of the respondents preferred to complete the questions in their own time rather than in an interview, and it was necessary to design the questionnaire to accommodate this need. An electronic form was produced using Microsoft Word, which allowed the respondents to complete the questions on-line. Owing to the fact that the researcher could not be present at the time the respondent was completing the questions, additional information was provided with each question so that the respondent could easily identify all the aspects of the question.

A further pilot study of the electronic version was conducted using different people than the first pilot. After the test, some adjustments were made to the manner in which the electronic form operated to facilitate ease of use. Electronic mail was utilised to distribute and communicate with the respondents. Follow-ups were

made telephonically to respondents who completed the electronic questionnaire.

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~~1.1.2~~3.6.2 Questionnaire Analysis

The nature of this mainly qualitative research posed a number of analytical issues, which the researcher had to be aware. The researcher had to maintain strict discipline to minimise any personal bias entering the findings.

The semi-structured nature of the research questionnaire gave respondents a great deal of latitude in answering the questions. This aspect was not controllable, but was carefully monitored.

The answers to the research questions were copied verbatim into a Microsoft Access database. This allowed the answers to be examined for constructs, themes and patterns to describe and explain the research topic. This type of analysis is regarded as interpretation analysis. Additional analysis using a reflective analysis technique was used. This method allowed the researcher to use primary intuition and judgement to portray and evaluate the results.

A Microsoft Excel spreadsheet was used to collate the information on the quantitative questions. The same package was used to perform the calculations and present the data in a tabular format or in a graphical format.

The collation of the data into a database and the subsequent extraction of results was time consuming and tedious in nature. The possibility of the researcher making assumptions about the data in order to ensure a result was prevalent and the researcher needed to apply personal restraint in order to minimise any biased views.

Misinterpretation of data and omissions on the part of the researcher were also prevalent. Careful cross checking of extracted information was made against the original verbatim answers and notes.

~~1.7~~3.7 Limitation of the Research

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~~1.1.1~~3.7.1 Generalising Findings

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KM or the creation of a knowledge-based environment is a concept that can be used in almost any business or industry type. The methods of implementation and the manner in which the knowledge is used will however differ amongst organisations.

The service industry was selected for this research based on its foresight with respect to KM becoming a useful and competitive tool. The nature of service industries lends itself to the use of these tools more easily than other industries because the main assets in this industry are the employees, their knowledge and expertise.

The emphasis of this research was not specifically on KM, but rather the activities of the HRM function affected by the introduction of a knowledge-based environment. Many HRM issues are generic across organisations and therefor many of the findings of this report are suitable for industries other that the service industry.

The sample size selected was small and confined to a specific employee type. This factor does affect the ability to generalise the findings. In order to minimise this effect, the respondents were selected from organisations that are involved with KM initiatives. The individuals involved had insight to the topic by virtue of their position in the organisation as well as their personal interest in the subject.

A compiled document was distributed to all respondents before the questionnaire was administered to ensure that a common understanding of the research topic was created.

~~1.1.2~~3.7.2 Selection Bias

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The relatively small number of organisations using KM or having formal KM policies meant that convenient sampling had to be utilised in order to obtain a sufficiently sized sample.

The sample was also selected from the recommendations made by the panel of experts. The panel also in some cases indicated the potential respondents to contact. It was possible that the selection of organisations and respondents could have limited the scope and innovation of the answers presented, and that the ideas that were common to the panel of experts were being expresses through the respondents. The relatively small grouping of people in South Africa who are professionally involved in knowledge management could have lead to inbreeding of ideas.

One of the reasons that the pre questionnaire document was given to the respondents was to trigger different thoughts about KM and its interaction with the HRM. The researcher was satisfied that the variety of answers received from the respondents did not portray any of the potential biases indicated above.

~~1.1.3~~3.7.3 Interviewer Bias

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A semi-structured interview questionnaire was the most appropriate method of data extraction from the sample. Respondents were asked to answer the questions from their working perspective and to be candid. Confidentiality of responses was offered to assist with the openness and honesty of answers.

Were the interview was held on a one-to-one basis, situations did arise were the researcher had to make judgmental interpretation of the answers. It was possible that this could be interpreted as interviewer bias. In order to minimise this from happening, the researcher refrained as far as possible from making judgement calls, but rather asked questions to clarify the answers.

The researcher was also asked for his opinion during some of the interviews or during follow up calls with respondents who completed the questions in their own time. It was necessary to decline any answers until such time that the interview had been complete and any follow-ups had been finalised.

The researcher also had to be careful not to make personal judgements about the respective respondents, which could later influence the analysis of that respondent's information.

~~1.1.4~~3.7.4 Reliability

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The nature of an exploratory research meant that a non-probability sampling method was preferable for this research. The convenient sampling method generally leads to low levels of reliability. The sample size was also relatively small, which compounded the reliability problem.

Although the results are generalisable because the research is focussed on generic HRM issues, and not KM *per se*, there is a possibility that certain issues cannot be generalised and thus lower the reliability of the findings.

To counteract the inherent reliability problem, the researcher structured the respondents such that their responses were from different business perspectives. The respondents were also selected from organisations involved with KM initiatives.

Overall, it was the intention of the research to provide as much useful information to the growth and understanding of how HRM is effected by a knowledge-based environment and to provide some grounding to further research in this area.

~~1.1.5~~3.7.5 Validity

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The validity of the findings refers to the extent that they satisfy the intended purpose. The nature of this report was to collect data via a semi-structured questionnaire; thus validity is related to the level of knowledge that the respondents had in terms of the topic of this research.

Validity also hinged on the ability of the respondents to interpret the questions and the broader topic within the context of their business environment. In order to ensure a level of validity, the sample was selected from organisations that were involved with KM and the respondents were decision-makers in their respective fields.

It was also ascertained that the respondents had an adequate understanding of KM. Pre reading was supplied to all respondents to enhance their insight into KM.

The researcher is of the opinion that the respondents had a reasonable level of understanding in the areas of KM in their own organisations and could therefor provide meaningful information to the research questions. Based on this the researcher is of the opinion that the validity of the results are acceptable.

4. Research Findings

4.1 Analysis of the Sample

The final count of 26 respondents represented an 86.6% response rate. Although it was not a prerequisite that respondents had a high level understanding of knowledge management (KM) principles, it was anticipated that there would be a relatively high awareness of the subject within the selected organisations.

The sample of respondents was evenly spread between the three sub-groups of jobs, namely human resources management (HRM), information technology management (IT) and general line management (LM). In reality, some of these positions did not exist or were part of another job type.

The respondents all came out of the broader service industries. The following table lists the particular sub-sectors of the responding organisations.

Table 1 - Breakdown of Participating Organisations

Industry Sector	Number of Companies	% of Sample (Rounded)
Communications	1	11%
Utilities	1	11%

Consulting	3	33%
Banking	1	11%
Research	1	11%
Information Technology	1	11%
Travel	1	11%

Nine different organisations participated in the research. The tenth organisation declined at a late stage of the research process and was excluded.

The following matrix defines the number of respondents by their respective job type for each of the industry sub-sectors.

Table 2 - Respondents by Industry Sub-sector and Job Type

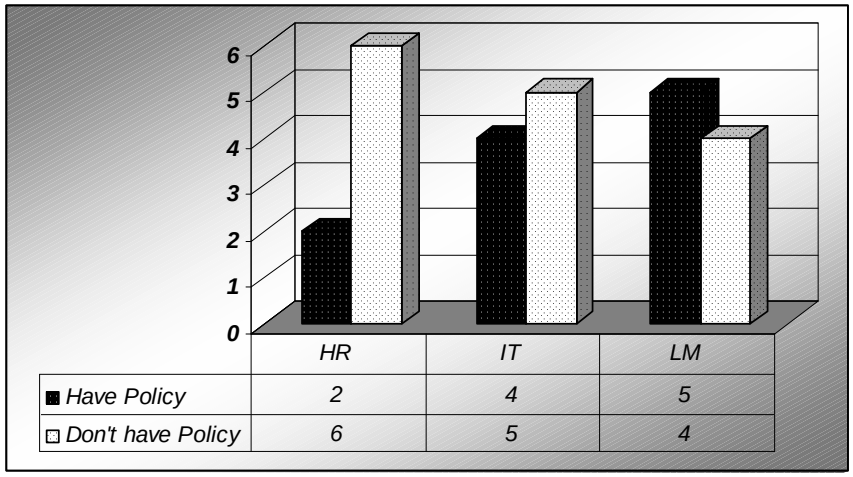
Industry Sub-sector	Human Resources	Information Technology	General Line Management
Communications	1	1	1
Utilities	0	1	1
Consulting	3	3	3
Banking	1	1	1
Research	1	1	1
Information Technology	1	1	1
Travel	1	1	1
Total	8	9	9
% of Sample	30.70%	34.60%	34.60%

Although the full sample was not attained, the split between the job types remained at an acceptable level in order to obtain information on KM from three perspectives within each organisation.

In the utility sub-sector, the researcher did not manage to obtain the responses from HRM. This was not considered an issue for the findings. In two cases the line managers selected from the organisations were directly involved in KM development. This was not considered a problem as they were still in a position to comment on the HRM function fairly. Their insight into KM also aided in the collection of important information.

During the discussion with the respondent organisations regarding their participation in the research, it was ascertained that the organisation had a formal knowledge policy. This question was also asked of the respondents during the interviews. Clearly, there was no consensus of the existence of such a knowledge policy. The results are shown graphically below.

Figure 3 - Existence of a KM Policy



The majority of the respondents indicated that a formal policy did not exist (58%). Further breakdown of the responses showed that within the nine participating organisations, none of their respondents were in full agreement.

The type of person employed in the responding organisations varied greatly. The grouping that were listed by the majority of the respondents were as follows:

- Professionally qualified;
- technical specialist; and
- post graduates.

Most of the respondents indicated that a portion of their staff were support staff such as administration. In one case, the majority of the company was administrative in nature.

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~~1.2~~4.2 Presentation of Findings by Question

Section 2 – Question 1

Broadly, what is your understanding of knowledge management?

The significance of this question was to gain insight into the respondent's general understanding of knowledge management. Owing to the selection criteria of the sample, it was not surprising that the respondents had a good understanding of the topic. The pre

reading supplied to the respondents also assisted in the creation of a common understanding of the topic.

Five (20%) of the respondents did not mention technology at all. These responses focussed on the relationship of people in the organisation and their willingness to impart information.

Sixteen (62%) of the respondents viewed the subject as a process of formalising information from employees and other sources. This was often enhanced with the view that KM was a strategic issue to ensure adequate supplies of information.

Five (19%) of the respondents indicated a process approach to KM such as collection of data, turning it into useful data and allowing access to the data.

None of the respondents viewed KM as purely technology or as a computer software system. This is feasible, as the respondent companies were identified based on their involvement in the subject and presumably had realised that KM is about people.

Only two respondents (7,7%) made any clear reference to the competitive business advantage that an effective KM system could

offer. Four respondents (15,4%) did mention the ability to develop people with the support of a KM system.

Buzzwords such as intellectual capital, tacit knowledge, employee intellect, business intellect were readily used to describe KM or a knowledge-based environment.

Section 2 – Question 2

What are the strategic issues that your organisation is considering with respect to knowledge management?

It was clear that the respondent's role in the organisation influenced the thinking around the strategic issues under consideration. The following list is a collation of the dominant issues raised, and is categorised into a broader grouping or focus.

Table 3 - Strategic Issues Under Consideration

Strategic Issue	Focus
Ensuring that the infrastructure enables effective KM.	Environment
Developing a culture of information sharing in the organisation.	Environment
Creating links between current knowledge repositories and current	Environment

employees.	
Promotion of communities of practice as accumulators of organisational learning/knowledge.	Environment
Converting the tactical dimension of knowledge requirements into working solutions.	Environment
Legal protection of intellectual capital.	Leadership
Changing the role of the manager.	Leadership
Re-defining organisational leadership.	Leadership
Understanding the recruitment, development, promotion and retention of talent and intellect function from a KM perspective.	People development
Systemise knowledge from staff and customers through the implementation of a central information unit.	Technical
Development of business driven data mining tools.	Technical

Section 2 – Question 3

What role do you see human resources management playing in supporting a knowledge-based environment? – Identify their specific objectives and critical success factors.

The following table lists the main objectives and critical success factors identified by the respondents.

Table 4 - HRM Specific Objectives and Critical Success Factors

Specific Objectives	Critical Success Factors
Recruitment, development and retention of knowledge assets.	The ability to compete in the global arena due to the quality of an organisations intellectual capital.
Facilitate the move away from traditional concepts of leadership to a different mode of leadership to support KM.	Buy-in by organisational leadership.
Identifying the value of knowledge, to fully exploit such knowledge, and measure the returns achieved.	The availability of sufficient budget
Identify performance to be included in routine performance	Adequate numbers of appropriately skilled HR staff.

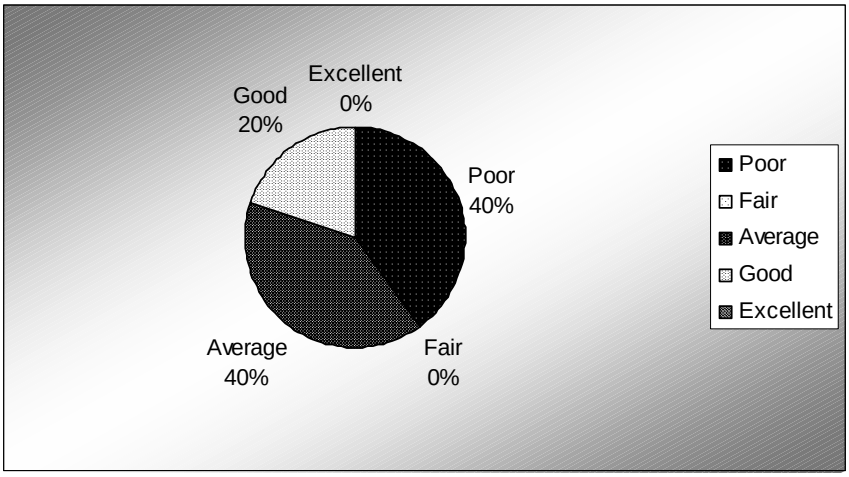
management exercises, training and induction requirements.	
Ensuring that compensation policy rewards the acquisition and sharing of knowledge.	Ability to integrate the KM process with training, recruitment and other HR activities.
Creating awareness of the importance of KM.	Ability to keep the KM process current as organisational and environmental changes occur.
Facilitate the design of KM frameworks.	Appropriate and efficient processes and procedures to ensure that information is captured based on events.
Monitoring of the knowledge 'gaps' in individuals and the organisation as a whole.	
The creation of a pool of resources.	
Ensure that an enabling environment exists for knowledge workers to maximise their ability to innovate.	

Section 2 – Question 4

How would you rate your human resources management service in terms of its current effectiveness to operate in a knowledge-based environment? [Scale]. Please support this with reasons.

The following ratings are shown graphically. The respondents did not provide meaningful comments regarding the reasons for the choice of scale. It was indicated by some of the respondents that the rating was a "gut" feel.

Figure 4 - HR Effectiveness in a KM Environment



None of the respondents gave a response of "Fair" or "Excellent"

The following table lists the key reasons indicated by the respondents to substantiate the rating given to the effectiveness of their HR

services. The corresponding rating is also shown, as these responses are company and individual specific.

Table 5 - Reasons for Rating of HR Effectiveness to Operate in a KM Environment

Reason for Ratings	Corresponding Rating
Competent HR people but with no experience in this area (KM).	Average
KM is not a priority of the HR division.	Poor
Exposure to KM is dominantly at the IT Transformation level.	Poor
The KM systems and processes are not in place.	Poor

Section 3 – Question 1

Describe the impact of a knowledge-based environment on employees?

Respondents were asked to indicate both positive and negative implications of the introduction or continued alliance to KM. The important themes are listed below as well as whether the issue was considered positive or negative.

Table 6 - Impact of a Knowledge Based Environment on Employees

Impact of KM on Employees	Positive or Negative
Construed as an attack on personal power i.e. knowledge is power.	Negative
Employees have to invest some of their time in contributing to the knowledge 'pool', which in effect creates more work for the employee.	Negative
Information overload.	Negative
Lower level employees do not see the value of developing a knowledge base if it is primarily used by senior management.	Negative
Perceived thinning of one's own knowledge base. I.e. by sharing information, one will not be as marketable.	Negative
Persuading staff to work across functional boundaries.	Negative
Danger that innovation can be stifled if people are forced to use only captured knowledge.	Negative
Databases are perceived as useless if bad knowledge is not filtered out.	Negative
Resistance to knowledge sharing.	Negative

Willingness to disclose all knowledge.	Negative
Communication between hierarchical levels is improved.	Positive
Creates environment to learn.	Positive
Creation of a challenging environment.	Positive
Cultural understanding and buy-in.	Positive
Employees value the support of their co-workers.	Positive
Evolving natural use of IT systems and tools that support KM.	Positive
New networks of people created.	Positive
Provides a sense of confidence.	Positive
Seamless integration between people and systems developed.	Positive
Staff becomes innovative.	Positive
Increased work demand.	Positive / Negative

More negative comments were given than positive comments. This could be the result of implementing a knowledge-based environment with little assistance or researched guidelines.

A trial and error approach or an unstructured approach to the implementation of a knowledge system is prone to a high level of error. The respondents were typically involved with their respective

knowledge management systems since inception; thus, the issues most prevalent in their minds were the negative issues.

Section 3 – Question 2

Describe how knowledge is managed and shared in your organisation.

The objective of this question was to understand the methods employed to gather, share and manage information. These methods could be either electronic or manual in nature. The following table indicates the methods employed to deal with knowledge, and whether the method is manual or electronic.

Table 7 - Methods Used to Manage and Share Knowledge

Method employed	Electronic / Manual
Central information unit.	Electronic
E-mail.	Electronic
Front-end software to access databases and data mines.	Electronic
Internet.	Electronic
Intranet.	Electronic
Proprietary knowledge management systems.	Electronic

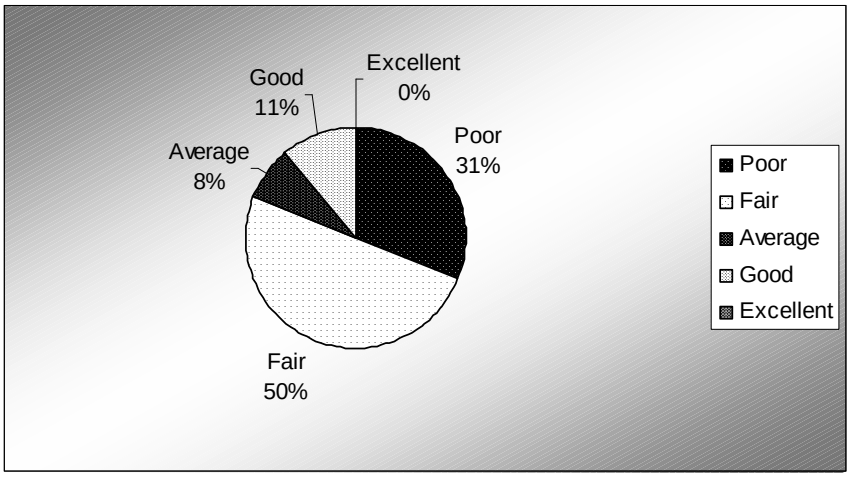
Public folders.	Electronic
Formal and ad-hoc communication e.g. Presentation, newsletters.	Electronic and Manual
Industry bodies.	Electronic and Manual
Learning and development.	Electronic and Manual
Libraries.	Electronic and Manual
Training courses.	Electronic and Manual
Business leadership.	Manual
Interest and focus groups.	Manual
Internal notices.	Manual
One-on-one communication.	Manual
Performance feedback.	Manual
Problem resolution and related workshops.	Manual
Professional bodies.	Manual
Project meetings.	Manual

Section 3 – Question 3

How successful is knowledge management in your organisation?

Respondents were asked to give a rating of the perceived success level of KM by using a five-point scale. The results are projected graphically below.

Figure 5 - Success of KM in Organisations



None of the respondents indicated a response of “Excellent”. The results suggest that twenty-one (80%) perceived their KM success level as below average while only three respondents (11%) indicated that their KM operations were good.

The following table indicates the reasons sited by the respondents related to the level of success of KM in their organisations. The corresponding rating is show as these responses are related to individuals and their organisations.

Table 8 - Reasons for Ratings given to KM Success in Organisations

Reason	Rating
Knowledge is not accessible to a large number of staff.	Fair
Knowledge tends to be shared within specific groups i.e. there is little ongoing firm-wide knowledge sharing.	Fair
Managers appear to be reluctant to commit to KM programmes.	Fair
The completeness and currency of data can still be improved significantly.	Fair
A central information unit has just been introduced - it is not yet a way of life.	Poor
Company politics is working against the desired KM objectives.	Poor
KM has no strategic platform, and is not given sufficient status.	Poor
Lack of understanding of KM concepts.	Poor
No formal KM strategy.	Poor
Perceived lack of return on investment.	Poor

Section 4 – Question 1

What changes with respect to company structure, culture and style is your company making to support a knowledge-based environment?

Company structure, culture and the management style are three areas that influence KM and have a direct impact on employees. For this reason, it was important to identify the changes that are being made in these areas.

The following table is an extraction of the themes presented by the respondents.

Table 9 - Changes to Structure, Culture and Style

Company Structure	Culture	Style
The development of national structures rather that regional structures.	Continuous learning.	Recognition of the value of talent.
The formation of flatter hierarchical structures.	Democratic and empowered organisation.	A more demanding management style for non-transactional issues.
Networked (internally and externally) structures.	Employees "empowered" to	Participative management approach.

	speak out, voice criticism and propose solutions in a safe environment.	
Conversion from a functional hierarchy (silos) to a process organisation.	'Coach' approach to education, skilling and general HR.	Accountability devolved to the lowest level of competence.
Centres of excellence created where pools of like competency reside.	The concept of the "Learning Organisation".	Organisational development initiatives to measure competency.
Support integrative activities across divisions (and with other organisations).	Open, friendly and information sharing.	Cross skilling.
		Philosophy of 'pay for performance'.
		Balanced scorecard method of measurement.
		Management actively

		involved with projects, customers and employees.

Section 4 – Question 2

What are the current and future challenges your company faces in order to make knowledge management effective?

The following list is a collation of the themes from the respondents. The responses are grouped into people and technology issues.

Table 10 - Challenges Facing Effective KM

Challenges	People/Technology issue
Initiating change management requirements to move towards the desired set of values.	People
Convincing staff of the value that KM can offer them and the organisation.	People
Creating a shared understanding of the business.	People
Develop a workforce that is challenged to become competitive within a changing world.	People

Ensuring the availability of suitably qualified KM people.	People
Managing knowledge workers whose skills are highly marketable.	People
Creating a formal and acceptable KM strategy.	People
Integrating KM needs into organisational culture and including the KM activities into performance management processes.	People
Managing organisation agility (both structurally and culturally).	People
Overcoming the notion of "Knowledge is Power".	People
Generating the ability to learn faster than the competition.	People/Technology
Gain more leverage from knowledge assets.	People/Technology
Introducing measurement.	People/Technology
Overcoming technophobia.	People/Technology
Increasing productivity through KM.	People/Technology
Improving tools to use and manage	Technical

knowledge.	

Section 4 – Question 3

How do your employees utilise the company's knowledge repository, and how do they contribute to the growth of the knowledge base?

The following responses were extracted and collated. The question fulfils the requirement to understand the methods used to gather data from the available sources.

Table 11 - Utilisation of Knowledge and Contributions towards Growth

Utilisation of Knowledge Repository	Contributions to Growth
Search facilities on intranet.	Meaningful and effective communication.
Paper communications in the internal mail.	Knowledge collection through debriefing exercises.
Access electronic databases via PCs and mainframes.	Face to face communication.
Face to face communication.	Part of performance expectations.
Proprietary databases.	Documents and other

	information added onto file servers.
Electronic reminders of new information.	Project requirements.
Push servers or list groups.	

Section 4 – Question 4

How is Knowledge management influencing your employees (positive & negative)?

The following table indicates the thinking of the respondent on the issue of how KM influences employees. These were categorised as positive or negative influences.

Table 12 - Positive and Negative Influences of KM on Employees

Positive Influence	Negative Influences
Increased awareness of important issues.	Adapting to change at a rapid rate.
Facilitating solutions to common problems.	Danger of employees feeling pressure of information overload or too much change, too fast.
An ever increasing awareness of KM as a concept.	Seen as more work .

An appreciation for learning and sharing of information.	Without being able to measure the worth of KM, employees see little or personal value.
Enhanced personal knowledge.	Pressure to use knowledge, but technical system is difficult to operate.
Employee self esteem improved.	Importance of a KM environment is not realised.
Simplifies research work.	

Section 5 – Question 1

Explain the issues in your company around acquiring, growing, retaining and rewarding employees in the context of knowledge management.

If it is accepted that KM is about people more than it is about technology, then the employee should be treated as an important asset to the organisation. The ability to build this human asset base and maintain it to perform effectively thus becomes an important issue.

This question specifically considered the issues the organisation and particularly the HRM function needs to consider in order to keep its

KM abilities effective. Staff acquisition, growth, retention and rewards are seen as the employee life cycle.

Table 13 - Staff Aquisition, Growth, Retention & Reward Issues

Issue	Area of Impact
Business driven recruitment criteria.	Acquiring
General skills shortages requires increased levels of creativity and pro-action with respect to obtaining and maintaining staff.	Acquiring/Retaining
Maintaining a level of pride in the KM system.	Acquiring/Retaining
Generating affiliation and a sense of belonging and worth.	Acquiring/Retaining
Recruiting staff from organisations with KM becomes difficult without an equally good or better KM system.	Acquiring/Retaining
Finding staff who are clever enough and have the right attitude towards KM.	Acquiring/Retaining
Successfully using mentors and coaches.	Growing
Ability to grow people and to provide the potential to broaden horizons.	Growth

Opportunities provided by KM to grow individual knowledge.	Growth/Retaining
Integrating KM skills as an important factor in determining promotion.	Growth/Retaining
Marketability of staff who have become skilled through the actions of an organisation.	Retaining
Preventing staff loss because of "Brain-Drain" syndrome.	Retaining
Recognition of contributions to the expansion of knowledge and information.	Retaining/Rewarding
Penalising staff for not contributing to the growth of knowledge.	Reward
Offering incentives to employees for providing information and knowledge.	Rewards

Section 5 – Question 2

What changes is your company making in order to address the previous question? (Issues around acquiring, growing, retaining and rewarding employees)

The following list of changes where distilled from the responses.

Table 14 - Planned Changes Affecting Employees

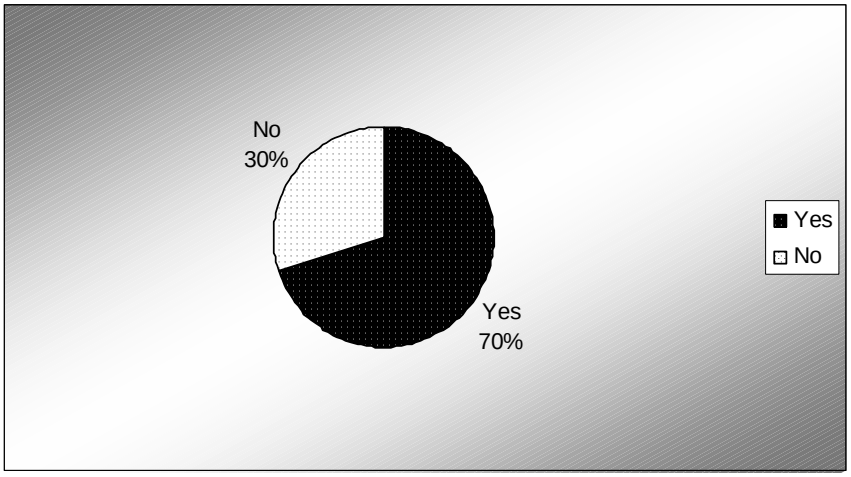
Planned Changes to Address Issues Around Acquiring, Growing, Retaining and Rewarding Employees
Conduct research into flexible remuneration policies to reward staff within a knowledge-based environment.
Develop a formal and widely accepted KM strategy with an integrated KM tool, which will aid in knowledge retention.
Develop a management philosophy that considers and portrays knowledge as an asset.
Incorporate KM issues pertinent to staff into performance management systems.
Implementation of "workflow" to assist with the management of the flow of knowledge.
Creation of a clear link between HRM and KM.

Section 5 – Question 3

Does your knowledge-based environment influence your staff turnover (current and future)?

A graphical display is presented showing the split between respondent indicating that a KM environment will affect staff turnover against those who do not believe KM will affect turnover.

Figure 6 - KM's Influence on Staff Turnover



The following table lists the supporting reasons why KM does or does not influence staff turnover.

Table 15 - Reasons Why KM Does or Does Not Affect Staff Turnover

Reasons Why KM Will Affect Staff Turnover	Reasons Why KM Will Not Affect Staff Turnover
KM should ensure that staff who are willing to acquire and share learning are properly valued and so incentivised to stay.	"Have had a knowledge based environment for many years and therefore I cannot see turnover increasing or decreasing significantly in the years to come."
Centres of excellence and pay for performance should retain staff.	KM is one component of an environment and may not

	influence turnover as a single entity.
The increased focus on HR issues should allow for a less hostile, contributing culture and workforce.	
Staff will have better methods to grow within the firm.	
Not all people want to work in a constantly changing and always challenging environment (Negative comment).	

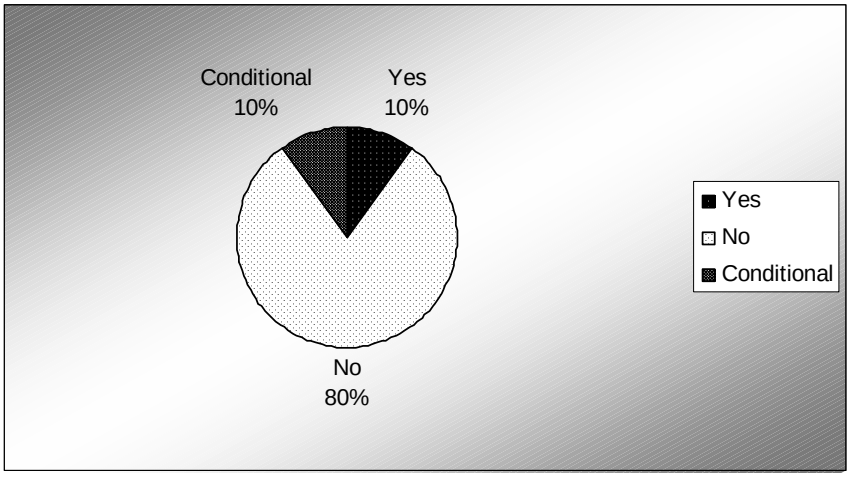
Section 5 – Question 4

What are your views on a model or tool to manage and support employees in a knowledge-based environment?

The basis for this question was to understand whether knowledge-based environments have peculiar characteristics that require similar actions or responses.

The following diagram indicates the high level response to the question.

Figure 7 - Opinions on a KM Modeling tool



Clearly, the results show that the majority of respondents (80,7%) do not support or understand the concept of a model to manage KM. A few respondents did however see some value in providing a framework for the implementation of a knowledge environment.

5. Evaluation of Findings

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~~1.1~~5.1 Objective

The research findings were presented in full in the previous chapter. This chapter interprets the findings from a number of perspectives. An evaluation of the findings for each research question according to the three sub-groupings of the sample population i.e. human resources, information technology and line management interviewees is conducted. The evaluation identified the following within the context of the report propositions:

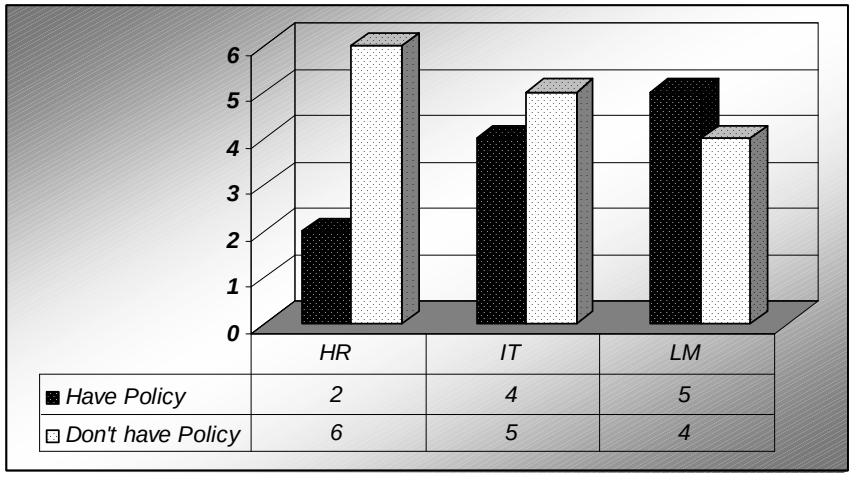
- Grouping of identical or similar issues and concepts within each population sub-group;
- identification of similar issues within the whole population; and
- discrepancies and contradictions in responses.

The chapter concludes with an evaluation of the findings against the research objectives and propositions.

The method used to select the participant organisations and their corresponding respondents presupposed that the respondents had an awareness of knowledge management (KM). This would be supported by the fact that the respective organisations were actively involved in the development of KM initiatives.

It was interesting to note that although the organisations had indicated that a formal KM policy existed when they were approached to participate, when it came to questioning the respondents, not one organisation answered consistently in this regard. Clearly, if formal KM policies do exist in these organisations then there was insufficient communication among the employees of its existence. Human resources management (HRM) could play a vital role in developing a communication policy that effectively reached the intended audience.

Figure 8 - Does a Formal KM Policy Exist in Your Organisation?



Noticeably, the greatest range of discrepancy lay with the HRM respondents, while general line management (LM) respondents had the highest count of believing that a policy did exist.

In analysing this it should be noted that two of the nine line managers that responded were directly involved KM.

The IT responses are interesting from the perspective that policy which already exists for computer systems that manage knowledge systems could be confused with a formal KM policy. In one of the follow-up session with a respondent, this was confirmed to be the case.

Section 2 – Question 1

Broadly, what is your understanding of knowledge management?

Apart from the fact that the respondents were from organisations involved in KM, supporting documentation was also supplied to assist respondents in answering the research questions. The support document was supplied to the respondents before the completion of the interview questions, which could have allowed the respondent time to enhance their own understanding of the topic.

Human Resources Management Perspective

The views expressed by the HR sub-group were focussed on the employees in the organisation. Two (25%) of the HR respondents used the word “individual” in describing the focus of KM. Six of the eight respondents (75%) sighted human resources development as

an element of KM. Only one (12,5%) of the HR respondents indicated that KM had an impact on the organisational competitiveness.

This confirms thinking that many HR practitioners are inwardly focussed on staff, whilst not taking too much interest in the broader implications of the business strategy. It perhaps also indicates the lack of strategic input from a pure business perspective that the HR fraternities have.

Four (50%) of the HR respondents made mention of a system or computer system to assist with the management of the information. In some cases, it was pointed out that the system itself could not sustain the development of KM, but that it should be viewed as a tool to assist with the process. In those organisations where KM systems were being used, the specific name of the system was used.

In one case (12,5%) the HR respondent was clearly interested in the subject, was able to describe the Lotus Notes © platform being used, and gave a high level of detail regarding the process of data collection.

It was noticed that a lack of discussion on process activities of KM was expressed by this sub-group. Except for the one respondent, none of the other HR respondents mentioned a process of collecting

data, managing the information and using the information. There was also no discussion about redundant data.

The HR managers from the three organisations classified as consulting firms did indicate that data was used for project purposes, but did not elaborate to any significant extent. Another critical area that was not discussed to any great length were the issues around culture in the organisation or the HR activities of acquiring and retaining staff. At this point of the interview there appeared to be minimal connection with KM as a concept and the traditional activities of HRM.

Information Technology Perspective

Seven of the nine IT respondents (77%) indicated that KM was a process. In some cases (42%), the respondents indicated that there was a collection process of the information from employees, a sorting of the data into meaningful knowledge and a function to ensure that the data was accessible. In only one case (11%) did a respondent discuss how redundant data was included in the process.

Five (56%) of the IT respondents made a connection to the overall organisational strategy. The respondents suggested that KM could be used to improve customer service, more efficient use of time,

improved competitiveness and the ability to retain important information even when employees leave the organisation.

Interestingly the use of specific words such as “formalise”, “relationship” and “discipline” were used to describe the formal requirements of a managed data system. Clearly, this set of words epitomises the strict nature of information management within computer system environments.

In four (44%) cases, the respondents discussed the individual or the employee as part of the process. The majority of the points made about employees were related to the supply of information to a knowledge base or system.

Four (44%) of the IT respondents implied that the environment was important in order for the KM system to be effective. Specific phrases such as “culture of encouragement”, “collective entity” and “infrastructure to support relationships” were used to indicate the importance beyond the system itself.

Clearly the IT respondents did not all fall into the classic role of identifying KM as a computer system. As these respondents were involved in KM projects, it is likely that they were exposed to the importance of people in the creation of knowledge environments.

Line Management Perspective

The respondents for this category were nominated from any other management function in their respective organisations other that IT or HR. In two cases, the line manager chosen was responsible for KM or intellectual capital.

The LM group had a majority (56%) of respondents that believed that a formal KM policy existed in their organisations. There was no indication if they had seen the policy or if they were involved in developing it.

The LM responses were often threaded with information regarding the use of information (66%). There was a clear focus from this group on issues of employee productivity and how knowledge systems could assist employees to raise their contribution towards the betterment of the company. The three LM from the consulting firms were specific on the use of knowledge data to provide faster response times to clients. This was considered as one of the competitive edges of knowledge management.

The LM group provided the most examples of the use of data and systems. In 89% of the responses, details ranging from on-line

telephone numbers to sophisticated executive information requirements were described.

The high level of needs from a system as described by this sub-group emanates from the fact that the LM is normally at the forefront of customer interface. LM are normally responsible for the transactional work, compared to the support role played by IT and HR.

The majority (67%) of the respondents also spoke about the importance of sharing information with other employees. There was an absence of discussion with respect to the methods of sharing information.

There appeared to be a focus on group requirements rather than individual needs. In three cases (33%) the respondents noted the involvement of the individual in the process of KM, but viewed the outcome of such involvement as being beneficial to a “group” or “team”.

Common Issues Within the Sub-groups.

The interesting connection between all three of the sub-groups is that they all made mention of people as part of the knowledge environment. This supported the view made earlier in chapter two

that there is a move away from the stereoscopic view of computer systems being the main driver of KM.

There appeared to be a consistent notion that computer systems were required to assist in the process of managing the data and to make it readily available to whoever needed information. A common negative issue between the sub-groups was the lack of discussion around the broader business environment. Although there was some discussion with respect to culture by the sub-groups, there were minimal references made to the role that a suitable environment played in an effective knowledge-based environment.

There were also minimal responses on the impact that traditional HRM activities such as recruitment could have on the knowledge-based environment. Clearly, until the respondents were prompted to answer questions regarding the HRM issues, the importance was not apparent to them.

Differences Between Sub-groups

The most striking difference between the sub-groups was the understanding of the link between KM and strategic issues in the organisation. Of the three sub-groups, IT seemed most focused on

KM being a strategic tool, whilst HR was very people centric and LM very result oriented.

Section 2 – Question 2

What are the strategic issues that your organisation is considering with respect to knowledge management?

KM should be supported by a strategic intent in order to have any measure of success. This question elicited the following:

- If there was real commitment to KM by the organisation.
- How the various sub groupings of HR, IT and LM were interpreting the strategy both from a overall company perspective and also how the strategy was being translated into departmental objectives.

Human Resources Management Perspective

In six cases (75%), the HR respondents dealt with departmental issues or objectives. In only two cases (25%) the respondents appeared to understand that the question was focussed on overall company strategy. There appeared to be a general lack of involvement in business strategy by the HR respondents. This may not be a point that one can generalise, however the learning that is important reflects on the impact that the non involvement of critical

players will have on the introduction or successful continuation of a knowledge-base environment.

In one case (12%), the respondent indicated that before the company developed a knowledge strategy, they as an organisation should first define what KM means to them. This statement was made by an HR manager from an organisation that indicated that a formal policy on KM existed. Clearly, if such a policy did exist it was not know even to relatively senior people in the organisation, and if it was know, then it was having little impact in driving objectives at a departmental level.

Four (50%) of the eight respondents referred to the HRM activities of recruitment, development or training, promotion and retention of staff as critical areas for their departments. Although these are important areas for KM, clearly there was not much depth in understanding why these HRM activities were important in a knowledge-based environment.

One respondent (12%) indicated that the acts of recruiting, developing and retention had to be focussed on the acquisition of talent rather that a specific skill. The respondent identified the era of constant change that many organisations were entering, and that rapid re-skilling of staff would be required in the future. A generally talented person would be better equipped in this type of environment.

One respondent (12%) discussed the changing role of managers from a controller to a facilitator and listener. This point is not new thinking, but it was noted in the context of creating a suitable environment for knowledge management to prosper.

The analysis of the HR responses would suggest that there is no clear understanding of the HRM role in a knowledge-based environment. The lack of apparent involvement with the strategic direction of the organisation is again indicative of the inward thinking that is prevalent among HR practitioners. The changing role of HR, as discussed in the literature review appears not to have happened in all organisations.

Information Technology Perspective

Five (55%) of the nine IT respondents indicated high level strategic issues that their organisations were considering. The involvement of IT personnel at strategic levels appears to be far more prevalent than that of the HR respondents. One could intimate from this observation that IT personal are more closely aligned to the development of KM at a strategic level. It could also be argued that KM is fragmented within organisations, and there is an apparent lack of involvement of HR managers in KM processes.

With reference to Sveiby (1998), as discussed in chapter two, it is possible that the technical perspective of KM has maintained momentum in the development of knowledge systems, but has realised the importance of people in the success of such systems.

On the other hand, it would appear that the HR or “human” approach to KM has not moves at the same pace. This supports the thinking of Sveiby in this regard.

In three cases (33%) the IT responses added valuable contributions to the organisational structure requirements of a knowledge-based environment. New terminologies such as “centres of excellence” and “communities of practice” were used to describe the move away from the functional silo approach of organisational structure. Movement to a system of allowing people to work together in a fluid manner and in accordance to their knowledge and skill offering was suggested by this sub-group. It was also indicated that this approach would assist the growth of innovation and ultimately the gathering of new information and knowledge.

Two of the respondents (22%) indicated that is was an objective to improve the process of information collection and sharing. These discussions implied that the systems currently in use were not an integral part of the work environment, but were seen as optional tools that could be used by employees. Clearly, an objective would be to create defined links between people and data, but in such a way that

the provider of information would not become burdened by having to capture data in a traditional manner.

The use of knowledge as a tool to increase competitiveness was noted in four cases (44%) by this sub-group. It was noted that the realisation that knowledge can give an organisation an advantage is emerging as a real issue.

Line Management Perspective

As with the HR respondents, there appeared to be a lack of exposure to the general strategy of KM, except were the line managers were directly responsible for KM or were involved in current projects.

Operational strategic issues were discussed in three cases (33%) and focussed on outputs of the knowledge environment. Issues such as easy access to knowledge systems from remote locations, business driven data mining tools and improved communication appeared to prevail in these responses.

The responses from LM are typical of the part of the organisation that is responsible for the transactional activities. These responses would indicate that the LM focus is on using the available information. The

issue that is not coming through in terms of responses is how this group of individuals will contribute to the growth of a knowledge base.

From a strategic perspective, different interface approaches need to be developed in order to ensure that everyone can contribute to the growth of the environment, and not just be users of the information.

Common Issues and Differences within the Sub-groups

The only common issue for the sub-groups with respect to this question was a direct indication or an intimation of the importance of people in the process of managing a knowledge environment. The focus of the various sub-groups with respect to strategic issues was clearly not common.

The IT sub-group appeared to have the most involvement with respect to knowledge management strategic issues, whilst HRM and LM were focussed internally on their departments or on the outputs of a KM environment. The latter point displays a form of separation from the system itself.

Further analysis of the extracted strategic issues tabled in chapter four, indicates that 78% of these issues deal with the environment, leadership or people. Only two of the issues were purely technical.

This further supports the notion that people are the drivers of a successful KM system.

Section 2 – Question 3

What role do you see human resources management playing in supporting a knowledge-based environment? – Identify their specific objectives and critical success factors.

Human resources management Perspective

This question tended to be answered theoretically by the respondents. The analysis of the previous question highlighted the lack of involvement by HRM in the area of KM strategy, yet once prompted by this question, ideas and thoughts pertinent to KM strategic thinking surfaced.

The approach by the respondents to this question highlighted that the HRM respondents had positive input into the creation and establishment of a knowledge-based environment. It appeared that HRM have not had much opportunity to provide guidance to their respective organisations.

The reasons for the apparent lack of involvement by HRM in developing a knowledge environment were not obvious, however the

inward focus discussed earlier could provide some insight. The organisational leadership may also not require their HR department to fulfil such a requirement.

Seventy-five percent (75%) of the respondents made reference to the role that they could play in redirecting leadership in the organisation and challenging the management style that currently existed. Clearly, the HR respondents foresaw change management and change leadership requirements in the development of a successful knowledge-based environment.

The word “facilitate” was used 12 times in the total HR responses. The word represents a perception of the HR role in the eyes of the HR respondents. It is also a required activity during the introduction and maintenance of a knowledge-based environment.

In all cases except two, the HR respondents indicated specific objectives and critical success factors that were focussed on the employees. The following list is a summary of the important thoughts:

- Providing a service and guidance to the organisations that is focussed or recruiting, developing and retaining knowledge capital and talented people.

- Facilitating the move away from current management styles to a style more suitable for the requirements of a knowledge environment.
- Giving guidance to the management of quality of work life.
- Creating an understanding of mentorship in a KM environment.
- Facilitating and providing guidance in the area of performance management for knowledge workers.

The two points mentioned that were non people related were the role that HR should play in determining the value of knowledge, and the provision of guidance in the area of knowledge competitiveness.

One could expect that the HR responses would be focussed on people, however many of the responses were essentially BPR or change management issues. The responses indicated that the HR respondents understood the implications of creating a new culture and environment in an organisation.

There was a lack of depth to the answers provided, and most of the respondents failed to substantiate their answers.

The Information Technology Perspective

There was a continuum of responses from the IT respondents. The one extreme a respondent (11%) indicated that HRM did not have a role to play in supporting a knowledge-based environment. This respondent indicated that HRM need only continue with their current “administrative” activities. One can deduce from this that the HR function has not been highly visible in non-administration activities in that particular organisation. This is a concern if the expectation from the organisation is that HRM guidance in the area of environment creation.

Comments from this sub-group were mainly focussed on objectives to support employees. One view could be that the IT respondents look towards the HR practitioners who are trained in people issues to provide guidance to the organisation in dealing with the issue that could emerge during a KM development.

The other extreme comments from the IT respondents indicated that HRM should be highly involved in identifying the type of knowledge needed by the organisation, the groups to which people should belong and who should have access to the knowledge. This response also suggests a lack of understanding of the broader KM picture. KM is not about developing a rigid set of rules that

employees should abide by. The creation of an empowering environment that allows groups to form dynamically should rather be encouraged.

The majority of the IT responses to this question did however indicate a facilitation role requirement from HRM as well as the ability to attract and reward knowledge workers in different ways from current practice.

As with the HR responses, there was little depth to the answers received. There appeared to be a “gut feel” amongst the IT respondents that the current ways of recruiting and developing staff would not be adequate for the needs of a KM environment.

Terms such as “culture”, “team work” and “integration” were prevalent in 55% of the IT responses. Two responses (22%) alluded to the new role of a leader or manager. The point was made that the new role of management would include many activities that are currently considered part of HR management. This supports the comments made on this point in the literature review.

Several of the respondents clearly saw the HRM activities as an important ingredient to the success of KM. It was interesting to note that two (22%) of the IT respondent viewed HRM as the

custodians of the KM. This is thoughtful insight in that systems are not always able to continue without external force or energy being applied. People are prone to fall into comfort zones or back to previous practice without a form of pressure being applied.

Line Management Perspective

The views expressed by the LM were not overly different from the IT responses. There was indication in four (44%) cases that the traditional roles of recruitment, training, development and retention were still important in a knowledge-based environment. Leadership issues and the role of management were raised in three cases (33%).

Budget requirements were mentioned in one case (11%). This was the only mention of money from the entire sample. The respondent indicated that the HRM function should be instrumental in determining certain costs associated with the development of a knowledge-based environment. These costs would include reward packages for knowledge workers, employee development costs and costs associated with the sustenance of an effective environment.

Two respondents (22%) indicated that an objective of the HRM function should be to build specialist skills in the area of KM. HRM should also determine the right level of HR practitioner staffing required to maintain a knowledge-based environment.

Common Issues and Differences within the Sub-groups

Although none of the individual sub-groups could provide specific insights, there was a common thread among the respondents that the HR activities of attracting, developing and retaining people in a knowledge-based environment was important. These activities needed to be enhanced to a level that would be appropriate for a knowledge-based environment.

There were no radical changes envisaged by any of the groups for the HRM activities. Many of the issues raised by the respondents were typical of change management activities. Clearly, the respondents were of the opinion that the development of a knowledge-based environment does require change interventions of some sort to ensure the creation of a suitable platform or environment for knowledge to grow.

The respondents were also lacking in their ability to provide depth to their statements. This could be indicative of the lack of experience or involvement in the creation of a knowledge system.

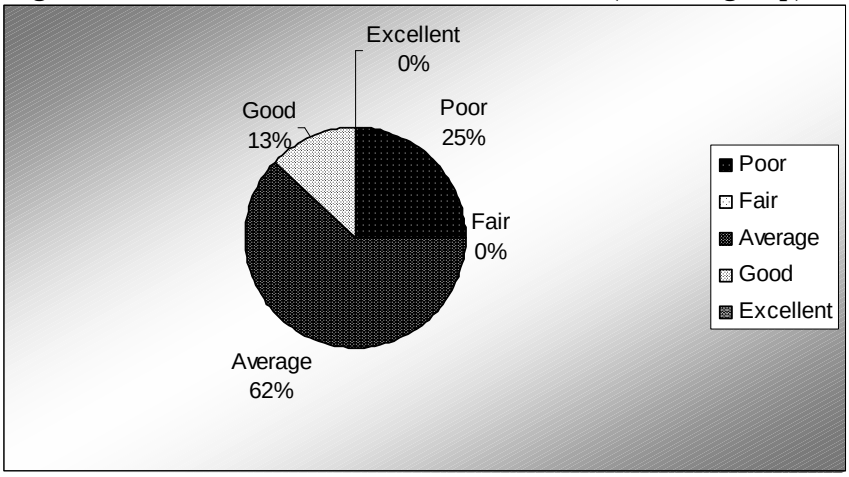
Section 2 – Question 4

How would you rate your human resources management service in terms of its current effectiveness to operate in a knowledge-based environment? Reasons.

Human Resources Management Perspective

The greatest number of HR respondents (62%) rated themselves as average with respect to the question. One would have to factor in that self-rating is difficult and often different from an external observation.

Figure 9 - HR effectiveness in a KM Environment (HR Sub-group)

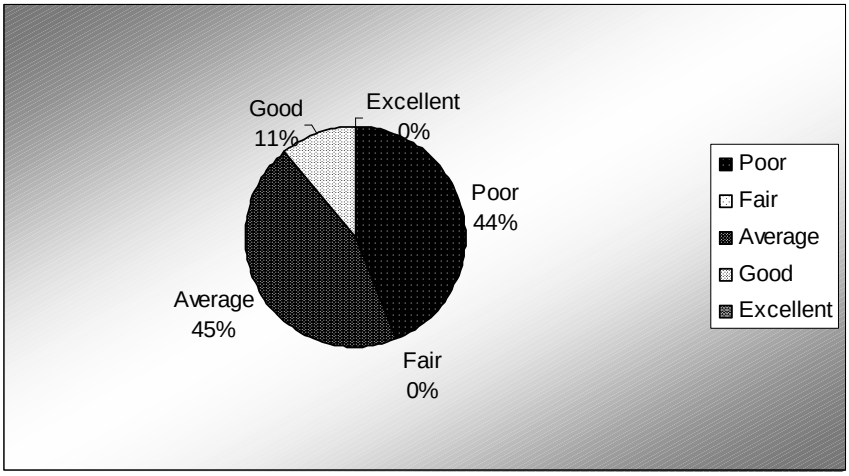


The apparent low level of insight into the strategic HRM issues with respect to KM noted in the previous question would substantiate the notion that the ratings given by the HR respondents about themselves are over-rated.

Information Technology Perspective

By contrast, the IT responses are more evenly spread between an average and poor service currently being offered by the respective HR services. Only one (11%) respondent indicated that the service was good. As this appears to be the exception to the responses, one can assume that this respondent had good service from HRM that had relevance to a knowledge environment.

Figure 10 - HR effectiveness in a KM Environment (IT Sub-group)



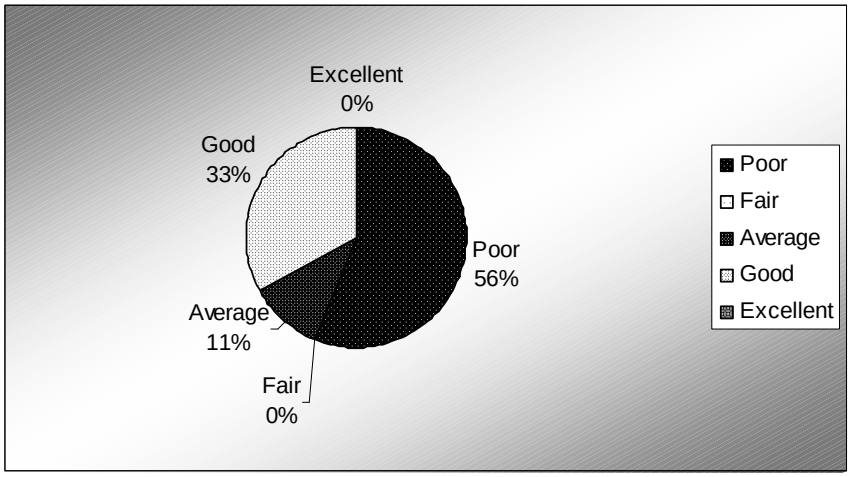
The relatively high “average” rating offered by the IT respondents could also be clouded by their apparent higher level of involvement in the KM systems. One could assume that if current KM projects

are successful from the IT respondents perspective, then it is easier for one to overrate the real input from other parties.

Line Management Perspective

The majority of the KM group indicated that the service offered by HR was “poor”. It is however interesting to note that a larger percentage of “good” ratings were obtained compared to the other two sub-groups.

Figure 11 - HR effectiveness in a KM Environment (LM Sub-group)



Common Issues and Differences within the Sub-groups

Eighty percent (80%) of the responses indicated that the level of effectiveness was below a rating of “good”. What has emerged from the previous three questions is the apparent lack of

involvement by the HRM function in the creation of knowledge-based environments. This lack of presence would support the view that there is a lack of experience among the HR sub group.

Section 3 – Question 1

Describe the impact of a knowledge-based environment on employees?

Human Resources Management Perspective

In six cases (75%), the respondents indicated that having a knowledge-based environment had a positive impact on employees. It did however appear that this was somewhat of a theoretical answer as there was little substantiation of the responses.

With respect to the negative comments, eighty seven percent (87%) of the respondents were able to provide a list of more that two negative issues and fifty percent (50%) were able to identify at least four negative issues.

The negative comments could be categorised into three broad areas of people, process and technical interface issues. The people categorisation was focussed on the ability of people to

learn and relearn as well as learning to share information with colleagues.

An interesting issue was raised by one of the respondents (12,5%) who quoted Karl Wiig (see Wiig *et al* (1997)) as saying that not more that 10% of an individuals knowledge could be transferred. This statement complements the issue around the non-tangible nature of knowledge and the difficulty in capturing tacit knowledge. Brethenoux *et al.* (1997) refers to this issue in their knowledge cube. The expectation is that solutions for capturing tacit knowledge will be available by 2003.

Process issues raised during these questions highlighted the concerns with working across the current organisational boundaries. One can assume that the respondents are aware of issues between departments that would cause interaction to be less than acceptable. This issue is closely related to organisational design and change management issues.

Two respondents (25%) expressed concern with teaching employees to become innovative. Clearly, innovative learning would occur over a time span, but is also linked to the type of talent that is being recruited into the organisation. This supports the notion that KM does have an impact on how organisations recruit staff.

Three respondents (38%) indicated that employees would need to learn to interact with technology almost on a daily basis. The implication is that work patterns would require change such that the technology interaction was not considered a burden or an administrative load on employees.

Employees who are adverse to or have fears of technology may leave the organisation and take their expertise and knowledge with them. Timely staff development could prepare the organisation for this requirement and HR should play a leading role in executing the action plans. This HRM activity is categorised as staff development and is one of the areas covered in this research.

Information Technology Perspective

The recognition that "knowledge is power" and the impact it could have on employees who will be expected to share their knowledge and therefor their power was mentioned in four responses (44%) by the IT sub-group.

It was mentioned by three (33%) respondents that an incentive or reward system that would reward employees for what they contribute and not what they know needs to be in place.

The important issue of information overload was mentioned by five of the nine respondents (56%). Clearly, the introduction of massive amounts of information will apply pressure to the work environment and the individual employee. The resultant effect could be a general block out of information and thus a lower level of interaction with the knowledge environment.

The commercialisation of KM products was an issue raised by two respondents (22%). The exaggerated expectations created around KM has lead to the belief by some employees that a knowledge environment will supply limitless amounts of information that can be applied to the work activities. Organisations need to deal with employee expectations to ensure a realistic view of the system and the environment is created.

Interestingly, one respondent (11%) indicated that the introduction of a knowledge-based environment placed a high level of stress on employees in that it implied continuous learning from employees. Learning in essence has to become a way of life for the survival of a knowledge environment. HRM need to build actions into their environmental planning that deals with stress and continuous change. This issue also influence staff acquisition and development.

Three respondents (33%) noted that KM implied more work for employees. This negative view could cause employees to withdraw their support for a knowledge system. The change management processes employed during the knowledge environment set-up phase must ensure that effective role changing takes place. HRM should play a leading role in this requirement.

Two of the IT sub-group respondents (22%) viewed KM ultimately as the management of an environment. This would include the creation of a suitable environment so that knowledge hoarding would be minimised and sharing of useful knowledge is shared.

Line Management Perspective

A strong sense of opportunity to improve personal levels of skill in the organisation was espoused by thirty three percent (33%) of the LM sub-group. This view was considered more as a problem than an opportunity by the previous two groups.

This sub group indicated that the introduction of a knowledge-based environment would create a sense of equality among the employees. It was suggested that employees would feel more comfortable knowing that they had access to the same type of data than anyone else in the organisation did.

On the negative side, the notion that “knowledge is power” was highlighted by five respondents (56%) as a barrier to the effective roll out of a knowledge system. Practical problems were also expressed with respect to the capture of tacit knowledge. The amount of time that may be required to capture tacit knowledge could slow the growth rate of a knowledge-based environment and thus minimising the perceived worth of such a system.

Common Issues and Differences within the Sub-groups

The common threads permeating this question were focussed on the notion of moving people from their comfort zones or their power bases. Clearly, there were concerns raised about the environment in which a KM system would reside. This environment would need to favour the move from a knowledge hoarding mentality to one of knowledge sharing as well as providing processes that would allow easy interaction between the data or knowledge and the employee.

In all three sub-groups, there was a reasonably large amount of negative comments. On counting the negative responses, it was ascertained that 48% of the comments could be construed as negative. Clearly, this would indicate that there are many concerns

that need to be dealt with in order to allow the positive aspects of a knowledge environment to be realised.

Section 3 – Question 2

Describe how knowledge is managed and shared in your organisation.

There would be little value added to the analysis of this question by individually analysing the three sub-groups. This question inspected the methods used to collect, manage and share information and knowledge and typically one would expect the list of methods used to be similar in nature.

An analysis was however done by the author and for the most part the proposition was correct. There was however one interesting aspect that filtered through. The responses by the HR sub-group were heavily focussed on transferring knowledge via manual means such as meetings, in-house magazines and documentation.

In two cases (25% of the HR responses), technical tools such as e-mail was mentioned or considered part of the tool set to collect, manage and share data. There was also a strong focus on one-on-one interaction via mechanisms such as performance management systems to share information.

The responses by the HR sub-group are indicative of the different views of systems within the traditional organisation functions. Clearly, the strategic development of a knowledge environment would need to deal with the creation of a common understanding of the environment and all its components.

The primary electronic means mentioned by the respondents to manage and share knowledge were intranets, knowledge management software such as Lotus Notes ®, shared electronic directories and e-mail systems.

In most cases, it appeared that electronic sharing of knowledge was passive in nature. The ability to search for information was also limited for the majority of the mentioned electronic systems except for software that had been developed around knowledge management requirements.

Twelve of the respondents (46%) indicated that manual methods of information transfer such as group meetings, workshops, communication documents and training manuals were still extensively used to share information. The downside of these methods of knowledge transfer was that it is limited to the receivers of the information (push approach). Others outside of the recipients would not have direct access to that knowledge.

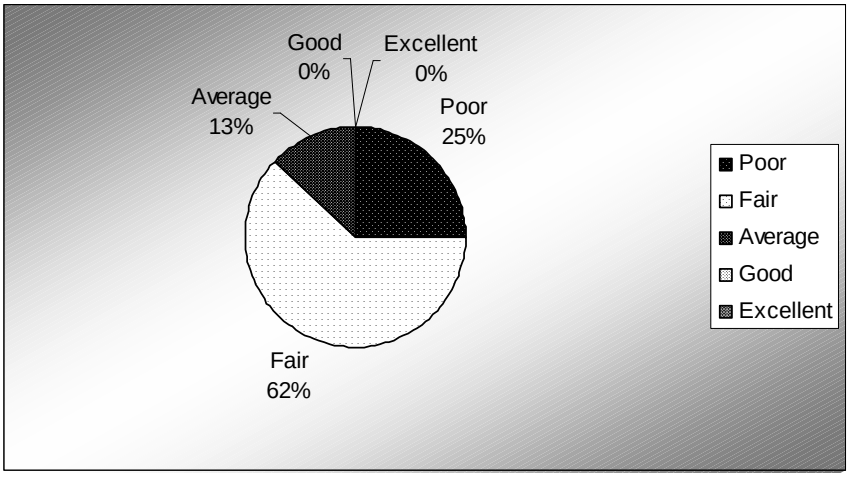
Section 3 – Question 3

How successful is knowledge management in your organisation?

Human Resources Management Perspective

The majority of the HR respondents (62%) indicated that they viewed the success of KM in their organisations as fair. Clearly, the HR perspective of 87% below average (62% average and 25% poor) is an expression of their unhappiness with KM.

Figure 12 - Success OF KM in Organisations (HR Perspective)



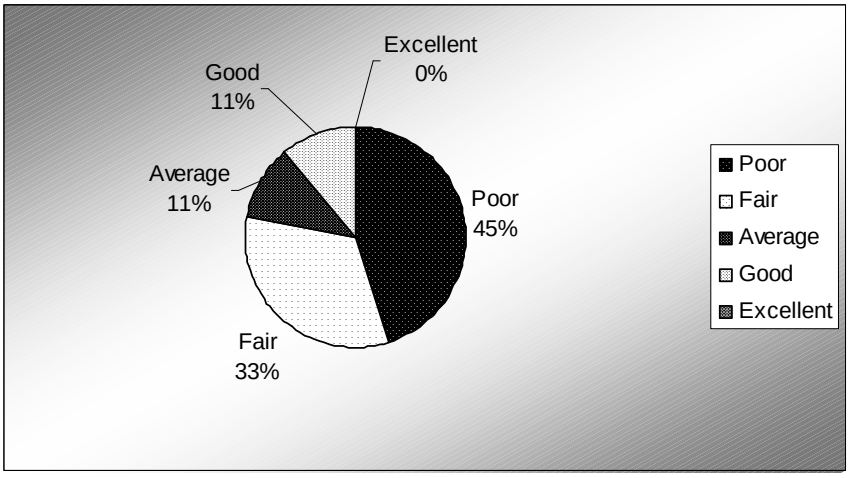
By contrast the responses given in question four of section two, 62% of the HR respondents thought that they were “average” with respect to their current effectiveness to operate in a KM environment and thirteen percent (13%) considered themselves “good”.

One could deduce from these statistics that if the majority of HR respondents consider themselves sufficiently skilled to operate in a knowledge-based environment, then the low level of perceived success of KM would not be attributable to themselves. This deduction would support the notion of stovepipe thinking rather than cross-functional thinking. The implication is that different departments have high opinions of their own and individual abilities while not fully understanding the abilities of other individuals in other departments. This would be a specific obstacle to overcome in the development of a knowledge-based environment.

Information Technology Perspective

Seven of the IT respondents (78%) indicated that knowledge management was less than average in their organisations.

Figure 13 - Success of KM in Organisations (IT Perspective)



In considering the reasons given for the responses, it is interesting to note that very few references are made to technology. This supports the view that stovepipe thinking in organisations creates positive inward thinking about individual and departmental abilities.

If one contrasts the views from the different sub-groups about KM, then clearly, there are differences of opinions among the participating organisations departments with respect to other department's abilities.

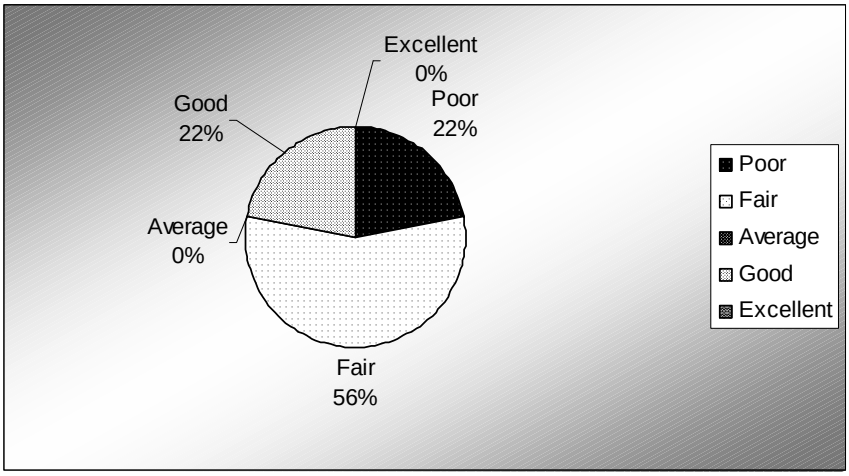
Two interesting reasons sited for the low ratings were a lack of understanding of the concept of KM. This would imply a lack of communication and change management in the organisation, and the other reason of a perceived lack of return on investment. The latter reason could be considered at a number of levels. If senior management do not consider KM a viable investment, then an organisation would find it difficult to muster the right level of management support to ensure its' success. The second approach could be that employees do not see the knowledge-based environment providing any personal return on investment (employee time), and do not support it fundamentally.

Line Management Perspective

As with the IT responses, seventy eight percent (78%) of the LM responses considered the success of KM in their organisations to be below an "average" level.

Two respondents (22%) indicated a rating of "good". Without making any judgements on their reasons of their ratings, it could be assumed that their situations are not the general perception among the LM sub-group.

Figure 14 - Success of KM in Organisations (LM Perspective)



It should also be pointed out that these two respondents have close ties to the KM strategic interventions in their organisation, and their responses may be a symptom of the stovepipe scenarios discussed earlier in this section.

Common Issues and Differences within the Sub-groups

In all of the sub-groups, there was a towering level of agreements with respect to the below average status of the current success of KM. Only three respondents from the full count of twenty-six indicated a rating of above average.

On analysis of the reasons for the low scores, it is interesting and important to note that the sub-groups do not see their role or interaction with the KM environment as being the reason for the low scoring. The possible reason for this was ascribed to the stovepipe mentality that appeared to exist in the sample group.

Section 4 – Question 1

What changes with respect to company structure, culture and style is your company making to support a knowledge-based environment?

Human Resources Management Perspective

In six out of the eight responses (75%), the HR sub-group indicated that their organisations were making or were planning to make changes to the structure of the organisation. In three cases (38%), there was mention that a new position would be included into the new structure. This position would have the management of knowledge as a prime responsibility. In only one case (12%), did

the respondent indicate the reporting line of this position. Interestingly in this case the position of knowledge manager would be reporting to the operations manager, who had responsibility for all the support functions of the organisation.

In one response (12%), it was indicated that there was a major initiative to redesign the organisation around a national framework rather than a regional basis. This was not done solely to enhance the knowledge environment, however it was mentioned that KM was an important driver of this organisation and it was discussed as part on the national structure discussions.

Three respondents (38%) from this sub-group noted that their organisations were discussing the implication of flatter hierarchical structures to enhance the level of creativity or to allow flexible work groups. One of the three respondents (12%) indicated that a test area had been developed to monitor the pros and cons of these structural changes.

It is interesting to note that in the previous two paragraphs, mention was made of structure changes that would appear to be diametrically opposite, but the respective organisations believe that the restructuring can benefit a knowledge environment.

The author cannot judge the reasons for this without acquiring intimate knowledge about the different organisations. It could however be conceivable that it is not so much the structure that could create barriers to effective knowledge environments, but rather the inability of those structures to allow the emergence of dynamic groups. An inefficient set of KM tools could also cause any structure changes to be ineffective.

The HR sub-group responses suggested that different structures are feasible for KM to be effective. One would need to focus on issues such as culture and management style in conjunction with the structure to evaluate its effectiveness.

Three respondents (37%) noted that culture change programs were taking place of which KM was one component. Two other respondents (25%) indicated that change management and culture change program were in place but were focussed on delivery around a broader organisational strategy. The two respondents were of the opinion that culture change programs are non-specific and all display a common set of values, which would suffice the requirements of creating a knowledge-based environment.

The majority of the HR sub-group responses indicated that the structure of the organisation was often indicative of the management style. In essence, the view was that where moves

were being made to flatten the structure or change it to allow the facilitation of democratic environments, the management style would follow suit to support the desired effects.

Information Technology Perspective

The responses to this question for this sub-group were not very different to those in the HR sub-group. There was however additional information provided that is worth noting for this report.

The concept of a flat structure was discussed by three respondents (33%) as the preferred structure of the organisation. It was further highlighted that the flat structure would allow both internal and external networking to develop at a rapid rate.

An interesting comment made by one respondent was that although there is a move towards more advantageous structures, management needs to become more demanding with respect to non-transactional issues. The dilemma with this is that empowerment through knowledge requires a high degree of freedom. Empowerment in itself pushes accountability and responsibility to the lowest levels in the organisation and it therefor requires careful structuring in order to work.

On the other hand, the comment is valid in that if management view KM as a strategic tool that will provide a competitive edge then they as management do have the right to demand input from their employees. This could be a topic for future research.

Culture issues were not well discussed with this sub-group. Two respondents (22%) indicated that a culture of learning needed to be established and that a coaching approach to the management style should be adopted.

Line Management Perspective

The concept of a flatter structure was discussed by sixty-six percent (66%) of the respondents, which is a clear indication of the perceived requirements needed to ensure an effective knowledge environment.

An interesting point was made by one of the LM with respect to culture. The respondent suggested that specific issues should be incorporated into a culture change program that will empower employees. Examples of this could be to tell employees that they are expected to challenge ideas from any person in the organisation irrespective of their position. This point is interesting in that it contradicts the views expressed by the IT sub-group on culture.

The types of management styles espoused from this sub-group included the fashionable ideals of open door policy, participative management and the coaching approach.

Common Issues and Differences within the Sub-groups

It was clear from the three sub-groups that there is a need for structural change to ensure a suitable environment for KM to flourish. By far the majority of the sample was in favour of a flatter structure to achieve this environment. Filtering out of the responses was also the notion of empowerment. It would appear that by empowering employees there is a build up of trust and confidence, which are two important factors to the success of knowledge management.

The HR sub-group had the most comments to make about culture and style. This is understandable from the perspective that cultural issues and style issues are typically the domains of human resources management.

Section 4 – Question 2

What are the current and future challenges your company faces in order to make knowledge management effective?

Human Resources Management Perspective

Four of the eight HR respondents (50%) foresaw that constant change would be a feature of the future work environment. One of the major challenges facing these organisations was ensuring that employees are comfortable with constant change.

The changes that employees would have to contend with will range from relatively small modifications such as dynamic group changes, reporting line changes and role changes, to more substantial changes such as location change, organisational change and culture change. Changes in the future will not only affect the employee, but will broaden beyond the work environment.

Three respondents (38%) noted that the retention of knowledge would be a critical challenge now and into the future. This challenge is affected on two levels. The first level being the capture of tacit knowledge from the individual employee that can then be stored and re-used and secondly the physical retention of the employee in the organisation to further enhance the knowledge environment. Clearly, this is a challenge that HR should see as a part of their role and responsibility. Retaining knowledge would require the correct environment and tools so that tacit knowledge

can be captured, and secondly employees would need to feel comfortable in the environment and feel rewarded for any contributions made. Rewards are not necessarily financially related, but could take on many forms.

Three respondents (38%) suggested that employees would need to be competitive, proactive, and feel challenged. These requirements would inspire creativity and maintain a high level of achievement within the employee group.

It is interesting to note that the respondents used words such as “competitive” and “challenged”. These words conjure images of conflict, which is contrary to the requirements of a knowledge environment. One can deduce from this that the competitiveness is against other organisations, while a high level of trust and respect is developed internally. Issues to contend with in such a scenario are that people who are highly competitive are normally power sensitive. The concept of “knowledge is power” would need to be carefully handled in this case.

Two respondents (25%) raised the issue of emotional intelligence as a future challenge. This subject is relatively new, but essentially alludes to a different form of intelligence measurement from the traditional IQ. The literature available on emotional intelligence (EQ) suggests that this form of intelligence can be learnt and

would become the desirable form of intelligence in the future. This very interesting subject is a topic for future research.

Information Technology Perspective

The predominant features of this sub-group's answers were the issues related to the value of knowledge and its measurement (44%). The concept of knowledge value took on two dimensions. The first dimension referred to the value as perceived by the individual employee. If no perceived value were instilled into the employee's minds, then the employee would see no value in contributing to the growth of the knowledge. The employee would be thinning out their own knowledge at the expense of their own marketability.

The second dimension is the value of KM as perceived by senior management. This value would be related to the expected returns on such an investment. If there is no senior support for the creation of a knowledge environment, then the likelihood of its success is slim.

Linked to the previous points, three respondents (33%) noted the importance of measuring employees for their contribution to a knowledge environment. The measurement could be as simple

and direct as determining how much useful knowledge was added to the database or knowledge repository. One could also determine the value created by an employee through contributions to the broader knowledge environment.

One respondent (11%) indicated that measurement of employees should be broader than the knowledge itself and should include contributions to the establishment of or improvements to the total knowledge environment.

Two respondents (22%) pointed out that a future challenge would not be the ability to collect, manage and share data, but rather the ability to learn quicker than the competition. The ability to learn quicker is an output of many of the point mentioned in this report such as culture, flexibility, freedom to act and dynamic work groups.

Line Management Perspective

An important view expressed by this sub-group was the integration of the knowledge environment tools into the working environment of employees. Three respondents (33%) felt that effectively dealing with technophobia would be a major challenge. Fear of technology is not distinct to knowledge environments, but is becoming a skill

akin to literacy. In future, people may not be employed without a high level of technical literacy.

Four respondents (44%) highlighted the challenge of sharing information and the concept of “knowledge is power”. Issues raised regarding this challenge were aimed towards certain grouping of people. Reference was made to senior management who achieved their positional status because of their knowledge. This issue refers to a previous comment made about competitiveness among employees and the need to develop a culture of internal trust.

Two responses (22%) indicated that there would be a shortage of skilled resources to develop effective knowledge environments and to give guidance to organisations in developing an effective knowledge-based environment.

One respondent (11%) noted that a future challenge would be to create an environment where the knowledge creation and management thereof would be self-maintaining. In essence, this would imply that the systems used in the knowledge environment become totally integrated into an employee’s work and not be considered as an add-on to their activities. Brethenoux *et al.* (1997) refers to the concept of linking the knowledge provider to the knowledge system in such a way that it becomes part of the

employee's way of work life. They refer to this as the co-ordinated enterprise in their knowledge model.

Common Issues and Differences within the Sub-groups

There appeared to be a high level of synergy in the answers provided by the sub-groups to this question. Clearly, the issue of dealing with power bases is an important topic that will require careful management in a knowledge environment. A high level of trust and understanding must cut across the environment. Without the trust, provision of knowledge to the knowledge repository could be construed as a thinning-out of personal power, and jeopardise the value of a knowledge system.

Integration of a knowledge system into the individual work environment was also an essential point to emerge from the groups. This point was complimented by the discussion regarding the correct measurement of people in a knowledge-based environment.

Section 4 – Question 3

How do your employees utilise the company's knowledge repository, and how do they contribute to the growth of the knowledge base?

This question was not analysed by the various sub-groups, as it was essentially a listing of methods used in the responding organisations. Reference is made to the sub-group if it added value to the report.

An interesting observation was made with respect to the HR sub-group in that most of their discussion referred to non-technical interaction. In contrast most of the IT sub-group referred to technical tools such as e-mail, data mines and electronic filing systems. These responses support the concern that employees are functionally bound in their thinking. HRM should incorporate cross-functional learning as part of the employee development process to minimise the stovepipe thinking.

Most of the topical approaches to utilisation of data were covered by the respondents. A list of these can be found in chapter four. The responses ranged from personal communication and measurement of employees to the electronic methods referred to above.

Of more interest to this report is the methods used by employees to contribute to the growth of the knowledge base. The responses obtained from the respondents were mostly focussed on how the knowledge could be generated. Mention was made of different

communication methods such as one-on-one discussions, performance management sessions, workgroups and formal documentation. These responses fell short of the requirements to ensure the self-maintenance of a knowledge environment.

The responses did not indicate that the linking of employees to the maintenance of knowledge had been thought through. The dynamic relationship between individuals and knowledge systems is seen as a requirement for the long-term success of a knowledge environment. The closest comment to this requirement was made by an IT sub-group respondent who indicated that employees were given responsibility for parts of the knowledge database. This is certainly a step in the right direction but is static in nature.

According to the model developed by Brethenoux *et al.* (1997), the dynamic link or interface between human and machine will only be realised circa 2003. Organisations should ensure that relations among people and information objects are taking relevance over storing and retrieving of information. Information should be online, indexed, and mapped, whilst employees should be represented by expertise, community, skill and affiliation.

A final comment by one of the respondents was to reiterate the importance of a strategic drive around KM so that the objectives become clearer to all concerned.

Section 4 – Question 4

How is knowledge management influencing your employees (positive & negative)?

Human Resources Management Perspective

Seven of the eight HR respondents (88%) indicated that they thought KM was or would have a positive influence on employees. One respondent (13%) was not sure of the effect on employees because the process of managing knowledge was a new concept in the organisation.

An interesting point about these responses in relation to some of the previous questions is that despite a lot of negative comment made about KM, fundamentally there is a resounding sense of positive sentiment. This sentiment confirms the thinking indicated by Brethenoux, E. & Bair, J. (1997) in their Hype curve as discussed in chapter two. The theoretical concepts of KM are sound, however it is the implementation of the environment that requires deep understanding of the objectives and people.

Four of the respondents (50%) noted that the adaptation to constant change could have a negative impact on employees. One respondent (13%) noted that culture change is the result of many things over time. Organisations need to ensure that change itself is a component of any change initiative, so that a smooth transition between macro change initiatives that take place in organisations are effective.

One respondent (13%) indicated that knowledge had always been highly respected in their organisation and the introduction of tools such as intranet searches and on-line libraries would further encourage the importance of information.

Information Management Perspective

The majority of the IT respondents (89%) indicated that KM was or would have positive influences on employees. One respondent (11%) noted that it was having a negative effect. The reason for this is highly valid. The respondent indicated that there was a drive to enhance KM, but the methodology of measuring the individual contribution was not developed adequately. The resultant effect was that employees did not understand what their role was within the environment, yet they were expected to contribute to the knowledge base.

Negative comments were made about the time taken to deliver an effective knowledge environment. The management of expectations needs to be carefully controlled so that the aspects described in the hype curve in chapter two are averted.

Four respondents (44%) indicated that employees would benefit positively with respect to research requirements related to work. It was further noted that individual knowledge enhancement will spur employees on to use the knowledge repositories especially if the information is accurate and correctly indexed for easy searching.

Line Management Perspective

All nine respondents (100%) indicated that KM was or would have positive implications for employees. This is consistent with the other two sub-groups.

One respondent (11%) indicated that there were other positive spin-offs with the introduction of KM. One example was that employees were becoming increasingly aware of the broader business environment. Indications were that a much better understanding of the organisation from a global perspective was being created. This was also the case with other important company wide issues.

Negative comments around information overload were raised by four respondents (44%). This issue was raised in previous questions and is an important issue to be dealt with to ensure the environment does not lose credibility or employees do not leave the organisation.

Part of the problem can be curtailed by having a pull approach to information requirements i.e. employees extract information as they need it rather than a push approach where the system gives employees information based on predefined rules.

Another common negative comment made by the LM respondents was the understanding by the employees of how they would benefit by using and contributing to a knowledge environment.

Common Issues and Differences within the Sub-groups

There was a high level of agreement between the sub-groups that KM was or would have a positive impact on employees. The negative comments emanating from this section were related to the broader environment, the cultural requirements and possible interaction problems between the employee and technology. These concerns should be part of the strategic issues highlighted during the design phase of such a project.

Section 5 – Question 1

Explain the issues in your company around acquiring, growing, retaining and rewarding employees in the context of knowledge management.

Human Resources Management Perspective

The issues related to the acquisition of staff were complicated by external factors not specific to KM, but had an effect on the ability of organisations to create effective knowledge-based environments. This concept was intimated by six of the eight respondents (75%). Two of the issues that were raised more that once was the general skill shortage in South Africa. Specific mention was made of the global shortage of IT type staff. The other issue was that legislative issues such as affirmative action that had an impact on how employees were acquired into the organisation.

One respondent noted that dealing with affirmative action would have been a lot easier if KM had been established ten to fifteen years ago. The availability of knowledge to relatively inexperience employees would have allowed fast tracking of previously disadvantaged employees much easier.

Of all the employee life cycle components, retention of staff was highlighted as the most problematic by this sub-group (63%). Two respondents (25%) thought that an effective and efficient knowledge environment would positively affect staff retention. The two respondents were from global organisations and added that the ability to allow staff to move within the global firm was a major boost for staff retention. Global movement also allowed foreign staff to spend time in the South African business and contribute to knowledge expansion and sharing locally.

Three respondents (38%) indicated that they were considering alternative and creative ways of acquiring and retaining staff. Ideas such as bursary schemes being offered to pre university students to large financial incentives for defined periods of stay in the organisation were forming part of reward system considerations. Non-financial incentives such as global work opportunities, flexibility of the type of work done and higher levels of responsibility were also being offered or considered.

A fear expressed by five of the respondents (63%) was that organisations that were actively developing knowledge environments were fast becoming breading grounds for highly marketable employees. Some organisations are not prepared to develop staff, but offer exorbitant attractions to get skilled people

to join them. This is a disincentive to organisations developing knowledge environments. An important role for HRM is to create an environment that offers a variety of rewards that would provide employees incentives to stay.

Information Technology Perspective

The IT sub-group expressed similar views to that of the HR sub-group. In particular the issue of the high loss of IT skills was raised by five respondents (56%) as being the major threat to the creation of a suitable environment. Two respondents (22%) further elaborated that acquiring the skill was not enough to secure the growth of the knowledge environment. They noted that the potential employee had to have the right attitude and intellect as well. This collaborates with earlier remarks regarding emotional intelligence as a future requirement.

One respondent (11%) indicated that rewards to highly marketable employees should not only be financial. The continuous raising of financial incentives was producing an upward spiral of costs. Instead there must be a swell of pride and respect created such that the organisation and what it stands for is the incentive to the employee.

Two respondents (22%) raised the point that performance management measures should be in place as a means of retaining employees.

The one area of the employee life cycle that did not attract much discussion was growth of staff. KM in itself is a growth opportunity, as it would provide the employee an opportunity to expand knowledge.

Line Management Perspective

Similar results to the other two sub-groups were observed in this sub-groups response. Two respondents (22%) indicated that mentoring was used to transfer tacit knowledge effectively. In essence, what mentoring is to a one-to-one relationship between employees, KM is to the entire workforce.

Three respondents (33%) noted that there should be a form of incentive for employees to acquire new skills and share these skills via the mechanisms provided by the KM system during the start-up phase of a knowledge environment.

One respondent (11%) supported the process of performance management and that employee's should be measured on their

contribution to the knowledge environment. The respondent also intimated that there should be both financial reward as well as non-financial rewards linked to the contributions made.

An important point was made by two respondents (22%) regarding the expansion of employee knowledge beyond the bounds of the organisation and the employee's functional role. The respondent believed that skill requirements would change at such a rapid pace that the so-called specialist would not be able to function effectively without having a broader personal knowledge base.

Common Issues and Differences within the Sub-groups

The predominant feature of this question lay with the activities of acquiring staff and the retention of those employees. Clearly, there was the issue of the availability of skilled staff in South Africa. This made the acquisition of staff difficult especially in the area of information technology.

A major threat raised in the development of a knowledge environment was the costs incurred to develop employees and the environment for this development to take place. Staff poaching appeared to be a concern.

Section 5 – Question 2

What changes is your company making in order to address the previous question? [acquiring, growing, retaining and rewarding employees]

The analysis of this question was done as a whole group rather that individual sub-group. It became apparent during the process that the non-HRM functions were not well informed about future HRM activities.

Two organisations indicated that they had commissioned research in the area of flexible reward systems. Part of the requirements would address the issues of rewarding people in a knowledge environment. The research was not specifically commissioned because of KM, but rather around the acquisition and retention of highly skilled and innovative staff.

The issue of creating a suitable environment was raised by seven respondents (27%). The establishment of a suitable environment for knowledge creation would contribute positively to the acquisition and retention of employees.

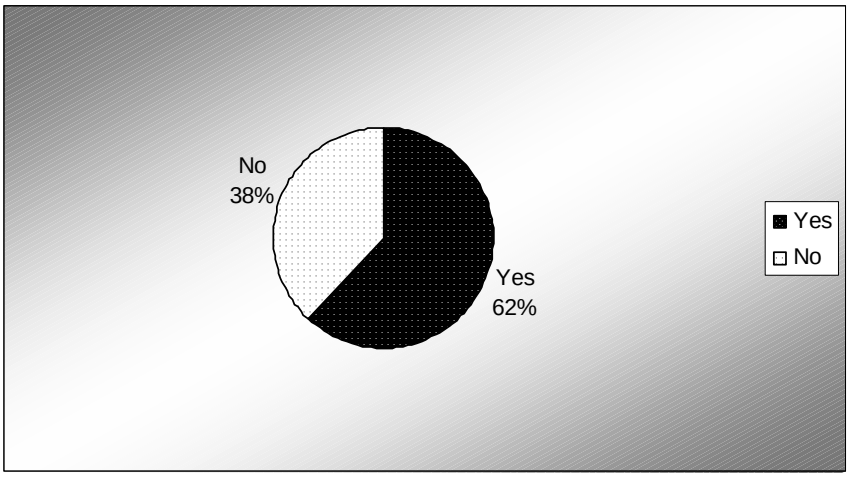
Section 5 – Question 3

Does your knowledge-based environment influence your staff turnover (current and future)?

Human Resources Management Perspective

There is a clear indication from the HR sub-group that a knowledge-based environment would have an effect on staff turnover. The effects were both positive and negative. This is represented graphically below.

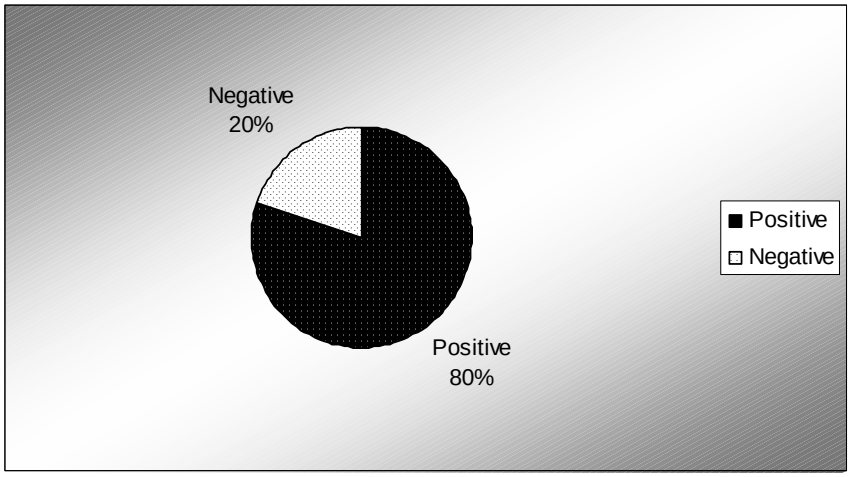
Figure 15 - KM Effects on Staff Turnover (HR Perspective)



Four of the five respondents (80%) that indicated KM would affect turnover also indicated that the turnover would be positive. This would imply that fewer people would leave the organisation and

the introduction of an effective knowledge environment would be an incentive for employees to stay with the organisation.

Figure 16 - Specific Effects on Staff Turnover by KM (HR Perspective)

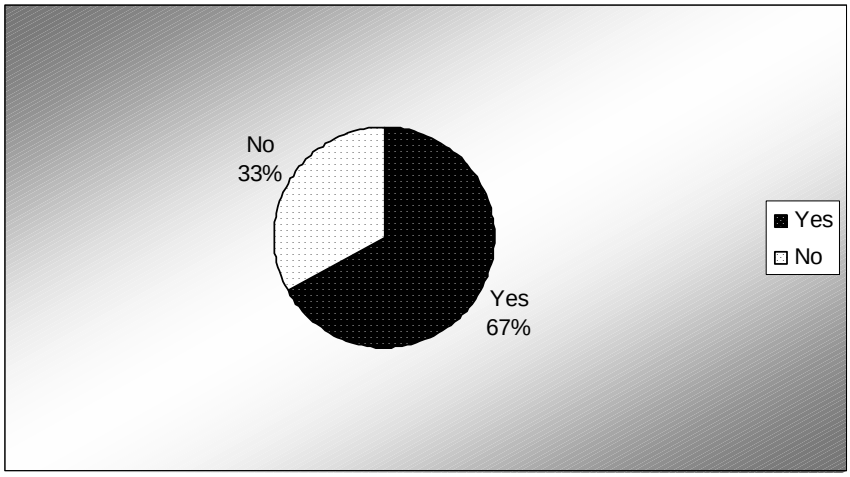


Information Technology Perspective

As with the HR sub-group, the majority of the IT sub-group were of the opinion that KM would influence staff turnover.

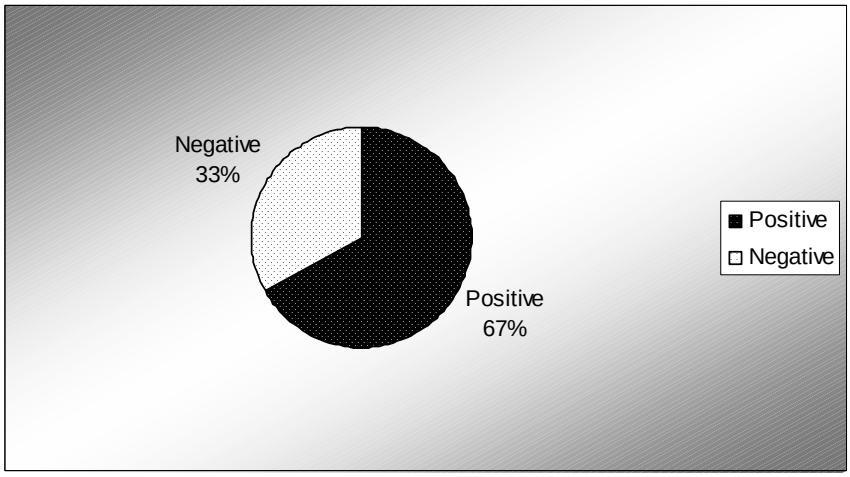
The view is not as strongly held by the IT group as compared to the HR group. This could be because of the current generally negative staffing situation being experience in the IT environment.

Figure 17 - KM Effects on Staff Turnover (IT Perspective)



Further analysis of the affirmative responses is indicated below.

Figure 18 - Specific Effects on Staff Turnover (IT Perspective)



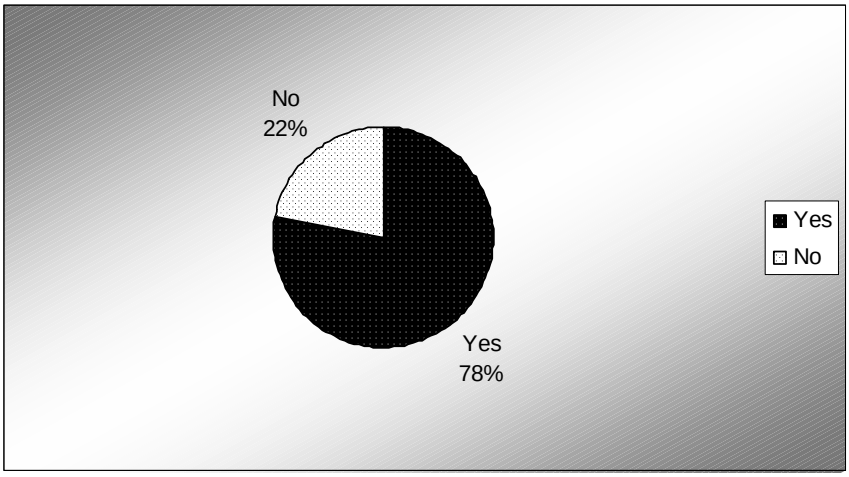
The majority of the IT sub-group (67%) believed that staff turnover would be positively affected by an effective knowledge

environment. The negative view is that KM could increase the tendency for staff to move. As employees acquire more skills, they could market themselves effectively with the new knowledge.

Line Management Perspective

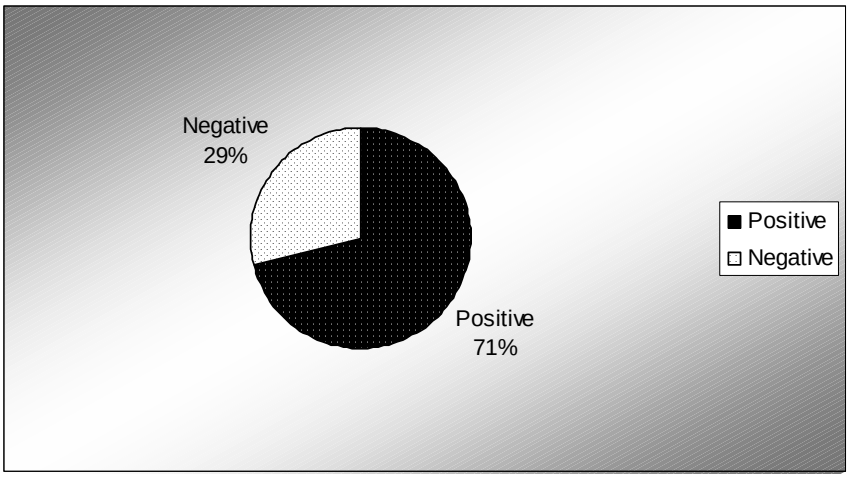
The LM view portrays similar expressions to the other two sub-groups. The results are closer aligned to the HR sub-group than the IT sub-group in terms of percentage value.

Figure 19 - KM Effects on Staff Turnover (LM Perspective)



Further analysis of the affirmative answers is presented below.

Figure 20 - Specific Effect on Staff Turnover by KM (LM Perspective)



As with the other sub-groups, the majority of the LM sector (71%) indicated that KM would positively affect staff turnover.

Common Issues and Differences within the Sub-groups

Clearly, there was a common feeling from the three sub-groups that a knowledge-based environment would have positive implications for organisations. Some respondents did indicate that this was a "gut" feel, as their organisations had not yet fully developed their knowledge-based environments and had not been able to provide a platform for the measurement to take place.

One respondent indicated that a staff survey should be conducted to ascertain why employees were staying, as the reasons may not emerge from the employees that were leaving the organisation.

One other respondent indicated that their organisation did not want KM to decrease staff turnover significantly. In this particular instance, the organisation wanted to keep the turnover rate between 15% and 19% to ensure a constant inflow of new personnel. The organisation was a consulting organisation and traditionally hired experienced staff. The inflow of new personnel allowed this organisation to keep abreast with new practices and ideas.

Section 5 – Question 4

What are your views on a model or tool to manage and support employees in a knowledge-based environment?

The majority of the respondents (80%) indicated that a model to support employees in a knowledge environment was not feasible.

The objective of this question was to identify if a generic model could be developed and used across organisations. It would appear from the analysis that the differences in the organisational

structure, culture and style would require that any model would have to be customised to be of any value.

The respondents made specific reference to their own organisational strategies and goals that were not generic and implied that there would be constant fine tuning of the model as a dynamic tool.

A small percentage of the sample indicated that a set of guiding principles or a set of models may provide some organisations with a foundation to develop their knowledge environment, however these principles would be generic in nature.

One respondent indicated that a model was perfectly feasible. The model would have to be based on scientific research and should be flexible enough to integrate with specific organisational requirements. In addition, the respondent did not believe that a single model could be used across all industries. The respondents view was that certain industries have peculiarities about them that are best dealt with in specific ways.

One respondent indicated that their organisation was using a model, but not specifically for KM. The tool was a guide with respect to dealing effectively with change management and was

applicable to the creation of a suitable environment for knowledge management to flourish.

5.2 Evaluation of Findings in Terms of the Objectives

This section of the research report evaluated the results given in the previous chapters against the objectives of the research. It was then possible to ascertain whether the research has provided meaningful information to understand the HRM issues in a knowledge-based environment.

Each of the information subsets together with the objectives relating to the subset are restated together the information needs. An evaluation of the findings against the propositions then follows.

Information Subset: "Strategic Approach"

Pertaining to Objective One and Two

Objective 1:

To identify future human resources objectives within a knowledge-based environment.

Objective 2:

To identify future human resources critical success factors within a knowledge-based environment.

Information needs:

- Level of strategic thought and awareness KM and the extent of HRM involvement.
- What knowledge management is.
- Rating of human resources effectiveness in a knowledge-based environment.
- HR critical success factors and specific objectives.

Evaluation of Findings

The choice of the sample was based on the selection of organisations that had indicated an involvement KM. It was found that although the organisations that were contacted had indicated that a formal KM policy or strategy existed, the responses from the individuals in the organisations did not support these statements.

The intention of working with organisations that were formally involved with KM was to obtain their leanings and integrate the findings with this research.

Although not all the organisations had formal knowledge management strategies, the level of knowledge among the respondents was high enough to warrant good responses. A

reading pack was provided to all respondents before the research questions were answered. This allowed all respondents to form a common understanding of this research.

The research provided good comments on the level of strategic awareness and thought with respect to KM. It was noticeable that the level of involvement in the strategic discussions around KM by the HR sub-group was lower than the other two sub-groups.

The responses fulfilled the requirements of the questions from two perspectives. Firstly, the researcher was able to ascertain that KM was being discussed at high levels in organisations by certain groupings of people. Secondly, the researcher obtained sufficient insight to draw conclusions regarding the low level of involvement by the HRM function in providing services to a knowledge environment. The direct responses as well as the conclusions draw allowed the CSF and specific objectives to be identified.

Finally, the respondents were able to evaluate the effectiveness of HRM to operate in a knowledge-based environment. The results should not be considered conclusive, however they do satisfy the objective.

Propositions

The following propositions related to objectives one and two:

- The objectives of HRM will require change to support a knowledge-based environment;
- the critical success factors of HRM will require change to support a knowledge-based environment; and
- the clear understanding of how a knowledge-based environment influences HRM is lacking within HR departments.

In the opinion of the researcher, the above propositions are true.

Information Subset "Company Issues/Work & Environment Issues"

Pertaining to the Third Objective

Objective:

To understand the impact of a knowledge-based work environment on employees.

Information needs:

- Perceptions of the impact that KM has on employees (positive and negative);

- understand the methods of knowledge collection and sharing;
- perceptions of KM success in the organisation;
- identify changes in company structure and culture that organisations are making; and
- identify issues affecting KM effectiveness.

Evaluation of Findings

This question set was designed to provide a lot of information that could be translated into HRM issues within a knowledge environment. The question considered both the positive and the negative impacts on employees. The questions allowed understanding of how organisations were changing or considering changing their environments with respect to structure, culture and style. This section also allowed the respondent to evaluate the success of knowledge management in their organisations.

The participating organisations were busy with KM initiatives or were in early planning stages. This influenced the amount of information that was generated and often the responses appeared to be theoretical rather than experiential.

Many of the responses to these questions were also generic and were equally applicable to other forms of culture and

environmental changes. This is not to say that the responses are not valid, but they appeared to lack depth in some cases.

The fact that the majority of the respondents rated their organisational attempts at KM below average is supportive of the high volume of negative comments received regarding the impact of KM on employees.

The question relating to the manner in which information was managed and shared in the respondent's organisation provided special insight. Very few of the respondents indicated that their organisations had acquired special software to manage the collection, indexing and distribution of the information. Besides the few organisations that had focussed software, the majority of the organisations appeared to be using normal electronic files. This method of managing large volumes of information would appear to be part of the negative issues expressed by the respondents. It gave the impression that the participating organisations were not totally committed to the process of creating an effective knowledge environment.

In terms of meeting the objective, a lot of information both positive and negative was created. Although some of the comments were generic and common to change initiatives, the information is still

valuable. The selection of organisations and the number of respondents did prevent this information from being generalised, but in terms of the objective, the requirements were met.

Proposition

- Organisational senior management acknowledges that the critical success factors of a knowledge-based environment are heavily weighted towards organisational design, culture and strategy issues.

In the opinion of the researcher, the above proposition is true.

Information Subset "Specific Staffing Issues"

Pertaining to the Fourth Objective

Objective:

To identify the impact that knowledge management has on acquiring, growing, retaining and rewarding of employees and potential employees.

Information needs:

- Information pertaining to the acquiring, growing, retaining and rewarding of employees;

- information of changes expected currently and in the future to address staff issues; and
- information on staff turnover.

Evaluation of Findings

This set of questions asked the respondents to make value judgements on specific staffing issues. As the KM implementations in most of the responding organisations were in their infancy, it was difficult for the respondents to provide depth to their answers. The results were however informative and contributed valuable information to the objective.

Many of the respondents identified issues of acquiring, growing, retaining and rewarding employees in the context of the socio-economic situation in South Africa. The high degree of skill loss or the so-called “brain drain” was a common issue. The responses to the questions were both direct and indirect and some responses tended to be industry specific.

The fact that there were many issues raised regarding the objective is a clear indication that change processes do affect typical human resources processes. This was further supported by the responses to how KM would affect staff turnover.

Seventy percent (70%) of the respondents were of the opinion that a knowledge environment would directly or indirectly influence staff turnover. Further breakdown of the results indicated that all of the sub-groups supported the view that the impact on staff turnover would be positive.

The changes required to address the concerns raised about the employee life cycle were insufficient, however give the phase of implementation of most of the responding organisations, it is understandable that these issues have not yet been fully discussed.

In terms of the objective, although far from conclusive, the responses have provided sufficient information to satisfy the requirements.

Proposition:

- A knowledge-based environment requires a different strategy for acquiring, growing, retaining and rewarding employees.

In the opinion of the researcher, the above proposition is true.

Information Subset "Specific Staffing Issues"

Pertaining to the Fifth Objective

Objective:

To develop a framework/model for managing and supporting employees in a knowledge management environment.

Information needs:

- Information pertaining to the usefulness of a generic model or tool to manage and support employees in a knowledge-based environment

Evaluation of Findings

The objective was to identify if the development of KM model would be feasible. Such a model would provide a foundation to ensure the successful establishment of a knowledge environment.

The results were clear from this group of respondents that such a model would not be applicable because of the difference in organisations. Such a model would be so generic that it would require a high degree of customisation for it to be of value. A small percentage of the respondents indicated that a set of guiding

principles would offer assistance to organisations embarking on the creation of a knowledge environment.

Proposition:

- It is possible to develop a framework/tool to manage and support employees in a knowledge-based environment.

In the opinion of the researcher, the above proposition is not true.

6. Conclusions

6.1 Research Highlights

The literature review indicated that knowledge management (KM) was a topic pulled between two extremes. The one extreme had a following that categorised KM as a technology tool. It was a view that was strong and was supported by the continued growth of computer based systems. It was also the view that created the greatest amount of hype about the abilities of KM systems.

The alternative view was that KM was only about people and their ability to share information between each other. It was a view that had its roots in the concept that knowledge was power. It was also the view that grew slowly in relation to the first extreme.

It was enlightening to have experienced the enthusiasm that is growing in South African organisations with respect to finding new ways of using knowledge. This was evident in the traditional activities of creating a knowledge environment, but what was more enlightening was the planned use of knowledge to grow previously disadvantage employees at a faster rate without loosing face as an organisation. The IT grouping of respondents clearly expressed the greatest sense of enthusiasm around the creation of a knowledge environment. It was

particularly interesting to take note of the depth of understanding that the IT sub-group had with respect to how people integrated and interacted with technical systems. This was a clear indication in most cases that the typical “technical-only” view held by IT management was changing substantially.

An important learning from this research was that implementing a knowledge environment is a long-term project. The results are not immediately visible until the whole environment is in harmony with the strategic objectives of KM.

6.2 Achievement of the Research Objectives

Chapters 4 and 5 provided the findings and evaluation of the results for this research. Chapter 4 presented the findings in a raw format and without interpretation, while chapter five provided an in-depth evaluation on the results in accordance with the objectives. The evaluation of the results was conducted from three perspectives; the human resources management perspective, the information technology perspective and a general LM perspective. Similarities and differences were discussed at the end of each question.

In some of the questions, especially those related to specific HRM actives, the responses from the non-HR sub-groups were lacking. An

impression was created that although KM activities were being developed in organisations, there was a lack of strategy and inclusiveness within the organisations. It also appeared that KM activities were occurring without a master plan. This comment does raise the question of the possibility of developing a knowledge management model. This was one of the research propositions that were found not true.

The question analysis was followed by an evaluation of the findings against the requirements of the information sub-sets. The results indicate that sufficient data was collected to ensure that the objectives were met satisfactorily.

It is important to note that one of the prime overriding objectives of this research was to provide as much useful information on the topic. Although the findings were not conclusive or generalisable, they do provide valuable insights as well as a foundation for future research on this subject.

6.3 Recommendations for Management

A number of important management implications from this research were identified and are listed below:

a) KM activities are happening within organisation in an uncoordinated fashion and without a formal strategic guideline.

b) HRM are not fully involved in KM activities. HR requirements are being overlooked or are being considered as unimportant.

c) The level of satisfaction of knowledge environments in the participating organisations is below acceptable and it would appear that expert knowledge should be sought to assist with environmental designs.

d) KM is about providing a competitive edge to organisations, but requires an environment change and shift in employee attitude and sense of power. Top management commitment is crucial to its success.

e) An effective KM environment can provide a sound basis for acquiring and retaining valuable staff.

CHAPTER 6: CONCLUSION

The implementation of a KM system and the creation of a suitable environment would require sound business, IT and HRM skills. It would be important that an organisation ensures a relatively high level of awareness and knowledge on KM before embarking on a rollout.

It would also be appropriate to do a full study of the current culture and power bases in the organisation so that a gap analysis could be produces.

A phased approach to the rollout of such a program would probably provide the best results, as employees would be expected to change their current habits, ideas and personal plans. Changing an environment too quickly can result in unpredictable outcomes, which may be detrimental to the organisation.

The research shows that organisations that want to use knowledge as a competitive advantage should have their environments working effectively by 2003 in order to become a competitor. The long-term requirements of creating a knowledge environment would suggest that organisations should be close initiating their projects if they have not yet started.

6.4 Areas of Future Research

The findings of this research could be used as a basis for future investigations into other areas of KM. In particular there were a few issues identified in the research that could form the basis of future research topics. These are:

- The struggle between employee empowerment in a knowledge environment and the rights of management control;
- the interfacing of tacit knowledge and information systems;
- providing knowledge at a speed to ensure competitiveness, but not at the expense of information overload in employees; and
- a KM model.

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APPENDIX 1 - QUESTIONNAIRE

APPENDIX 2 – PARTICIPANTS

Company Name	Sub Industry	Description
BSW-Data (Pty) Ltd.	Consulting	System integration of Telecommunications and Business solutions
CSIR	Research	Delivery of innovative technology that will improve national competitiveness and enhance quality of life
Deloitte & Touche SA	Consulting	Auditing and tax consulting
Deloitte Consulting	Consulting	Management and IT consulting (Operates independently from Deloitte & Touche SA)
Eskom	Utilities	Electricity supplier
First National Bank of Southern Africa Ltd.	Banking	Public banking
Mobile Telephone Networks (MTN)	Communications	Mobile phone communications
Rennies Travel	Travel	Travel and forex services
IBM South Africa	Information Technology	Computer hardware and software services

APPENDIX 3 – SUPPORT DOCUMENTS