UNIVERSITY OF KWAZULU-NATAL

KNOWLEDGE MANAGEMENT AS A STRATEGIC TOOL FOR HUMAN RESOURCE MANAGEMENT: A STUDY OF SELECTED HIGHER EDUCATIONAL INSTITUTIONS

by

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ABSTRACT

Although higher educational institutions the world over are beginning to recognize the importance of knowledge management, such institutions are still on the "very first steps of the long ladder" in addressing, evaluating and implementing the benefits of knowledge management with particular reference to the human resource management sector. Knowledge management is a viable means through which higher educational institutions could gainfully capitalize on its intellectual and social capital. Implementing knowledge management principles could bring about improved human resource efficiency and effectiveness and a resultant improved performance at higher educational institutions fostering a culture of excellence. Institutions of higher learning should therefore embrace knowledge management principles and practices in order to adequately address the challenges in a society that is becoming increasingly knowledge based.

Relevant knowledge for human resource managers could be located at three different places. Individual knowledge is acquired through personal work experiences. Secondary knowledge could be attained through others insights, experiences and perceptions. Finally, much valued codified knowledge could be found in knowledge repositories. The realistic value of knowledge could be derived through the combination of all three approaches.

Against this backdrop, this study explores knowledge management as a strategic tool for human resource management in higher educational institutions. Specifically, the dimensions such as organizational culture, organizational performance, technology, management support, and the institutions mission and vision will be evaluated to understand knowledge management within higher educational institutions.

A questionnaire/survey was administered to a sample representing senior, middle and junior human resource managers at selected higher educational institutions in South Africa, Mauritius and India. In addition, a semi-structured interview was conducted with executive managers responsible for the human resource function in the higher educational institutions.

The study investigated the impact of policies, systems and processes that the higher educational institutions implemented in support of knowledge management and knowledge sharing.

A triangulated research approach was adopted through the administration of survey questionnaires amongst human resource managers, conducting semi-structured interviews with executive managers, and a comprehensive literature review backed up with a review of the findings of similar studies.

The outcomes of the study demonstrate that significant benefits could be derived by HEI's in adopting an integrative approach between the human resource and knowledge management functions. The research results provide convincing arguments to support the integration of human resource management and knowledge management initiatives in HEI's and affirms the assumption that these two disciplines are mutually inclusive. Whilst the HRM function at HEI's have demonstrated that they have the capability and resources to implement knowledge management initiatives, the results reflect that much ground needs to be covered to realize the full benefits of this endeavour.

The research culminates in providing important recommendations and guidelines, as well as the development of an integrated normative model on how human resource departments at higher educational institutions could embrace knowledge management as a strategic human resource management tool.

The study confirms that an effective knowledge management strategy for human resource management that is aligned to the organizations' strategic objectives is imperative in the 21st century organizational era, and more specifically for higher educational institutions in South Africa.

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It is said that no amount of reward can replace the sense of satisfaction that human beings feel when they finish a job well done. This is the feeling that I experienced when I reached the end of this "almost impossible" knowledge journey.

DEDICATION

"the wise grieve neither for the living nor the dead" (Gita. 2:11)

"The aim is not the acquisition of knowledge but the right action from the acquired knowledge; not to know how good men act, but so that we may act as good men" (Aristotle:Ethics)

I dedicate this study to the memory of my late dad, Mr Harry Govender. A generous, warm, loving, gracious and tolerant human being who touched so many lives in so many different ways. His golden voice may be silent but his presence through his spirit will continue to live on in the hearts of all those that were influenced by his positive approach to life. I shall always reminisce in his motto, that success for any aspiration only comes to fruition through personal sacrifice, determination, perseverance and sheer hard work. His personal experiences enriched my life and inspired my study. May God rest his soul and grant him eternal peace in the knowledge that his encouragement for me to embark on this study and my accomplishment of this goal after his demise was not in vain. I therefore surrender this work as an offering in his name and to the legacy that he has left behind.

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<u>DECLARATION</u>

I, Loganathan Narayansamy Govender, declare that:

(i)   The research reported in this thesis, except where otherwise indicated, is my original research.

(ii)   This thesis has not been submitted for any degree or examination at any other university.

(iii)   This thesis does not contain another persons' data, pictures, graphs or information, unless specifically acknowledged as being sourced from other persons.

(iv)   This thesis does not contain other persons' writing, unless specifically acknowledged as being from other researchers. Where other written sources have been quoted, then:

(a) their words have been re-written but the general information attributed to them has been referenced, and

(b) Where their exact words have been used, their writing has been placed inside quotation marks, and referenced.

(v)   This thesis does not contain text, graphics, or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the thesis and in the reference section.

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Signature

L N Govender

25 November 2010

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LIST OF ABBREVIATIONS AND ACRONYMS USED IN THE STUDY

APQC	American Productivity & Quality Centre
ABS	Australian Bureau of Statistics
APS	Australian Public Service
AU	African Union
BBP	Business Best Practices
BPR	Business Process Re-engineering
CEO	Chief Executive Officer
CHE	Council for Higher Education
CKO	Chief Knowledge Officer
CoP	Communities of practice
DoE	Department of Education
DoL	Department of Labour
GATT	General Agreement of Tariffs and Trade
FET	Further Education and Training
HEI	Higher Educational Institution
HESA	Council for Higher Education in South Africa
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HRIS	Human Resource Information Systems
HRM	Human Resource Management
ICT	Information and Communication Technology
IM	Information Management
IT	Information Technology
ITSA	Insolvency and Trustee Service Australia
JIPSA	Joint Initiative for Priority Skills Acquisition
KM	Knowledge Management
KMBP	Knowledge Management Best Practices
KMSC	Knowledge Management Steering Committee

KPMG	KPMG Consulting
NEPAD	New Partnership for Africa's Development
NPHE	National Plan for Higher Education
NRG	National Remuneration Guide
OD	Organizational Development
ROI	Return on investment
RSA	Republic of South Africa
SADEC	South African Development and Economic Community
SAUVCA	South African University Vice-Chancellors Association
SPSS	Statistical Package for Social Sciences
TUS	Trade Union Solidarity
TQM	Total Quality Management
WILS	Work in life survey

CHAPTER 1

INTRODUCTION AND OVERVIEW OF THE STUDY

"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. It is how the user reacts to a collection of information that matters" (Churchman, 1971:10).

1.1 Introduction

The South African human resources environment has experienced unprecedented change in the last decade. It is acknowledged that the twenty first century organizational era is likely to witness a tendency towards being knowledge driven. In view of this, it has become ever more important to implement knowledge management strategies to ensure that South Africa's knowledge gaps are appropriately identified and concerted efforts are made to close such gaps. This will enable organizations to cope with the national human resource skills requirements at all levels.

The Minister of Higher Education and Training (Nzimande, 2009) placed emphasis on the need for higher educational institutions to recruit and sustain highly skilled and qualified lecturing and support staff. He further expressed the commitment and support of Government to create mechanisms to coordinate and manage skills development to overcome skills deficiencies in all sectors of the national economy.

The background to the study articulates the national skills deficiencies regarding the lack of professionals and experts in the various sectors of business, industry, public service and the economy. Thus the need to pursue human resource

management strategies to attract and sustain talent and stem the on-going exodus of highly skilled human resources has become a national imperative.

1.2   Background to the study

South African business, both the private and public sectors face two major challenges from an international perspective i.e. globalization and knowledge management. From an African and regional point of view, issues such as the SADEC (South African Development and Economic Community) and NEPAD (New Economic Plan for African Development) together with the new African Union (AU) bring these continent-wide challenges closer to South Africa (Nel et al, 2004: 27).

The continuing decline in the skills and knowledge profiles in organizations and the economic impact of HIV and AIDS have a crippling impact on the provision of service and on productivity. In addition, absenteeism in the workplace has increased because workers take time-off to care for their AIDS-affected families. As a result of the high turnover, knowledge, skills and experience are lost at an ever increasing rate (Hunter, 2010: 35).

Tyler (2004) reports that according to statistics, an average of three hundred qualified South Africans leave the country every month. The concern raised is that the knowledge that they take with them far supersedes the knowledge that they leave behind. She therefore advocates that organizations should look at mechanisms that could turn the "brain drain" into "brain rain" i.e. facilitate the transfer of skills and knowledge from emigrants or would be emigrants to the existing or retained workforce (Daily News, 24 March 2004).

The outcome of the magnitude of the HIV/AIDS pandemic, downsizing, outsourcing, restructuring, early retirements and the continuing exodus of experienced and qualified employees will result in a knowledge drain i.e. as

experienced and knowledgeable employees leave the organization and the country, they will take with them a valuable stock of knowledge.

This situation is paradoxical because whilst there is an increasing exodus of competently skilled and experienced employees on the one hand, there is an oversupply of unskilled and inexperienced personnel on the other. Given this critical situation, the prospect of South Africa becoming a global competitor and a formidable contender in the international market seems distant (Nel *et al.*, 2004:29).

It is, therefore, necessary for organizations to take cognizance of the critical level of knowledge gaps and develop appropriate HR strategies and knowledge management interventions to curb knowledge flows and find mechanisms to generate, capture, retain and harness knowledge to achieve the organization's human resource objectives.

1.3   Motivation for the study

The purpose of this study is underpinned by the recognition of knowledge as an important strategic asset for organizations, precipitated by the gross shortage of skills in South Africa.

According to Carrell *et al.,*(2000:17), the shortage of skills is more serious than was believed and the full effect of the lack of expertise has yet to be felt. Economists, researchers and industrialists believe that the shortage of skills is the most significant challenge faced by the economy in the 21st century. This challenge is attributed to emigration, early retirement, deteriorating work conditions and poor salaries. Hunter (2010:41) posits that South Africa is in denial as far as the skills shortage is concerned. He further claimed that owing to the acute skills shortage, organizations' are being forced to use under-qualified

and inexperienced staff resulting in declining standards, thus compromising on quality service delivery and productivity.

According to the National Remuneration Guide (2008), 81 per cent of companies experience difficulties in recruiting employees because of skills shortage. The Department of Labour (DoL) reported that head hunting is the preferred choice over advertising when filling critical positions. Therefore, the lack of advertising which created the impression that all was well is misleading.

Momberg (2008) reports that the Department of Home Affairs issued 641 work permits between April 2008 and July 2008 to skilled foreigners. In 2007, 1133 work permits were issued. According to the government's Joint Initiative for Priority Skills Acquisition (JIPSA) list published in 2007 by the Department of Labour, South Africa needs about a million people to fill job vacancies listed in the 2007 national scarce-skills list. This list includes a shortage of 17000 higher education lecturers and tutors and 23 000 chief executive and managing directors for higher educational institutions and general managers in the public and private sectors. The Department of Home Affairs confirmed in June 2007 that 35 000 positions have been occupied by foreigners. All sectors reported staff shortages, particularly mid-career professionals who are required to execute major projects and transfer knowledge to junior staff (Momberg, 2008).

According to a survey conducted by Deloite and Touche (2008), 81 per cent of companies in South Africa experienced difficulties in recruiting staff because of acute skills shortages. Of the 55 countries surveyed, South Africa reported the highest number of people to have emigrated in 2007/2008. This constitutes a massive exodus of scarce skills from South Africa during this period.

The role of human resource management and knowledge management is regarded as the key levers of competitive advantage (Oltra, 2005:70). Although the focus of the study is on human resources (HR) and knowledge management

(KM), it is evident from the literature review that senior management play a critical leadership role in creating an environment conducive for the implementation of human resource policies and practices with knowledge management outcomes (Smith & Schurink, 2005: 6).

The growing awareness of the value of knowledge embedded in the experiences, skills and abilities of people is emerging as a significant challenge to improving organizations and in particular, higher educational institutions. The success of higher education depends on the intellectual capital of its employees and their capacity to grow and survive in a complex and competitive environment. Higher educational institutions have yet to address and evaluate the advantages offered by knowledge management initiatives. The application of knowledge management principles could significantly improve higher education performance thus fostering a culture of excellence (Kaniki, 2005).

Whilst there is extensive literature covering knowledge management (KM) and human resource management (HRM), as separate and distinct disciplines, the researcher has identified gaps in previous studies and research undertaken and these are:

- limited exploration has been undertaken to ascertain the link between knowledge management (KM) and human resource management (HRM);

- minimal research in KM has been undertaken in HR Departments in higher educational Institutions;

- no previous research could be found linking KM, HRM and higher educational institutions;

- there is a dearth of research that explores KM as a strategic tool for HR Departments;

- a comparative study of knowledge management practices in human resource management in higher educational institutions amongst countries had not been conducted before; and

- research in the field of knowledge management is minimal in South Africa.

The proposed study aims to understand and establish the relationship between human resource management (HRM), knowledge management (KM) and higher educational institutions and the role of the human resource managers as contributors to HRM policy formulation and knowledge management. The study will examine and highlight the important aspects of human resource integration with knowledge management that are unique and relevant to human resource management.

It is envisaged that this study would result in the creation of mechanisms for the integration of human resource management and knowledge management practices in higher educational institutions. It is further anticipated that the proposed generic KM/HRM model will provide a planned, co-ordinated and disciplined approach to managing knowledge assets from a human resource management perspective within HEI's. This will be achieved by conducting a literature review and through an empirical survey of HR Departments of higher educational institutions.

The respondents to the questionnaires are managers who have supervisory and decision making responsibilities in HR Departments at higher educational institutions. The participants to the semi-structured interviews will be the executive managers responsible for the human resource function.

1.4 Problem statement

According to Momberg (2008) the greatest impediment in South African organizations is the country's acute shortage of skills. Momberg (2008) further submits that a similar problem is also prevalent in the higher educational sector. As a result, this problem could impact negatively on the future operations of higher educational institutions if urgent solutions are not forthcoming. Higher education, therefore, needs to devise strategies of how to respond positively to the problem of the continuous exodus of skilled employees without replenishing the stock of knowledge that exit with such employees.

This study, therefore, attempts to find solutions by devising strategies that would enable the transfer of knowledge from experienced, qualified and capable employees to lesser qualified employees in the higher educational sector. This could lead to a cascading effect resulting in the closing of the knowledge gaps amongst these employees in higher educational institutions. As a consequence, it is anticipated that the exit of knowledgeable employees will have a minimal impact on organizational performance and productivity and its competitive advantage.

The question that the research study will attempt to answer is: To what extent are higher educational institutions implementing knowledge management policies and practices for effective human resource management?

A major goal of a higher educational institution is to transmit, evoke or acquire knowledge through deliberate, sustained and systematic effort. The responsibility for the management of the knowledge amongst employees within the higher educational institution is none other than its human resource department (Nel et al., 2004:426). It was therefore deemed appropriate that human resource departments at higher educational institutions should be the sites to conduct the survey.

Having considered the motivation for the study and the problem statement, the objectives of the study have been formulated and are as follows:

1.5   Objectives of the study

The central objective that underpins this study is to examine the relationships that exist between the broad domain of knowledge management (KM) and human resource management (HRM) in human resource departments at higher educational institutions in South Africa. These will thereafter be compared to selected higher educational institutions in Mauritius and India. In line with the above, the sub-objectives formulated for the study are as follows:-

1.5.1   Sub-objectives of the study

The sub-objectives of the study with specific reference to higher educational institutions are to:

- ascertain whether the HR Departments have knowledge management strategies and if so, to identify such strategies;

- assess the factors that encourage and/or create barriers in respect of knowledge generation and knowledge sharing;

- evaluate knowledge transfer in relation to speed, reliability and ease of knowledge transfer;

- understand knowledge assets relating to explicit and tacit knowledge;

- identify the organizational culture that is conducive to knowledge management and knowledge sharing;

- assess the influence of organizational structure on KM;

- determine the extent of the use of technology in KM;
- establish the role that KM/HR could play in contributing to the establishment of a learning organization;

- conduct benchmarking studies of important knowledge management processes to establish international knowledge management best practices (KMBP);

- examine the influence of the biographical variables (gender, race, education, age and managerial status) on the perceptions of the dimensions of knowledge management; and

- develop an integrated normative model that links knowledge management strategy to strategic human resource management in higher educational institutions.

The objectives of the study are achieved *vis-à-vis* a detailed theoretical analysis of literature, an empirical survey amongst human resource managers and semi-structured interviews conducted with executive managers at selected higher educational institutions.

Based on the research objectives, the research questions that the study aims to answer are formulated.

1.6 Research questions

Council for Higher Education (CHE) (2008) expressed serious concern over the acute skills shortage with particular reference to South African organizations. The Council expressed the need to improve the quality of the skills profile and

consequently the number of skilled people that constitute the workforce in South Africa. However, higher educational institutions themselves have serious challenges of capacity in terms of recruiting and sustaining qualified employees. In order for these institutions to function well, it is essential that the employees have the requisite knowledge, skills, abilities and qualifications. This situation is more pronounced at historically disadvantaged higher educational institutions in that apart from the lack of capacity of skilled employees, they also face problems with lack of facilities and infrastructure (Ross, 2008:21).

The study articulates a knowledge management strategy for higher educational institutions as a means of addressing the knowledge gaps that exist at all levels in the hierarchy and organizational structures. South African higher educational institutions can no longer ignore the potential of leveraging knowledge management as a strategic tool for human resource management in the 21st century organizational era.

With specific reference to higher educational institutions, the objectives of the study have led to the development of the following research questions that inform the investigation in the study and these are:

- What is the relationship between knowledge management and human resource management at higher educational institutions?

- Do higher educational institutions have knowledge management strategies, and if so, what are the strategies?

- What are the factors that encourage or create barriers to knowledge generation and knowledge sharing?

- How effective are knowledge transfer processes in relation to speed, reliability and ease of knowledge transfer?

- How do institutions manage explicit and tacit knowledge?

- How does organizational culture support knowledge sharing initiatives?

- To what extent do organizational structures influence knowledge management?

- What is the extent of use of technology for knowledge management?

- What contribution does knowledge management/human resource management make towards transforming higher educational institutions to learning organizations?

- What are some of the important knowledge management best practices?

- How do the biographical variables (gender, race, education, age and managerial status) influence the perceptions of the dimensions of knowledge management? and

- Could an integrated generic model be designed for higher educational institutions to create linkages between executive management, human resource management and knowledge management?

In order to address the objectives of the study and the research questions, the responses will be analyzed and empirically tested to determine perceptions of human resource managers in respect of the various dimensions of knowledge management. In addition to the aforementioned, the information gathered will test the following hypotheses.

1.7 Hypotheses

The following hypotheses have been generated for the study.

1.7.1 Hypothesis 1:

There is a statistically significant difference in the perceptions of respondents from South Africa, India and Mauritius in terms of the respective dimensions of knowledge management and knowledge transfer.

1.7.2 Hypothesis 2:

There is a significant difference in the perceptions of the dimensions of knowledge management between the respective gender groups.

1.7.3 Hypothesis 3:

There is a significant difference in the perceptions of the dimensions of knowledge management among the respective race groups.

1.7.4 Hypothesis 4:

There is a significant difference in the perceptions of the dimensions of knowledge management among the respective educational levels.

1.7.5 Hypothesis 5:

There is a significant difference in the perceptions of the dimensions of knowledge management among the different age groups.

1.7.6 Hypothesis 6:

There is a significant difference in the perceptions of the dimensions of knowledge management among the different managerial groups.

It is envisaged that the realization of the aims and objectives and the hypotheses of the study will contribute significantly to close or minimize the gaps identified in previous research in the field of study.

1.8   Limitations and delimitations of the study

This study is delimited on the basis that it focuses on only one delineated aspect of a broader research problem. The scope of the study covers only managerial employees in the human resource departments in higher educational institutions in five sites situated nationally, three sites in Mauritius and three sites in India. The restricted scope of the population implies that the findings of this research cannot be applied to all higher educational institutions universally.

The study has been limited owing to the following factors:

- Generally human resource managers at all levels experience undue work pressures. Therefore the return of the survey instrument was not always available at the scheduled date and time. This prolonged the duration of visits, increased the number of visits to the institutions, and led to additional unscheduled financial expenses.

- In spite of guaranteeing anonymity of the respondents and the identity of the institutions that were surveyed, reservations were nonetheless expressed by some respondents in the completion of the questionnaires.

- The higher educational institutions that were surveyed had different and unique human resource organizational structures. Some HR departments had centralised organizational structures, whilst others were decentralised. Some institutions had unique, matrix or hybrid organizational structures that comprised a combination of centralised, decentralised and outsourced HR functions. Some higher educational institutions in Mauritius and India did not

have a specialised human resource department. The human resource function formed part of the administration wing of the institution or the human resource functions were performed at faculty level. Therefore the classification of the human resource manager's functional area of responsibility and job titles were not straight forward. The Executive manager responsible for the human resource function also differed from institution to institution. Some institutions had an Executive Director of human resources. Others had a Deputy Vice-Chancellor, or a Registrar as its executive Manager. These structures presented unique challenges for the researcher in the administration of the questionnaires and the interview schedule.

- Owing to the merger of several higher educational institutions in South Africa, human resource departments have undergone major restructuring. The HR organizational structures at most HEI's were under review with some key positions vacant or occupied by persons in an acting capacity. The respondents in such instances have not held substantive positions which could compromise the outcomes of the study.

- Some of the respondents were not familiar with the term "knowledge management" and related concepts and expressed difficulty in completing the questionnaires.

1.9   Methodology of the study

An extensive literature review was conducted on the variables of the study including legislation impacting on higher educational institutions, policies and practices related to human resource management and knowledge management. A questionnaire survey was conducted amongst human resource managers in selected higher educational institutions. In addition, a semi-structured interview was conducted amongst executive managers responsible for the human resource management portfolios in the higher educational institutions. The

hypotheses formulated were assessed by means of the data gathered and were evaluated by means of descriptive and inferential statistics.

1.10 Summary outline per chapter

The chapters in the study are organised as follows:

Chapter 1 provides a general orientation by demarcating the field of study and outlining the research approach. The research objectives and hypotheses are formulated and an overview of the proposed study is presented. Each objective contains a theme for the study and the themes permeate the study.

Chapter 2 focuses on the conceptual framework of the study. The discussion highlights the relationship between human resource management and knowledge management within the higher educational institution paradigm. The important legislation impacting on higher educational institutions were evaluated to glean an understanding of the prevailing and regulatory conditions in South Africa.

Chapter 3 evaluates the impact of knowledge management and the distinct benefits that this discipline brings to the human resource management function. Specific human resource issues and how these contribute to knowledge management initiatives are examined.

Chapter 4 provides a review of industry and international knowledge management best practices (KMBP). Initiatives and experiences as well as research findings in organizations in the international sector provide useful benchmarks for the proposed study.

Chapter 5 presents the research design and methodology in conducting the research. A discussion is provided on quantitative and qualitative methodologies of research theories. A discussion on sampling is provided, followed by a

description of the population under study. The methods of data collection, questionnaire design and interview schedules are described. The concluding sections of the chapter discuss pilot study, fieldwork and data analysis.

Chapter 6 focuses on the presentation of the results of the study and an empirical analysis of the data.

Chapter 7 entails the discussion of the results based on the objectives, sub-objectives and hypotheses formulated for the study. Findings, evaluation of the results, and comparison of results with similar research studies also form part of the chapter.

Chapter 8 proposes an integrated normative model for knowledge management/human resource management as a strategic tool for implementation at higher educational institutions. This model is formulated against the backdrop of the literature review as well as the findings of the study.

Chapter 9 concludes with the findings of the study, and proposes recommendations/strategies that could be tailored to suit the needs of human resource management at respective higher educational institutions before its implementation.

1.11 Conclusion

The central focus of the study is to understand and establish the relationship between human resource management (HRM), knowledge management (KM) and higher educational institutions and the role of the human resource managers as contributors to HRM policy formulation and knowledge management. This chapter illustrated an overview of the study, setting out the motivation for the study, including the focus, objectives, research questions, problem statement,

hypotheses, limitations and delimitations of the study and provided an overview of the chapters of the study.

The next chapter provides a conceptual framework of the study. It furnishes an overview of the relationship between human resource management (HRM), knowledge management (KM) and higher educational institutions (HEI's) by using approaches advocated by respected authors and researchers in the field of study.

CHAPTER 2

A CONCEPTUAL FRAMEWORK OF THE STUDY

"*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 is dispersed and unorganized. We need a sort of mental clearinghouse for the mind: a depot where knowledge and ideas are received, sorted, summarized, digested, clarified and compared"* (Wells, 1940).

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2.1 Introduction

The objectives of this chapter are firstly to place the study in a conceptual framework and, secondly to initiate and contextualize the discussion on knowledge management (KM) as a discipline and to put into perspective its role for human resource management (HRM). It also contextualizes the impact of legislation on higher educational institutions and provides an overview of the variables related to knowledge management within the higher education paradigm with particular focus on its implications for human resource management.

2.2 Legislative/regulatory mechanisms

According to Chapter 2 of the Bill of Rights of the Constitution of the Republic of South Africa, 1996 (Act 108 of 1996) all South Africans have the right to basic education. Therefore the State is under obligation to make education accessible and available. Section 29 of the Bill of Rights states that it is the duty of the State to:

"consider all reasonable educational alternatives taking into account

    a. equity

    b. practicability; and

    c. the need to redress the results of past racially discriminatory laws and practices" (www.info.gov.za/documents/constitution/1996).

Education levels in South Africa are currently in the limelight as the government views educational attainment as a means to empower both the employed and the unemployed. The 2009 results of the Quarterly Labour Force Survey showed that of those who were employed, only 18.5% had higher education qualifications. The proportion of Whites, Indians, Blacks and Coloureds with tertiary qualifications was 45%, 25%, 13.4% and 12.1% respectively (Lehohla, 2010:3).

Whilst the government expressed concern at the disparities in higher education qualifications amongst the different racial and population groups, it also acknowledged that other facets such as on-the-job training, the quality of education and the recognition of prior learning also have a critical impact on skills development (Lehohla, 2010:3).

2.3 Education in South Africa

The President of South Africa, Jacob Zuma proclaimed in May 2009 that education in South Africa is regarded as a national priority and therefore will be given serious government attention. He announced the need for the National Department of Education (DoE) to be separated into two ministries, namely, Basic Education, and Higher Education and Training. Following this announcement, Blade Nzimande was appointed as Minister of Higher Education and Training and Angie Motshekga, the Minister of Basic Education (http://www.mediaclubsouthafrica.com).

Each of these ministries is responsible for its respective portfolios across the whole country, whilst each of the nine provinces is in charge of its own regional education department. The Ministry of Higher Education also oversees the

numerous sector education and training authorities
(http://www.mediaclubsouthafrica.com).

The South African Qualifications Authority (SAQA) plays a significant role in higher education in South Africa and its role will be evaluated.

2.3.1. South African Qualifications Authority

In support of the Ministry of Education, the South African Qualifications Authority (SAQA) was established in 1996 in terms of the SAQA Act 58 of 1995. This legislation governs the establishment of the National Qualification Framework (NQF) and SAQA. SAQA's responsibility is to determine the implementation details of the NQF in consultation with the relevant stakeholders (Lategan, 1998:13).

The responsibilities of the SAQA Act, in its implementation of the NQF, are to:

- establish an integrated national qualifications framework for learning initiatives;

- create access, mobility and progression within education, training and career paths;

- enhance the quality of education and training;

- fast track and redress past unfair discrimination in education, training and employment practices; and

- contribute to the personal development of each learner.

The strategy underpinning the NQF is to transform education and training, and to centralize control over the accreditation of learners with national qualifications. The central authority determines criteria that learners should satisfy before the attainment of a qualification. National standards are set which includes a description of the competencies that a learner should demonstrate in terms of

knowledge, skills and abilities acquired, at the end of the learning event. Statutory mechanisms are implemented to ensure that only those learners who meet prescribed standards are issued with a qualification (Meyer, 2002: 16).

2.4 Conceptual framework

In an emerging new world order driven by local and global competition it is necessary for HR Managers to re-conceptualize their roles and responsibilities in order to survive. This repositioning should result in HR integrating with KM with a joint responsibility of improving organizational performance and effectiveness. This should result in KM and HR sharing a strategic partnership with a broad influence and direction.

Skyrme (2000:54) posits that employees are an organization's most important asset. Therefore human resource policies must be implemented to reward learning and knowledge sharing. A people-focused knowledge strategy entails motivating knowledge workers so that they remain committed to the success of the organization.

Skyrme (2000:201) states further that the human resource function should play a key role in establishing the knowledge infrastructure. Its role should entail the following:
- recognize, profile and integrate knowledge and skills in the organization;
- create hybrid structures so that promotions could be cross functional thus encouraging job rotation and secondments;
- develop recruitment and orientation processes that focus less on jobs and more on transferable knowledge, skills and behaviours;
- encourage learning and development so that employees continually increase their knowledge; and
- develop incentive and reward systems such as performance management systems that include knowledge sharing behaviours as part of the assessment.

It is evident from the foregoing discussion that human resource management could achieve certain knowledge management objectives, provided that there is proper integration with other functional sectors.

Figure 2.1 illustrates the overview and the relationship between the broad functional areas, which includes human resource management and knowledge management, both within the organization and the external environment.

Figure 2.1:   Components of the Knowledge Management/HR Management Model (derived from the study)
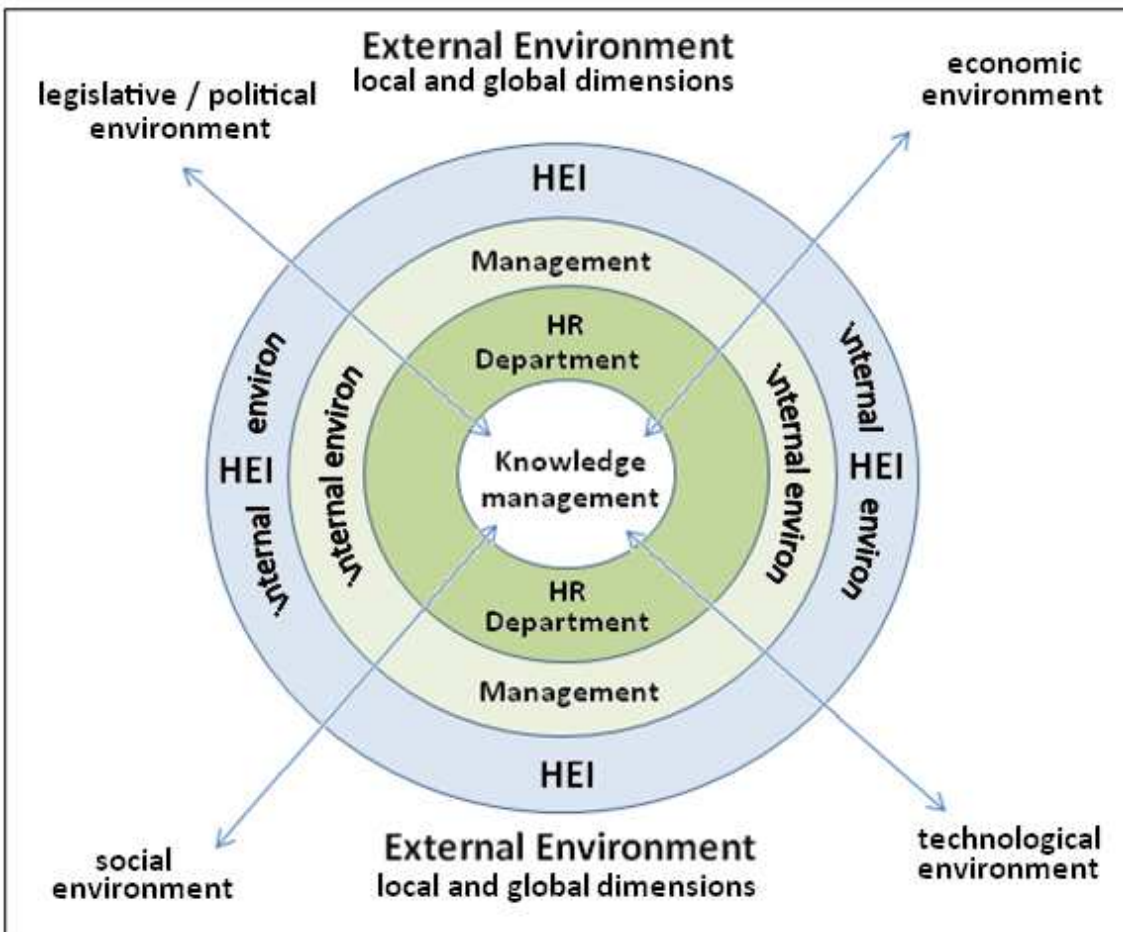
For knowledge management to be implemented efficiently and effectively there is a need for the formulation of a clear higher educational institution strategy, which

should be aligned to a human resource strategy that addresses the allocation of resources to cater for knowledge management initiatives.

When formulating strategy, the organization's vision, mission and key performance indicators must be determined together with programmes that are planned and designed to meet these objectives. Organizational strategies should be reviewed annually as part of the strategic planning process (Department of Natural Resources and Environment:1996).

Both the organizational strategy and the human resource strategy must indicate the level of commitment of management to meet its human resource needs. Without this statement of intent and commitment from senior management, the issue of resources often tends to become a major impediment to the organization in addressing its human resource goals and objectives (Pont, 1990).

Gottschalk (2005: vii) cites research undertaken by KPMG Consulting which established that organizations are failing to tackle knowledge management's real challenges. The reason tendered for this failure is due to the lack of understanding by senior management regarding the full implications of knowledge management (KM) and hence, the lack of support for it.

Higher educational institutions are increasingly interdependent with the external environment. In view of this relationship, these institutions are accountable to the external environment such as the local and central government. The nature of the relationship determines whether the institution is business oriented or defined by a collegial shared form of governance (Kezar & Eckel, 2004:371).

The Council for Higher Education (CHE) serves as a conduit between government and higher educational institutions to create a system whereby autonomous higher educational institutions would work constructively with government and other stakeholders to achieve common objectives. The national government, via the Council for Higher Education, the 1997 Higher Education Act, and the 2001 National Plan for Higher Education (NPHE) assume direct

control of curriculum, funding and regulation over higher educational institutions (Hall & Symes, 2005:201-202).

According to Sydanmaanlakka (2002:154) the external environment represented by social, cultural, economic and technological factors are critical for the success of knowledge management projects. Skyrme (2000:33) concurs with this position by stating that successful knowledge management strategies require organizations to exploit technology such as Internet and electronic commerce to create global markets for new products and services.

According to Nel *et al.*, (2004:7) the external environment is an important stakeholder that impacts on the internal environment. The factors in the economic environment that influence organizations include availability of capital, current interest rates, rate of inflation and the level of employment.

Nel *et al.*, (2004:7) claim that the social environment is largely influenced by the society in which the organization is located. The customers and employees of the organization shape the social environment through their attitudes, values, education and skill levels, and their expectations.

Nel *et al.*, (2004:7) posit that the political environment impacts organizations to an ever increasing extent in the present South Africa. Organizations' must conform to the laws and regulations at central, provincial and local levels. In this regard, several legislation (as elaborated in 3.2.3.2) have been enacted post 1994 that impact on the human resource management function in South Africa.

Schwella (1991:20) maintains that the technological environment impacts on efficiency, effectiveness, accuracy, speed and precision. According to Nel *et al.*, (2004:8) the technological environment has a significant influence on management philosophy in that there is a positive correlation between technology and productivity. Technology transforms inputs (raw material) into outputs (products and services).

Having established the link between the external environment and the internal environment, the conceptualization of the study will be discussed.

The framework in Figure 2.2 illustrates the research problem and the interaction of the through-put dimensions that impact on the study.

Figure 2.2: Conceptual framework of the key elements impacting on the study (derived from the study)

Problem Identification	**Through-put Dimensions**	**Desired Results / Objectives**

• Loss of skills/ knowledge due to:-
    - HIV / AIDS
    - Downsizing
    Retrenchment
    - Emigration
    - Retirements
 • Barriers to knowledge sharing
    - Hoarding of knowledge
 • Lack of KM / HR strategy
	• KM interventions
	 • Organisational Culture
	 • Leadership
	 • Organisational structure
	 • Learning organizational
	 • IT
	 • Incentives for knowledge sharing
	 • KM budget
		• Development of KM / HR strategy
		 • Creation of a knowledgeable workforce
		 • Developing a rich knowledge sharing culture
		 • Developing sound knowledge transfer intervention policies
		 • Improved performances
		 • Foster culture of excellence

FEEDBACK

Figure 2.2 outlines the relationship between the **identified problems** of the loss of critical skills and knowledge due to a range of factors, including but not limited to the barriers to knowledge sharing and the lack of KM/HR strategies to stem the loss of knowledge and skills in higher educational institutions. The **throughput dimensions** represent the tools that higher educational institutions could use to create strategies to bring about **desired results or objectives**. These could have a significant impact on the challenges facing human resource management in terms of the management and leverage of human knowledge for the overall benefit of higher educational institutions.

Significant changes to the higher educational systems in South Africa since the 1994 democratic elections have led to unique higher education leadership

challenges. Some of the challenges that impact on the provision of human resource services in higher educational institutions will be reviewed.

2.5   Higher education leadership challenges

The new framework prescribed in the White Paper on the transformation of higher education seeks much greater skills from higher education leadership than the pre-1994 era. An important feature of the new framework is the requirement that higher educational institutions should forward to the National Department of Education its institutional strategic and rolling plans that reviews and sets out priorities. The rationale for this process is to develop a better focused vision and mission, and develop strategies in order to implement the revised or new vision and mission statements (Phala, 2000:vi).

Higher educational institutions are acknowledged to be in the forefront of the knowledge business and such institutions are being subjected to market pressures similar to the private sector (Goddard, 1998). Senge (1990) proclaimed that

"***many organizations are unable to function as knowledge based organizations as they suffer learning disabilities"***.

In view of this organizations must "***innovate or die***". Thus, the ability to learn, adapt and manage change is the key competency for survival. Rowley (2000:1) claims that knowledge management has the potential to be of great benefit to higher educational institutions. Rowley (2000:2) further claims that the impediment to such potential is the lack of an appropriate knowledge management model to address knowledge management principles in higher educational institutions. Whilst there is a plethora of literature on the adoption and implementation of knowledge management in other sectors, this is grossly lacking in higher educational institutions.

2.5.1 Challenges for South African higher education

The White Paper of 1997 sets out the programme for the transformation of higher education. It identifies several and diverse purposes that higher education should strive to serve. A key policy goal is the establishment of a national, integrated and co-ordinated higher education system for South Africa. The over-riding objective is the creation of a higher education system that represents quality and excellence in the provision of its services to the wider community that it serves. One of the priorities of the White Paper of 1997 set for higher education is the provision of skills to address the acute skills shortage in the country. This priority entails the development of professionals and knowledge workers with globally competitive skills (DoE, White Paper, 1997:13).

The shortage of high level skills has escalated the cost of skilled labour, resulting in the general increase in inflation due to high labour costs. In conjunction with the shortage of skills, is the concern of the appropriateness of skills taught at higher education level. Owing to the lack of capacity of academic and support services in higher educational institutions, students are not equipped with relevant skills in order to function effectively in the modern knowledge and information driven economy (DoE, White Paper, 1997:79).

2.5.2 Re-configuration of higher education in South Africa

The election of a democratic government in South Africa in 1994 marked a turning point for higher education in South Africa. The proposal for the transformation and restructuring of higher education has led to the equitable allocation of resources to ensure that the higher education sector is academically and financially sustainable to meet the demands of teaching, skills development and research needs of the country.

The Government's proposals resulted in the consolidation of thirty six higher educational institutions into twenty one merged institutions. The restructuring of higher educational institutions did not lead to the decrease in the provision of educational services as all former sites continued to operate, but in new institutional, organizational and structural forms (Department of Education, 2002:1).

The purpose of leadership in South African higher education, according to the White Paper on Higher Education Transformation and Higher Education Act (No. 101, 1997), is to drive change at the institutional level. This requires leaders in the higher education sector to develop innovative strategies that steer change in the higher educational institutions in keeping with the provisions of the Act.

2.5.3   Management of higher educational institutions (HEI's)

There is a perception that the concept of management is fairly new in the context of South African higher education. Most South African higher educational institutions in South Africa are said to have been "administered" rather than "managed". During the apartheid era, the government regulated higher educational institutions which resulted in the weak supervision of historically white institutions and a more authoritarian state control over historically black institutions (CHE, 1996:42).

Cloete, Bunting & Kulati, (2000:2) agree that many higher educational institutions in South Africa have been administratively managed with the role of managers limited to administrative operations without providing strategic leadership.

File (2000:27) lends a similar view and states that traditionally higher educational institutions resisted advice from experts from outside as to how such institutions should be organized and managed. Such resistance was based on the assumption that higher educational institutions are unique, and as a

consequence, it would be impossible to transfer private and public sector best practices to a higher education setting. File (2000:27) further states that higher educational institutions involve multiple functions as follows:

- Higher educational institutions are responsible for undergraduate and postgraduate teaching, research, community service, and a complex set of lifelong learning activities. Higher educational institutions are therefore seen as different to other organizations which have clearly defined goals.

- Higher educational institutions are client servicing organizations, with multiple cohorts of clients, which include, but not limited to students, parents, governing boards, industrial and service partners, communities and future employers of students.

- High levels of professionalism and specialization are unique characteristics regarding decision-making related to academic matters. Senior and professional employees have dual allegiances, first to the disciplines, schools or departments and then to the higher educational institution as a whole.

According to Nadison (2000:71) the leadership of South African higher education has a duty to implement the provisions of the legislative framework, as contained in the White Paper on Higher Education Transformation and the Higher Education Act (No. 1 of 101, 1997). The important provisions enlisted in this Act are to develop institutional and region-specific goals to bring about strategic change at the institutional level.

2.5.3.1   Higher education governance structures

Governance in higher education refers to the manner in which higher educational institutions are structured, organized and managed.

There are important structures that are responsible for the governance of higher educational institutions. The powers of the Council, Senate, the Executive management and the Institutional Forum are prescribed by South Africa's Higher Education Act. According to File (2000:22) the important responsibilities of each of these bodies are as follows:

- **Council:** The Council's overall responsibility is to govern the higher educational institution. The Council is constituted with a mix of members from within and outside the higher educational institution.

- **Vice-Chancellor/Principal/Rector:** This position represents the executive head of the higher educational institution and whose primary responsibility is the management and administration of the higher educational institution.

- **Senate:** The Senate is an academic board accountable to Council for academic administration and research functions.

- **Management executive:** This body comprises of the Vice-Chancellor/Principal/Rector and the executive portfolio managers including the Registrar/s who are responsible for the administrative functions.

- **Institutional forum:** This forum provides an advisory function to Council on matters that affect the institution, including, but not limited to national higher education policies, equity policies, selection of senior management, codes of conduct, and institutional culture (File, 2000:22).

Figure 2.3 illustrates the governance structures that are generally applicable at higher educational institutions in South Africa.

Figure 2.3: South African higher education institutional governance
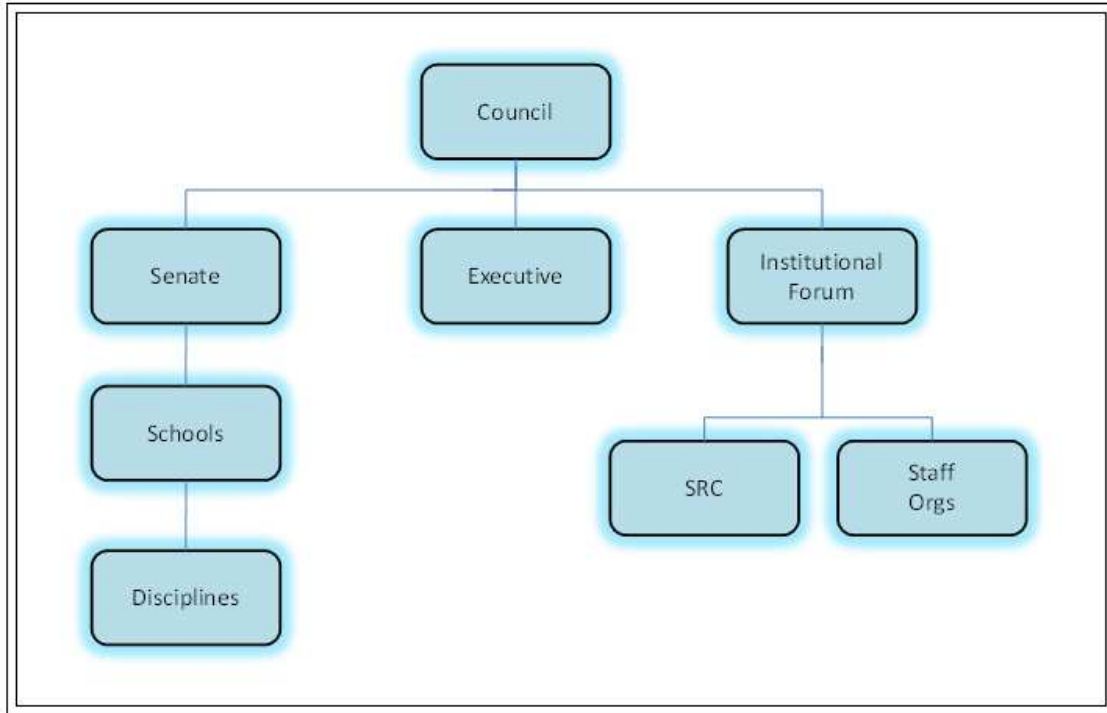
Source: File (2000:31), A comparative perspective on leadership and institutional change

The concept of governance of higher educational institutions refers to the organization and management of the internal structures of autonomous institutions. In addition to the bodies described above, higher educational institutions are also co-governed by a team of administrative executive managers, academic deans, discipline chairs and some form of student representation(*http://en.wikipedia.org/wiki/Governancein_higher_education*).

Kezar & Eckel (2004:371) state that as higher educational institutions are increasingly interdependent with the external sectors, and accountable to local and central government, higher education "governance" has become a multi-level concept with different decision-making functions. Therefore, higher education governance is deemed to be different to the governance of any other institution.

According to Lapworth (2004:299), the increase in corporate governance of higher educational institutions and the decline of shared and participative governance has led to the decline in academic participation. This change has brought about the growing tendency towards managerialism and the beginning of a new higher education environment.

A major concern expressed by the government and confirmed by the Council on Higher Education (CHE) (2002) is that South Africa does not have adequate human resources to occupy senior and middle-level leadership positions to sufficiently manage the institutional structures of higher education (*http://www.polity.org.za/govdocs/pr/2002/pr0530b.htm*).

South African institutions face new human resource challenges due to the SADEC/NEPAD agreement in line with the African Union (AU). As a means to address these challenges, South Africa requires knowledgeable institutions with quality human resources in all fields of economic activities in tandem with technological transformation (Nel *et al.,* 2004:27).

2.6   Challenges for human resource management (HRM)

Owing to the rapid changes that have taken place in organizations worldwide, the role of human resource management has transformed significantly over the past few decades. Organizations' cannot rely on outdated policies and practices, nor can HR professionals remain functional experts (Burke & Cooper, 2005:10).

According to Noe, Hollenbeck, Gerhart, & Wright (2006: viii), three major challenges face twenty first century organizations.

Sustainability challenge: This challenge refers to the ability of an organization to survive in a dynamic competitive environment. Organizations depend on skilled employees for high quality customer service. The challenge therefore is

how to attract and sustain a committed and productive workforce during turbulent economic conditions. In order to meet the sustainability challenge, organizations are advised to engage human resource management practices that meet short term needs but strive to ensure the long term success of the organization. In this regard, the development and selection of human resource management practices that align with organizational goals and strategies is important.

The global challenge: Organizations must strive to become globally competitive. Ballard & Schwella (2000:737) define globalization as a continuous evolutionary process whereby functions and influences cross boundaries from one state to another. According to OECD (1997:2) the globalization impact is increasing rapidly because of the information revolution. Physical distance is no longer an insurmountable problem. Modern technologies within the IT industry have revolutionized all forms of communication and have closed the gaps in the global environment.

The technology challenge: Organizations are increasingly investing in up-to-date technologies that support human resource practices through the use of technology to create high performance work systems. e-HRM technology applications are used to communicate with employees and customers online via a "virtual" network.

According to Noe *et al.* (2006: ix) organizations must deal successfully with the aforementioned challenges to remain competitive, and the key to managing these challenges is a well motivated, skilled and committed workforce.

In order to meet the challenges of the new generation organizational challenges, it is crucial for organizations to have the right type of human resource managers to manage these challenges.

2.6.1 The changing role of human resource managers

According to Svoboda & Schröder (2001:261) the role of human resource managers will have to change in the twenty first century. The following are some of the proposed role changes. Human resource managers must:

- partner with line managers in strategy formulation and implementation that result in the design of HR strategies that align with the organizational strategy;
- create efficiencies in the way work is organized and executed;
- reduce costs through administrative efficiency, while maintaining high standards;
- represent the interests of fellow employees when putting their concerns to management;
- get involved in efforts to improve employees' contribution to the organization; and
- be an agent for continuous transformation and change.

Ulrich (1997:24-25) confirms this view and posits that for human resource professionals to be successful, they have four different roles to play. These include being a strategic partner, an administrative expert, an employee champion and a change agent. The behaviours and actions demanded of the four HRM roles have the potential of creating world class organizations.

Brewster *et al.*, (2008:5) states that to be an effective human resource manager does not mean moving from operational to strategic work. It demands the ability to become proficient in both operational and strategic processes as well as managing people. Human resource managers are expected to fulfill multiple roles in order to deliver value to the organization.

2.6.2 Human resource management (HRM) in higher educational Institutions (HEI's)

Cloete & Bunting (2000:85) claim that the most critical challenge for higher educational institutions in South Africa in the 21st century will be in the human resource management sector. These challenges relate to the attraction, recruitment and retention of high quality employees, and the need to change to the demographic profile of employees in terms of the provisions of the Employment Equity Act.

In order to meet the human resource needs in a highly competitive environment, Cloete & Bunting (2008:86) recommend the following initiatives for the 21st century higher education sectors:

- Improvement in the conditions of service of staff;
- Creation of new and innovative recruitment and retention strategies;
- A balance between driving the equity programmes and quality of new recruits;
- An integrated institution-wide human resource and staff development strategy; and
- The improvement of leadership and management capacity in the new complex South African higher education environment.

According to Ivancevich (2001:8) there is a need for a strategic perspective on human resource management when organizations become larger and complex. As higher educational institutions are regarded as large and complex institutions, the need to integrate strategies with human resource management is adequately demonstrated.

2.7 Strategic Human Resource Management (SHRM)

Human resource management as a field of study has expanded significantly over the past few decades. It has been a subject of considerable controversy due to the divergent definitions, significance and focus.

According to Boxall & Purcell (2003:77), strategic human resource management is the integration of human resource management with business objectives that are implemented through the devolvement of HRM policies and practices. Armstrong (2000) defines HRM as strategic personnel management with emphasis on the acquisition, organization, and motivation of human resources.

Svetlik & Stavrou-Costea (2007) posit that human resource management is not about managing people. They are of the view that human resource management is about managing people's personal and inter-personal characteristics. They consider these characteristics as resources that bring distinct advantages for the organization. They also maintain that human resources are not only obtained by organizations through the process of recruitment and selection. Existing human resources are also developed by investing in their personal capacities by nurturing their interpersonal and inter-group relations.

The change of the concept personnel to human resources management seems to be in keeping with the actual nature and content of this field of theory and practice which has undergone substantial qualitative changes. Traditionally personnel administration or management was viewed as a second class function where line managers played a reactive role. The contemporary view of human resource management is that it is business orientated with a qualitatively different role to play (Swanepoel *et al*, 1998:9).

According to Zhang & Wang (2006:356) strategic human resource management was developed as a concept by Fombrun *et al.*(1984) who linked the human

resource function with the overall organizational strategy. Zhang & Wang (2006: 356-357) claim that traditional HRM practices focus on low level, routine tasks such as recruitment, record-keeping, rewards and wages. Conversely, strategic human resource management focus on activities involving human resource planning and policy formulation on human resource issues. Becker *et al.* (2001) posit that strategic human resource management perceives people as critical organizational investments, strategic resources and a means to attain competitive advantage, leading to the success or failure of the organization.

Dreyer & Dougherty (2002:16) posit that changes in the human resource discipline have led to the transition of the human resource function from a task oriented to a people oriented strategic function. Whilst human resource management practices were useful in the past, such practices may no longer be effective to meet the demands placed on human resource departments in the current knowledge era.

The twenty first century has introduced a new economic paradigm- that which is characterized by speed, innovation, short cycle times, quality and customer satisfaction. These factors highlight the importance of intangible assets such as brand recognition, knowledge, innovation and in particular human capital. This new paradigm marks the beginning of a golden age for human resource management (Huselid, Becker & Ulrich, 2004).

2.8 Conceptualizing knowledge management (KM)

The knowledge economy in the 21st century has had a significant impact on the human resource function in organizations. This century has embraced a major shift in the human resource management (HRM) function. It transformed from a bureaucratic "personnel management" operation a few decades ago, to a human resource department with integrated functions which support the corporate strategy and the organization's competitive advantage (Chivu & Popescu, 2008).

In this vein, Lengnick-Hall & Lengnick-Hall (2003:178) state that whilst traditional human resource management (HRM) operated within confined boundaries, the role of HRM in the knowledge economy has expanded both within the organization and beyond. They posit that the emphasis on human resource practices is to create environments conducive to learning, and the acquisition, sharing and dissemination of knowledge within organizations.

Svetlik & Stavrou-Costea (2007:197) advocate that immense benefits could be derived if human resource management and knowledge management are integrated, where one reinforces and supports the other in improving organizational effectiveness and performance.

As a consequence, Smith & Schurink (2005) claim that knowledge management (KM) is a deliberate means of eliciting essential knowledge from knowledgeable people and getting it into action by sharing it with the people who require it at the right time to enhance organizational performance. They further assert that knowledge management (KM) entails a complex process that is influenced by a number of variables both within and outside the organization.

In order to examine knowledge management and the variables that impact on the study, it is necessary to establish the evolution of knowledge management (KM).

2.8.1 Evolution of knowledge management's importance for human resource management

Knowledge management has become a subject of great interest to academics and organizational practitioners since the mid-1990 as reflected in Figure 3.1. However, it was only until 1997 that this area of management gained momentum through the publication of a number of research articles in academic and professional journals (Scarbrough *et al,* 1999). This position is accentuated by

Beaumont & Hunter (2002), stating that organizations have only recognized the significant benefits of knowledge management systems and strategies since the beginning of the twenty first century.

Figure 2.4: Growth in Knowledge Management literature

Web of Science - titles with 'knowledge management'
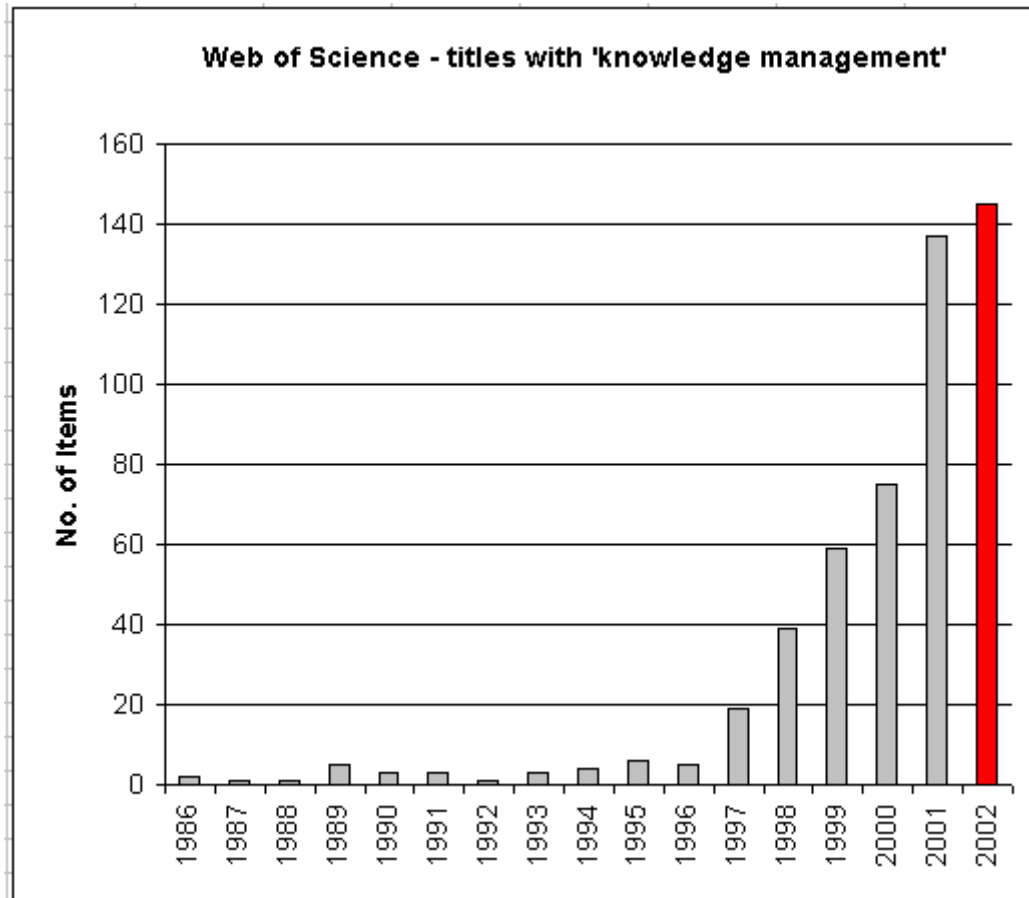
SOURCE: Wilson, T.D. (2002), The nonsense of Knowledge Management, **Information Research**, Vol. 8, No. 1, October

Whilst literary material focused predominantly on technological issues prior to the twenty first century, this position has changed since then, with a change in focus to areas related to human and social factors. Storey & Quintas (2001) posit that despite the change in focus, the human resource management perspective is yet to be fully developed.

Gamble & Blackwell (2001:5) trace the history and origins of knowledge management (KM). They claim that 1950s was the decade of electronic data processing with a focus on quantitative management techniques and structured management approaches such as management by objectives. The 1960s witnessed a change in focus to different forms of organizational structures and experimentation between centralization and decentralization. This period also ushered interest in interpersonal and group dynamics, and attempts to harness the power of employees working as one community. The 1970s focused on teams working cohesively and the advent of strategic planning and portfolio management advocated by leading authorities in the field such as Henry Minzberg. The 1980s introduced the importance of organizational competitiveness which was made popular by people such as Michael Porter. His writing had a profound impact on this concept. During this period, management gave attention to corporate culture, downsizing and total qualitative management (TQM) as a means of making organizations competitive. The 1990s gave more prominence to competitiveness of organizations through the potential of human resources and the creation of learning organizations. Technology and strategic information systems had taken central roles and the age of the internet had commenced (Gamble & Blackwell, 2001:5).

Business process re-engineering (BPR) advocated by Ghoshal & Bartlett (1998) complemented previous management practices, with much focus on purpose, people and process. Technology facilitated the creation of products by people scattered through the world and sold to customers from diverse locations. Traditional organizations have become obsolete and inappropriate during this era. The 2000s saw the emergence of the knowledge management as a corporate solution to unifying the fractured knowledge resources of the organization. Knowledge management in the twenty first century has taken centre stage in integrating organizations through a knowledge sharing culture in exploiting and deploying knowledge to the areas of need. This position is complemented with the greater access to information than ever before and the

enormous potential for human resource management at an accelerated pace (Ghoshal & Bartlett, 1998).

Knowledge management (KM) is the process of capturing the collective expertise and intelligence in an organization and utilizing them to create innovation through continuous organizational learning (Davenport & Prusak, 1998:5).

According to Bassi (1997) knowledge management (KM) is the process of creating, capturing, and using knowledge to enhance organizational performance, such as documenting and codifying knowledge and disseminating it through databases and other communication channels.

Herling & Provo (2000:7) posit that any theory of knowledge management must embrace concepts such as knowledge assessment, creation, storage, distribution, and its application to the business and organizational strategy.

Iles *et al.,* (2001:1) state that although knowledge is acknowledged as an important source of competitive advantage, its real impact is felt mostly when it is considered from a human resource management perspective.

Therefore, it is imperative to understand the inter-relation between knowledge management and human resource management and how this relationship impacts on the efficiency and effectiveness of the organization.

2.8.2 Knowledge management and its implications for human resource management

According to Iles *et al.,* (2001:3) knowledge management has experienced exponential growth due to the move from an industrial to an information based economy. This era has witnessed the rise of the knowledge worker with a reliance on knowledge and expertise to solve organization related problems.

According to Scarbrough *et al.,* (1999) notwithstanding the attention that knowledge management attracted to other sectors of the organization, its beneficial role for human resource management has not been fully appreciated. They identified knowledge formation and acquisition, knowledge utilization, and knowledge retention as key knowledge management processes. Technology cannot on its own cannot capture and manage innovative knowledge. The technology perspective of knowledge management focuses on flows of information through IT tools such as groupwise and intranets. Due to the view that knowledge management is predominantly technology driven initiative, the human resource management focus has been neglected. It is argued that knowledge management is a process and not a technology and is directly linked to the ways in which people work. A supportive culture is viewed as important for knowledge management, complemented with HR policies that link rewards to individual employee contributions. This would create an internal ethos of knowledge creation and knowledge sharing.

Some protagonists of knowledge management literature have expressed similar views regarding the relationship between knowledge management and human resource management. Bailey & Clarke (2000:235) posit that the key to sustained competitive advantage is for organizations to leverage knowledge, with particular reference to tacit knowledge. Cropley (1998:29) argues that knowledge is meaningless without people. People possess knowledge, develop it further and make decisions based on that knowledge. Conversely, data can be transmitted, information can be shared, but knowledge is an attribute of people, communities and societies.

Koch *et al.,* (2002:19) claim that human resource aspects of knowledge management manifest in several ways. It is crucial for organizations to have employee retention policies to prevent the exodus of intellectual capital embedded in employees' knowledge. This is due to the fact that when co-employees have solutions to knowledge problems, accessing that knowledge on a person-to-person basis often occur at a faster turnaround time. Moreover, the

knowledge communicated is in original format compared to referring to non-personal knowledge repositories. Knowledge sharing activities include conversations, meetings, and formal and informal communications.

2.8.3   Knowledge categories

There is no universally accepted definition of the concept knowledge. The constructivist view holds that knowledge is a subjective state in individuals minds embedded in organizations and communities (Davenport & Prusak, 1998; Lang, 2001 & Spender, 1998) cited in Svetlik & Stavrou Costea (2007).

The constructivist approach to knowledge relies on the difference between information and knowledge. Information is organized data whilst knowledge is meaningful information. The objectivist approach considers knowledge management as a conscious strategy of getting the right knowledge to the right people at the right time. This approach helps employees share and put information into action in ways that would improve organizational performance (O'Dell & Grayson, 1998).

Svetlik & Stavrou Costea, (2007) view the two approaches as meaning one and the same as they complement each other.

Drucker (1993:38) describes knowledge as the most important resource in a knowledge society. He also maintains that:

"Knowledge is not impersonal like money. Knowledge does not reside in a book, a data bank, a software program. These contain only information. Knowledge is always embodied in a person, taught and learned by a person, used or misused by a person" (Drucker, (1993:191).

A review of literature has identified various dimensions of knowledge. Some of the important dimensions of knowledge are presented.

2.8.3.1 Tacit and explicit knowledge

Nonaka, Toyama & Konno (2000) suggest that tacit and explicit knowledge have unique differences. Reviews of literature have confirmed this statement and some of the views of authorities on the subject are presented.

2.8.3.1.1 Tacit Knowledge

According to Donaldson (2001), tacit knowledge is knowledge acquired through experience, and therefore is not easy to formalize and communicate. Ahmed et al (2002) also posit that tacit knowledge is very difficult to describe or express. It is the knowledge which is usually transferred by demonstration, rather than description, and includes personal skills and expertise.

Weggeman (1997) cited in Mulders *et al.,* (2003), confirm that tacit knowledge is person-specific and consists of personal experiences, skills and attitudes and as a consequence, difficult to formalize or communicate to others. Holden (2002) posits that tacit knowledge, once embedded, becomes an organizational resource which is difficult to be imitated by competitors.

According to Leonard-Barton & Sensiper (1998), tacit knowledge can be used to benefit organizations in the following ways:-

- **Problem solving:** Experts in a particular field have the capacity to solve problems better than novices. This is due to knowledge patterns relating to the subject being developed into their minds due to experience. They are therefore able to apply this knowledge and problems solve and find solutions to problems quickly and easily.

- **Problem finding:** Whilst problem solving is linked to a relatively clearly formulated problem within an existing paradigm, problem finding is more

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complex. It leads to a search for a better means of framing or defining the problem. Tacit knowledge gives rise to not so much intuitive discovery but an insight into the real nature of the problem.

- **Prediction and anticipation:** Extensive study of a subject would provide an understanding of how something works. Based on this theoretical understanding, individuals anticipate and predict occurrences through conscious exploration.

Ahmed *et al.,* (2002:32) state that the value of tacit knowledge is best demonstrated in organizations where learning and use of personal experience is encouraged.   In this kind of environment, knowledge creation is integral to organizational culture. Individuals lose track of where the knowledge came from. Individual learning and experience feed back into the organization's knowledge base. Incoming data and experiences are used by managers to facilitate decision-making and problem solving.

2.8.3.1.2 Explicit knowledge

According to Grover & Davenport (2001) explicit knowledge is knowledge that could be easily written down or codified. It is relatively easy to articulate and communicate, and relatively easy to transfer between individuals and organizations. Explicit knowledge resides in textbooks or technical documents.

Gottshalk (2005:64) states that explicit knowledge could be expressed in words and numbers shared in the medium of data, scientific formulae and manuals. This type of knowledge can be easily communicated between individuals in a formal and systematic manner.

2.8.3.1.3 Tacit and explicit knowledge dichotomy

The distinction between tacit and explicit knowledge is considered to be important with regard to dissemination and circulation of knowledge within the organization. Pollard (2001:74) points out the relationship and difference between tacit and explicit knowledge as:

"Explicit knowledge can be transferred through written routines and instructions but tacit knowledge is often highly content-specific; existing in an individual's memory as accumulated beliefs and experience, and often only invoked when circumstances dictate. This experience can only be effectively transferred to others through some measure of personal interaction. It should be noted, however, that explicit and tacit knowledge is not a dichotomy, rather the opposite ends of a continuum".

In contrast to explicit knowledge, tacit knowledge cannot be described fully even by an expert. It is transferred from one person to the other only through a long process of apprenticeship (Polanyi: 1966).

Tacit knowledge is work-related practical know-how that is learned informally on the job (Wagner & Sternberg: 1987). Nelson & Winter (1982) point out that much organizational knowledge remains tacit because it is impossible to describe its minute details necessary for successful performance.

Organizations' have traditionally focused on the explicit part of knowledge and ignored tacit knowledge although it has been estimated that only about ten per cent of an organization's knowledge is explicit (Grant: 1996). A major reason for not being able to manage tacit knowledge is because it is not finite. It involves the extraction of personal knowledge which is difficult to express and communicate (Nonaka & Takeuchi: 1995).

Ahmed *et al.,* (2002:11) are of the view that tacit knowledge is deeply embedded within individual experience, judgment and intuition. These are compounded by

other factors such as personal beliefs, individual perspectives and value systems. The success of any knowledge initiative to produce competitive advantage depends on how well the organization manages its tacit knowledge.

Fuller (2002:26) states that tacit knowledge is valued much higher than explicit knowledge. However, once tacit knowledge is codified, it no longer offers a competitive advantage. It becomes a public commodity.

Nonaka & Takeuchi (1995) maintain that knowledge is the outcome of the interaction between explicit and tacit knowledge. The process of creating knowledge results in a spiraling of knowledge acquisition. It starts with people sharing their internal tacit knowledge by socialising with others or by capturing it in digital or analogue form. Other people then internalise the shared knowledge, and that process creates new knowledge. These people, with the newly created knowledge, then share this knowledge with others, and the process begins again.

Skyrme (2000:51) states that creativity and idea creation is the beginning of the innovation process. Organizations generally lack knowledge infrastructures that convert ideas into new products. Some of the methods conceptualizing innovation according to Skyrme (2000:51) are as follows:

- Accessing existing knowledge from the external environment;
- Creating new knowledge by encouraging creative thinking and exchange of ideas;
- Codifying knowledge into an appropriate format for easy access; and
- Diffusion of ideas and insights through knowledge networking.

Skyrme (2000:51) claims that throughout the innovation process, tacit knowledge is converted to explicit knowledge and vice-versa. Knowledge flows between people, is codified into databases, and restructured into new forms. It is therefore a management responsibility to encourage knowledge generation and sharing.

Nonaka & Takeuchi (1995) demonstrate how the four processes of knowledge conversion could be used to design new and creative products. These processes are described as socialization, externalization, internalization, and combination as represented in Figure 2.5.

Figure 2.5: The Knowledge Creation process
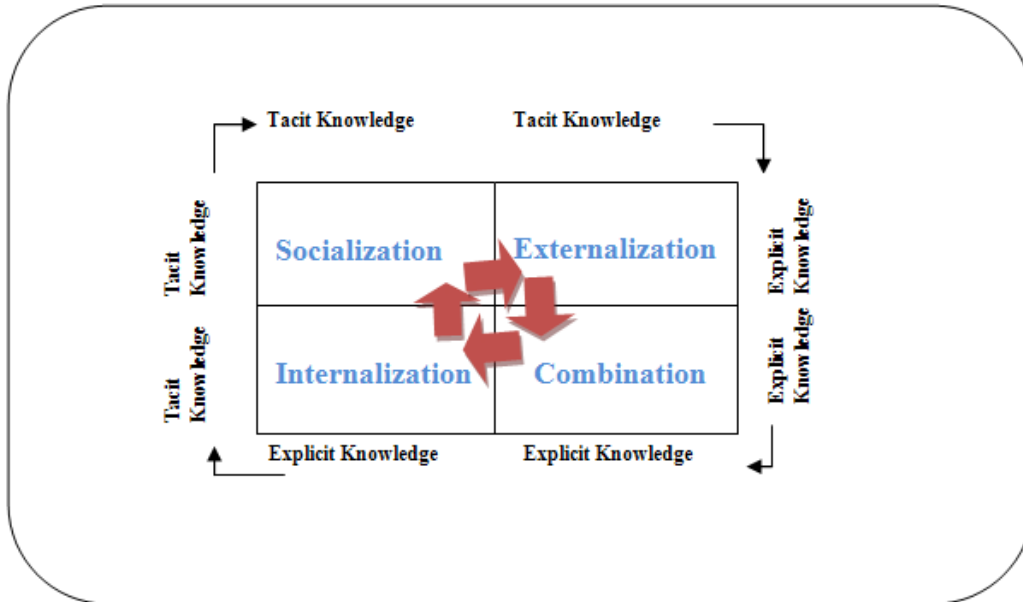
Source: Nonaka &Takeuchi (1995)

Sveiby (1997:47-48) share the same view as Nonaka & Takeuchi (1995) in that the processes as represented in Figure 2.5 are interrelated and in dynamic interaction. According to Sveiby (1997:48) the processes entail the following:

➢ **Socialization** is a process of sharing experience through the socialization process. Tacit knowledge is converted to explicit knowledge through shared mental models and skills. When apprentices work under the guidance of mentors they learn craftsmanship through observation, imitation, and practice.

➢ **Externalization** is a process of articulating tacit knowledge through explicit concepts. Tacit knowledge takes the form of metaphors, models, concepts,

and equations, which are expressed as unique forms of tacit knowledge of an individual. Manuals and books are some forms of creating tacit knowledge through explicit concepts.

➢ **Combination** is the systematic process of bringing together explicit concepts to create a knowledge system. This is attained through combining different bodies of explicit knowledge by analysing, categorising, and reconfiguring information. This form of knowledge conversion takes place in higher educational institutions and other formal education forums. Data-bases and computer technology are enablers for this kind of knowledge conversion.

➢ **Internalization** refers to the conversion of explicit knowledge into tacit knowledge. It is closely related to learning through action. Internalization takes place if the knowledge is verbalised or if systematic documentary processes are used (Sveiby, 97: 48).

The knowledge conversion process articulates the relationship between tacit knowledge and explicit knowledge. These knowledge resources complement one another in deriving value for organizations.

2.8.3.2 Organizational and individual knowledge

According to Zander & Kogut (1995), a distinction between individual knowledge and organizational knowledge is that individual knowledge is the sum total of individuals' competencies, information, and knowledge. Organizational knowledge comprise of organizing principles, routines, and practices, organization's past experiences, goals, missions, competitors, and relationships that are widely distributed throughout the organization and held in common by a large number of organizational members.

According to Nonaka & Takeuchi (1995), successful organizations consistently create new knowledge, distribute these throughout the organization and capture these in technologies and products. The success of Japanese organizations has been noted in the 1970s and 1980s due to the management of employees' skills and expertise as an organizational resource.

2.8.3.3 Private and public knowledge

According to Barney (1991) private knowledge is unique to the organization, whereas public knowledge resides in the public domain. The distinction and relationship between private and public knowledge is important because the relationship between each of these forms and its competitive advantage differ. Private or organization-specific knowledge can be a source of competitive advantage. It is an example of a resource that is unique, valuable, rare, and that which is not imitable. Private knowledge entails organizations' unique routines, processes, documentation, or trade secrets.

Matusik & Hill (1998) are of a similar view and aver that public knowledge constitutes knowledge that is not unique to any one organization. It resides in the external environment and is, in essence, a public good. Public knowledge includes items such as industry and occupational best practices. Examples of public knowledge relate to accounting practices, computer language programming skills and total quality management (TQM). Public knowledge cannot be a source of competitive advantage as it is not unique or proprietary to any one organization and is readily accessible by any organization. However, the failure to apply such knowledge within the organization can be a source of competitive disadvantage. The application of public knowledge pertaining to best practices is necessary for survival in a highly competitive marketplace, but on its own, will not guarantee competitive advantage. Therefore public knowledge must be complemented with private knowledge to optimize its returns.

2.8.3.4 Component and architectural knowledge

Component knowledge is the knowledge that is peculiar to an aspect of an organization's operations. It is knowledge that relate to "parts" or "components" rather than the organization's entire operations. Each of the processes of a component constitutes just one aspect of an organization's overall knowledge structure (Amit & Schoemaker,1993; Henderson & Cockburn,1994; Leonard-Barton,1992) cited in Matusik & Hill (1998).

Component knowledge can be held individually, as well as collectively. One person may be responsible for a component, or the knowledge relating to a component but the knowledge may be held collectively by a sub-group within the organization (Matusik & Hill, 1998).

Architectural knowledge, on the other hand, relates to the entire organization-wide routines and coordinates the various components of the organization by putting them to productive use (Henderson & Clark, 1990).

Because it is organization-wide, architectural knowledge is held collectively. In view of this, it is difficult for any one individual to see, comprehend, or articulate a full perspective of architectural knowledge. Architectural knowledge is often viewed as tacit in nature. Because each organization has its own unique heritage and background, no two organizations could have the same architectural knowledge. Hence architectural knowledge is considered as private knowledge (Nelson & Winter, 1982).

2.8.3.5 Internal and external knowledge

According to Tayeb (2005:135) external knowledge is created through knowledge inputs from the external environment. Network based knowledge is generated

through interaction with external sources and by understanding the way in which such knowledge is applied by the external sources.

Foss & Pederson (2001) argue that no knowledge is entirely generated internally. There are significant complementary conduits between internal and external knowledge resources. However, they concede that some knowledge is to a large extent, internally produced, whilst others are created through external knowledge inputs.

From the foregoing discussion, it is concluded that several types of knowledge exist at the organizational level and it is the responsibility of organizations to capitalize on this important resource.

According to Nonaka &Takeuchi (1995), a key challenge for organizations is to convert tacit knowledge into explicit knowledge for organizational benefits.

2.8.4 Characteristics of knowledge

Liebeskind (1996:93) claims that knowledge is information which has been validated through tests of proof. Therefore knowledge is distinct from opinion, speculation, beliefs, or other types of unproven information. This distinction is considered important because knowledge establishes reliable relationships between inputs on the one hand and outcomes on the other. As a result knowledge could be used repetitively without further experimentation or proof. Characteristics and uses of knowledge assets have become more prominent in the knowledge economy.

2.8.5 Knowledge economy

Core knowledge competences in organizations are valued as a key driver of economic growth and organizational competitiveness (Hamel & Prahalad,

1994:102). Stewart & Tansley (2002:75) state that the knowledge economy represents the following characteristics:

- Individual and organizational knowledge is regarded as the most important asset in achieving organizational success.

- The term 'knowledge economy' is an appropriate term to describe the current dominant economic environment given the importance of knowledge for organizations.

- The most important factors that dominate the knowledge economy are globalization and the increased pace of development in information and communication technologies (ICT).

- The means of production and consumption of services and products have fundamentally changed.

- The knowledge economy has profound implications for knowledge creation, learning and training in the workplace.

Penrose (1959:77) in the analysis of the economics of the organization commented as follows on the great difficulty in managing the knowledge process

 "*Economists have, of course, always recognized the dominant role that increasing knowledge plays in economic processes, but have, for the most part, found the whole subject of knowledge too slippery to handle*".

According to Ahmed *et al,* (2002:6) two key characteristics underpin the knowledge economy: speed and interconnection. Speedy transmission of information and knowledge leads to quick decision making and innovative solutions. Interconnection refers to the network of information systems, workers, organizations and economies. The twenty first century organizational era demands new strategies. Managing knowledge and learning in organizations is

the key to such strategies. The building blocks of knowledge management are knowledge assets.

2.8.6 Knowledge assets

Knowledge assets are defined as stocks of knowledge from which services are expected to flow (Boisot, 1998:3). According to Malhotra (2003), physical assets have a limited lifespan due to wear and tear. In contrast, knowledge assets could last a life-time. Due to this open-ended value, there is a dire need for organizations to create knowledge assets to yield long lasting invaluable services.

Edivinsson & Malone (1997) posit that although knowledge is considered as one of the most important organizational assets to create competitive advantage, there is no effective tool to evaluate and manage knowledge assets. Existing accounting systems are not adequate to measure knowledge assets due to the tacit nature of the knowledge. A further challenge for managing knowledge assets is that they are viewed as both inputs and outputs of the organization's knowledge creating processes, and are evolutionary and dynamic. It is therefore not possible to take a snapshot of the knowledge assets that the organization owns at any given point due to its fluid characteristics.

The World Bank's prospectus document for national knowledge assessment notes that:

"Knowledge assessment is a tool for assisting countries to analyze their capabilities for participating in the knowledge revolution. It focuses on those areas of the economy and society that directly benefit from knowledge and learning" (World Development Report, 1998).

Knowledge becomes an asset when it is given coherence, when it is captured in such a way that allows it to be described, shared, and exploited.

According to Malhotra (2003), countries that are rich in knowledge assets and intellectual capital fare better in terms of higher levels of growth and development. Knowledge assets represent the hub of a nation's competences and capabilities and are deemed essential for economic growth, competitive advantage, human development, and quality of life.

Nonaka *et al.*, (2000) differentiate between different types of knowledge assets as follows:

- **Experiential knowledge assets** consist of tacit knowledge shared through hands-on experience amongst employees, customers, suppliers and allied organizations. Through this process, skills and knowledge are acquired and accumulated. Owing to the tacit nature of this knowledge, experiential knowledge is difficult to attain, evaluate or trade. Knowledge acquired through this process is organization specific, difficult to imitate and which gives the organization a sustainable competitive advantage.

- **Conceptual knowledge assets** are explicit knowledge represented through images, symbols and language. As these are tangible, conceptual knowledge assets are easy to acquire compared to experiential knowledge assets.

- **Systemic knowledge assets** are systematized and packaged explicit knowledge represented in technologies, manuals, documents and packaged information about customers and suppliers. Legally protected patents and intellectual property right also fall in this category. These knowledge assets could be transferred easily.

- **Routine knowledge assets** are tacit knowledge embedded in actions and practices of the organization. Organizational culture and organizational routines in conducting day-to-day business are examples of routine knowledge assets. Repetitive exercises mould patterns of thinking and are reinforced amongst organizational members. The historical background of the organization determines the ethos and philosophy of routine knowledge practices.

In order to create a knowledge strategy, organizations need to catalogue its knowledge assets. As knowledge assets are dynamic, new knowledge assets could be derived from pre-existing knowledge assets. It is therefore important to conceptualize, assess and evaluate knowledge assets in order to formulate a knowledge strategy for an organization.

2.8.7 Knowledge strategy

The concept of knowledge has emerged as the most strategically significant resource of the organization in the twenty first century organizational era. Management theorists are advising organizations that in order to remain competitive, they must efficiently and effectively create, capture, harvest, share, and apply their organization's knowledge and expertise. Moreover, they must devise distinct capabilities to use the knowledge to their advantage as creative solutions to problems and opportunities as these emerge. It is therefore important for each organization to clearly define its knowledge strategy (Zack, 1999: vii).

Grant (1996) posits that if knowledge is a critical input into all production processes, then it is the responsibility of the organization to encourage the creation, storing and sharing of such knowledge in the organization. It is argued that an individual's ability to integrate knowledge is constrained by cognitive limitations, and it is not possible for each individual to emulate the knowledge possessed by other specialists.

Skyrme's (2000:48) notion of knowledge strategy is based on the premise that tacit knowledge is the most valuable organizational asset. As this asset lies in the heads of employees, the difficulty arises when the employees leave the organization with their personal knowledge. The "crux of a knowledge strategy" should therefore strive to convert tacit knowledge into organizational knowledge with a view to giving the organization a competitive edge.

2.8.8 Knowledge and competitive advantage

Prahalad & Hamel (1990) posit the view that organizations possess numerous resources, but only those resources that are unique, inimitable, and valuable are central to competitive advantage.

Nonaka (1994) views knowledge creation as the key to organizational survival in the turbulent competitive world. Changing environmental demands and rapid imitation by competitors make it necessary for organizations' to continually build new knowledge.

Organizations' must not confine knowledge creation to the internal environment, but also expose themselves to a wide range of new ideas from the external environment to prevent rigidity and become innovative (Leonard-Barton:1995).

Tayeb (2005:134) posits that organizational knowledge and expertise is learnt and acquired within organizations by experimenting with innovative ideas and in-house training whilst external knowledge is acquired through formal and informal interaction with the outside world.

Whilst Gupta & Govindarajan (2000) claim that knowledge plays a significant role in organizations' competitive advantage, Nonaka (1991) argues that knowledge is the only source of competitive advantage over competitors. Gupta & Govindarajan (2000) add that knowledge creation in itself does not make an organization successful. They claim that knowledge must be efficiently and effectively shared and utilized across the organization to make it an invaluable resource.

Sparkes & Miyake (2000) advocate that employees possess unique skills, experience and knowledge that are of economic value to organizations. It is therefore the responsibility of organizations to tap this wealth of knowledge by

implementing organization-wide knowledge sharing processes and mechanisms. This responsibility of managing and implementing knowledge sharing processes falls within the domain of the human resource function.

2.9 Conclusion

This chapter provided a conceptual framework for the study and highlighted the relationship between knowledge management, human resource management and higher educational institutions. In view of the strategic alliance of knowledge management for human resources in higher educational institutions, the origins and the variables that impact on the study were discussed. It was established that the main role players were the human resources as knowledge resides within them. Various categories and types of knowledge were also discussed.

The next chapter will discuss the theoretical framework for knowledge management and human resource management. The benefits of this integrated approach for human resource management and the organization will be evaluated.

CHAPTER 3

KNOWLEDGE MANAGEMENT AND HUMAN RESOURCE MANAGEMENT: A THEORETICAL PERSPECTIVE

"The most powerful of the strategic configurations of power remains people... developing an organizational 'espirit de corp' aligns the hearts and minds of employees with the aims of the business" (Boar, 1997:196).

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3.1 Introduction

Organizations in the knowledge economy are beginning to realize the immense benefits in adopting an integrative approach between human resource management (HRM) and knowledge management (KM). Integrating these two disciplines reinforce and support one over the other resulting in enhanced organizational effectiveness and efficiency (Svetlik & Stavrou-Costea, 2007:197).

According to Murty (2010:5), knowledge management is regarded as a people related discipline aimed at leveraging collective knowledge through collaborative team effort. In this regard, human resource management plays a significant role towards the knowledge management movement. Murty (2010:5) makes the distinction between talent management and knowledge management. Whilst talent management refers to the management of knowledge at the individual level, knowledge management, on the other hand views the management of "collective" knowledge from an organization wide perspective.

Human resource management (HRM) has a significant role to play in the development of the knowledge based organization in the 21st century. An essential theme in this regard according to the literature review is the importance of people as organizational assets. This human resource approach views

organizational goals and human needs as compatible and mutually inclusive (Grobler *et al*, 2010:8).

According to Noe, Hollenbeck, Gerhart & Wright (2006: viii) organizations are reviewing the HR priorities to provide more value to customers, shareholders and employees. In this regard managers must allocate resources across the organization's functions in a manner that would ensure the best returns towards the achievement of organizational goals and strategies.

Thompson & Mabey (1994:6) state that an organization's human resources include all the individual employees who contribute to the operations of the organization, whether they are employed full time, part-time, on a temporary or permanent basis, centrally, in separate business units or from home. The management of recruitment, selection, training and development, reward and monitoring of these human resource functions is as important as that of the employees.

The significant position of knowledge management in the overall strategy of human resource management and its integral function within the organization is presented. Various theoretical concepts and the relationship between human resource management and knowledge management from various perspectives are also discussed.

3.2 Human resource management (HRM)

Human resource management (HRM) refers to policies, procedures and practices that impact on employees' behavior, performance and attitude to work related activities. The broad functions in human resource management entail human resource administration, human resource training and development, employee relations and human resource information systems. The human resource management strategy entails managing these functions to elicit

maximum organizational performance (Hitt *et al.*, 1998:22) cited in Noe *et al.,*(2006:5).

Human resources are considered the most valuable, yet the most volatile and potentially unpredictable, resource of the organization. If an organization fails to place and direct human resources in the right areas of the business, at the right time, and at the right cost, serious inefficiencies are likely to arise creating considerable operational difficulties and likely business failure (Bramham, 1990).

The roles and responsibilities of the human resource function have changed significantly over the decades initially as an administrative function to the current strategic and critical role in the organization.

3.2.1 Roles and responsibilities of human resource management (HRM)

A constant dilemma in human resource management is: Who is responsible for what? Human resource staff cannot be fully effective unless they know their functional areas of responsibility and the lines of authority. They need to known within which limits they may operate, over what activities they have authority, and to what degree they will be held accountable for performing those duties (Megginson, 1981:38).

Grobler *et al.*, (2010:20) posit that in new generation organizations, the HR function is not only a HR Department prerogative. It is a joint responsibility of every manager at all levels in the organization. The HR Department designs HR policies and procedures and the line managers are responsible for its implementation. The implementation of HR policies and procedures lies primarily with line managers as they are responsible for the day-to-day supervision of subordinate employees.

All managers are responsible for performing the human resource functions. The responsibility of the human resources manager is to ensure that the performance of the human resource function is done satisfactorily. Human resource management is a staff as well as a line function.

According to White & Wolfe, (1979:3) the roles at the different levels of human resource management is as follows:

- **Top management** sets human resource objectives and policies and undertakes long range planning and organizing;

- **Middle managers** manage the operating procedures needed to achieve the human resource objectives and carry out the human resource policies of top management;

- **First-line supervisors** interpret the policies of the organization, influence attitudes, and direct and supervise operations.

The human resource function should be held accountable to the highest level in the organization. One person should be responsible for it, and that person should have the aggressive backing of top management. The human resource executive should be responsible to the chief executive officer for developing policies and procedures to permit the most effective use of human resources so that the organization's needs and goals will be met (Megginson, 1981:39).

The 21st century has witnessed a transformation of roles and responsibilities to incorporate strategic attributes. Some of these roles are presented.

- **Strategic partner:** This role involves the alignment of HRM strategies to organizational strategies to help the organization achieve its goals and objectives (Ulrich & Smallwood, 2004:119).

- **Administrative expert:** This responsibility requires the expert to design and deliver HRM systems, processes and practices that are effective and efficient. Some of these systems include selection, training and development, performance management and reward policies (Ulrich: 1997).

- **Employee advocate:** This role requires the employee advocate to manage employee commitment and contributions so that these realize organizational objectives (Ulrich: 1997).

- **Change agent:** The change agent role requires HRM to transform the organization so that it is able to meet the demands of the volatile competitive markets (Ulrich: 1997).

Changes in the human resource environment demand corresponding changes to the organizational structures of human resource departments.

3.2.2 The structure of human resource departments

There is no one best form of organization, but if certain changes occur that affect the size and shape of the organization or the types of employees, then its structure should change accordingly. In more complex operations, the organizational structure becomes more extensive and specialized. The ideal organizational structure for a human resources department should consider the size of the organization, the type of industry, the complexity of operations, the importance assigned to efficiency and effectiveness and the management's view of the importance of the human resource function (Megginson, 1981:45).

Noe *et al.,* (2006:141) view HRM as responsible for the design and approval of organizational structures in organizations. Structuring organizations is about the way people are grouped and the way in which the work is coordinated and managed. Organizational structure is generally depicted through organizational charts with vertical and horizontal relationships and functional responsibilities.

Centralization represents authority being vested at the top of the organogram. **Departmentalization** is the degree to which employees are grouped according to similarities in functions or similar work flow.

Schminke *et al*., (2000:294) posit two emerging configurations of organizational structures. Firstly, the **functional structure** which is based on departmentalization with high levels of centralization. Next is the **divisional structure** which is a combination of divisional departmentalization with low levels of centralization. Owing to effective work flow, the divisional structures are preferred as these are flexible and innovative.

Rebello (1999:114) states that functional structures are effective in stable environments where the supply and demand for services and goods are predictable. Functional structures in this type of environment lead to cost efficiency because of coordination between jobs and standardized repetition of activities. On the other hand, divisional structures are appropriate for unpredictable environments where the supply and demand for goods and services are uncertain. In these circumstances, flexible strategies are considered appropriate. In this instance, divisional structures are regarded as autonomous and able to respond more quickly to changes in the marketplace and technology.

Fowler, (1992) sets out options, which take into account the effects of decentralization. This leads to operational HR work being devolved to line managers. As a consequence, HR professionals may adopt one of the following roles:

- undertake a wide range of detailed day-to-day operational HR work on behalf of line managers;
- provide administrative support to managers who handle their own operational human resource work;

- set quality standards for line managers' operational HR activities, provide support to managers to help them meet these standards and monitor the results;

- retain HR specialists at the central level, but allow operational divisions to provide HR services at source;

- keep HR specialists executively responsible to the central HR manager, but post them to work within operational divisions where they establish close links with line managers; and

- maintain a small central HR department to deal with strategic issues, while the operational divisions have their own HR personnel (Fowler, 1992) .

Structures are dynamic and subject to change depending on several factors. Similarly, human resource management has to continually deal with a variety of challenges in order to remain competitive.

3.2.3 Human resource management challenges

It is acknowledged that the quality of human resources in South Africa is a critical challenge from an international, African and regional perspective. Furthermore, the impact of the turbulent environment lead to additional challenges such as managing a diverse workforce and changes in legislation that have serious implications for the human resource function (Nel *et al.*, 2004:27).

Some of the current and imminent challenges facing South African organizations are the following:

3.2.3.1 Worker productivity

South Africa has one of the lowest worker productivity rates in the world ever since its re-entry into the global arena. This is considered as a mammoth

challenge that faces the government and the business community (Grobler, *et al.*, 2010:22).

New trading agreements such as the General Agreement of Tariffs and Trade (GATT) and international partnerships have led to international goods being imported in huge quantities which place local organizations under serious threat. This is paradoxical in that whilst productivity has dropped significantly, salaries have increased substantially. As a result, South Africa faces stiff competition in the international sector (Grobler, *et al.*, 2010:22).

In response, Hofmeyer & Rall (1995: 22) state that South African is ready for the challenge. Organizations' are changing management practices that motivate the employees to improve productivity. Hierarchical organizational structures have been replaced with structures that promote self managed and flexible teamwork, thus impacting on productivity levels.

3.2.3.2 Impact of legislation

The human resource profession has been largely influenced by government policies and programmes through an extensive range of employment legislation enacted by the government. Employees and employers have a number of statutory rights and obligations defined in Acts of Parliament in South Africa such as:

➢   The Constitution of RSA and the Bill of Rights;
➢   Labour Relations Act 66 of 1995;
➢   Basic Conditions of Employment Act 75 of 1999;
➢   Employment Equity Act 55 of 1998;
➢   Occupational Health and Safety Act 85 of 1993;
➢   Unemployment Insurance Act 30 of 1966;
➢   Skills Development Act 97 of 1998;

- Skills Development Levies Act 9 of 1999;
- Promotion of Access to Information Act 2 of 2000; and
- King III report on Governance (Grobler *et al.*, 2010)

In essence such legislative frameworks, which are supported by a range of regulations and codes of practice, provide employees and employers with various rights in the employment relationship. The law also gives certain rights to prospective employees during the recruitment and selection process. The legal environment for human resource management has more importance in the 21st century than ever before. These laws regulate employer conduct in the way that employees are treated. The legislation is considered as an essential input in overall strategy formulation and consequently increased human resource management participation at the strategic level in organizations (Greer, 2001:79).

The legal-political environment sets the limits within which human resource management is performed. Therefore human resource policies and practices must be rational, objective and effective (Megginson, 1981:83).

The implications of legislation on human resource management pose a major challenge for human resource management in the 21st century organizational era.

3.3 Strategic human resource management (SHRM)

The environment within which an organization operates is dynamic. External and internal forces constantly require organizations to amend or adopt new strategies to remain competitive. A change in strategy will determine the direction of the human resource management function. A strategic approach to human resource management requires that an organization's goals must be interrelated with the business environment (Anthony *et al.*, 1999:3).

Environmental, social and technological change and the increased scarcity and cost of human resources demonstrate that long-term planning is risky, but absolutely essential. Strategic management is the process of organizations making decisions about their future in a complex and rapidly changing world. It involves making those decisions that define the overall mission and objectives of the organization, determining the most effective acquisition and utilisation of its human resources and executing the strategy in ways that produce the intended results. Business strategy is therefore management's game plan (Carrell *et al.*,, 2000:11).

Thompson *et al* (1992:2) state that in the absence of a business strategy, management would have no road map to follow and no action plan to produce desired results.

Strategic human resource management activities address a wide variety of people issues relevant to the business strategy. Human resource management is fully integrated with all the significant parts of the organization. In this regard, the process is led and coordinated by the senior management responsible for human resource management (Erasmus et al, 1993:65).

In the past, people issues were the sole responsibility of the human resource department. This has changed over time and presently, strategic human resource management is the responsibility of every manager in every department. Human resource employees support the line managers in the management of their operations (Grobler, 1993:15).

According to Anthony et al (1999:16) if human resource strategy is integrated with the overall organization's strategy, additional value will be derived by the effective combination of integrated forces. Excellent coordination and combination of functions will result in synergy; a value which makes the combined whole of the organization more valuable than the sum of its parts.

Strategic human resource approach is involved in strategic planning and coordinates all human resource functions for all employees. It views the human resource function as an integral part of all corporate functions.

The strategic human resource management approach views all managers as human resource managers. Managers must therefore take responsibility for the efficient and effective utilization of their subordinates. Human resource managers, because they are in a staff position, must view their role as supportive of operating (line) managers. They should see their role as advising, helping, and providing expert guidance to line managers on human resource issues. Human resource professionals should view the people whom they advise as customers and themselves as service representatives (Rosik, 1991:64).

The strategic human resource approach recognizes the impact of the external environment on human resource strategy. The external environment presents a set of opportunities and threats to the organization. In formulating strategy, the human resource department takes advantage of the opportunities whilst minimizing the threats. The organization learns of its environment through a scanning process. This process involves the gathering of information about environmental issues on a regular basis and interpreting these in the light of the organization's business. Scanning is the first step to strategic planning and strategy formulation. A scan and a forecast are developed and serve as the basis for the plan (Anthony *et al.*, 1999:20).

Competitive and market analysis are also important for strategy formulation. An organization achieves a sustainable competitive advantage by analyzing competitors (Porter, 1985).

The human resource strategy is based on the overall corporate strategy and needs to be consistent with it. Corporate strategy should drive functional strategy. An organization determines its overall strategy and then sets functional

strategy to carry it out. Functional strategy could also impact on the corporate strategy in that the organization must consider existing functional strategy when setting corporate strategy. For example, the existing human resource strategy and capabilities are major factors to consider in formulating corporate strategy. Also, various functional strategies must be integrated with one another (Anthony et al, 1999:24).

3.3.1 Human resource planning

Human resource planning is the process through which organizational goals, as put forth in mission statements and business plans, are translated into human resource objectives. Human resource planning helps to ensure that organizations are neither over-nor understaffed, that the right employees are placed in the right jobs at the right time, that organizational and environmental change are anticipated and adjusted with a minimum of cost, and that there is direction and coherence to human resource activities (Greer, 2001:163).

The first step in human resource planning is to collect information. A forecast or plan must be based on data. According to Fisher et al (1990:42) there are two main types of information needed for human resource planning – data from the external environment and data from inside the organization. Data from the external environment includes information on current conditions and predicted changes in the general economy, the economy of the specific industry, relevant technology and competition. Any of these may affect the organizations business plans and thus the need for human resources. Furthermore, planners must be aware of the labour market conditions such as unemployment rates, skills availability, the age, race and gender distribution of the labour force. Finally, planners must be aware of the provisions of the relevant legislation and government regulations that directly affect HR practices such as employment equity and affirmative action. The second major type of information will come from within the organization. The Internal information will include short and long-

term organizational plans. Plans to dissolve, merge or revise organizational structures will have human resource implications. Information will also be needed on the current state of human resources in the organization, how many individuals are employed and how many are expected to leave or retire. HR planners need to gather data on current levels of staffing in each job, and average turnover rates among different categories of employees. When planners have the external and internal information, they can forecast the future demand for employees. The next phase will require the planners to forecast the supply of labour. This shall include the internal supply of employees and their skills and promotability, as well as the availability of candidates from the targeted groups in the external labour market. The final step is to plan specific programmes to assure that supply will match demand in the future. These programmes may include recruitment plans, training and development initiatives, incentives or disincentives to early retirement, modifications of career paths in the organization, or a variety of other human resource management programmes (Fisher et al, 1990:44-45).

Human resource planning is usually initiated and managed by the human resources department. However, the need for information from all parts of the organization requires that line managers have some involvement in the planning process (Greer, 2001:163).

Based on the discourse, it could be deduced that human resource planning is important in controlling costs while also providing a productive and knowledgeable workforce. According to Blundell et al (1997:78) no organization can rely on obtaining skilled personnel at short notice. Human resource planning therefore addresses the objectives of the organization by ensuring the availability of people with the right type of skills, of the right quality, in the right quantities, in the right places at the right time. When understanding human resource planning, it is necessary to factor in the organization's overall objectives as reflected in its strategic plan.

3.3.2 Job analysis

Job analysis involves a systematic investigation of the tasks, duties and responsibilities of jobs in the organization. Without an adequate knowledge of employees job responsibilities, organizations cannot develop an effective human resource procedure for recruiting, selecting, promoting, training, appraising and remunerating employees. An organization cannot appoint an employee without first establishing what behaviours, abilities, knowledge, and equipment are required in performing the job. An organization cannot train an employee without determining what the incumbent is required to do in the job. Job analysis provides organizations with this essential information (Grobler *et al.*, 2010:158).

Job analysis is the means of obtaining information about jobs and involves the following steps:

- Collect and record job information;
- Check the job information for accuracy;
- Write job descriptions based on the information;
- Use the information to determine the skills, ability and knowledge required on the job; and
- Update the information from time to time (McCormick, 1979:19).

Closely related to the job analysis are job descriptions and job specifications.

A job description is a written narrative describing the activities performed on a job and the working conditions under which the job is performed.

A job specification is a statement of specific skills, knowledge, abilities, and other physical and personal characteristics that are necessary to perform the job (Grobler *et al.*, 2010:169).

3.3.3 A systems approach to human resource management

A system is a number of interdependent components that form a whole and work collectively with a view to attain common goals. Organizations are regarded as an open system under the following circumstances:

- ➢ it is dependent on the environment in which it operates;
- ➢ the environment depends on it; and
- ➢ there is interaction between the system and the environment.

The system takes inputs from its environment, processes them and returns them to the environment in another form as outputs (Hunter, 2010:14).

According to the systems approach all subsystems within a system are equally important. Human resource management plays an important role in providing employees with the appropriate knowledge, aptitude, abilities and experience to meet the requirements of the job and of the organization. This ensures that the right employee inputs are obtained (Van Dyk, 1998:47).

3.3.3.1 Human resource strategy and the open systems

The environmental factors that impact on the organizations determine the strategic goals of human resource management. Although the human resource (HR) strategy is based on its strategic plan, the people related factors pose the most critical challenges for the organization. The HR in formulating its strategy must consider the strengths and weaknesses of the organization as well as its employees and the opportunities and threats in the environment. The environment in this context refers to both the internal and external environments. The outcomes should lead to a strategic fit between both environments (Hunter, 2010:43).

3.4 Knowledge management (KM)

The key to becoming a global leader in any business venture is to unleash the human intellectual capacity to its full potential. The perspective of human resources as the organizations knowledge capital has given a new dimension to the management of human resources (Nel, 2004:28).

According to Wiig (1999:155), enormous benefits that give organizations the competitive edge can be derived from knowledgeable and effective behavior of its employees. Knowledge management requires organizations to adopt the systems approach to human resource management to ensure that all parts of the system operate effectively to yield maximum returns.

Lee (2004:6) posits that knowledge management empowers individuals, teams, and communities to share and maximize knowledge and experience. Knowledge management can be a framework to locate and re-use previously tried and tested ideas and experiences. This could be achieved by deploying individual and team knowledge to team members in other parts of the organization. Knowledge management requires employee commitment, structured processes, and a culture that is conducive for knowledge sharing. The knowledge networks in the organization can use the framework to capture knowledge resources comprising knowledge, information, wisdom, experience and ideas.

3.4.1 Key factors that influence knowledge management

According to Ahmed *et al.,* (2002:12) knowledge management is a complex, multi-layered and multifaceted concept. It is a management function and consists of a set of cross-disciplinary processes that strive to create new knowledge. This is achieved by combining technology and the innovative capacity of human beings. Knowledge management is the combination of organizational processes,

information technology, organizational strategies and organizational culture as reflected in Figure 3.1.

Figure 3.1: Key factors of knowledge management

Technology

Processes

Internal and external environment

Knowledge management

Strategy

Internal and external environment

Culture
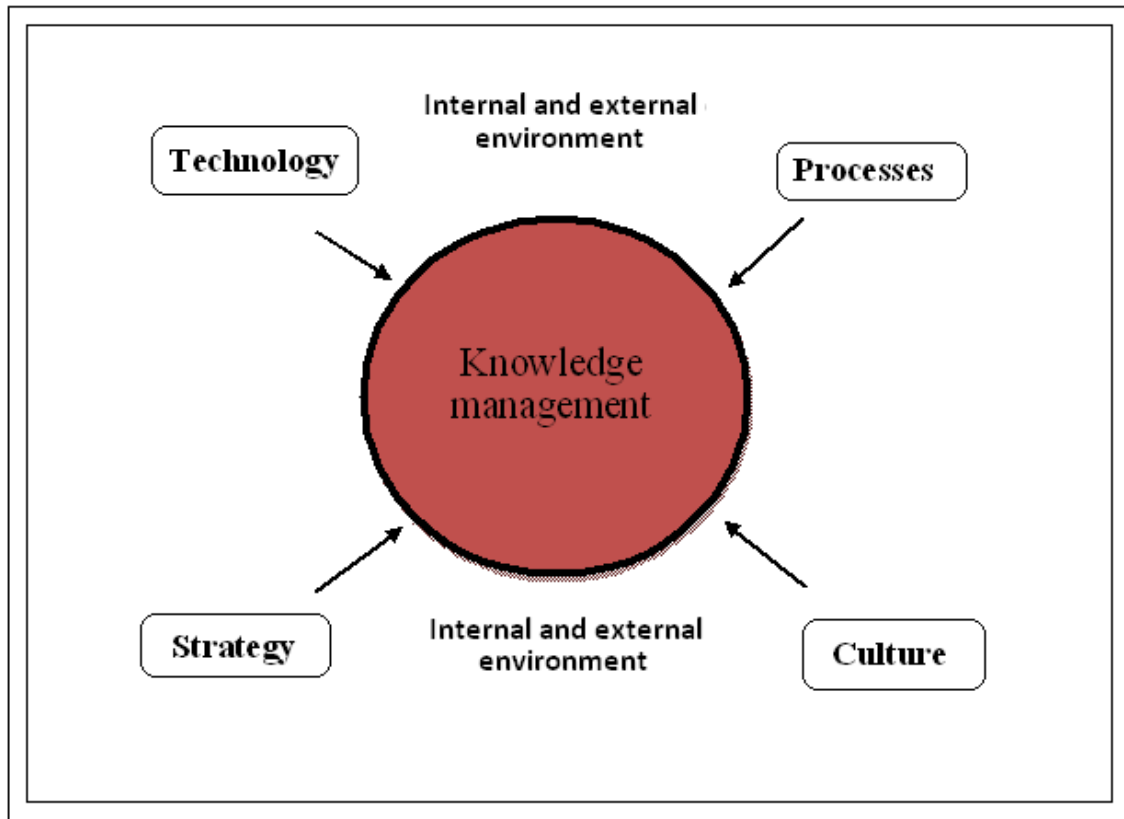
Source: Ahmed *et al., (*2002:13)

Davenport (2000:9) posits that literature on the subject of knowledge management has given information technology undue recognition over human resource management. In this regard Boshyk (2000:52) confirms that:

"the concepts of knowledge management are essentially people focused and technology enabled, not technology driven".

According to Smith & Schurink (2005:6) knowledge management entails a complex process influenced by several key factors both by the internal and external environment. Knowledge management necessitates inter-dependence between all of the factors as reflected in Figure 3.1.

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These factors of knowledge management are discussed against several schools of knowledge management, with each school portraying distinct benefits regarding this growing discipline (Earl, 2000)

3.4.2 Schools of knowledge management

The theoretical perspectives of knowledge management are reviewed in terms of the following schools (Earl, 2001).

- The Economic School;
- The Organizational School; and
- The Strategic School

All of the above schools are advocated by Earl (2001:215). The important characteristics of each of these schools are presented.

3.4.2.1 The Economic School

According to Earl (2001:215) the economic school promotes the protection and exploitation of an organization's knowledge assets to derive maximum revenue. It manages knowledge as an economic asset. Knowledge assets in this context refer to intellectual assets such as patents and copyrights. The criticism against this school is that the focus is on exploitation of knowledge but is less concerned with exploring knowledge further. The success of this school is the aggressive management of knowledge through intellectual capital management principles.

3.4.2.1.1 Intellectual capital accounting

According to Roslender & Fincham (2001: 383), intellectual capital is a significant topic across the management discipline. This is an indication that intellectual capital is acknowledged as a valuable asset to organizations. It is for this reason

that organizations are beginning to account for intellectual capital and are striving to manage this asset successfully. Organizations are challenged to develop performance measures to capture and evaluate the quality of intellectual capital.

Stewart (1997) identified three components of intellectual capital, namely:

Human capital represents the capabilities, know-how, skills, and expertise of the employees in the organization.

Relational capital refers to any relationship that people outside the organization have with it. This component impacts on customer loyalty and market credibility.

Structural capital includes systems and networks, cultures and values as well as elements of intellectual property such as patents, copyright and trademarks (Stewart, 1997).

3.4.2.1.2 Intellectual capital management

Sveiby (2001:351) developed a knowledge-based theory to guide the knowledge strategy formulation. He identified and differentiated between three groups of intangible assets in the organization, namely, external structure, internal structure and individual competence.

External structure: This group of intangible assets mainly consists of relationships with customers and suppliers and the reputation of the organization.

Internal structure: This category consists of patents, concepts, models, computer and administrative systems. These are developed by the employees and are therefore owned by the organization. This structure is not entirely dependent on employees and remains the property of the organization even if a number of employees leave the organization.

Individual competence: Individual competence is defined as the sum of knowledge, skills and abilities at the individual level. Individual competence refers

to the competence of professional and expert employees and those employees with specialized skills that have direct contact with customers.

Sveiby (2001) claims that whilst tangible assets depreciate in value when they are used, knowledge assets appreciates in value when used and depreciates when not used. To lend support for the knowledge-based theory for strategy formulation, Sveiby (2001) considers some of the important features of knowledge transfers.

- **Knowledge transfers between individuals** refer to creating the best means of communication between employees in the organization. This would facilitate the transfer of competence amongst employees. The activities related to intellectual capital management focus on trust building, team activities, induction programmes, job rotation and mentorships.

- **Knowledge transfers from individuals to external structure** entail the transfer of employee knowledge to the outside world. The focus is on the improvement of competences of external stakeholders. Activities are directed at enabling employees to educate customers about products and services, eliminating bureaucracy and holding product seminars.

- **Knowledge transfers from external structure to internal structure** occur when employees learn from external stakeholders. This entails new experiences and new technical knowledge. Activities that enable this type of knowledge transfer include creating rapport and maintaining good relationships between organizations, creating alliances to generate ideas and research and development initiatives.

- **Knowledge transfers from individual competence to internal structure** refer to the transformation of human capital into structural capital. This could be achieved through documenting work routines, via intranets and data

repositories. The challenge is to improve the conversion of individual competence to systems and templates. This would facilitate the sharing of knowledge within the organization.

- **Knowledge transfers within the internal structure.** Once competence is captured in organizational systems it could be easily distributed to other employees. The challenge is to improve employees' competency levels. The medium of transfer could include streamlining databases, building integrated information technology systems and remodeling office layout.

The economic school offers a template to maximize the benefits of knowledge management from an economic perspective. As this school views knowledge as an economic asset, it would be prudent for organizations to consider its merits and demerits.

3.4.2.2 The Organizational School

The Organizational School describes the importance of organizational structures for knowledge sharing. Creating knowledge communities entails the arrangement of groups of employees with a common interest, problem or experience. The knowledge communities could be created within one sector or with other sectors of the organization (Gottschalk, 2005:14).

3.4.2.2.1 Knowledge sharing process

According to Gottschalk (2005:15) knowledge sharing has received wide attention in management literature. Several mechanisms for knowledge transfer have been identified. Some of the common transfer mechanisms include training, communication, observation of employees, technology transfer, replication routines, interaction with others, alliances and other means of relationships.

Markus (2001:57) identifies four types of knowledge replication situations.

- The first is termed *"shared knowledge producers"*. In this situation knowledge re-users could be close to or distant from the knowledge producers.

- The second sharing is regarded as the **"*shared work practitioners"*** where people share a similar practice community. These practitioners could be specialists who occupy similar roles in different locations, work units, or organizations.

- The third initiative is called *"expertise seeking novices".* This entails novices seeking access to experts and expertise from the knowledge creators.

- The fourth knowledge sharing mechanism is *"secondary knowledge miners"*. This situation involves data mining where analysts extract knowledge from records that were collected by others, sometimes unknown to the re-user of the knowledge, and adapts such knowledge for use in different purposes.

In order to maximize the potential use of knowledge resources it is necessary to implement knowledge transfer mechanisms.

3.4.2.2.2 Knowledge transfer mechanisms

Dixon (2000) identified five knowledge transfer mechanisms. The criteria used to define these mechanisms are;
- Who is the intended receiver of the knowledge?
- What is the nature of the task? and
- What is the type of knowledge to be transferred?

The transfer mechanisms described by Dixon (2000) are as follows:-

- **Serial knowledge transfer:** The tasks in this type of transfer are frequent and non-routine. The knowledge could be either tacit or explicit or both. Serial transfer takes place when unique knowledge is transferred from an individual into a public domain so that the knowledge can be accessed and integrated by the entire team or group.

- **Explicit knowledge transfer:** The nature of this transfer is when a group of knowledge workers perform the same work undertaken by a previous group by applying established knowledge of the previous group. The knowledge from the previous group is transferred explicitly in the form of data, formulae, and manuals.

- **Tacit knowledge transfer:** This type of knowledge transfer takes place when a group of knowledge workers perform the same work as another group by applying knowledge of the other group through social activity.

- **Strategic knowledge transfer:** This knowledge transfer is applicable for project related tasks and is infrequent. Team members express the desire to benefit from the experience of others who performed similar tasks in the past. Senior management is involved during this process as they define the type of knowledge required to solve the task. The knowledge transferred during this process could be both tacit and explicit knowledge.

- **Expert knowledge transfer:** Generic and explicit knowledge is accessed from experts within or outside the organization. New methods and knowledge is solicited through this method to solve problems. This knowledge transfer mechanism is appropriate when a team faces an unusual technical problem which is beyond the scope of the team members own knowledge.

Gottschalk (2005:16) posits that for successful sharing of knowledge all forms of knowledge transfer initiatives must be considered.

Knowledge is closely linked to knowledge workers. The management of knowledge workers will be discussed in the context of the organizational school.

3.4.2.2.3 Management of knowledge workers

A knowledge worker is defined as an employee who is able to locate, understand and apply knowledge in the organization. A knowledge worker takes responsibility for self development and learning. A knowledge worker uses acquired knowledge to solve work related problems. Knowledge workers not only possess information, but are able to apply the information within the context of the problem. This leads to the creation of new information which expands existing knowledge, expertise and experience. Therefore all knowledge stems from people (Grover & Davenport, 2001:5).

Gartner Group (2001:1) recommends the following guidelines for the management of knowledge workers.

♦ **Intellectual stimulation:** Effective knowledge workers continuously seek new opportunities to learn, expand their experience and strengthen their portfolios. Organizations' should therefore ensure that knowledge workers' job responsibilities take this into account.

♦ **Reduced employment tenure:** As knowledge workers are in high demand, the employment tenure is expected to be an average of three years. Knowledge workers constantly upgrade their skills and market their experiences in the free market. This has given rise to frequent and high turnover. The Gartner analysis of knowledge intensive organizations reveals a turnover rate of up to 15% per annum. The high turnover rate demands swift integration of knowledge into the workflow. As a result, there is a need for urgent knowledge management interventions such as job rotation and well defined job responsibilities.

♦ **Redesign workloads:** Collaborative work tends to increase employee output. To obviate knowledge worker burnout, the best solution lies in the redesign of work, redefining the nature of collaborative work, the sharing of workload with support staff, and the installation of software tools to enable and support collaborative work.

A central theme that is emerging is that if knowledge management is to succeed, then organizations will have to focus on people. Organizations are acknowledging that people are the creators and the carriers of the knowledge, and not the organizational databases (Ward & Peppard, 2002:39).

The organizational school has made a significant contribution in managing knowledge in the organization. The strategic school also has a profound impact on knowledge management. The effect of the strategic school will be elaborated on.

3.4.2.3 The Strategic School

According to Earl (2001:220), the strategic school views knowledge management as a dimension of strategic management. The adoption of a knowledge management approach depends on the strategic management perspective. Distinctions are made between the following perspectives.

- **Information-based perspective** focuses on access to information. Employees should be able to locate persons with appropriate knowledge fairly quickly in order to solve work related problems.

- **Technology-based perspective** evaluates the application of information technology to systemize, store, and distribute information to knowledge workers.

- **Culture-based perspective** focuses on knowledge sharing amongst employees in the workplace. Hierarchical structures and division of labour facilitates knowledge sharing as employees could draw from each other's expertise.

Earl (2001:221) claims that for a knowledge management project to be successful, all three perspectives must be integrated. The focus of each perspective depends on the prevailing circumstances. If "reinventing the wheel" is a concern, the information-based perspective would be prominent. If the technology in the organization is lacking, then attention should be given to this perspective. However, if knowledge workers work in silos and are reluctant to share their knowledge, then the culture-based perspective becomes the priority.

3.4.2.3.1 Automating knowledge vs knowledge sharing strategy

Organizations' adopt unique strategies to manage and access knowledge. Some choose to automate and share knowledge whilst others prefer employees to share their knowledge through traditional means. Some organizations depend heavily on computer systems. In the technological environment, knowledge is codified and stored in databases, and accessed by any employee within the organization. Such organizations develop systems to codify, store and reuse knowledge. This process is called the codification strategy (Hansen *et al.,* (2001:107).

Other organizations adopt the knowledge sharing strategy where knowledge is shared directly via person-to-person. Computers are used merely to communicate knowledge and not to store it. These organizations provide extensive support in creating networks of people. Dialogues and brainstorming ideas between individuals are encouraged. Networks are fostered through transferring people between offices, creating directories of experts, employing

knowledge managers to assist fellow employees with access to knowledge. This process is called the personalization strategy (Hansen *et al.,* (2001:107).

Hansen *et al.,* (2001:108) stress that incentives must be created to support employee participation in the knowledge sharing processes. The codification strategy requires systems that encourage employees to reduce to writing what they know and to transfer this know-how through the electronic format. Employees' contributions to the knowledge sharing process should be evaluated via the annual performance review process. Management should ensure that employees are rewarded for sharing knowledge for knowledge strategies to be successful.

Ahmed *et al.,* (2002:44) posit that it is important for organizations to adopt a strategy that is appropriate for the kind of business that they run. The problem with implementing a strategy is that once designed, there is initial enthusiasm, but senior management commitment then falls away. The reality then is that when a well designed strategy is in place, its implementation is shortlived owing to a lack of continued senior management commitment.

The literature review on knowledge management has revealed that the internal environment is determined predominantly by four enablers. These are culture, organizational structure, information technology and learning organizations. The enablers of knowledge management will be probed in further detail as sub-components of the knowledge management cycle.

3.4.3 The Knowledge Management Cycle

According to Zack (1999:135) an organization's knowledge strategy determines the overall approach an organization intends to implement to align its knowledge resources and capabilities to its strategy. There are two important approaches that organizations could consider. The first approach addresses the desire to

increase its knowledge base against the opportunity it has to leverage its existing underutilized knowledge resources. The second approach requires the organization to consider whether the primary sources of knowledge are internal or external. Both approaches could assist an organization to evaluate its current knowledge strategy.

Davenport *et al.*, (1996) identify the following processes in a knowledge management cycle:

- Locate existing knowledge and transfer it to the users;
- Create new knowledge;
- Package knowledge obtained externally for internal use; and
- Apply existing knowledge on the basis that it has been tried and tested.

The knowledge management cycle refers to the important processes in a knowledge management environment (Figure 3.1). The knowledge management cycle is made up of knowledge management enablers that comprise organizational culture, organizational structure, information technology and learning organizations. These enablers are processes in a knowledge management environment that are managed to convert knowledge into action to achieve desired results. The knowledge management cycle operates within and in accordance with the organizational strategy. The human resource and knowledge management strategies can play major roles in the organization's overall strategy.

Figure 3.2: Knowledge management cycle
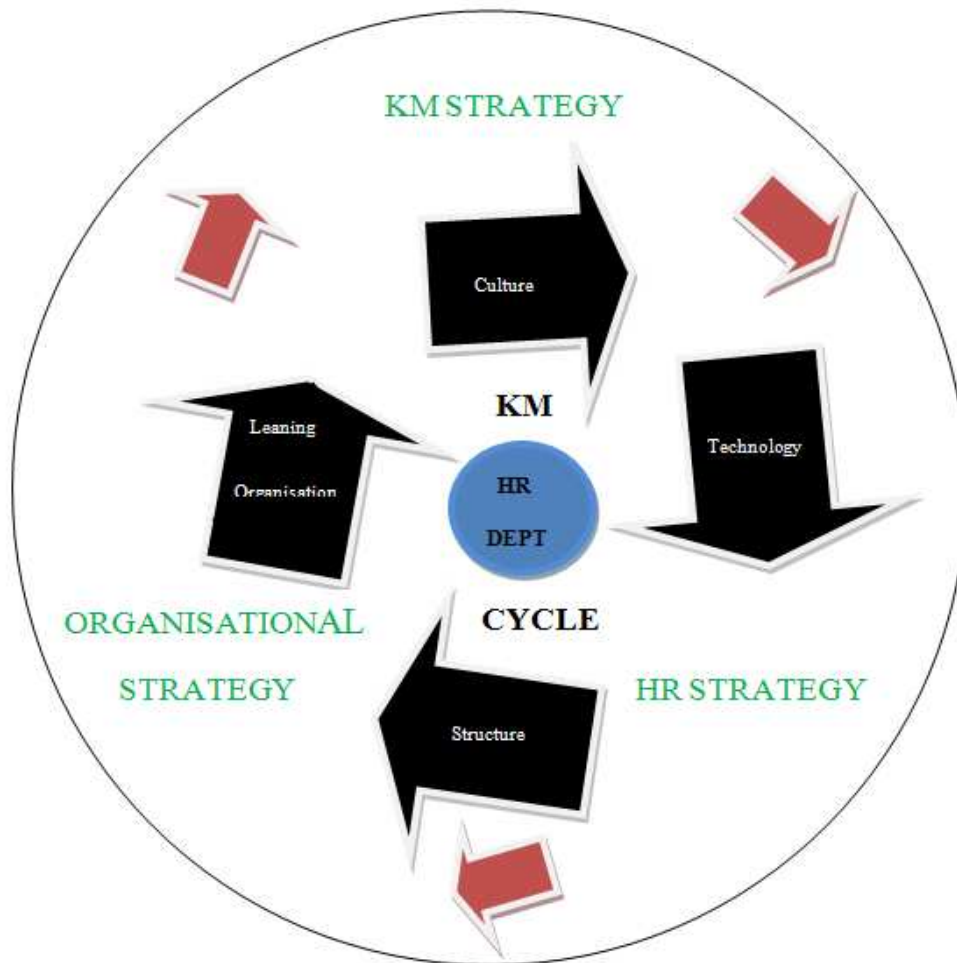
Source: Adapted from Armbrecht *et al.,* (2001:34)

3.4.3.1   Enablers of knowledge management

The enablers of knowledge management are used to describe the efforts made by organizations to manage knowledge and highlight the difficulties in the traditional control of the processes related to each enabler. In this regard, Von Krogh *et al.;* (2000) state that

"an enabler is a conceptual tool that describes a process or asset that allows an organization to achieve its objectives".

Figure 3.2 shows the relationship between culture, structure, technology and learning organizations. These enablers of knowledge management have a significant impact on organizational strategy, human resource strategy and knowledge management strategy.

Armbrecht *et al.,* (2001:38) posit that these enablers are controllable and have significant benefits for knowledge management. The enablers, as represented in Figure 3.2 are discussed.

3.4.3.1.1 Organizational culture

Huczynski & Buchanan (2001:624) define organizational culture as
"the collection of relatively uniform and enduring values, beliefs, customs, traditions, and practices that are shared by an organization's members".

Hislop (2005:127) states that organizational culture influences attitudes towards employee participation in knowledge related initiatives and positive knowledge management cultures could be created through management intervention.

Kim & Lee (2006:373) endorse this position and posit that an organization's culture encompasses the behavioural norms that determine interpersonal relationships amongst employees. Organizational culture is largely shaped by senior management, human resource management processes, compensation systems and performance management. Organizational culture originates from the mission and vision of the organization. Values reflect the priorities of the organization whereas norms manifest in routines and behaviours.

McDermott & O'Dell (2001:78) argue that in order to align knowledge management initiatives with the organization's culture, it is necessary to link these with the visible and invisible elements of the culture (Table 3.1). Visible elements refer to initiatives that should address existing human resource challenges. Reward and performance management should be designed to

support and encourage knowledge sharing behaviours. The invisible aspects of organizational culture refer to the core values of the organization. These should link with the social relations networks of the organization as illustrated in Table 3.1.

Table 3.1: Linking KM initiatives to organizational culture

Visible elements of culture	Invisible elements of culture
KM initiatives should link to existing HR challenges	KM initiatives should link to core organizational values
KM initiatives should match existing organizational design	KM initiatives should link to existing networks of social relations
HR practices should link to appropriate knowledge behaviours	

 Source: McDermott & O'Dell (2001:77)

Hislop (2005:129) expresses that it is unlikely that large scale culture change could be attained if appropriate knowledge behaviours are not part of the existing culture. However, Hislop (2005:129) records that an alternative perspective highlighted in knowledge management literature is that organizational cultures could be adjusted to encourage and support knowledge related behaviours.

Pan & Scarborough (1999:369) claim that it is possible to develop knowledge sharing cultures provided that adequate levels of commitment and leadership are provided by senior management at organizational level. Hence they claim that

strong leadership is a key driver of successful knowledge management culture change.

Cameron (2002:23) suggests the following to instill a culture of knowledge management in organizations:

- Create an environment that promotes trust and respect amongst employees and management;

- Establish a knowledge-sharing culture initiated by senior management. This sector of the hierarchy must be leaders and active participants of the sharing knowledge process for change in culture to be perceived as genuine. They must diffuse the notion that knowledge hoarding is power building;

- Create collaborative relationships to facilitate knowledge transfer from one to the other and ultimately from small teams to large communities; and

- Encourage knowledge sharing behaviour as part of the overall organizational culture, by supporting it with appropriate rewards and incentives.

Greengard (1998) has identified the following cultural barriers that organizations generally experience.

- Employees are reluctant to share their knowledge;

- Employees do not like to use others knowledge; and

- Employees prefer to consider themselves as experts and choose not to
   collaborate with each other.

The second enabler is the role of technology for effective knowledge management.

3.4.3.1.2   Role of technology for knowledge management

In order to determine the impact of technology on knowledge management, Davis (2005:24) differentiates between data, information, analytic information, knowledge and wisdom (Figure 3.3).

The transformation process takes data through the various stages to the ultimate level of wisdom for organizational benefit.

Data is simple facts or recorded observations. It is converted to information when it becomes meaningful and useful for decision making purposes.

Information is the transformation of data that is of value for activities such as decision-making. Data becomes information only when it becomes meaningful.

Analytic information is refined and enhanced information which is combined in unique ways to create relationships and patterns. Analytic information is created through creative and critical thinking and often via analytical processing and statistical methods.

 Knowledge is created when information and analytical information are applied together with previous experiences and intuition. The higher the levels of knowledge of individuals or organizations, the more likely they will anticipate and respond to challenges in the environment.

Wisdom is the accumulation of abilities and the willingness to apply knowledge with good judgment. It is the sum total of inputs from all sources and experiences of an entity's lifetime.

Figure 3.3: Pyramid of data transformation
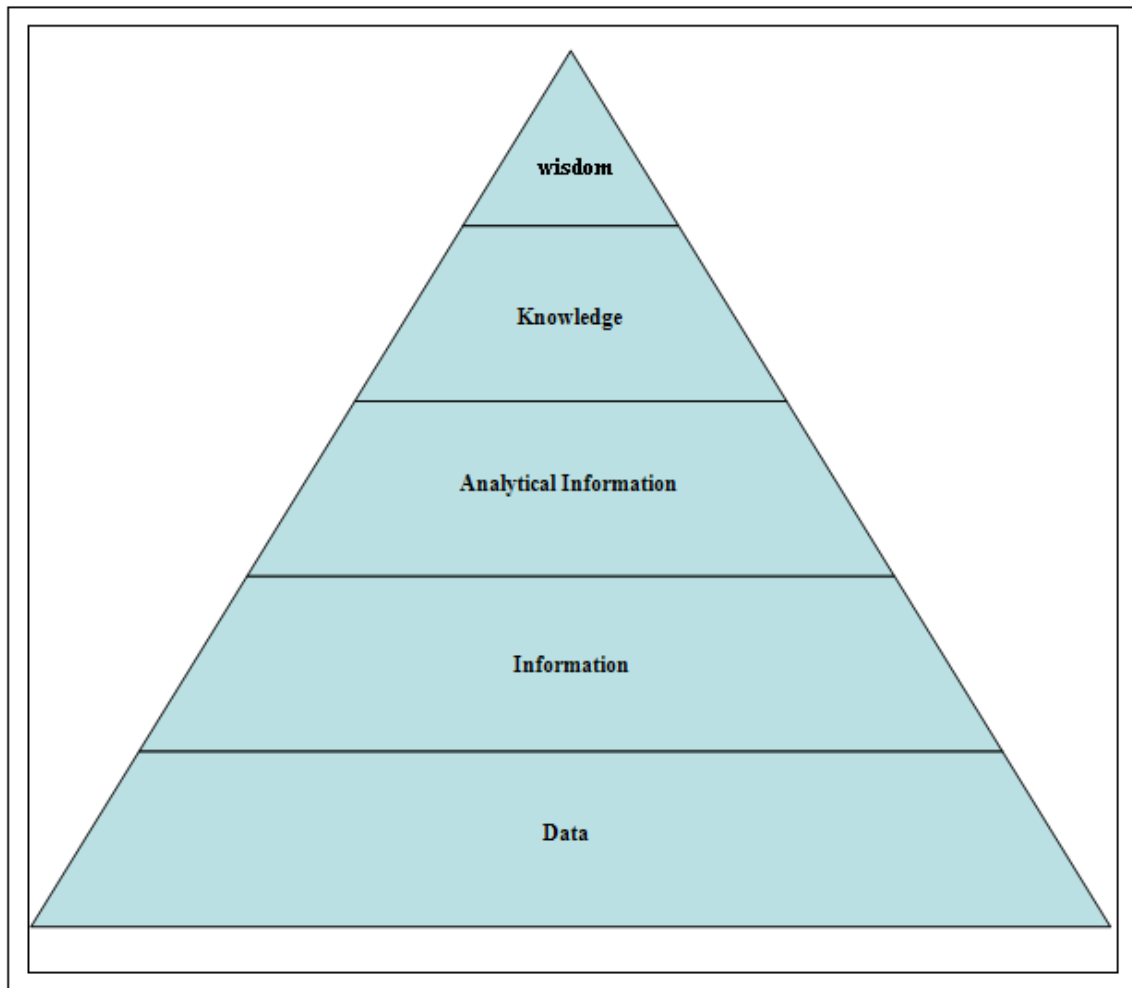
Source: Davis, D. (2005:25), Business research for decision making

As information technology begins to facilitate data and information flow in organizations, technology becomes an important tool for successful knowledge management initiatives. Whilst coding and sharing knowledge have been in practice in organizations previously through traditional means, technology has only recently been introduced to the knowledge management function. Information technology such as internet, intranet, extranets, browsers, data warehouses, expert systems and groupwise have increased significantly in contemporary organizations. Modern information technology has great potential

to collect, structure, store, combine, distribute and present information of value to knowledge workers (Nahapiet & Ghoshal, 1998).

The low cost of computers and improved networks have opened up important knowledge management opportunities. The communication and storage capabilities of networked computers make it a useful tool for effective knowledge work. Ward & Peppard (2002) identify two important but contrasting views of technology for knowledge management. These are the engineering perspective and the social process perspective. These perspectives are described as follows:

- **The engineering perspective** views knowledge management as a technology process. This view claims that knowledge is a commodity that could be codified and stored. The knowledge referred to in this context is explicit knowledge and is construed as having relevance just beyond that of information.

- **The social process** perspective advocates that knowledge management is a social process. Accordingly, this view asserts that knowledge resides in people's heads and is therefore tacit in nature. This type of knowledge cannot be easily codified and could only be revealed through its application. Tacit knowledge occurs only through practice and cannot be directly transferred from person to person. Technology could therefore only serve as support for knowledge work.

Ward & Peppard (2002) argue that knowledge management should never be confined to the engineering perspective but should be regarded purely as a social process as it is a human issue.

Gottschalk (2005:90) claims that the objective of knowledge management technology is to take knowledge that exists in human heads and partly in paper documents and to make these available to employees across the organization.

3.4.3.1.3 Organizational structure and knowledge management

Whilst Skyrme (2000:185) claim that culture and structure go hand in hand, where one reinforces the other, Newell *et al.*, (2002:98) assert that the introduction of technology to human resource management and organizations have impacted on the design of organizational structures. Information technology has enabled the reorganization of structures to create a supportive environment for knowledge management.

Volberda (1998) cited in Newell *et al.*, (2002:99) claim that knowledge work is best suited to informal settings, where horizontal rather than vertical communication takes place. This is a departure from the traditional bureaucratic organizational structures where vertical communication is the norm.

According to Nohria & Eccles (1992) cited in Newell *et al.*,(2002:99), organizational structures are flexible and could be adapted depending on changing circumstances. This is attained by dividing large bureaucratic structures into subsections. Smaller units can adapt to changes easily during changing circumstances. The smaller units could operate independently should the need arise when changes are taking place in one or some units. Modularization is consequently seen as a solution to managing increased complexities, with networked information technology linking the various units. Organizations that are designed in this manner display some of the following characteristics:

- **Decentralization into semi-autonomous business units:** This creates opportunities for business units to focus on niche markets and respond to such markets in a flexible manner.
- **Flat structures:** This type of structure is achieved by eliminating middle management positions. Employees are empowered by devolving power down the hierarchy thus giving them autonomy and decision-making powers.

- **Cross-functional project teams:** Rather than each function working independently, people are brought together from other functions to form cross-functional teams. This leads to quicker turnaround time to finding solutions.

- **Inter-organizational networking:** This form of arrangement promotes collaborative alliances and partnerships with other organizations. This process enables organizations to access knowledge and expertise that are not available from within. This encourages a faster lead time in responding to new developments and cost effective in terms of creating internal solutions.

All of the above have the ability to adapt to rapidly changing organizational conditions characteristic of the current knowledge economy.

Greer (2001:40) confirms that due to advances in information technology, the nature of work and management styles are changing. The distinction between levels of hierarchy is becoming blurred. Computerized information systems have led to shift from individual to group decision making as the same information is available to all employees. Greer (2001:41) further argues that due to

" the knowledge power of skilled technology workers, the structure of many of today's organizations is poorly suited for the future".

As a result, organizations are being re-structured with lesser hierarchy, creation of task teams and project oriented work groups. Some organizational structures are becoming less pyramidal and more in the form of concentric circles.

In this vein, Schein (1989) cited by Greer (2001:41) states that organizational structures in the knowledge era encourages employee participation, places less emphasis on managerial status, creates new forms of manager-subordinate relations and allows for rotating leadership roles which require different managerial skills.

3.4.3.1.4 Learning organizations

Ahmed *et al.*, (2002:43) emphasize that organizational learning is crucial for long term organizational survival. Organizational learning entails the creation, acquisition and sharing of knowledge. Over time, these attributes become institutionalized as the organization's main means of knowledge and learning.

According to Senge (1990:3), "***learning organizations are where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together***".

Goh & Richards (1997:575) state that it is not possible to create a learning organization if its characteristics are not systematically managed. Managers should develop interventions to overcome barriers by transforming the organization to a learning organization. However, the difficulty is that there is no methodology for measuring organizational learning. Organizations' currently experience shorter product cycles, global competition, increased workplace diversity, and increased pressure to become cost effective. In such environments learning organizations will have a distinct advantage. They will find innovative methods to respond to market demands compared to their slower competitors.

The characteristics and management practices that are essential for learning to take place in an organization are as follows:

- **Clarity of purpose and mission statement:** The organization and every department within it must have a clear purpose. All employees must identify with this purpose and understand how their work integrates with the mission of the organization. If employees can determine the gap between the vision and the current position, they could strive to overcome the gap (Mohrman & Mohrman, 1995) cited in Goh & Richards (1997:577). In this regard, Senge

(1990) states that "building a shared vision" of a future organization creates tension that in turn leads to learning.

- **Leadership commitment:** Garvin (1993:78) posits that leaders must be committed to organizational goals and the goals of learning. A climate of trust must be created where people must be free to approach each other. Failure must be regarded as a learning process. Leaders must identify performance gaps and encourage the search for knowledge to overcome such gaps. Employees must be empowered to make decisions and take risks.

- **Incentives:** Slocum *et al,* (1994:33) claim that managerial practice must encourage experimentation with new work methods and innovative processes by employees. Systems must be designed to challenge established ways of doing things. Incentives must be created to reward innovation and risk-taking.

- **Open communication:** Garvin (1993:78) asserts that communication must be clear, fast and focused. Information should go beyond functional and departmental boundaries. The nature of the information should address organizational challenges. Meyer (2002:78) states that learning organizations characterize open and honest communication.

- **Problem solving through teamwork:** Employees need to support each other to realize organizational objectives. Organizational structures and policies must encourage team-work and problem-solving amongst employees rather than depending on upper management. Teams must also be able to work across functions. This would facilitate knowledge sharing and create a network of understanding amongst organizational members (Senge, 1990).

- **Flat organizational structures:** Senge *et al.,* (1994:38) state that strong hierarchical structures represent power and status of managers. Learning organizations design structures that erode bureaucratic structures and

systems. Focus is more on horizontal processes with greater level of inter-dependence amongst employees. Employees are encouraged to learn from each other irrespective of their positions in the hierarchy.

- **Technology:** Learning organizations use the most advanced technology to improve business processes, products and services. Employees are trained continuously to use the latest technology to yield optimum efficiency and effectiveness.

Meyer (2002:2) claims that research has confirmed that knowledge management is one of the major best practices in the area of organizational learning and managerial practice. Maximum benefits could be realized when organizational learning and knowledge management are integrated.

Rowley (2000:11) suggests the following characteristics of knowledge management for applicability to learning organizations.

- **Reliability of knowledge:** Knowledge must be objective, valid, reliable and accurate. Accuracy refers to correct data and information. Reliability implies that the information is a true indicator of the variable that it is intended to measure.
- **Accessibility of knowledge:** Knowledge must be available to potential users. It could be created, stored and communicated through people, print or electronic media. The knowledge assets must be integrated and presented in different formats.
- **Relevance of knowledge:** Knowledge must be relevant and meet users' requirements and contribute to decision making, problem solving, or the learning event.
- **Currency of knowledge:** Currency of knowledge is important in that some knowledge may supersede others. Therefore outdated knowledge must be

replaced with current knowledge. The challenge for learning organizations is to manage the life cycle of knowledge to ensure its currency at all times.

- **Structure and organization of knowledge:** All knowledge must have structure. This is reflected in the communication systems in the manner of text and graphical representations. The important features of structure are the way in which knowledge items are categorized and the relationship between these categories.

- **Systems:** The structure is influenced by systems. Systems represent conceptual frameworks, communication systems, or information systems. Knowledge is communicated and stored through information systems. Such systems will include people, hardware and software. Therefore these systems must be designed to achieve effective and efficient knowledge retrieval. Such systems will include document management systems, filing systems, databases and search engines.

Learning is of minimal value unless relevant skills and knowledge are acquired through the learning process. Survival is dependent on the knowledge and skills acquired during the learning process. Learning organizations are judged by the effectiveness with which it manages its knowledge base (Rowley, 2000:13).

3.4.4 Knowledge management strategy

Knowledge management is described as a strategic management tool both in operations management as well as in strategic management. Knowledge management is also regarded as an information management tool. It deals with the creation, management and exploitation of knowledge for the benefit of the organization (Martensson, 2000).

3.4.4.1 Knowledge management as an information management tool

The first step in the process of information management is acquisition of information. In the second stage, the information is entered into a storage system and organized logically. Knowledge management is about the acquisition and storage of employees' knowledge and making information accessible to other employees within the organization. This is achieved through various technologies such as the Internet and data-bases (Papows, 1998).

Once the information is stored in the various databases, the stored information is made accessible to as many employees as possible within the organization. The objective is to distribute the information to users at the right time and where it can be of best use (LaPlante, 1997).

The final process commences with people sharing knowledge by socialising with one another or by exchanging information via technology (Laberis, 1998).

Having reviewed knowledge management as an information tool at the operational level, it is appropriate to consider knowledge management as a strategic tool for management.

3.4.4.2 Knowledge management as a strategic tool for Management

According to Chen (2002), strategic knowledge management is a means of creating an innovative culture supported by collaborative technologies to secure competitive advantage, sustainable performance and enhance productivity by

leveraging and developing organizational knowledge. Strategic knowledge management provides a systematic and structured approach for organizations to create ideas, share best practices, avoid repetitive mistakes, learn from past performance, secure higher knowledge retention and create innovative business solutions to meet the changing demands in the environment.

Allerton (1998) argues that an organizational knowledge management strategy is intended to build systems for capturing and transferring internal knowledge and best practices.

A study by American Productivity and Quality Centre showed that 89 per cent of the participants perceived the core function of knowledge management strategy is to capture and transfer knowledge and best practices (Allerton, 1998).

An extensive multi-organizational study undertaken by the American Productivity and Quality Centre, identified the lack of a model for KM strategy and the absence of systems or processes to support and evaluate the effectiveness of the KM strategy (Ostro, 1997).

A knowledge management strategy should be linked to the organizational objectives. It is also important to articulate the purpose of the KM strategy. The benefits that that the organization expects to gain from such implementation must be clearly stated. Employees must be informed of the effect that the proposed strategy will have on the organization (Klaila, 2000).

To successfully create and implement a knowledge management strategy, various authors have recommended the inclusion of certain critical elements.

One such element that is considered very critical for the success of any knowledge management strategy is the support of top management.

3.4.4.2.1   Support from top management

The human resource function should influence top management to support processes that will promote cross-boundary learning and sharing. This includes soliciting top management's support in funding knowledge initiatives as well as developing the skills and expertise of the employees through external sources (Mayo, 1998).

Gopal & Gagnon (1995) posit that organizations' that have achieved the greatest success in KM initiatives are those that have appointed a dedicated senior-level executive manager to lead the knowledge management portfolio.

3.4.4.2.2   Communication

Saunders cited by Ash (1998) established that the missing factor in strategic management was communication. A large proportion of organizations failed to implement strategies due to a lack of communication. Only those organizations that designed good communication plans followed through and delivered on business strategies.

3.4.4.2.3   Creativity

Kao (1996) noted that a good strategy for knowledge management is not sufficient without it being linked to creativity. He contends that the connection

between knowledge management strategy and creativity will lead to the organizations' survival in the future.

3.4.4.2.4   Culture

The successful implementation of KM strategies is closely linked to entities such as culture and people. In a study reported in People Management (1998) the importance of people, as opposed to technology and processes, was examined when implementing a KM strategy. According to the study 70 per cent of the respondents indicated that employees are the most important factor and 75 per cent reported that there should be greater emphasis on the people factor (People Management, 1998).

Best-practice organizations' express the view that people and culture are at the heart of creating a successful knowledge management strategy. Several studies have confirmed that people and cultural issues are the most difficult problems to resolve, but produce the greatest benefits (People Management, 1998).

The biggest challenge for KM strategy is therefore not technology related, as it could be integrated into any IT system, but to cultural obstacles. However, overcoming cultural barriers could pose a daunting task, especially when a culture such as hoarding knowledge is regarded as more valuable than sharing it.

3.4.4.2.5   Knowledge sharing

According to Mayo (1998) collaboration amongst employees regarding work-related issues and the sharing of knowledge are lacking in organizations.

This view is reinforced by Cole-Gomolski (1997) as he claims that efforts to deploy KM group-wise in the organization are frequently met with employee resistance to share their expertise.

Forbes (1997) argues that the likely reasons for the display of this attitude is attributed to employees being competitive in nature and are therefore inclined to hoard rather than share the knowledge they possess.

On the other hand, Ostro (1997) reports that the results of an extensive multi-organization study found that the main reason for knowledge not being shared was that employees did not realize that their experience was material to fellow employees.

Mayo (1998) makes the point that the recruitment function should be expanded to explore methods of sharing knowledge with new employees, as well as to assess what new knowledge new employees could bring to the organization. He suggests that the orientation process with new recruits should involve the capturing of their knowledge and experience. He asserts that although most new employees bring useful specialist experience with them, few organizations tap this rich reservoir of knowledge.

Mayo (1998) makes reference to the capture of experience and expertise of those employees who exit the organization. In this regard he states that:

"when people leave, the HR department asks their company keys and so on. Why not conduct a recruitment interview in reverse to retrieve information".

Mayo (1998) further argues that there is a general reluctance by organizations to trust employees with information. He claims that a common excuse tendered by organizations that withhold information is one of "commercial sensitivity".

3.4.4.2.6   Incentives

An important issue when implementing KM strategy is to create the right incentives for employees to share and apply knowledge. The human resource reward systems must support the culture of sharing knowledge (Mayo, 1998).

Cole-Gomolski (1997) maintains that it is important to reward employees that offer their expertise to other employees. This will signal the encouragement of the process of a knowledge sharing culture in the organization.

Mayo (1998) suggests that organizations should consider the following questions: What criterion is used for promoting staff? Are instances in which the business has benefited from sharing knowledge publicly celebrated? Are mistakes made that could have been avoided if it had been known that similar errors had happened in the past? The responses to these questions will identify whether a knowledge sharing culture should form part of the reward structure of the organization.

3.4.4.2.7   Formal learning

Galagan (1997) draws attention to the importance of creating time and opportunities for employees to learn. He posits that appropriating time for formal learning will enable knowledge sharing practices to become part of the job.

3.4.4.2.8   Performance management

Organizations increasingly recognize that planning and enabling individual performance have a critical effect on organizational performance. Strategic success therefore depends on key business imperatives, which can be achieved through effective performance management (Bennett & Minty, 1999:58).

The 1980's saw the growth of performance appraisal systems into the fully-fledged performance management systems of the 1990's. Most successful organizations have accepted the necessity of managing employees' performance in order to manage the organization's performance. Learning organizations look beyond managing a subordinate's performance. The driving force behind some of the world's largest and most successful organizations' is performance leadership, and not just performance management, that enable an organization to integrate knowledge management into its corporate strategy (Schultz, 2004:473).

According to Holtshouse (2003) the systematic capture, re-use and retention of knowledge through voluntary sharing remain the primary organizational challenge. Organizations' must therefore create a work environment with a culture and incentives that are conducive to knowledge sharing, and should support that environment with improved work processes and proper technology infrastructures. The best performers are proactive knowledge sharers, whilst the lowest performers are those who hoard knowledge and equate the sharing of knowledge with loss of power. High performers talk about **'knowledge'** whilst the lower performers speak in terms of **'information'**. This confirms the correlation between effective knowledge sharing and high performance.

Performance management cannot be successful unless the management of knowledge is integrated into work processes. One method in which effective performance management is implemented in a knowledge environment is

through the use of e-learning portals. An e-learning portal is a virtual setting to give workers access to knowledge. It advises users, through electronic means, what skills and experience they need to advance, and provides competency maps and assessments. Portals are able to recognize what the user knows, the learning acquired, and the user's ideal learning style (Brockbank, 2003).

3.5 Conclusion

This chapter provided a theoretical overview of human resource management and knowledge management. Literature review was presented that explored the interrelationship between human resource management and knowledge management. In view of the strategic importance of knowledge management, the origins and the variables that impact on the study were discussed. It was established that the main role players were people as knowledge resides within them. Various categories and types of knowledge were also discussed.

The next chapter will discuss knowledge management and human resource management best practices and the distinct benefits that benchmarking will yield for human resource management and the organization.

CHAPTER 4

KNOWLEDGE MANAGEMENT BEST PRACTICES

If NASA wants to go to the moon again, it has to start from scratch; having lost not the data, but the human knowledge that took it there the last time (Brown & Duguid, 2000:122).

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4.1   Introduction

 A review of literature revealed that over the last decade organizations have realized the strategic importance of managing and leveraging the knowledge assets. These assets are often never located when the need arises to use them. Such assets are usually contained in documents, databases and more important, in individuals heads. Organizations therefore grapple with the challenge of locating, selecting and applying the knowledge assets to create or sustain the competitiveness of organizations. In addition, the internal knowledge assets are often obsolete or not effective in addressing new human resource challenges as accentuated by Malhan & Gulati (2003:209).

Blankley & Booyens (2010:3) state that South Africa is lagging behind in terms of patenting knowledge assets. In 2008, South Africa achieved 91 patents compared to India's 679. The relatively poor performance in the human resources skills category is indicative of education and human resource skills constraints in South Africa. Therefore South Africa needs to focus on education and human capital development to meet the economy's demand for a highly skilled workforce.

According to Anantatmula & Kanungo (2006:25) acquiring and implementing best practices is an exercise that adopts and uses generic knowledge. The recipient of the knowledge must be able to select best practices that add value to the

organization. They posit that best practices are mostly explicit in nature, and become tacit knowledge when applying such knowledge in specific contexts.

Al-Mashari (2005:1) claims that contemporary organizations must be flexible and be able to handle rapid changes in the environment. The cost effective means of achieving this is through a process of continuous learning. In addition, benchmarking performance against the world's best practices will lead to the use of established cost effective best practices. It is through this innovation that organizations could become world class. Implementing, adapting and learning from others best practices are not only legal and ethical, but mandatory for success.

This chapter reviews literature on knowledge management best practices (KMBP) and provides useful benchmarks of important knowledge management processes for higher educational institutions to emulate. The purpose of reviewing industry best practices is to evaluate good performance organizations and to integrate such practices within the organization.

4.2   Benefits of knowledge management best practices

Wareham & Gerrits (1999:39) posit that organizations that seek best practices build on the experience and knowledge of other organizations rather than generating knowledge in-house. Managing knowledge resources across organizations, industries, institutional environments and diverse cultures has become a major challenge in the current organizational era.

Seeking, adapting and adopting industrial best practices are not only cost effective but timely and therefore beneficial for organizations. Knowledge management best practices have become preferred methods to create, manage and transfer knowledge in organizations due to the enormous benefits and cost effectiveness.

The following important benefits of benchmarking have been identified by Auluck, (2002). Benchmarking:

- encourages organizational dialogue about the current work practices and the need to change;
- evaluates industry best practices;
- develops a better understanding of processes;
- interrogates existing practices within organizations leading to innovation and exchange of ideas;
- assists in goal setting based on objective data;
- improves competitiveness of organizations; and
- encourages learning and networking with leading benchmark organizations.

According to the White Paper on Knowledge Management Best Practices (2002), the following best practices have been identified for successful knowledge management initiatives.

Best practice 1: Make knowledge managerment a natural part of the workflow;

Best practice 2: Provide access to the most relevant knowledge available;

Best practice 3: Obtain the support of the key managers from the top down;

Best practice 4: Address the cultural change that knowledge management implies;

Best practice 5: Recognize and reward the efforts of knowledge workers; and

Best practice 6: Monitor performance and analyze results for continuous improvement.

The White Paper posits that successful knowledge management endeavours result when the six accessible and pre-existing best practices are implemented.

Carpinetti & de Melo (2002:246) state that benchmarking could be conducted and applied to various sectors and functions including higher educational institutions and human resource management.

Gamble & Blackwell (2001:51) state that the best way to institutionalize best practice is to pose the following questions:

- What do you know?
- What do you need to know?
- What is the best way of getting what you need to know?

The starting point is to enquire from managers what knowledge they need about the context of the project on hand. The follow-up question is to ascertain the best way of accessing the knowledge that is required.

Camp (1995), a leading authority on benchmarking defines the benchmarking process in terms of the following phases:

- **Planning:** This phase identifies what to benchmark and the choice of organization to benchmark against. It is important for the recipient organization to acknowledge that its own performance in the area of study could be improved.

- **Analysis:** This phase focuses on analyzing the data that has been collected. The analysis reveals the knowledge gaps that exist between the source and the recipient, as well as the best practice the source employs to attain superior performance.

- **Integration:** Following the analysis phase, the recipient organization should prepare to integrate the identified best practices.

- **Action:** Once the best practices are integrated, the recipient organization develops towards superior performance. It is necessary for continuous benchmarking and learning to maintain and improve current standards in managing knowledge.

The benchmarking phases should be regarded as templates and adapted to suit different circumstances as well as specific industries and organizations.

According to Drew (1997:427) the benchmarking process could be categorized into five basic steps as depicted in Figure 4.1. These are:

- Identify what to benchmark;
- Select the best performers in the market (benchmarking partners);
- Collect and analyze the data;
- Set performance targets, and
- Implement plans and monitor results.

Figure 4.1: Generic benchmarking
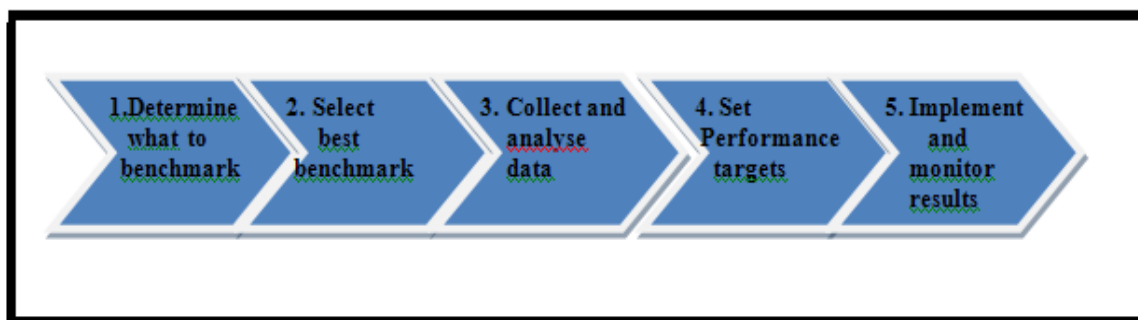
Source: Adapted from Drew (1997)

Generic methods of benchmarking have been identified in business best practices (BBP) and are discussed.

4.2.1 Different methods of knowledge management benchmarking

Bendell *et al,* (1993:125) differentiate between different forms of benchmarking related to knowledge management best practices. They posit that the knowledge management benchmarking will differ from situation to situation depending on the prevailing circumstances.

(a) Competitive benchmarking

This method of benchmarking reviews competitors that are achieving best performance results. A critical assessment is undertaken to establish the success factors that determine the competitor's outstanding performance. Due to the similarity of the competitive environment, the potential to transfer knowledge management best practices will be relatively high. However, this kind of benchmarking may be difficult to undertake as competitors may not cooperate with sharing best practices due to competitive rivalry (Bendell *et al*, (1993:125).

(b) Internal benchmarking

Organizations that have multiple departments and sites that perform similar tasks and functions can transfer best practices between the sites and departments. Improved performance is generally linked to effective methods in performing tasks. Therefore it is beneficial to identify such methods within the organization and transfer such methodologies to employees in other sites and departments (Bendell *et al*, (1993:125).

According to Carpinetti & de Melo (2002:244), the advantages of internal benchmarking is that the knowledge is already in the organization and available. However, the disadvantage of this method is that it overlooks competition, and encourages a narrow internal perspective.

(c) Process/functional benchmarking

This type of benchmarking reviews business practice processes in the relevant area of operation. Different organizations which offer different products or service in different markets can improve service levels by adopting best process factors (Bendell *et al*, (1993:125).

(d) Generic benchmarking

Generic benchmarking focuses on the technological aspects of the process. Technology and its optimal deployment are regarded as major contributors to acquiring best practice status. Benchmarking is used to evaluate existing technology and the need for new technology implementation (Bendell *et al*, 1993:125).

4.2.2 Benchmarking of human resource management (HRM)

According to Lopez-Cabrales *et al*., (2009:485), empirical studies have confirmed that the strategic management of knowledge is a key responsibility of the human resource function. They further posit that although human resource systems facilitates the development, and creation of unique knowledge amongst employees, there is no best practice for the use of human resource processes to manage knowledge.

Chasserio & Legault (2009) claim recent studies have indicated that human resource best practices are not considered important in modern organizations. In such institutions, the human resource functions have been relegated to operational procedures. This position is contradicted in research conducted by Evardsson (2008). The findings showed that the human resource function is critical for the success of knowledge creation and sharing provided these are supported with incentives and rewards.

Rodwell *et al,* (2000:356) argue that whilst human resource management benchmarking adopt industry best practices, this does not necessarily give institutions competitive advantage over others.

The main objective of strategic HRM to an organization is its contribution to making the organization maintain and sustain competitive advantage (Teo, 1998: 67).

Although benchmarking practices seem easy to implement, the application of its principles does pose challenges for organizations. Torrington & Hall (1996) state that benchmarking HRM is driven by the high labour costs and the potential of the human resource function to propel the organization to strategic status.

Akinnusi (2003:30) makes the following suggestions that could result in benchmarking techniques revolutionizing the human resource function with particular reference to the public sector:

- Human resource managers must improve their skills in strategic human resource management as benchmarking focuses on strategic rather than operational objectives.

- Human resource managers must collaborate with academics to identify and implement the best HRM practices in the relevant sectors.

- South African organizations should emulate America, Europe, Canada and Australia's example of implementing best practices in public sector HRM management.

In a study of HRM best practices undertaken by Arnolds *et al.,*(2009:11) the finding showed that managers did not attach much value to the strategic importance of best practices. This finding is corrobated in a study by Lucas *et al.,* (2004) in that human resource policies and practices are not linked to the strategic objectives and moreover, a strategic human resource management approach is not reflected when designing and implementing business strategies.

In an exploratory study by Abrahams (2006), it was established that many lower and middle managers who are responsible for implementing human resource management best practices are not familiar with such practices.

Human resource managers should, therefore, embrace the challenges of benchmarking as a means to improving the pace of service delivery, especially given the poor state of human resource management in South Africa. In this regard the world competitiveness report (2007) recorded South Africa in the last quartile against other countries in terms of human resource development and human resource management categories during the period 1998 until 2007.

Benchmarking and implementing best practice HRM policies and practices will ensure that the organization's human management will contribute to some measure in improving its ratings (Akinnusi, 2003:30).

4.3 Knowledge management Industry best practices

The 21st century heralds an organizational era that would take knowledge management to a higher level where organizations not only strengthen existing knowledge management practices but also implement knowledge management best practices to realize its optimum benefits.

A literature search identified a number of knowledge management best practices. Each of the countries and industries that have been researched have reported unique challenges in introducing and implementing knowledge management. Some of these countries and industries have been selected for discussion owing to its relevance to the study.

4.3.1 Teltec

Teltech is a successful enterprise which offers a service to organizations on how to best manage their information and knowledge assets. Teltech's model focuses on a hybrid environment of people and technology- based services, a directory of people with expertise, mapping of information sources, and techniques for categorizing knowledge (Davenport, 1997).

Teltech's vision emphasizes that technical approaches to information and knowledge provision on its own do not add value. It must be accompanied by the human element. A key principle of Teltech is that people are not only guides to information, but important repositories of knowledge (McCampbell *et al,* 1999:177).

A knowledge analyst position has been created to specifically define the information and knowledge that is desired, to clarify concepts, to interpret research results, and to maintain a contact list of experts in diverse fields. Teltech's business model views people as important repositories of expertise (Davenport, 1997).

According to McCampbell *et al,* (1999:177) Teltech's knowledge management structure provides useful guidelines for institutions' that are considering implementing knowledge management initiatives. Teltech's emphasis is that if knowledge is to be leveraged, it must be categorized. They posit that Teltech's *"thesaurus-based, matrix approach may be 'best practice' since knowledge is usually communicated and sought in words".*

Teltech's response to its challenges related to knowledge management is an ideal exemplar for other institutions to consider during the knowledge management implementation phase.

4.3.2 Microsoft

The Microsoft case study is reviewed by McCampbell *et al.,* (1999). Microsoft has maintained a significant lead over its competitors because of its focus on the knowledge and capabilities of its employees. Microsoft engaged a programme manager to manage the knowledge competencies of its employees and to create an on-line competency profile of jobs and the employees. Much focus was given to established competencies that gave the company a leading edge. The major components of the knowledge management focus areas according to (McCampbell *et al*, 1999) include:

- **Development of a structure of competency types and levels**

In the development of the competency structure, four levels were created.
- Foundation or entry level skills;
- Advanced skills for the job;
- Generic skills of all jobs in a function; and
- Generic skills of all employees in the organization (McCampbell *et al*, 1999)

Meyer (2002:16) states that according to the SAQA Act, learners must meet certain standards before the issue of qualifications. Standards are competencies that learners must demonstrate in terms of knowledge, skills, and attitudes in the jobs.

- **Competencies for specific jobs**

- In Microsoft, templates measure competencies of employees against the requirements for the job. The average template for a job contained between forty to sixty competencies (McCampbell *et al*, 1999).

- **Performance rating of employees in terms of competencies**

- The objective of the employee rating system was to build a competency repository that could be accessed and used across Microsoft. Any manager that required employees with a specific set of competencies to be part of a team for a project could draw names from the competency list (McCampbell *et al*, 1999).

- **Implementing competencies in an on-line system**

- The on-line system comprised of the competency structure, the job rating system and ratings database as well as the competency levels of employees. The system created a Web page for easy access through Microsoft's intranet.

Microsoft's implementation of its knowledge management strategies was rated as highly successful in their international operations which involved a large number of employees across all job categories (McCampbell *et al*, 1999).

Microsoft's example makes it evident that the success of knowledge management practices depends on having effective performance management systems, measuring competencies against job profiles and teamwork. The importance of building a competency database that is accessible to managers and supervisors is the key to maintain its strategic advantage over competitors

4.3.3 Hewlett-Packard

Several knowledge management initiatives were pursued by Hewlett Packard since 1995. The company undertook several knowledge management workshops which brought together groups of employees who acknowledged the importance of sharing knowledge. The objectives of the workshop were mainly two-fold: Firstly the focus was on sharing knowledge through informal networking, and

secondly, to establish common norms and a framework for knowledge management (McCampbell *et al*, 1999:178). The workshops resulted in the following outcomes:-

- Various knowledge sharing avenues were discovered. Some of these included accessing the company's training database, an on-line knowledge database of issues, topics and techniques with sources of origin.

- A guide to human related knowledge and expertise within the Hewlett group. This guide identified expert profiles of employees who were knowledgeable in specific topics (McCampbell *et al*, 1999:178).

Hewlett-Packard recognized the importance of knowledge sharing and therefore undertook several knowledge sharing initiatives to advance their competitiveness in the global marketplace. One such initiative as a means to retain knowledge at Hewlett-Packard is the programme called "Knowledge Briefs" (KB). This programme encourages knowledge transfer and knowledge retention by documenting scarce knowledge through an incentive scheme. This process leads to documenting and distributing best practices within the organization. Although this incentive scheme cost $13million it led to a value creation relative to knowledge creation to the extent of $75million (Mello, 2011:396).

Table 4.1 summarizes the impact of knowledge management initiatives undertaken that have impacted on service quality and productivity levels in the organizations that have been evaluated.

Table 4.1 Impact of knowledge management on quality and productivity

Organization	Quality	Productivity
Teltech	- Access to experts in knowledge field. - Development of software provides integrated view of sources of knowledge in a matrix environment. - Teltech's resources focus on adding value to information	- Development of non-hierarchical knowledge structure result in more efficient data search time - Higher project success level in utilization of external information
Microsoft	- Employees acquire new and higher level job skills. - Creation of on-line competency profile for jobs and employees that match skills to projects	- Increased communication among employees - Increased advantage margin over competition
Hewlett Packard	- Knowledge sharing initiatives enacted - Knowledge sharing networks bring decentralized workforce together	- Increased knowledge areas such as competition, marketing, product development and customer service - Increased advantage margin over competition

Source: McCampbell, A.S., Clare, L.M. & Gitters, S. H. (1999)

The comparison amongst the three organizations shows different and unique approaches to knowledge management implementation. Yet all three approaches have proved successful and all three organizations are leaders of their products in the international sector.

4.3.4 The World Bank

American Productivity and Quality Centre (APQC) (2003:111) compiled a profile of World Bank's knowledge management best practices due to its huge success in embracing and converting internal knowledge into commercial success. APQC claims that of the hundreds of institutions that it benchmarked, the World Bank stands out as one of the best examples of knowledge management implementation successes. APQC (2003) posit that the World Bank's success is predominantly due to the following factors.

- The use of technology to systematically manage knowledge is given significant importance. Systematic knowledge management through the

implementation of technology software and procedures have overcome hurdles such as lack of time, cumbersome processes and lack of resources.

- Senior management support is regarded as a key success factor. This support alleviates barriers to knowledge sharing by encouraging appropriate behaviour. Fostering a knowledge sharing culture and implementing policies and procedures that support these are some methods that senior management engages in support of its successful knowledge management strategy.

- An important practice at World Bank is that knowledge is embedded in employee's work flow processes and it is incumbent for employees to capture, share and reuse knowledge in their daily responsibilities (APQC: 2003).

APQC (2003) claims that World Bank is one of the few organizations to have accomplished all five stages of the knowledge management development plan. The five stages are described as follows:

Stage one focuses on the need to incorporate knowledge management as part of the vision of the organization. This vision of knowledge is marketed throughout the organization as a valuable organizational asset. The key activities in this phase include:
- definition of knowledge management for the World Bank,
- identification of available opportunities,
- capitalize on communication technologies, and
- inclusion of the IT department as an important stakeholder in the provision of technical support.

Stage two is regarded as the organizational experimental stage. It is characterized largely by the question of *"how would knowledge management*

work in this organization"? The central theme of this phase is to align the knowledge management strategy to the institution's corporate strategy, and the steps that lead to this alignment. The activities in this phase are to:

- create cross functional knowledge management task teams;

- identify current internal efforts; and

- fund resources to support these initiatives.

APQC posit that large organizations may go through each of these phases on an ongoing basis, with each knowledge management project entering and exiting the various phases at different intervals.

Stage three entails the formal implementation of the knowledge management initiative. This phase undertakes the following activities:

- funding of the current internal efforts;

- developing methodologies to implement knowledge management initiatives; and

- capturing the lessons learnt.

It is envisaged that the activities listed will lead to the formation of communities of practice and innovative methods for sharing lessons.

Stage four invokes the following trends:

- the results of stage three will raise interest and create awareness;

- duplication of efforts in knowledge management implementation approaches will occur; and

- Management will acknowledge that the full potential to leverage knowledge assets is not being achieved from the knowledge management efforts.

Demand for knowledge management support from other parts of the organization will be experienced which will confirm its value. The key activities during this phase will be to:

- develop an expansion strategy;
- communicate and market the strategy; and
- manage and control the resultant chaos.

During this time it is important to examine the strengths and weaknesses in the outcomes with a view to closing gaps. The World Bank at this stage engages the services of an external team of knowledge management practitioners to review its strategy and provide recommendations.

Stage five is the final phase where the knowledge management strategy is institutionalized. During this phase the following attributes are considered:
- knowledge management is entrenched in the policies of the organization;
- the organizational structures are realigned to stimulate workflow; and
- knowledge management competency becomes part of the performance management system (APQC,2003).

Sharing and using knowledge at this stage become part of the culture of the organization through its operations and daily routines.

APQC (2003) rates the World Bank as one of the very few institutions to have reached stage five of the road map to achieving knowledge management results.

The World Bank gains knowledge through external learning and internal evaluation of knowledge resources. World Bank believes that business survival depends on multiple flows of knowledge, empowerment of employees through knowledge development, and creation of communities of learners. Easy access to knowledge will expedite decision-making (faster cycle times), and reduce costs (APQC, 2003).

The World Bank case study provides an excellent model for knowledge management. The five stage model is a huge success owing to a range of factors

as presented, the most important being the acknowledgement and support of senior management.

4.4 Knowledge management country comparators

An increasing number of countries have initiated knowledge management programmes within their organizations. Whilst most of these countries are developed countries, emerging and developing nations are increasingly embracing knowledge management initiatives within the human resource management function as a means of improving the quality and pace of service delivery. Review of literature has revealed excellent international knowledge management perspectives and models as benchmarks for South African higher educational institutions.

4.4.1 Japan

Japan has been the world's second largest economy for a significant period spanning 1968 until around mid-August 2010, with the status recorded as second to the United States of America in the list of economically significant nations during this period. China is currently the world's second largest economy with Japan in third position (Perryman Report, 2010:1).

Japan remains a leading economy, having transformed from a nation which imitated the low-wage, low-cost goods based on Western designs to a formidable nation that manufactures high quality and reliability products in the 21st century (Little *et al,* (2002:102).

Japan's capacity for knowledge creation is facilitated by its stable economy and clearly demarcated organizational boundaries. The stability of organizations and the zero rated labour turnover means that organizations could effectively tap the accumulated individual and collective tacit knowledge. Japanese organizations

engender close working relationships amongst employees which creates voluntary knowledge flow with relative ease. However, internal values tend to exclude external perspectives such as Western models of social networking and self-organizing communities of practice (Ray, 1998: 151).

4.4.1.1 Japanese knowledge management

Japanese knowledge management includes knowledge related processes in every part of the organization. Its knowledge management strategy is informed by the feedback it receives from the various channels which involves everyone in the organization. The management culture encourages all employees to participate in the planning process, which induces commitment by the employees to implement the plan on a voluntary basis (Nonaka, Toyama & Konno, 2000: 41).

Nonaka & Takeuchi (1995) advocate that the Japanese knowledge creation process place emphasis on the middle-up-down management style which is neither a *"top-down"* nor *"bottom-up"* approach, but a combination of both.

Little *et al,* (2002:110) contend that the role of Japan's middle managers is to transform the organization's vision into a format that is practical and achievable by the operational workers. Whilst the Western world views mission and vision statements as *"vague, ambiguous or even meaningless"*, the interpretation of vision statements in Japan is based on the understanding of its contents due to the mutual relationship between the leadership and its subordinates. This relationship creates an instinctive knowledge of what the leadership expects. This position is consolidated as subordinates could assess which options find favour with the management during the course of the working relationship. Therefore vague vision statements would be interpreted as the placement of trust on employees to implement the preferred action. In exchange, the leadership rewards the subordinates for the positive behaviour.

Japanese management practice is qualified in Harvey-Jones (1993:178) study of competing nations against a Japanese company in building a chemical plant. Each organization was required to build a similar plant and started the project at the same time. The Japanese company completed the project ahead of all competing nations. Harvey–Jones (1993:178) attributes this success to three reasons:

"the most important was that the Japanese plant was built by a team which shared a single large office and lived, worked and dreamt together, twelve hours or more a day, during the whole time of the development and planning of the plant. They were in each other's minds and did not have to send a memo, or make a telephone call, to check the effects of, for example, locating a valve somewhere else. Any one of them could cover for anybody else…..
…..The second reason was that exactly the same team which had done the designing was also involved in the construction. There was no hand over, no communication problems- the thing just flowed….
….The third reason for the Japanese achievement was that they had the forethought to erect a holy Shinto shrine in front of the plant…"

Japanese organizations discovered that the sources of knowledge used for innovative projects came from across the organization, and not only the department that was dedicated to the functional responsibility. Organizations' have a tendency to store redundant information for collective organizational memory (Macdonald, 1995:557).

Porter (1990:397) points out that in Japanese organizations, employees' derive their identity by their sense of belonging to the organization and earning the respect of their fellow colleagues as a committed team member. Porter (1990:397) noted that knowledge creation in Japanese institutions is equal to or second to none.

The foregoing confirms that the success of Japan's knowledge management projects are influenced to a large extent by a combination of factors such as

culture, senior management support, rewarding of knowledge related activities, high commitment to communities of practice and teamwork.

4.4.2   UK, Europe and USA

An intensive research was conducted by Harris Research, on behalf of KPMG Consulting (2003) among chief directors, finance directors, marketing directors and those who were specifically responsible for the knowledge management function at 423 organizations. The organizations that were chosen had a turnover exceeding US$347million a year. The reason for the choice of the sample is that it was perceived that organizations at this level have the greatest need to implement knowledge management initiatives, the capability and resources, and the potential to reap maximum benefits (KPMG Report:2003).

The findings of the study in the KPMG Report (2003) provide a good overview of the status of knowledge management initiatives in the respective countries. A summary of the outcomes is presented hereunder:

- **Knowledge management is part of the organizational strategy**

The respondents from all countries surveyed reported that knowledge management play a significant role in improving the competitiveness of the organizations and to a lesser degree, employee development.

The participants expressed that knowledge management provide significant benefits, especially in achieving improved decision-making, quicker turnaround response to key business matters, and improved customer service (KPMG Report:2003).

- **Knowledge management and organizational performance**

Overall, most respondents stated that the organizations are better off with a knowledge management programme than those without. Respondents with a KM programme (45%) compared to those without (63%) complained of re-inventing the wheel. 72% stated that they could access procedures for a business need within half- day compared to 55% without (KPMG Report: 2003).

- **Future of knowledge management**

Of the respondents that had a KM programme, 75% perceived that greater benefits are yet to be realized from the programme. The important findings are that 75% of the respondents expected increased profits and 73% anticipated reduced costs (KPMG Report: 2003).

- **Full potential of knowledge management**

Of the respondents, 36% indicated that the full potential of knowledge management has not been realized. The reasons cited are:
- insufficient communication;
- lack of integration of KM in work practices;
- lack of time or system was too complicated;
- lack of training;
- insufficient benefit for users
- lack of time to share knowledge;
- failure to use knowledge effectively; and
- difficulty in capturing tacit knowledge (KPMG Report:2003).

- **Knowledge management not supporting employees' needs**

The responses reflected that organizations were not considerate of employee needs. KPMG Consulting (2000:3) claims that this is a reflection of organizations not addressing the cultural implications of KM. KPMG argues that a knowledge management programme should ideally overcome employee frustration in accessing knowledge resources. Only 33% of all respondents had knowledge policies, 31% rewarded knowledge work, and only 18% created knowledge maps that guided employees to locate available knowledge resources (KPMG Report: 2003).

In terms of staff attraction and retention strategies, only 45% of respondents whose organizations had KM programmes viewed KM as a means to attract and retain employees (KPMG Report: 2003).

- **Knowledge management and technology**

The study revealed that organizations have implemented a number of technologies for KM. 93% of respondents used the internet to access external knowledge, 78% used the intranet, 61% used document management systems, 49% used decision support systems, and 43% used groupware. Whilst organizations reported extensive use of technology for KM purposes, only 16% of respondents stated that their organizations had technologies that were specifically designed to leverage KM initiatives (KPMG Report:2003).

- **Integrated knowledge management system**

The survey revealed that most of the organizations did not have a fully integrated KM system. Only 53% of the respondents whose organizations had a knowledge management programme reported that KM was integral to organizational and

individual processes. None of the organizations surveyed have exploited the full potential of KM initiatives (KPMG Report: 2003).

The findings of the survey reflected that there were no significant differences in the respondents' views amongst the organizations in UK, Europe and the USA (KPMG Report: 2003).

The study confirmed that knowledge management is an acknowledged strategic management tool in the countries surveyed. However, the full impact of knowledge management policies, practices and interventions are yet to be realized.

4.4.3   India

India's knowledge management implementation and experiences are diverse owing to its unique mixture of best and worst scenarios as stated by Malhan & Gulati (2003:211).

Retention of skilled workers in India remains a challenge because the demand far exceeds the supply. India has a huge shortage of experienced and trained middle managers to supervise employees. Much time and effort is spent on human resource administration thus very little attention is given to strategic issues (Mello, 2011:623). This is further qualified by Goyal (2006) who states that India's education system, with the exception of sectors of excellence, is failing to produce knowledge workers in critical areas of need.

It is paradoxical in that India has the state-of-the-art fastest jet planes, superfast trains and speed post mail facilities. At the same time it has bullock carts, steam engines and pigeon post facilities. It has world class universities and research institutions but numerous schools are without basic infrastructures. It creates the

world's best engineers and scientists but 45% of its population is illiterate (Malhan & Gulati: 2003).

These paradoxes pose unique and additional challenges for human resource management to ensure success in knowledge management initiatives.

4.4.3.1 Knowledge management challenges in India

Malhan & Gulati (2003:211) claim that India is rich in knowledge and ideas which have been passed on from generation to generation. They caution that knowledge is dispersed and requires to be managed to yield maximum benefits. The major barrier to knowledge management is the lack of interest shown by senior management in knowledge activities. Computer and internet literacy is cited as a further barrier. However, current studies have confirmed that internet usage has improved significantly.

According to a NASSCOM (2003) Survey, only 1.2% of the population in India use the Internet. Due to budgetary constraints and the time spent on the internet, restrictions are placed on its usage. The University of Jammu is cited as an example, where a slow speed Internet facility is made accessible to a limited number of employees for a specified four hours a day. The lack of ICT infrastructures in higher educational institutions in India poses significant problems for knowledge management processes and activities. Electricity power outages are cited as another growing problem for knowledge management due to the irregular and intermittent disruptions in knowledge related activities. However, the Government of India and private businesses have shown commitment to addressing these challenges (NASSCOM Survey, 2003).

Whilst previous studies showed slow progress in internet usage since the introduction of the internet in India in 1995, current statistics confirm that India has an active internet population of 52 million users with a 2600% growth of

users since 2000. This represents 5.2% of India's population and this is expected to grow to 10% by 2015. Whilst 58% of the internet users are in the 19-35 age group, 78% of this group prefer the internet to television for entertainment and information. (http://www.slideshare.net/vik_n72/internet-in-india-2010).

Kumar (2009) states that the increasing capabilities of the Internet offer significant opportunities to expand access to quality knowledge resources to different sectors and the diverse communities in India. The internet has tremendous potential to create interactive knowledge experiences that have previously not been possible.

A major thrust for knowledge management in India was propelled through the establishment of the National Knowledge Commission (NKC) in 2005. This Commission's responsibility is to build excellence in the education system to meet the knowledge challenges of the twenty-first century (Press Information Bureau, 2005).

According to the NKC Report (2007) the success of the knowledge economy relies to a large extent on enhancing access to education, and a most effective way to achieve this objective is through broadband internet connectivity.

Some of India's knowledge management best practices are evaluated through a survey by Griffith University and BML Consultancy.

4.4.3.2 Empirical knowledge management Survey: Griffith University and BML Consultancy

The Griffith University and BML conducted a study of knowledge management practices in fortune 100 companies in India during 2002. The research study investigated the importance of knowledge management and the acceptance of

KM strategy in the Indian fortune 100 companies. The relevant findings of the survey to this study have been extracted and are reported as follows:

- **Knowledge management: A key strategy**

The respondents were required to indicate whether they had a KM programme in their organizations. 75% of the respondents recorded that they had or were considering a KM programme. 19% had no programme in place but were familiar with the programme benefits. 6% did not have a programme and were not aware of its existence nor the benefits that it could offer the organization (Griffith University & BML Survey, 2002).

- **Benefits of a KM strategy**

The majority of the respondents acknowledged the potential benefits of knowledge management. The respondents identified KM to contribute significantly in improving revenue growth (94%), competitive advantage (94%), employee development (81%), and cost reduction and improved productivity (69%) (Griffith University & BML Survey, 2002).

- **Threats to knowledge management implementation**

Potential threats to the successful knowledge management programme implementation were identified by the respondents. The highest risk was the conversion of tacit knowledge to explicit knowledge (73%). This was followed by lack of knowledge (68%), re-inventing the wheel (62%), and information overload (55%). Failure in knowledge management implementation was also attributed to inadequate communication (62.5%), not integrating knowledge management practices in daily tasks (62.5%), no personal benefits (43.5%), and lack of senior management support (37.5%) (Griffith University & BML Survey, 2002).

- **Cultural Implications of knowledge management**

The findings revealed that the organizations surveyed did not understand the cultural implications of knowledge management. This is accentuated by the fact that the knowledge management activities that focused on cultural factors did not get good ratings. The factors that were rated included the creation of knowledge policies (31%), rewarding knowledge work (44%) and lack of organizational commitment (6%) (Griffith University & BML Survey, 2002).

- **Knowledge management as a technological solution**

The survey discovered that the organizations were very advanced in the use of technology, but failed to exploit its full potential. Very few respondents declared that their organizations implemented technologies specifically for knowledge management programmes. 87.5% of the respondents used the internet to access external knowledge, 75% used the intranet, 62.5% used document management systems, 50% used decision support systems, and 25% groupware (Griffith University & BML Survey, 2002).

- **Overall findings: India**

The overall findings concluded that most organizations in India do not have fully integrated knowledge management programmes. 31% of the respondents indicated that their organizations were in a position to integrate knowledge management in the organizational and individual processes. 23% of the organizations use knowledge management procedures and tools as they acknowledge its benefits. 19% of the organizations do not see the relationship between the importance of knowledge management and organizational goals. 8% of the organizations indicated that they have implemented knowledge management across the organization inconsistently (Griffith University & BML Survey, 2002).

The findings confirm that whilst India made progress in knowledge management initiatives, there is a lot of room for improvement. With appropriate interventions and senior management support, knowledge management will no doubt become a strategic tool for the organizations in India in the future.

4.4.4   Australia

The Australian Government has expressed great interest in knowledge management programmes within its public service. This interest has culminated in Australian public services being regarded as world leaders in e-government and knowledge management practices within the public sector. It is therefore appropriate to examine knowledge management practices and approaches in Australian public sector as a benchmark.

Case studies in Australian public service management have been accessed via the web site *__http://www.agimo.gov.au/practice/km_case_studies__* and will be used as the main source of discussion.

The case studies provide a variety of knowledge management applications to address the strategic challenges of the Australian Public Service (APS).

4.4.4.1 Knowledge management   in the Australian Bureau of Statistics (ABS)

The Australian Bureau of Statistics (ABS) is responsible for the country's national statistics. The agency facilitates informed decision-making and research within government departments.

Knowledge management in ABS is a means to derive maximum productivity levels in service delivery. It encourages knowledge workers to work cohesively and to contribute and share knowledge in the process. ABS identifies innovative ideas emerging from its knowledge workers and encourages its application.

Information management (IM) and knowledge management (KM) in ABS have been largely influenced by technology. Technology is a means of getting people to interact with each other. Technology is regarded as a tool to improve work performance and contribute to the organizations competitiveness in meeting the demands for statistical information.

ABS has devised its own unique knowledge management system called *"ABS Enterprise Architecture"* which outlines its knowledge management framework. The system identifies the cultural and technical elements that influence KM initiatives. These are further subjected to evaluation by senior management as important considerations for the creation of a successful environment conducive for communication, collaboration, automated workflow, effective identification of knowledge assets and knowledge transfer
(*http://www.agimo.gov.au/practice/km_case_studies*).

(a) Organizational culture and knowledge sharing at ABS

The culture in this organization is described as supportive of knowledge management. The turnover is minimal, with employees enjoying long and diverse careers. As employees move around different functions and departments there is general appreciation for and continuity in good file management and knowledge sharing mechanisms. This results in the creation of a good knowledge base which assists employees in performing duties in new jobs with relative ease. This culture also encourages employees to conform to similar practices so that successors to their positions have a good knowledge base to tap into (*http://www.agimo.gov.au/practice/km_case_studies*).

ABS also encourages a non-competitive, collaborative approach to work, with multi-disciplinary teams supporting corporate objectives. This leads to a culture where team members share information and knowledge voluntarily with each other. The culture encourages behaviours that include the following attributes:

- Locate, re-use, and build on existing knowledge;
- Acknowledge that team members need to share knowledge; and
- Promote the benefits of knowledge sharing

ABS has developed a work environment that place emphasis on employee empowerment. This environment engendered an ethos that supported voluntary contributions to knowledge work characterized by trust and openness (*http://www.agimo.gov.au/practice/km_case_studies*).

(b) Organizational structure for knowledge management function

ABS's organizational structure has made provision for a Knowledge Director position. The job description for this position requires the incumbent to develop, and ensure co-ordination of knowledge enabling initiatives through employee interaction. This position is supported by a steering group comprising of senior and executive officers and directors whose leadership ensures that the department's objectives are in line with senior management objectives. The KM director reports to the Head of the Technology Services Division (*http://www.agimo.gov.au/practice/km_case_studies*).

(c) Budget for knowledge management

Budgets are created in several knowledge management cost centres at ABS. Funds cover salaries of employees who are engaged with knowledge management responsibilities. The budget also caters for the configuration, development and implementation of the organization's knowledge services as

well as the technological infrastructures (*http://www.agimo.gov.au/practice/*
km_case_studies).

If the ABS case study is a reflection of Australia's capabilities to manage
knowledge resources, then Australia could be a useful benchmark for those
countries that are considering such initiatives.

4.4.4.2 Centrelink

Centrelink offers a wide range of services on behalf of the Government of
Australia, which includes the departments of education, science and training,
human resource management, agriculture, and fisheries and forestry. Centrelink
also runs local, national and international services to millions of customers
through its customer service and call centres
 (*http://www.agimo.gov.au/practice/km_case_studies*).

Knowledge is regarded as a core element to Centrelink's operations relating to
policy, administrative, corporate memory and performance management issues.
It is also a key factor in service delivery which relate to all knowledge-based
activities. The challenge for Centrelink in managing a large organization is to
locate the right information at the right time and communicate this precisely so
that an informed and correct knowledge based decision could be made
(*http://www.agimo.gov.au/practice/km_case_studies*).

Centrelink's experience with knowledge management is outlined as follows:

(a) Knowledge management strategy at Centrelink

Knowledge is defined as the integration of human experience and intelligence
interacting with existing and useful information. Knowledge is considered to

accumulate with time and lost through dynamic change. Centrelink is of the view that knowledge could be shared but cannot be transferred.

Knowledge workers use context, dimension, fact and detail in performing their functions. Centrelink claims that knowledge workers are able to express their knowledge in the written medium; a major concern is that such knowledge is not used appropriately to solve knowledge related challenges. The defining moments for knowledge management cited by Centrelink is the 11 September 2001 attacks on the iconic US buildings. Centrelink claims that preceding this event, people did share the right knowledge at the right time. A further example cited is the US Columbia space shuttle disaster. In this example, people had the right information, but did not act on that information.

Centrelink claims that in many instances, knowledge resources were available and the requisite knowledge was freely shared. Knowledgeable people have identified the problem and have stated the likely consequences, but managers tended to have ignored the advice. Therefore investing in knowledge acquisition and not acting on it is wasted expenditure with drastic consequences (*http://www.agimo.gov.au/practice/km_case_studies*).

(b) Challenges in decision-making based on knowledge

Centrelink claims that knowledge is not easily managed outside the area of responsibility. Relevant knowledge with description, context, advice and guidance based on experience will not necessarily lead to knowledge acquisition outside the area of operation. It depends on the intellectual and constructive acumen of the receiver who visualizes, understands and acts on the knowledge. The correct application of the information is what transforms it into knowledge (*http://www.agimo.gov.au/practice/km_case_studies*).

(c) Centrelink's view of knowledge management

Centrelink has attempted for several years to establish a knowledge-based organization. The organization acknowledged that it was able to create mechanisms to share knowledge but held no guarantee that such knowledge is used effectively. Centrelink believes that knowledge management requires a combination of competent people, skills and organizational understanding together with relevant, useful, and current information (*http://www.agimo.gov.au/practice/km_case_studies*).

The useful conclusions drawn from the Centrelink case study is that notwithstanding organizational efforts in identifying information resources and transferring it to the relevant employees, the organization cannot control or influence the conversion of such information into knowledge. Centrelink argues that knowledge management is a focus on people and networking and that technology and methodology merely play supportive roles.

4.4.4.3 Insolvency and Trust Service Australia (ITSA)

ITSA is a public sector organization which regulates Australia's insolvency system. The organization is highly rated, enjoys public confidence with its main responsibility of reducing the impact of financial failure in its community.

The case study of ITSA is therefore a useful benchmark for the study of knowledge management. The review of the case study is based on the knowledge management development process at ITSA which is reported to have involved the collation of data through management interviews, focus groups and information exchange sessions. The data that was collected was able to identify developmental opportunities and areas of priority that required attention (*http://www.agimo.gov.au/practice/km_case_studies*).

(a) Need for knowledge management strategy at ITSA

The ITSA leadership identified knowledge management as a strategic tool for the organization to maintain its reputation as a source of expertise and the provider of quality service. As ITSA is a service organization, it recognized that knowledge was a valued resource due to its appropriateness to the work environment. The rationale to develop a knowledge management strategy was to improve its capacity to capture, share and identify knowledge that was necessary to improve the quality of its service(*http://www.agimo.gov.au/practice/km_case_studies*).

(b) Key improvement opportunities

The analysis of the qualitative data elicited from the research instruments identified the following threats as critical drivers for a knowledge management strategy:

- Loss of organizational memory and knowledge resources due to the exodus of employees to the private sector or due to retirement;
- Lack of succession planning and the need for improved workforce planning based on organizational needs;
- The need to dismantle organizational and departmental silos and encourage a culture of collaboration;
- The need to change current practices and identify technologies that promote collaboration and knowledge sharing; and
- Implement better methods to capture, store, manage, and retrieve integrated information and knowledge assets throughout the organization (*http://www.agimo.gov.au/practice/km_case_studies*).

Whilst these factors represented the challenges to ITSA, the benefits of the knowledge management strategy are discussed.

(c) Benefits from knowledge management strategy implementation

The benefits that were envisaged from the implementation of the critical drivers of the knowledge management strategy were as follows:

- An efficient and effective organization with increased access to information and knowledge assets;
- Improved work practices and processes;
- An improved quality of service to customers;
- Development of employee capabilities and improved efficiency levels;
- Effective workforce management with proactive succession planning; and
- The creation of a culture where knowledge sharing is valued and rewarded, and trust amongst employees permeates the organization (*http://www.agimo.gov.au/practice/km_case_studies*).

(d) Organizational structure for knowledge management function

The knowledge management function at ITSA is managed by the Knowledge Management Steering Committee (KMSC). The KMSC comprised of the Director of knowledge management services, the secretariat, the IT manager, the senior line manager, and the employee relations manager. The project manager is assigned to the project based on the level of expertise and the nature of the project (*http://www.agimo.gov.au/practice/km_case_studies*).

(e) Knowledge management objectives, outcomes and programmes

The key objectives that were identified for the strategy are specified as follows:
Service excellence: The service excellence was determined through the development and application of policies and procedures regarding information governance; the establishment of authoritative, comprehensive and accessible information resources; and the ability to establish good rapport with expert

employees to encourage knowledge transfer to a broader spectrum of employees.

One ITSA: The rationale for the creation of one organization is to offer a consistent customer service and eliminate variations in service quality; to present a professional and unified mindset to its clients; and share knowledge amongst all employees and work as a united team.

Industry leader: This objective was devised to ensure that ITSA is a leader in implementing best policies and practices; and to be an exemplar of best practice in knowledge management initiatives

(*http://www.agimo.gov.au/practice/km_case_studies*).

The ITSA case study has provided a useful benchmark regarding the integration of knowledge management strategy with a range of functions such as human resource management, organizational development workflow and information management.

4.5 Conclusion

The literature review on industry and international knowledge management best practices demonstrated a wide range of knowledge management implementation challenges. The benchmarking exercise has revealed some important lessons as well as a number of common trends. Some of the benefits of KM implementation included improved pace of service delivery, creation of a corporate knowledge culture, optimal use of organizational knowledge resources, creation of an environment conducive to knowledge sharing, and development of world class organizations through innovative knowledge management strategies.

The next chapter provides a discussion on the research methodology used for the study.

CHAPTER 5

RESEARCH METHODOLOGY

"It has taken 300,000 years for humans to accumulate 12 Exabyte (1 billion gigabytes) of information: It will take just two to five more years for humans to accumulate the next 12 Exabyte" (Fahey & Prusak, 2000:27).

5.1 Introduction

Whilst the preceding chapters covered the conceptualization and theoretical aspects of the study, this chapter focuses on the research methodology used in gathering the data for the study. The discussion encompasses the objectives of the study, research design, sampling selection procedure and description, research instruments that were utilized, and the statistical analysis of the data. The chapter concludes with an outline of the data analysis techniques employed to test the hypothesis formulated for the study.

5.2 Background to the research methodology

According to Momberg (2008) the greatest impediment to the South African economy is the country's acute skills shortage. Higher educational institutions suffer a similar problem in its attempts to fill important positions at all levels. Urgent solutions are required to redress the problem of the continuous exodus of skilled employees. Higher educational institutions, therefore, need to devise strategies to enable the transfer of knowledge from experienced, qualified and capable employees to lesser qualified employees thus retaining some of the personal knowledge of qualified employees that exit the institution.

The study attempts to find solutions by devising strategies that would encourage knowledge transfer and knowledge sharing amongst employees. It is anticipated that these initiatives would have a cascading effect resulting in the closing of knowledge gaps between employees.

Given the background of the research methodology, the objective, sub-objectives and problem statement are restated for ease of reference.

5.3 Objective of the study

The central aim that underpins this study is to examine the linkages that exist between the broad domain of knowledge management (KM) and human resource management (HRM) in human resource departments at higher educational institutions (HEI's) in South Africa. These will be compared to selected higher educational institutions in Mauritius and India.

5.3.1 Sub-objectives of the study

Related to the main objective, the specific sub-objectives of the study relating to higher educational institutions are to:

- ascertain whether the HR Departments have knowledge management strategies and if so, to identify such strategies;

- assess the factors that encourage and/or create barriers in respect of knowledge generation and knowledge sharing;

- evaluate knowledge transfer in relation to speed, reliability and ease of knowledge transfer;

- understand knowledge assets relating to explicit and tacit knowledge;

- identify the organizational culture that is conducive to knowledge management and knowledge sharing;

- assess the influence of organizational performance on KM;

- determine the extent of the use of technology in KM;

- establish the role that KM/HR could play in contributing to the establishment of a learning organization;

- conduct benchmarking studies of important knowledge management processes to establish industry and international knowledge management best practices (KMBP) ;

- examine the influence of the biographical variables (gender, race, education, age and managerial status) on the perceptions of the dimensions of knowledge management; and

- develop an integrated normative model that links knowledge management strategy to strategic human resource management in higher educational institutions.

In undertaking the study, trends in human resource management and knowledge management practices in higher educational institutions will be considered and evaluated.

5.4   Focus of the study

An extensive literature review in the area of knowledge management has revealed that whilst there is an abundance of literature in knowledge management (KM), minimal research has been undertaken that link KM and higher educational institutions. The literature review has confirmed that within the management field, academic focus on knowledge management covered a range of perspectives which largely included information management and project management However gaps have been identified in previous studies and research undertaken, and these are:

- Limited exploration has been undertaken to ascertain the link between knowledge management (KM) and human resource management (HRM);

- Minimal research has been undertaken relating to HR Departments in higher educational institutions (HEI's);

- There is a dearth of previous research that link knowledge management, human resource management and higher educational institutions;

- Previous research in exploring KM as a strategic tool for HR Departments is limited;

- A comparative study of this nature has not been conducted before ie. a comparison of KM practices in the HR departments in higher educational institutions within a country and through international benchmarking; and

- Research in the field of knowledge management is minimal in South Africa.

Given the gaps that have been identified in previous studies and literature review, the focus of the study is to establish the benefits of adopting an

integrative approach between human resource management (HRM) and knowledge management (KM) in higher educational institutions (HEI's). The important dimensions of the study entail knowledge management practices, resistance to KM practices, knowledge generation and knowledge sharing, knowledge assets, organizational culture, technology (human resource information systems) and learning organizations.

The underlying theme of the research study therefore is formulated as follows:

It is envisaged that this research project will contribute to the creation of a knowledge management strategy for human resource management at higher educational institutions to promote excellence through the connection of people, information and ideas. It is anticipated that the integrated KM/HRM model that is to be developed will provide a planned, co-ordinated and disciplined approach to managing higher educational institutions (HEI's) knowledge assets from a human resource management perspective. The proposed study and empirical survey of HR Departments in higher educational institutions will determine the current capacity of higher educational institutions to capture, share, transfer and manage knowledge.

5.5 Problem statement

The greatest impediment to the South African economy is the country's acute skills shortage. Higher educational institutions suffer a similar problem in its attempts to fill important positions at all levels. Urgent solutions are required to redress the problem of the continuous exodus of skilled employees. Higher educational institutions therefore, need to devise strategies of how to transfer knowledge from experienced, qualified and capable employees to lesser qualified employees thus retaining some of the tacit knowledge of qualified employees that exit the institution.

The question that the research study will attempt to answer is: To what extent are higher educational institutions implementing knowledge management policies and practices for effective human resource management?

5.5.1 Hypotheses

According to Davis (2005:354) a research hypothesis states the expectations of the researcher. It is a declarative statement in the form of an educated guess. It must be supported by a statistical test and confirmed or rejected based on the collected data. Cooper & Schindler (2003) posit that hypotheses describe the relationships between or amongst the variables of the study.

Based on one of the sub-objectives of the study, the following hypotheses have been formulated for the study.

Hypothesis 1:
There is a statistically significant difference in the perceptions of respondents from South Africa, India and Mauritius in terms of the respective dimensions of knowledge management and knowledge transfer.

Hypothesis 2:
There is a significant difference in the perceptions of the dimensions of knowledge management between the respective gender groups.

Hypothesis 3:
There is a significant difference in the perceptions of the dimensions of knowledge management among the respective race groups.

Hypothesis 4:
There is a significant difference in the perceptions of the dimensions of knowledge management among the respective educational levels.

Hypothesis 5: There is a significant difference in the perceptions of the dimensions of knowledge management among the different age groups.

Hypothesis 6: There is a significant difference in the perceptions of the dimensions of knowledge management among the different managerial groups.

In order to test the hypotheses, the questionnaire responses will be analyzed using numerous descriptive statistics as well as the application of inferential statistics. The computer package for the quantitative analysis of the data is the Statistical Package for Social Sciences (SPSS) for windows.

5.6 The research design

The research design proposed a preliminary framework as the basis for the subsequent field study. The proposed study will evaluate the mutual relationships between HR practices and KM characteristics.

The quantitative data was obtained by administering structured questionnaires to the respondent sample comprising higher educational institutions in South Africa, Mauritius and India. Five higher educational institutions in South Africa, three in Mauritius and three in India participated in the study and hence constituted the target population for the survey. The respondents comprised senior HR managers, HR line managers and HR supervisors of the participating institutions and were deemed representative of the population under study.

Qualitative data was solicited by interviewing the Executive manager responsible for the HR function in the respective higher educational institution to explore further the extent of KM initiatives in HR and to determine the level of commitment of senior management support for KM. A semi-structured interview schedule was administered during the interview to elicit responses to the interview questions.

Whilst comparisons regarding KM/HR practices amongst HR departments in South African higher educational institutions were made, it was deemed necessary to benchmark the findings with similar institutions in the international sector. An important reason for international comparison is the fact that South Africa has and continues to feature poorly in terms of human resource development compared to the international sector as reported in world competitiveness reports in the last decade (World Competitiveness Report, 2007).

5.6.1 Reasons for selecting India and Mauritius as benchmarks

In terms of the IMD 2007 World Competitiveness Report, South Africa was positioned 50th out of 55 countries in the category of human resource management and development. USA was rated 1st and India's position was rated 27th. According to the Global Competitiveness Report 2007-2008 (World Economic Forum: 2007), South Africa and Mauritius were ranked as the first and second most competitive economies in the Sub-Saharan African region. However, both these countries have shown higher education and skills development as obstacles to such competition. Therefore, the implementation of quality education and human resource development are deemed appropriate interventions to boost economic performance. Whilst there is sufficient literary material and case studies in the US and European countries in the area of study, very little information could be sourced from the Indian continent. India is a growing economy and a leader in the IT industry and information management.

The foregoing discussion further supports the rationale for having chosen India and Mauritius as international benchmarks to evaluate KM/HR strategies in HR departments at higher educational institutions.

According to Malhan & Gulati (2003:211) India's knowledge management problems are diverse due to the country's unusual blend of best and worst situations. India has several ethnic groups, languages, cultures, caste and creeds. This diversity creates unique challenges for knowledge management. There is an abundance of ideas and knowledge. Significant knowledge has been transferred from generation to generation. The problem that has been identified is that the knowledge is fragmented. Enormous benefits could be realized if the knowledge is properly collected, collated, and made available to the current generation of people. Brilliant ideas are not tapped, not timely and not properly channeled. It is estimated that 55% of India's population is illiterate and this poses severe challenges in people's participation in knowledge activities.

Malhan & Gulati (2003:212) further claim that India has excellent institutions of higher learning including premier world-class management schools. The country has knowledgeable and experienced managers who are real assets in advancing knowledge related activities. The Government of India actively supports knowledge management evidenced by its provision of funds for the development of communication facilities and computer networks.

In a survey of 17 Fortune 100 companies in India, a large majority of 75% of the respondents reported that they had a knowledge management programme, 19% indicated that they were considering the programme and aware of its benefits, whilst 6% recorded that they did not have a programme and unaware of its benefits (Knowledge Management Report 2002, India). The research findings indicate the importance of knowledge management within an organizational framework and the acknowledgement of its immense benefits to Fortune 100 Indian organizations.

The choice of Mauritius as a site of investigation was the sensitivity with which this island had responded to the pressures of globalization. In this context, the University of Mauritius has emerged as a key player in research in the area of

Management and HRM with the creation of an outstanding research culture. This is evidenced by the research outputs published in peer-refereed and international journals. According to the Pro-Vice-Chancellor of the University of Mauritius, the university actively promotes individual and team initiatives for the acquisition and dissemination of knowledge thus contributing to the human resources development (Peerally & Parahoo, 2000:2).

Both India and Mauritius represent knowledge management challenges in developing countries which closely resemble the South African scenario. Therefore the selection of India and Mauritius as international comparators was regarded as appropriate and fitting for the study.

The framework for the research adopted the following steps:-

- **Identifying the research problem**

This process entailed delineating the research problem after an extensive review of the literature. This process set out the conceptual framework for the study and defined the key concepts that underscored the study. The problem statement clearly set out the rationale for the study. According to Sekaran (1992:44) a problem statement *"is a precise and succinct statement of the question or issue that is to be investigated with the goal of finding an answer or solution"*.

For ease of reference, the research question formulated for the study is restated as follows:
"To what extent are higher educational institutions implementing knowledge management policies and practices for effective human resource management?"

- **Ethical clearance**

Before the commencement of the research study, it was necessary to ensure that the ethical issues of the subjects were observed. Therefore concerted efforts have been made to ensure that the study conformed to the principles of ethics. Ethical clearance of the research topic, protocol as well as the research instrument was solicited from the University's Ethics Committee before the commencement of the research study. In keeping with the provisions of the University's Ethics Committee, the survey was conducted anonymously with no identifying information. Participants were given the assurance that anonymity in so far as the name of institution, as well as the region within the country would be observed to elicit maximum response. However, as the study was a cross country comparison, participants were informed that the country surveyed will be reported in the study project. The information consent form formed an integral part of the research instrument and was annexed to the questionnaire **(Annexure D)** prior to its completion. Confidentiality in terms of individual responses was maintained in terms of the undertaking given, and all results are presented in aggregate form.

- **Selection of research method**

The objectives of the study, the research problem, the type of data required, the nature of the research instruments, the data collection techniques, as well as the statistical tools and data analysis processes determined the research methodologies that were to be adopted for the study.

5.7 Sampling technique and description of the sample

According to Neuman (1997:201), sampling is a process of systematically selecting cases in a research project to enable deductions and generalizations to be made from the information and data gathered.

Cooper & Schindler (2003:179) state that the basic idea of sampling is that by selecting some of the elements in a population, conclusions about the entire population could be drawn. A population element is the unit of study on which the measurement is taken. An element need not be confined to a person. It could represent anything else. A population is the total collection of elements about which inferences could be made. A census is a count of all the elements in a population. Some of the reasons for using sampling techniques include reducing costs, greater accuracy of results, and greater speed of data collection and availability of population elements.

Twenty one higher educational institutions were identified in South Africa. The office of the executive officer responsible for the human resource function, or the head of the human resource portfolio in the administration was contacted either by e-mail or by telephone to obtain permission to conduct the study. This was followed up in writing (**Annexure A**). The researcher communicated the broad objectives and the background of the study. Five higher educational institutions in South Africa participated in the study. In addition, three higher educational institutions in Mauritius and three in India consented to participate in the study.

According to Cooper & Schindler (2003:182) the nature of the sample is based on the research investigation and the objectives that evolve from the investigation. The sampling frame is the actual list of elements from which the sample is drawn.

The sampling frame for the study was confined to the managerial employees with supervisory responsibilities in human resource departments at higher educational institutions as well as the dedicated person/s responsible for knowledge management within the HR function. Once the gatekeeper authorization for the research study was obtained from the higher educational institution, permission was also solicited for the HR departmental secretary in the respective higher educational institution to co-ordinate the distribution and return of questionnaires.

5.8 Data collection

According to Sekaran (1992:189), data can be collected in various ways, from different settings and from different sources. Data collection methods include face-to-face interviews and telephonic interviews. Questionnaire data collection methods could either be personally administered, or mailed, or electronically administered.

Bell (1998:64) posits that once the choice for the data collection method is made, its reliability and validity must be tested. Reliability assesses the extent to which a test or procedure produces similar results under constant conditions on all occasions. Validity on the other hand is complex and informs whether an item measures or describes what it has intended initially. The data collection instrument is a tool to gather data, and therefore it is important to select the best tool taking into account the prevailing circumstances.

5.8.1 The KM/HR integrated questionnaire survey

To facilitate maximum responses in an orderly manner and to analyze data with relative ease, the KM/HR integrated questionnaire was sub-divided into several sections and these are described as follows:

- **Section A: General personal particulars**
The first section enabled the researcher to obtain a personal profile of the participants: gender, race group, age, education level, managerial status, and job status.

- **Section B: General organizational particulars**
The purpose of this section was to establish the total HR and managerial experience of the respondents.

- **Section C: Knowledge generation and sharing**

Respondents were required to rate the issues that encouraged knowledge generation and knowledge sharing.

- **Section D: Barriers to knowledge sharing**

This section elicited the organizational barriers to knowledge generation and knowledge sharing.

- **Section E: Knowledge transfer**

Respondents were required to rate the knowledge transfer variables which included the speed of knowledge transfer, the reliability of knowledge transfer, and the ease of knowledge transfer.

- **Section F: Knowledge assets**

This section required respondents to rate statements related to accessibility to explicit and tacit knowledge assets.

- **Section G: Organizational culture**

The respondents were required to rate statements related to organizational culture that they perceived as conducive to knowledge management.

- **Section H : Organizational performance**

The purpose of this section was to evaluate the knowledge management variables that influence organizational performance.

- **Section I: Technology**

This section evaluated the status of information and communication technology infrastructure and its contribution to knowledge management at the institution.

- **Section J: Learning organizations**

Predetermined characteristics of learning organizations were listed, and respondents were required to rate the applicability of these characteristics.

The integrated questionnaire contained structured questions related to the key objectives of the study which elicited comprehensive information from the targeted respondents. The questionnaire covered a wide range of variables and a mix of different types of questions.

The cover letter to the questionnaire (**Annexure B**) outlined the significance of the study, the objectives of the survey, the value that the respondents would add to the research study in participating, and the return date. A definition of knowledge management formed part of the cover letter. The working definition of knowledge management from a human resource management perspective is described as an enabling tool to create, organize, share, apply and maintain knowledge within key human resource management processes and to capture, share and reuse knowledge previously attained.

5.8.1.1   Design of the questionnaire

According to Thomas (2004:156) a questionnaire involves the formulation of individual questions and the layout and organization of the questions. Difficulties in securing valid and meaningful data to survey questions stem from the design of the questions themselves. Some of the common problems are generally attributed to ambiguity, question phrasing, question length, question order, and response formats.

Tull & Hawkins (1984:252) define a questionnaire as *"a formalized set of questions for eliciting information"*. Welman, Kruger & Mitchell (2005) point out that the questionnaire design is guided by the concepts and variables under

investigation in conjunction with the research problem, objectives of the study, the theories, models and evaluative framework.

The design of the questionnaire was developed having taken all of the factors mentioned above. Considerable time was spent in developing the questionnaire, which entailed extensive consultation with the relevant literature, reviewing research instruments used in similar studies and research protocols in related fields of study. Wherever possible, a five point Likert scale was used for measurements. The questionnaire was developed in a way that respondents with little or no knowledge in the areas under investigation would be able to complete the survey form, based on their perceptions rather than on actual knowledge. The conceptualization of the questionnaire was drawn with due consideration to the themes and objectives of the study and the hypotheses for the study. Questions were clustered into sub-sections. The framing of each question was based on the key objective and then linked to specific themes of the study. The final draft questionnaire was reviewed by two established researchers. This exercise provided useful feedback as follows:-

- The researchers felt that some of the questions were not user friendly and proposed amendments;

- The researchers felt that some of the open ended questions could be converted to Likert scales, thus reducing time taken to complete the questionnaire and facilitate data capture; and

- The researchers felt that some of the questions were not relevant for the study, and hence could be deleted.

The proposed changes were effected and the questionnaire was ready for pre-testing.

5.8.1.2   Questionnaire pre-test

According to Churchill (1979:357), pre-testing the research instrument is a cost effective process to test the success of the questionnaire and to establish the time it takes to complete the questionnaire. During this process, defects, ambiguity and areas that require fine-tuning could be highlighted and corrected.

The pre-test of the questionnaire was conducted by administering it to a master's degree class in human resource information systems (HRIS) in the School of Management at the University of Kwazulu-Natal comprising of twelve students. Most of the students were in full time employment in HR departments in the corporate sector and held senior positions ranging from supervisors to executive managers with strategic management responsibilities. In addition, the questionnaire was also e-mailed to the statistician for assessment. The feedback from the test respondents enabled further amendment to the questionnaires which entailed mainly the re-wording of some questions to provide clarity. The statistician provided useful guidelines relating to the standardization of the questionnaire for ease of obtaining data, data capture and statistical analysis of the data. The relevant amendments were effected thereby making the questionnaire ready for a pilot study.

5.8.1.3   Pilot study

The data gathering phase commenced with a pilot study with the target population. The purpose of a pilot study was to clarify item wording and check suitability of the questionnaire to best obtain accurate information, test the survey instrument for flaws and suggest improvements. Furthermore, the validity and reliability of the questionnaire was tested with the primary subjects. The human resources department at the University of Kwazulu-Natal was chosen as the site to do the trial run of the questionnaire. Ten questionnaires were personally administered to volunteer subjects comprising senior managers, middle

managers and supervisors in the HR department. After a minor revision of the questionnaire, it was ready for administration.

According to Newsted, Huff & Munro (1998:553), questionnaire surveys are one of the most popular methods used by the research community for the following reasons:

- Easy to administer and simple to score and code;
- Ability to determine values and relationships between variables and constructs;
- Responses could be generalized to the rest of the population studied and applied to other similar populations;
- Adapted and reused easily and provided an objective method for comparing responses over different groups, times, and places;
- Could be used to predict behaviours;
- Allow theoretical propositions to be tested objectively; and
- Assist in confirming and quantifying the findings of qualitative research.

Hence, the pilot study served as a useful trial run to identify potential problems in the proposed survey. More importantly, the pilot study created the opportunity of revising the methods and logistics of data collection before the commencement of the actual fieldwork.

5.8.1.4 Validity and reliability

Validation refers to the extent to which the research findings accurately represent the actual position. A test is valid if it measures what the researcher thinks or claims it does (Coolican, 1992:35). Greer (2001:203) further confirms that the procedure must predict what it is supposed to predict. In order for a questionnaire or interview to be valid, it must first be reliable.

Face validity refers to the realistic outlook of the outcomes of a measuring instrument. Face validity makes the results credible to the common audience. However, it is cautioned that face validity is not always trustworthy. (Nation, 1997:134-135). The measuring instrument used for this study was subjected to pilot testing and face validity was accounted for during this process.

Content validity refers to the extent to which the measure assesses the broad characteristics of the study. In this regard, the design of the questionnaire enjoyed a good level of content validity as the measures covered most of the dimensions of knowledge management and human resource management identified during the literature review process (Nation, 1997:136).

Construct validity refers to the relationship between the nature of the data that the measuring instrument is supposed to elicit and the rationale for the study (Nation, 1997: 137). The measuring instrument for the proposed study took into account the theory impacting on the study as well as the variables related to human resource management and knowledge management. The questions were drawn after an exhaustive literature review, interviews with human resource managers, as well as drawing from samples of questionnaires in related studies.

Criterion-related validity refers to the relationship between the variables covered in the measuring instrument and the measures taken in different situations. According to Sekaran (1992:171), pre-testing the measuring instrument would determine the reliability of the instrument and how consistently it measures what it is intended to measure at the outset. The measuring instrument used for this study was subjected to a pre-test and adjusted to conform to the criterion of internal validity.

Cronbach's Alpha coefficient is an approach used to test for internal consistency among items. *"This measure is derived from the correlation of each item with each other item and does not rest on any arbitrary choice of ways to*

divide the items into two halves" (Judd, Smith & Kidder, 1991:52). The "alpha" ranges from 0 to 1 with 0 meaning complete unreliability and 1 denoting perfect reliability, which refers to all items measuring the same thing. Although reliability is a requisite for validity, it does not guarantee that a measure is valid, that is, it is not a precondition for validity. A measure may produce consistent results but it may not match the construct it is measuring. A measure could be reliable but not valid (Neuman, 1997).

The Pearson's correlation is applicable when determining the nature, direction and significance of the relationship between two variables. The Pearson's correlation matrix examines the direction, strength and significance of the bivarite relationship among the variables in the study. The correlation coefficient is also referred to as the 'Pearson r'. The magnitude of 'r' gives an indication of the strength and direction of the relationship that exists between the variables. The level of significance determines whether the correlation is significant or not. A five percent level of significance denotes ninety five percent confidence that there is a significant correlation between the two variables and only five percent chance that the relationship does not exist (Cooper & Emory, 1995:681).

5.8.1.5   Organization and administration of questionnaire

It was deemed most appropriate to personally administer the questionnaires in institutions where the executive manager responsible for the HR function consented to participating in the semi-structured interview. Prior arrangements were made with the executive manager responsible for the human resource function in the three participating higher educational institutions in South Africa, three higher educational institutions in Mauritius and three higher educational institutions in India in respect of the period of visit to administer the questionnaires and to conduct the semi-structured interview. In addition, questionnaires were personally administered to two other higher educational institutions in South Africa.

- **Editing**

The initial step in the analysis process entailed the editing of the raw data. According to Cooper & Schindler (2003:455), editing detects errors and omissions, completes data where possible, and certifies the standard of the quality of the data.

The researcher ensured that the data was accurate, uniformly entered, complete and arranged in a manner that makes coding and tabulation simple The editing process of the questionnaires was undertaken by the researcher with the assistance of the statistician. Every questionnaire was scrutinized and edited to ensure completeness.

- **Coding**

According to Cooper & Schindler (2003:456),

 "coding helps the researcher to reduce several thousand replies to a few categories containing the critical information needed for analysis. In coding, categories are the partitioning of a set; and categorization is the process of using rules to partition a body of data".

The coding of the responses for the study involved assigning numbers to safeguard that the responses were easily grouped into pre-determined categories. The coding of the data into categories ensured efficient data capture and analysis of data. An example of coding responses would be instead of requesting the word male or female in the questionnaire under Section A, Question 1, the researcher used code 1 for male and code 2 for female.

5.9   Interviews

A personal interview is a face-to-face communication initiated by the interviewer to obtain information from the participant. Both the interviewer and interviewee

are generally unknown to each other. The interviewer controls the topics and patterns of discussion, notes the conditions of the interview, probes with additional questions, and gathers supplementary information through observation. The advantage of a personal interview is that in-depth information and details can be secured through this process. The value of this process supersedes the information obtained through any other data collection method. The following conditions contribute to successful personal interviews (Cooper & Schindler, 2003:323):

- The interviewee must have the necessary information targeted by the interviewer;
- The interviewee must provide accurate information; and
- The interviewee must be adequately motivated to participate,

Anthony, Perrewe' & Kacmar (1999:216) are of the view that interviews are a preferred data collection method when data is required from managerial and professional subjects relating to complicated phenomena. However they caution that this method is time consuming and may require interviews to be conducted by trained interviewers.

As the subjects for the interview comprised HR executive managers in the participating higher educational institutions, interviews were an appropriate data collection method for this level of position and for the nature of the data required.

5.9.1 Semi-structured interviews

According to Kreiner *et al.*, (2006), a qualitative semi-structured interview has two components. The first part of the interview is structured and relates to the contextual and relative factors derived from theory and literature review. Each factor is framed into a question in the interview schedule and presented verbally to the respondent "to describe the evidence of the factor" in the focus area. The

second part refers to the unstructured part of the interview which delves further into relationships based on the structured, and open- ended questions. At the end of the interview, the qualitative data could be analyzed and presented.

For this research study, semi-structured interviews were conducted with the most senior manager responsible for the human resource function in the participating higher educational institutions. Executive managers from nine higher educational institutions agreed to participate in the interview (three from from each of the participating countries ie. South Africa, Mauritius and India).

The researcher communicated the objectives and the background of the study clearly. The interviews were arranged to coincide with the time that the questionnaires were administered at the higher educational institutions for convenience.

The format of the interview entailed the use of both closed questions and open-ended questions with appropriate follow-on questions dependant on the responses. Each interview was scheduled for and lasted an average of one and a half hour to two hours and was generally conducted in a reasonably relaxed environment. The researcher received excellent co-operation from the respondents and was able to identify with the respondents because of the researcher's similar background in human resources management. The broad framework of the content of the interview was recorded manually and the finer details of the discussions were updated subsequently.

5.10 Data analysis and interpretation of data

According to Davis (2005:352) data is given value only after they have been analyzed. Data analysis result in sets of descriptions, relationships, and differences that contribute to informed decision making.

Cooper & Schindler (2003:87) state that data analysis enables the refinement and reduction of raw data to manageable size, developing summaries, identifying patterns, and applying statistical techniques. Responses with scales require the data analyst to manipulate data to derive scenarios and explore relationships among variables.

Researchers are required to interpret the findings in relation to the research problem and to establish whether the results are consistent with the research objectives and theories. Researchers are then required to make recommendations and draw conclusions based on the interpretation of the data (Cooper & Schindler, 2003:87).

The researcher created the relevant fields appearing on the questionnaire in the order of the various sections and captured the data into an electronic format using a computer spreadsheet. A statistician was appointed to assist with data analysis and interpretation by applying the appropriate statistical techniques.

Statistical techniques: Once the data is collected, it must be organized and coded in order for it to be analyzed. According to Sharma (1995:235) a large number of statistical techniques are available for data analysis. Selecting the most appropriate technique depends on the nature of the study, the characteristics of the population, the measurement level and the sample size. When deciding on the statistical test to be implemented, it is recommended that the following issues be taken into account.

- **Level of measurement:** The level of measurement pertaining to the study will determine the selection of the appropriate statistical test. Whether to implement a nominal, ordinal, interval or ratio measurement could be determined by applying appropriate statistical methods (Sharma, 1995:235).

- **Nominal measurement:** The nominal measurement is the lowest scale, the objects are in sets or categories, and they are mutually exclusive (Shaughnessy & Zechmeister, 1997:95). According to Dillon, Madden & Firtle (1994:290) the mode is the correct measure of central tendency, when applying nominal data.

- **Ordinal measurement:** Data emanating from ordinal measurements are mutually exclusive and involves ranking the stimuli that is to be measured. The objects are compared in different categories in terms of the quantity of the attribute being measured. The distance between numbers is not reflected with the ordinal scales. The mode and the median are the measures of central tendency, when applying ordinal scales (Dillon *et al.*, 1994:115).

- **Interval measurement:** Shaughnessy *et al,* (1997: 97) postulate that interval measurements are mutually exclusive and rank order. Interval measurements are "how far apart two stimuli are on a given dimension". When applying interval measurements, the mean, median and mode are the measures of central tendency.

- **Ratio measurement:** According to Harris (1995:15) a true zero point denotes that "the ratio of two scores measured on the ratio scale represents the actual ratio of the amounts of the characteristic being measured". Ratio measured data are mutually exclusive, rank order, equal distance between the various categories, and an emphatic zero point. Dillon *et al.,* (1994: 290) state that a zero point gives substance to the ratio of scale values. The mean, median, mode and co-efficient of variation are the measures of central tendency, when applying ratio measurements.

- **Variables:** Sharma (1995:235) posits that when several variables are applied in research, it is a test of association when dependent and independent variables interact. However, when two variables are chosen, the bivariate

technique becomes applicable. Alternatively, when more than two variables interact, the multivariate technique becomes applicable.

Statistical techniques are divided into descriptive and inferential categories. If the scores of the entire population are available, descriptive statistics would be appropriate. However if the population numbers are very large, samples are the preferred method to make inferences about the corresponding population properties. In such cases, inferential statistics may apply (Welman & Kruger, 2004:208).

5.11 Descriptive statistics

Descriptive statistics refer to the description and/or summarization of the data obtained for a group of individual units of analysis (Welman & Kruger, 2004:208). McCall (1994:7) reaffirms this by stating that descriptive statistics "refer to the procedures for organizing, summarizing and describing quantitative information, which is called data".

The most common and preferred descriptive statistics are frequency distributions, measures of central tendency and measures of variability.

5.11.1 Frequencies

Frequencies refer to the number of times various subcategories of a certain phenomenon from which the percentage and the cumulative percentage of their occurrence can be easily calculated (Sekaran, 2000:396).

Impressions about a variable could be established by studying the frequency distribution on a graph. Frequency distributions are presented by means of percentage breakdowns (percentiles) of the various categories, and histograms (McClave & Benson, 1989:42).

Histograms and bar diagrams are diagrams in which columns represent frequencies of the various ranges of scores or values of a quantity. This gives an overall picture of the description of the units of analysis as a whole group (Welman & Kruger, 2001: 208).

According to Dillon *et al.*, (1994:406) graphs are also a good means of representing data from tables, and could be more effective than tables when presenting data.

5.11.2 Measures of central tendency

According to Thomas (2004: 208), measures of central tendency indicate the centre of a frequency distribution, with the three most commonly used being the mean, median and mode. Each of these is more or less appropriate depending on the specific features of the frequency distribution.

The mean: Thomas (2004:208) defines the mean or average as the sum total of the values recorded for all the cases divided by the number of cases. However the mean can be misleading especially when unusually high or low values are reflected in the distribution.

Harris (1995:96) argues that when values are in the extreme, either too high or too low, the mean will not be realistic as the mean considers every score in the distribution.

The median: According to Aiken (1994:430), the median of a group of scores is the middle score, the score below and above which one half (fifty percent) of the scores fall. Huysamen (1990:37) refers to the median as the 50th percentile and states that

" if a frequency polygon was drawn, the median will be that point on the baseline which cuts the area of the histogram or frequency polygon into equal halves".

The mode: is the value that occurs most frequently in the distribution. Bless & Kathuria (1993:46) draw attention that the mode does not include all the scores of distribution and is the preferred for those scores that use nominal scales.

Taking into account the advantages and disadvantages of the measures for central tendency, Thomas (2004:208) recommends the mean as the most important measure of central tendency for statistical purposes.

5.11.3   Measures of dispersion/variability

Measures of dispersion, point out the extent to which the values of a distribution are spread out around the distribution's mean. Measures of dispersion are also known as measures of variability. The measures of dispersion are the range, variance, and standard deviation. These measures provide a sound basis in terms of the manner in which a group of scores vary from the main score (Thomas, 2004:208).

Thomas (2004:208) further postulates that variance is one of the most important concepts in quantitative research analysis. Research often requires an explanation for the variance in dependent variables, and for variable analysis the existence of variance is very important. The variance in a set of values is summarized in a statistic called standard deviation. The standard deviation calculates the average differential value from the mean value for the distribution and the variance that exist. The standard deviation summarizes the degree to which a set of measures are held together or spread out around the mean value.

According to Sekaran (2000: 398) the range of a set of observations is the difference between the largest observation and the smallest observation and is regarded as a simple measure of dispersion.

Huysamen (1994:51) states that a range determination is the difference between the highest score and the lowest score. However, since the range is based on two scores and is limited in displaying the variability of a distribution, the semi-interquartile range would reflect a more representative measure.

Whilst descriptive statistics is a significant category for statistical procedures, inferential statistics is another major statistical procedure that is reported in research literature.

5.11.4   Inferential statistics

The main function of inferential statistics is to establish relationships among variables and draw conclusions thereafter. This statistical procedure could also be used to test statistical hypotheses. Researchers must differentiate between parametric tests and non-parametric tests when deciding which statistical test to implement. Parametric tests have the ability to provide fairly accurate results and are able to describe relationships between different variables in the population. The drawback is that parametric tests are not conducive for nominal or rank order data and are more complex to manage compared to non-parametric tests (Harris, 1995:18-19).

However, parametric tests are better suited to data which is interval or ratio-scaled. A large sample size is recommended and the population from which the sample is drawn should reflect a normal or bell-shaped distribution (Zikmund, 1995:604).

Bless & Kathuria (1993:77) state that descriptive statistics are procedures that condense information about a set of measurements whereas inferential statistics constitute techniques that make statements based on partial information through a theory of probability. Therefore statistical inference is an application of

inductive reasoning that derives conclusions about a population drawn from evidence from a sample.

According to Thomas (2004: 213), it is unlikely that a sample will replicate the population exactly. It is therefore necessary to test whether the variation is statistically significant or insignificant. A test of statistical significance is a way to estimate the probability that results from a sample are due to chance variations (sampling errors) rather than indicating actual differences. When a test shows that the results are likely to have occurred due to chance, it is regarded as "statistically significant".

Kerlinger (1964:180) states that when a statistical value occurs by chance five times or less in a hundred (five percent), then the value is regarded as significant. However, if it occurs once or less in a hundred (one percent) then it is regarded as "very significant". Inferential statistical techniques that are used to test the results of the survey and hypotheses include t-test, analysis of variance (ANOVA) and correlation.

5.11.4.1 T-test

The t-tests evaluates whether two groups have equivalent or different mean scores. Descriptive research compares the mean of one group with that of another group. A t-test determines whether an observed difference in means of two groups is sufficiently large to be attributed to a change in some variable or whether such change is attributed to chance (Welman and Kruger, 2004:213).

5.11.4.2 The analysis of variance (ANOVA)

The analysis of variance is an experimental strategy that entails quantitative analytical procedures. It applies to the analysis of group differences rather than individual differences. The measures to be compared with are the average

values of the dependent variable of the control groups. The aim of the analysis is to establish whether the differences between the control groups on the dependant variable is wide enough to indicate that they are unlikely to have occurred by chance (Thomas, 2004:214).

This test will be used to determine whether the different sub-groups of the demographic variables such as age, gender, length of service and managerial status differ on the variables of interest.

5.12 Presentation and analysis of data, and discussion of results

According to Welman & Kruger (2004:216), results of a research study could be presented by using tables (cross-tabulations), graphs, statistical summaries, means, standard deviations, correlation coefficient, and written statements from the responses obtained.

The research study utilized either one or a combination of the above methods in the presentation of the results of the survey.

5.13 Triangulation of results

According to Welman & Kruger (2001:184), triangulation is an attempt to corroborate findings according to at least three different sources.

The limitations of this study were minimized by the triangulation of data sources between the quantitative data obtained from the human resource managers, the qualitative interview data solicited from the executive managers responsible for the HR function and the literature review. In addition, the data of the study was

further corroborated against data as reported in the literature review, case studies and similar previous studies undertaken.

5.14 Conclusion

This chapter provided a structure of the research design for the study which included the purpose of the survey, the sampling procedure, the research instruments for data collection and the analysis of the data. In meeting the objectives of the research, this study utilized a combination of two main methods of data collection. This included questionnaire surveys and semi-structured interviews and the results were corroborated against related studies conducted in previous similar research. The use of these methodologies has enabled the researcher to access sufficient appropriate data to address and realize the aims and the specified objectives of the study. The following chapter will examine the data obtained from the questionnaire survey and interview schedule. The presentation of the results will be integrated with the discussion and analysis of the data.

CHAPTER 6

PRESENTATION OF RESULTS

"The difference between what we do and what we are capable of doing would suffice to solve most of the world's problems…Live as if you were to die tomorrow, but learn as if you were to live forever" (Mahatma Gandhi).

6.1 Introduction

The data that was collected was analyzed and subjected to rigorous statistical analysis. The Statistical Package for Social Sciences (SPSS) statistical software was used to code and analyze the data. This was the preferred method because the survey focused mainly on quantitative data.

The analysis of results is presented by means of descriptive statistics which includes frequency tables. These mainly consisted of the description of the key biographical and organizational variables in the study. Inferential statistics comprised an examination of the research hypotheses that were formulated to evaluate an objective of the study.

Whilst there is empirical confirmation from the literature survey that the concepts of knowledge management and human resource management lead to organizational success, the results of this study will either affirm or negate this position in the higher educational institutions surveyed.

The purpose of the study is to scientifically explore the relationship, dependence and/or correlation between knowledge management (KM) and human resource management (HRM) specifically at higher educational institutions. Accordingly the following research themes formed the basis for the study titled, "***Knowledge management as a strategic tool for human resource management: A study of selected higher educational institutions***".

6.2 Overview of the research themes

Research theme one examines the perceptions of human resource managers on issues that encourage knowledge generation and knowledge sharing.

 Research theme two evaluates the impact of issues that act as barriers to knowledge generation and knowledge sharing in higher educational institutions.

Research theme three looks at the issues that are related to the speed, reliability and ease of the transfer of knowledge within departments, amongst departments and in the organization as a whole.

Research theme four examines the impact of tacit and explicit knowledge assets for the organization.

Research theme five investigates the organizational culture that is conducive for knowledge generation and knowledge sharing.

Research theme six evaluates the contribution of knowledge management for individual and organizational performance.

Research theme seven investigates the impact of information technology on knowledge management initiatives.

Research theme eight evaluates whether higher educational institutions conform to the characteristics that apply to learning organizations.

The analysis of the data and findings of the study were based on the aforementioned key research themes. Each research theme translated into an objective of the study.

The analysis of results are presented through the medium of descriptive statistics in **Section A** which covers frequency tables and information relating to the key demographic variables of the study; **Section B** entails inferential statistical techniques that test the hypotheses and includes the t-test, analysis of variance (ANOVA) and correlation. **Section C** presents the details relating to the qualitative analyzes emanating from the interviews held with the executive portfolio managers responsible for the human resource function.

The preliminary presentation of results begins with descriptive statistics for the sample profile and key demographics. In order to enhance the quality of the study, significant trends reflected in the data are emphasized and reported. The results will be presented in terms of the key research themes identified for the study.

6.3   Section A: Descriptive statistics (frequencies and percentages)

The questionnaires were administered to the following categories of human resource managers in higher educational institutions in South Africa, Mauritius and India.

- senior human resource managers (senior managers);
- human resource managers (middle managers); and
- junior human resource managers (supervisors).

The descriptive statistics are presented in terms of frequencies and percentages.

6.3.1   Country composition

Table 6.1 provides the cumulative responses received from the higher educational institutions within each country.

Table 6.1   Frequencies and percentages of the country groups

Cumulative respondent frequency distribution	Country						Total	
	India		Mauritius		RSA		**Total**	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Total	22	24.2%	19	20.8%	50	55%	91	100.0%

Table 6.1 makes it evident that the majority of respondents were from higher educational institutions in South Africa (55% - 50 responses). The reason for a higher response rate is attributed to the fact that the survey in South Africa covered a greater number of higher educational institutions than those in the other countries surveyed. Mauritius accounted for 20.8% (19) responses whilst India attracted 24.2% (22) responses.

Considering the number of higher educational institutions surveyed, the response rate is deemed reasonable taking into account that the target population comprised human resource employees at managerial occupational levels with either decision-making powers or the ability to influence decisions with regard to human resource policies, programmes and practices relevant to knowledge management initiatives. The response rate could have improved had more time been allocated for the completion and return of the questionnaires and/or if a larger number of higher educational institutions participated in the study.

6.3.2   Gender composition

Table 6.2 reflects the frequency distribution of gender amongst the higher educational institutions in the countries surveyed. The total counts and frequency for the whole sample is reflected in the "Total" column.

Table 6.2   Frequencies and percentages of the gender groups

Gender Groups	Country						Total	
	India		Mauritius		RSA		**Total**	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Male	13	59.1%	7	36.8%	31	62.0%	**51**	**56.0%**
Female	9	40.9%	12	63.2%	19	38.0%	**40**	**44.0%**
Total	**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

For the whole sample, 56% were male and 44% were female. Based on this gender distribution it would appear that higher educational institutions are making concerted efforts towards giving females opportunities in managerial positions previously dominated by males. Amongst the respondents from India, 59.1% were male and 40.9% were female. Amongst the respondents from Mauritius, 36.8% were male and 63.2% were female. Amongst the South African respondents, 62% were male and 38% were female.

Whilst India and South Africa showed gradual progress in achieving equity targets, Mauritius seems to have surpassed the target with an overwhelming majority of managerial positions occupied by females.

6.3.3   Race composition

Table 6.3 reflects the frequency distribution of race amongst the higher educational institutions in the countries surveyed.

The total counts and frequency for the whole sample is reflected in the "Total" column.

Table 6.3   Frequencies and percentages of the race groups

Race Groups	Country						Total	
	India		Mauritius		RSA			
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Indian	22	100.0%	17	89.5%	8	16.0%	**47**	**51.6%**
Black	0	.0%	0	.0%	5	10.0%	**5**	**5.5%**
*Coloured	0	.0%	2	10.5%	14	28.0%	**16**	**17.6%**
White	0	.0%	0	.0%	23	46.0%	**23**	**25.3%**
Total	**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

*NB: For the purposes of the study, the mixed race "Creole" in Mauritius is referred to as Coloured

For the entire sample, 51.6% were Indian; 5.5% were Black; 17.6% represented the Coloured race and 25.3% were White. India accounted for a 100% Indian occupants, Mauritius for 89.5% Indian and 10.5% Coloured managers whilst South Africa showed 16% Indian, 10% Black, 28% Coloured and 46% White incumbents.

6.3.4   Age composition

Table 6.4 outlines the age profile of the sample respondents. The survey instrument made provision for respondents to indicate their age groups in the categories 25 years and younger, 26-35 years, 36-45 years, 46-55 years and 56 years and older.

Table 6.4   Frequencies and percentages of the age groups

Age Comparison	Country						Total	
	India		Mauritius		RSA			
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
25 and younger	1	4.5%	0	.0%	1	2.0%	**2**	**2.2%**
26-35	3	13.6%	11	57.9%	11	22.0%	**25**	**27.5%**
36-45	9	40.9%	3	15.8%	16	32.0%	**28**	**30.8%**
46-55	6	27.3%	3	15.8%	19	38.0%	**28**	**30.8%**
56 and older	3	13.6%	2	10.5%	3	6.0%	**8**	**8.8%**
Total	**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

Table 6.4 reveals that the overall count represents 2.2% in the under 25 year group, 27.5% in the 26-35 year group, 30.8% in the 36-45 year group, 30.8% in the 46-55 year group and 8.8% in the over 56 year group. South African higher educational institutions reveal that the majority of the sample respondents were in the 46-55 year age group. Whilst Mauritius reflect its concentration of 57.9% of its HR managerial cadres in the age group category of 26-35 years, India reflect 40.9% of its respondents in the 36-45 year group and South Africa reflect 70% in the age group ranging from 36-55 years.

6.3.5 Composition of the qualification groups

Table 6.5 provides a representation of the qualification profile of the respondents within each of the countries surveyed. Respondents were required to indicate their qualifications in the categories of grade twelve or equivalent (matriculation), diploma, first degree, honours degree, masters/doctoral degree.

Table 6.5   Frequencies and percentages of the qualification groups

| Qualification | Country | | | | | | Total | |
| | India | | Mauritius | | RSA | | | |
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Grade 12 or equivalent	0	.0%	0	.0%	3	6.0%	**3**	**3.3%**
Diploma	1	4.5%	5	26.3%	10	20.0%	**16**	**17.6%**
First degree	13	59.1%	3	15.8%	18	36.0%	**34**	**37.4%**
Hons degree	2	9.1%	2	10.5%	13	26.0%	**17**	**18.7%**
Masters/Doctoral degree	6	27.3%	9	47.4%	6	12.0%	**21**	**23.1%**
Total	**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

In terms of qualifications, overall, 3.3% of the respondents reported having a Grade twelve or equivalent; 17.6% had a diploma; 37.4% were in possession of a first degree; 18.7% had a honours degree whilst 23.1% had either a masters or a doctoral degree. India has accounted for 59.1% of its managers with a first degree and 27.3% with a masters or doctoral degree. In Mauritius, 47.4% of its managers have either a masters or doctorate qualification. South Africa reflected

6% having a Grade twelve equivalent; 56% with a diploma or a first degree; and 12% with a masters or doctoral degree.

From the above descriptive information it is noted that the majority of the managers held a minimum of a first degree qualification.

6.3.6 Composition of the occupational levels

Table 6.6 outlines the occupational distribution within the human resource management sector. The respondents were required to indicate whether they held a position of junior HR manager (supervisor), HR manager (middle management) or senior HR manager (senior management). The questionnaire for the survey was directed at these levels which formed the unit of analysis.

Table 6.6   Frequencies and percentages of the occupational level groups

Occupational Levels		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Managerial Status	Junior HR Manager	5	22.7%	5	26.3%	7	14.0%	**17**	**18.7%**
	HR Manager	8	36.4%	8	42.1%	33	66.0%	**49**	**53.8%**
	Senior HR Manager	9	40.9%	6	31.6%	10	20.0%	**25**	**27.5%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The survey revealed an overall frequency distribution of 18.7% of junior HR Managers (supervisors) followed by 53.8% HR Managers (middle-managers) and 27.5% senior HR Managers (senior managers) respectively.

From the descriptive statistics it could be ascertained that South Africa has the highest concentration of middle managers (66%) in the higher educational institutions with the minority (14%) occupying junior HR manager positions. India reflected an equitable distribution of managers in the middle and senior management categories.

6.3.7 Composition of the functional areas of responsibility

Table 6.7 reflects the results in respect of the functions that the managers were responsible for. The key functional areas in human resource management reported in the survey were human resource administration, human resource development, human resource information systems and industrial relations.

Table 6.7   Functional areas of responsibility

Functional Areas of Responsibility		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
	Diversity	0	.0%	0	.0%	1	2.0%	1	1.1%
Function/	Emp Eqty	0	.0%	0	.0%	3	6.0%	3	3.3%
Area of	Group HR	3	13.6%	1	5.3%	4	8.0%	8	8.8%
responsibility	HR	0	.0%	0	.0%	1	2.0%	1	1.1%
	HR Payroll	0	.0%	0	.0%	2	4.0%	2	2.2%
	HR(ACAD)	0	.0%	0	.0%	1	2.0%	1	1.1%
	HR(ADM)	10	45.5%	11	57.9%	17	34.0%	38	41.8%
	HRD	4	18.2%	2	10.5%	8	16.0%	14	15.4%
	HRIS	3	13.6%	3	15.8%	4	8.0%	10	11.0%
	IR	2	9.1%	2	10.5%	4	8.0%	8	8.8%
	Remuneration	0	.0%	0	.0%	5	10.0%	5	5.5%
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

With respect to the descriptive statistics regarding the functional areas of responsibility (Table 6.7), the frequencies show that most respondents (41.8%) were responsible for the human resource administration function followed by (15.4%) who were in charge of the human resource development function. The human resource information systems function recorded (11%) of respondents. Group HR Managers are responsible for the overall human resource function and accounted for (8.8%) of the respondents. The industrial relations function also recorded (8.8%) of respondents. The remaining respondents reflected remuneration (5.5%), employment equity (3.3%), diversity (1.1%), human resources (1.1%) and human resources academic (1.1%).

6.3.8 Composition of the higher educational institutions (HEI's)

Table 6.8 displays the headcount of the respondents in the participating higher educational institution (HEI) within each country.

Table 6.8   Headcount of respondents in the HEI within each country

Head count of respondents in each HEI		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
HEI	1	10	45.5%	7	36.8%	14	28.0%	**31**	**34.1%**
	2	7	31.8%	7	36.8%	10	20.0%	**24**	**26.4%**
	3	5	22.7%	5	26.3%	11	22.0%	**21**	**23.1%**
	4	0	.0%	0	.0%	7	14.0%	**7**	**7.7%**
	5	0	.0%	0	.0%	8	16.0%	**8**	**8.8%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The headcount of respondents in the participating three HEI's in India were 22 (100%). The breakdown of respondents amongst the three HEI's in India were 10 (45.5%) in HEI (1), 7 (31.8%) in HEI (2), and 5 (22.7%) in HEI (3).

The headcount of respondents in the three participating HEI's in Mauritius were 19 (100%). The breakdown of respondents amongst the three HEI's in Mauritius were 7 (36.8%) in HEI (1), 7 (36.8%) in HEI (2), and 5 (26.3%) in HEI (3).

The headcount of respondents in the five participating HEI's in South Africa were 50 (100%). The breakdown of respondents in the five HEI's in South Africa were 14 (28%) in HEI (1), 10 (20%) in HEI (2), 11 (22%) in HEI (3), 7 (14%) in HEI (4), and 8 (16%) in HEI (5).

The participants represented supervisory, managerial and senior managerial employees who performed human resource related duties. The Director or Head of the HR department in most instances identified the participants for the study, and in some instances the secretaries to the Director or Head of the HR

Department determined the participants for the study in accordance with the organogram of the department.

Whilst some HEI's reported a centralized human resource department, a number of the HEI's have decentralized or were in the process of decentralizing this core function into the faculties to provide services at source.

6.3.9   Composition of total service in HRM

Table 6.9 provides data relating to the total period of service that respondents have had in human resource management.

Table 6.9   Total service in HRM

Total Service in HRM	Country						Total	
	India		Mauritius		RSA			
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Less than 6 years	3	13.6%	9	47.4%	11	22.0%	**23**	**25.3%**
6-10 years	1	4.5%	4	21.1%	14	28.0%	**19**	**20.9%**
11-15 years	6	27.3%	4	21.1%	14	28.0%	**24**	**26.4%**
16-20 years	4	18.2%	0	.0%	5	10.0%	**9**	**9.9%**
More than 20 years	8	36.4%	2	10.5%	6	12.0%	**16**	**17.6%**
Total	**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results indicate that the majority of participants in RSA and Mauritius have a service record of between 6 years to 15 years in the HR Department.

In India, the majority of participants worked in the HR Department between 11 years and more than 20 years.

Overall, the majority of participants in all 3 countries worked between 6 years and 15 years.

This may not necessarily mean that the human resource managers have limited cumulative experience as organizations generally require HR professionals to be

proficient in various areas of organizational operations prior to moving to human resources.

6.3.10 Composition of length of service

Table 6.10 represents the participants' responses on the number of years of service in their current positions.

Table 6.10   Total service in current position

Total Service in Current Position	Country						Total	
	India		Mauritius		RSA			
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Less than 1 year	2	9.1%	0	.0%	3	6.0%	**5**	**5.5%**
1-3 years	6	27.3%	8	42.1%	19	38.0%	**33**	**36.3%**
4-6 years	13	59.1%	5	26.3%	23	46.0%	**41**	**45.1%**
7-9 years	1	4.5%	2	10.5%	5	10.0%	**8**	**8.8%**
10 years or more	0	.0%	4	21.1%	0	.0%	**4**	**4.4%**
Total	**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

In all three countries, the majority of participants served between 1 and 6 years. In India and South Africa, the majority of participants have been in their present positions for between 4 and 6 years, whilst in Mauritius it was between 1 and 3 years. Based on this response profile, it is evident that the majority of the respondents are fairly new to their positions and hence might not have adequate experience in decision making to contribute to knowledge management/human resource management initiatives in their respective institutions.

6.4   Descriptive statistics: Research themes

The descriptive statistics are presented in the form of frequency tables. Meaningful results are contextualized within the objectives of the study and expressed according to the research themes.

6.4.1 Research theme one: Knowledge generation and knowledge sharing

Human Resources (HR) play a significant role in facilitating the knowledge generation and knowledge sharing processes of its employees. The important factors that have been selected as contributors to these processes are the impact of HR policies, procedures and unwritten practices, job manuals, filing/record systems and work flow.

(a) Current policies and procedures

Table 6.11 provides the results to the participants' responses regarding current policies and procedures that encourage knowledge generation and knowledge sharing.

Table 6.11   Current policies and procedures

		Country						Total	
		India		Mauritius		RSA		**Total**	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Current policies and procedures	Disagree	0	.0%	0	.0%	4	8.0%	**4**	**4.4%**
	Neutral	0	.0%	0	.0%	5	10.0%	**5**	**5.5%**
	Agree	18	81.8%	13	68.4%	32	64.0%	**63**	**69.2%**
	Strongly agree	4	18.2%	6	31.6%	9	18.0%	**19**	**20.9%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results revealed that an overwhelming 90.1% % of participants either strongly agreed or agreed that current HR policies and procedures encouraged knowledge generation and knowledge sharing, followed by 5.5% who were neutral and 4.4% who disagreed.

Respondents from India and Mauritius reported 100% either strongly agree or agree that current HR policies and procedures encouraged knowledge generation and knowledge sharing.

Participants from RSA recorded 82% either strongly agree or agree, 10% who were neutral and 4% who disagree.

Based on the responses, it is acknowledged that there is a growing recognition in the HR departments in HEI's about the importance of knowledge and knowledge management policies and procedures to encourage knowledge generation and knowledge sharing.

(b) Unwritten practices and procedures

Table 6.12 provides the results to the participants' responses regarding current unwritten policies and procedures that encourage knowledge generation and knowledge sharing.

Table 6.12   Unwritten practices and procedures

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Unwritten policies	Strongly disagree	0	.0%	2	10.5%	2	4.0%	4	4.4%
	Disagree	4	18.2%	0	.0%	4	8.0%	8	8.8%
	Neutral	14	63.6%	9	47.4%	10	20.0%	33	36.3%
	Agree	4	18.2%	4	21.1%	28	56.0%	36	39.6%
	Strongly agree	0	.0%	4	21.1%	6	12.0%	10	11.0%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The overall results revealed that 50.6% of participants either strongly agree or agree that current unwritten HR practices and procedures encouraged knowledge generation and knowledge sharing, followed by 36.3% who were neutral and 13.2% who either disagreed or strongly disagreed.

Results from India indicated that 18.2% agree, 63.6% were neutral and 18.2% disagree that unwritten HR practices and procedures encouraged knowledge generation and knowledge sharing.

Respondents from Mauritius indicated 42.2% either agree or strongly agree, 47.4% were neutral and 10.5% strongly disagree.

Participants from RSA recorded 68% either strongly agreed or agreed, 20% who were neutral and 12% who either disagreed or strongly disagreed.

The results to this question yielded mixed responses from the participants, with a substantial proportion of the respondents from India and Mauritius who chose the neutral response. This could be attributed to either the HR managers' preference for written policies or an indication of the respondents' indecision regarding this question. Respondents from South Africa have however reported an overwhelming support for unwritten HR practices and procedures as a means to encourage knowledge generation and knowledge sharing. It does appear that HEI's in South Africa are moving towards flexible decision-making and hence policies are not written down to achieve the organization's HR objectives.

As higher educational institutions are generally complex operations, often with multiple sites and functions, it would be appropriate to document all human resource practices and procedures to assist with consistent decision-making and more importantly to facilitate knowledge generation and sharing in a structured and consistent manner .

(c) Job manuals

Table 6.13 provides the results to the participants' responses regarding job manual procedures that encourage knowledge generation and knowledge sharing.

Table 6.13: Job manuals encourage knowledge generation and knowledge sharing

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Job manual procedures	Disagree	1	4.5%	1	5.3%	3	6.0%	5	5.5%
	Neutral	3	13.6%	1	5.3%	5	10.0%	9	9.9%
	Agree	16	72.7%	13	68.4%	36	72.0%	65	71.4%
	Strongly agree	2	9.1%	4	21.1%	6	12.0%	12	13.2%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The overall results revealed that 84.6% of participants either strongly agreed or agreed that job manuals encouraged knowledge generation and knowledge sharing, followed by 9.9% who were neutral and 5.5% who disagreed. The overwhelming majority of the respondents acknowledge the importance of job manuals and hence their support for it.

Respondents from India reported 81.8% either agree or strongly agree, 13.6% were neutral and 4.5% disagree that job manuals encouraged knowledge generation and knowledge sharing.

Respondents from Mauritius indicated 89.5% either agree or strongly agree, 5.3% were neutral and 5.3% who disagree. Participants from RSA recorded 84% either strongly agree or agree, 10% who were neutral and 6% who disagreed.

Due to the overwhelming support for job manuals as a tool to generate and share knowledge, institutions should give additional attention to compiling or documenting existing procedures to form job manuals and make these accessible to employees to facilitate the execution of complex operations or tasks.

(d) HR filing systems

Table 6.14 provides the results of the participants' responses regarding HR filing systems that encourage knowledge generation and knowledge sharing.

Table 6.14: **HR filing systems encourage knowledge generation and knowledge sharing**

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	%	Count	Column %	Count	Column %	Count	Column %
Filing system	Disagree	1	4.5%	1	5.3%	3	6.0%	**5**	**5.5%**
	Neutral	7	31.8%	3	15.8%	6	12.0%	**16**	**17.6%**
	Agree	11	50.0%	10	52.6%	36	72.0%	**57**	**62.6%**
	Strongly agree	3	13.6%	5	26.3%	5	10.0%	**13**	**14.3%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results revealed that 76.9% of participants either strongly agree or agree that HR filing systems encourage knowledge generation and knowledge sharing, followed by 17.6% who were neutral and 5.5% who disagreed.

Respondents from India reported 63.6% either agree or strongly agree, 31.8% neutral and 4.5% disagree that HR filing systems encourage knowledge generation and knowledge sharing.

Respondents from Mauritius indicated 78.9% either agree or strongly agree, 15.8% were neutral and 5.3% disagreed.

Participants from RSA recorded 82% either strongly agree or agree, 12% who were neutral and 6% disagreed.

The results to this question yielded an overwhelming support for the maintenance of proper HR filing systems. Respondents from South Africa reported the highest

count for the maintenance of HR filing systems. This could be an affirmation of an over-reliance on manual human resource information systems.

The high response rate of 31.8% who were neutral from the respondents of India seem to indicate either that they are undecided or that the HR filing system is being gradually replaced by electronic filing systems for easier accessibility to information.

(e) Workflow

Table 6.15 provides the results of the participants' responses regarding workflow that encourages knowledge generation and knowledge sharing.

Table 6.15: Workflow processes encourage knowledge generation and knowledge sharing

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Workflow	Strongly disagree	0	.0%	1	5.3%	0	.0%	**1**	**1.1%**
	Disagree	1	4.5%	0	.0%	3	6.0%	**4**	**4.4%**
	Neutral	12	54.5%	4	21.1%	12	24.0%	**28**	**30.8%**
	Agree	7	31.8%	11	57.9%	26	52.0%	**44**	**48.4%**
	Strongly agree	2	9.1%	3	15.8%	9	18.0%	**14**	**15.4%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results revealed that 63.8% of participants either strongly agree or agree that workflows encourage knowledge generation and knowledge sharing, followed by 30.8% who were neutral and 1.1% who strongly disagree.

Respondents from India reported 40.9% either agree or strongly agree, 54.5% were neutral and 4.5% disagree that workflows encourage knowledge generation and knowledge sharing.

Respondents from Mauritius indicated 73.7% either agree or strongly agree, 21.1% were neutral and 5.3% who strongly disagree.

Participants from RSA recorded 70% either strongly agree or agree, 24% who were neutral and 6% disagree.

A significant proportion of the respondents, most in India respondents (54.5%) have indicated neutral to this variable. It is possible that the respondents were undecided whether or not proper workflows encourage knowledge generation and knowledge sharing.

6.4.2 Research theme two: Barriers to knowledge generation and knowledge sharing

The research theme focuses on the different individual and organizational barriers to knowledge generation and knowledge sharing.

(a) Organizational structures

Table 6.16 provides the results to the participants' perceptions whether organizational/departmental structure is a barrier to knowledge generation and knowledge sharing.

Table 6.16: Organizational structures are barriers to knowledge generation and knowledge sharing

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Organizational Structures as barriers to knowledge generation	Strongly disagree	2	9.1%	2	10.5%	3	6.0%	**7**	**7.7%**
	Disagree	12	54.5%	5	26.3%	7	14.0%	**24**	**26.4%**
	Neutral	8	36.4%	2	10.5%	9	18.0%	**19**	**20.9%**
	Agree	0	.0%	9	47.4%	30	60.0%	**39**	**42.9%**
	Strongly agree	0	.0%	1	5.3%	1	2.0%	**2**	**2.2%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported 34.1% either disagree or strongly disagree, 20.9% were neutral and 45.1% agree or strongly agree that organizational structures are barriers to knowledge generation and knowledge sharing.

The results from India revealed that 63.6% of participants either strongly disagree or disagree that organizational structure/departmental structure are barriers to knowledge generation and knowledge sharing, followed by 36.4% who were neutral. None of the respondents agreed or strongly agreed.

Respondents from Mauritius indicated 36.8% either disagree or strongly disagree, 10.5% were neutral and 52.7%% strongly agree or agree.

Participants from RSA recorded 20% either strongly disagree or disagree, 18% were neutral and 62% who strongly agree or agree.

The higher educational institutions in India demonstrated a preference for flat structures with decentralized teams. In addition, this is supported with policies, procedures and job manuals. The results showed that over 50% of the subjects in Mauritius and over 60% in South Africa agreed/strongly agreed that organizational structures are barriers to knowledge generation and knowledge sharing.

(b) Political interference

Table 6.17 provides the results to the participants' perceptions whether political interference is a barrier to knowledge generation and knowledge sharing.

Table 6.17: Political Interference is a barrier to knowledge generation and knowledge sharing

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Political interference	Strongly disagree	2	9.1%	3	15.8%	1	2.0%	**6**	**6.6%**
	Disagree	8	36.4%	2	10.5%	8	16.0%	**18**	**19.8%**
	Neutral	9	40.9%	5	26.3%	31	62.0%	**45**	**49.5%**
	Agree	2	9.1%	3	15.8%	9	18.0%	**14**	**15.4%**
	Strongly agree	1	4.5%	6	31.6%	1	2.0%	**8**	**8.8%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported that 26.4% either disagree or strongly disagree, 49.5% were neutral, and 24.2% agree or strongly agree that political interference is a barrier to knowledge generation and knowledge sharing.

The results from India revealed that 45.5% of participants either strongly disagree or disagree that political interference is a barrier to knowledge generation and knowledge sharing, followed by 40.9% who were neutral and 13.6% agree or strongly agree.

Respondents from Mauritius indicated 26.3% who either disagree or strongly disagree, 26.3% who were neutral and 47.4%% who strongly agree or agree.

Participants from South Africa recorded 18% who either strongly disagree or disagree, 62% who were neutral and 20% who strongly agree or agree.

From the descriptive statistics, it would appear that political interference in Mauritius and South Africa does pose as a barrier to knowledge generation and sharing and to a lesser degree in India. However, a significant percentage of respondents in all countries reported a neutral result denoting indecision.

(c) Communication channels

Table 6.18 provides the results to the participants' perceptions whether communication channels between employees are barriers to knowledge generation and knowledge sharing.

Table 6.18: Communication channels between employees

| | | Country | | | | | | | |
| | | \multicolumn{2}{c}{India} | | \multicolumn{2}{c}{Mauritius} | | \multicolumn{2}{c}{RSA} | | \multicolumn{2}{c}{Total} |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Communication channels between employees	Strongly disagree	1	4.5%	1	5.3%	1	2.0%	3	3.3%
	Disagree	13	59.1%	7	36.8%	11	22.0%	31	34.1%
	Neutral	6	27.3%	1	5.3%	8	16.0%	15	16.5%
	Agree	1	4.5%	7	36.8%	26	52.0%	34	37.4%
	Strongly agree	1	4.5%	3	15.8%	4	8.0%	8	8.8%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The results overall reported 37.4% either disagree or strongly disagree, 16.5% were neutral and 46.2% agree or strongly agree that communication channels between employees are barriers to knowledge generation and knowledge sharing.

The results from India revealed that 63.6% of participants either strongly disagree or disagree that communication channels are barriers to knowledge generation and knowledge sharing, followed by 27.3% who were neutral and 9% who agree or strongly agree.

Respondents from Mauritius indicated that 42.1% who either disagree or strongly disagree, 5.3% were neutral and 52.6% strongly agree or agree.

Participants from RSA recorded 24% who either strongly disagree or disagree, 16% who were neutral and 60% who strongly agree or agree.

The descriptive statistics show that communication channels between employees is lacking in South Africa, followed by Mauritius and India to a lesser degree. In

overcoming communication barriers, an environment conducive to knowledge generation and knowledge sharing could be fostered.

(d) Command and control

Table 6.19 provides the results to the participants' perceptions whether command and control procedures in the institution are barriers to knowledge generation and knowledge sharing.

Table 6.19: Command and control procedures are barriers to knowledge sharing

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Command and control procedures	Strongly disagree	1	4.5%	3	15.8%	1	2.0%	5	5.5%
	Disagree	12	54.5%	6	31.6%	9	18.0%	27	29.7%
	Neutral	7	31.8%	0	.0%	14	28.0%	21	23.1%
	Agree	1	4.5%	7	36.8%	23	46.0%	31	34.1%
	Strongly agree	1	4.5%	3	15.8%	3	6.0%	7	7.7%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The results overall reported 35.2% either disagree or strongly disagree, 23.1% neutral, and 41.8% agree or strongly agree that command and control procedures pose as barriers to knowledge generation and knowledge sharing.

The results from India revealed that 59% of participants either strongly disagree or disagree that command and control procedures are barriers to knowledge generation and knowledge sharing, followed by 31.8% neutral. 9% reported agree or strongly agree.

Respondents from Mauritius indicated 47.4% either disagree or strongly disagree and 52.6% who strongly agree or agree.

Participants from RSA recorded 20% either strongly disagree or disagree, 28% who were neutral and 52% who strongly agree or agree.

Whilst the majority of participants from India state that command and control procedures do not pose as barriers to knowledge generation and sharing, the results reveal that Mauritius and South Africa maintain strong command and control processes that inhibit knowledge generation and sharing.

The overall results in respect of barriers to knowledge generation and knowledge sharing in South Africa indicate that there is an urgent need for human resource management and senior management to consider interventions as a means to address the barriers that inhibit knowledge generation and knowledge sharing.

6.4.3   Research theme three: Knowledge transfer

This research theme evaluates the perceptions of respondents in terms of knowledge access, knowledge transfer and knowledge sharing.

(a)   Knowledge access within departments

Table 6.20 provides the results to the participants' perceptions whether knowledge/information is easily accessed within the department.

Table 6.20   Knowledge/information is easily accessed within departments

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge/information is easily accessed within Departments	Strongly disagree	0	.0%	0	.0%	3	6.0%	**3**	**3.3%**
	Disagree	2	9.1%	3	15.8%	9	18.0%	**14**	**15.4%**
	Neutral	1	4.5%	5	26.3%	11	22.0%	**17**	**18.7%**
	Agree	13	59.1%	10	52.6%	27	54.0%	**50**	**54.9%**
	Strongly agree	6	27.3%	1	5.3%	0	.0%	**7**	**7.7%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported 18.7% either disagree or strongly disagree, 18.7% were neutral and 62.6% agree or strongly agree that knowledge/information is easily accessed within departments.

The results from India revealed that 9.1% of participants either strongly disagree or disagree that knowledge/information is easily accessed within the department, followed by 4.5% who were neutral and an overwhelming 86.4% of participants who reported agree or strongly agree.

Respondents from Mauritius indicated 15.8% either disagree or strongly disagree, 26.3% were neutral and 57.9% who strongly agree or agree.

Participants from South Africa recorded 24% either strongly disagree or disagree, 22% who were neutral and 54% who strongly agree or agree.

Mauritius and South Africa participants are lagging behind in terms of knowledge accessibility within departments. It is therefore necessary for South Africa and Mauritius to improve in this area to ensure that knowledge is freely accessible within departments so that they could derive distinct benefits from this endeavour.

Whilst South Africa has the information technology infrastructure equivalent to or better than the other countries surveyed and the means to transfer knowledge effectively, the results reflect that knowledge transfer remains a challenge.

(b) Knowledge access from other departments

Table 6.21 provides the results to the participants' perceptions whether knowledge/information is easily accessed from other departments.

Table 6.21 Knowledge/information is easily accessed from other departments

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge is easily accessed from other Departments	Strongly disagree	1	4.5%	1	5.3%	3	6.0%	**5**	**5.5%**
	Disagree	2	9.1%	5	26.3%	24	48.0%	**31**	**34.1%**
	Neutral	11	50.0%	6	31.6%	21	42.0%	**38**	**41.8%**
	Agree	7	31.8%	6	31.6%	2	4.0%	**15**	**16.5%**
	Strongly agree	1	4.5%	1	5.3%	0	.0%	**2**	**2.2%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported that 39.6% either disagree or strongly disagree, 41.8% were neutral and 18.7% agree or strongly agree that knowledge/information is easily accessed from other departments.

The results from India revealed that 13.6% of participants either strongly disagree or disagree that knowledge/information is easily accessed from other departments, followed by 50% who were neutral and 36.3% who agree or strongly agree.

Respondents from Mauritius indicated that 31.6% either disagree or strongly disagree, 31.6% who were neutral and 36.9% who strongly agree or agree.

Results from RSA revealed that 54% either strongly disagree or disagree, 42% were neutral and only 4% strongly agree or agree.

The results signal concerns regarding the perceptions on knowledge transfer between and amongst departments, more significantly in South African institutions. There is a dire need to evaluate the barriers to knowledge transfer between departments in the institutions so that mechanisms could be created to overcome such obstacles. Working in silos could have serious implications for organizational effectiveness.

The descriptive statistics show that South Africa, Mauritius and India have yet to embrace the importance of making knowledge resources accessible to other sectors within the institution.

As each institution would have unique reasons for the barriers to knowledge sharing between departments, it is therefore important for these reasons to be evaluated by the leadership and management so that a culture of knowledge exchange between departments is fostered.

(c)   Reliability of knowledge

Table 6.22 provides the results to the participants' perceptions on the reliability of knowledge transferred.

Table 6.22   Reliability of knowledge transferred

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge that is transferred is generally very reliable	Disagree	0	.0%	2	10.5%	9	18.0%	11	12.1%
	Neutral	1	4.5%	2	10.5%	15	30.0%	18	19.8%
	Agree	18	81.8%	14	73.7%	24	48.0%	56	61.5%
	Strongly agree	3	13.6%	1	5.3%	2	4.0%	6	6.6%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The results overall reported that 12.1% disagree, 19.8% were neutral and a majority of 68.1% agree or strongly agree that knowledge that is transferred is generally very reliable.

The results from India revealed that none of participants either strongly disagree or disagree that knowledge that is transferred is generally very reliable, followed by an overwhelming 95.4% of participants who either agree or strongly agree. Respondents from Mauritius indicated that 10.5% disagree, 10.5% were neutral and 79% strongly agree or agree.

Participants from RSA recorded that 18% disagree, 30% were neutral and 52% strongly agree or agree.

The results demonstrate that knowledge that is transferred is to a large extent, reliable. The results augers well for organizations in that sound decisions could be made based on the reliability of the knowledge that is accessed. However, comparatively South Africa is behind the other countries surveyed, with a large contingent of respondents recording neutral, signaling either undecided or not certain. The fact that the knowledge transferred is reliable is an indication that proper infrastructures are in place to ensure accurate capture, storage, retrieval, and transfer of such knowledge.

(d) Knowledge is up-to-date

Table 6.23 provides the results to the participants' perceptions on whether the knowledge transferred is up to date.

Table 6.23   The knowledge that is transferred is generally very up- to- date

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge that is transferred is generally very up-to-date	Disagree	0	.0%	3	15.8%	13	26.0%	**16**	**17.6%**
	Neutral	1	4.5%	3	15.8%	22	44.0%	**26**	**28.6%**
	Agree	18	81.8%	11	57.9%	13	26.0%	**42**	**46.2%**
	Strongly agree	3	13.6%	2	10.5%	2	4.0%	**7**	**7.7%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported that 17.6% disagree, 28.6% were neutral and 53.2% agree or strongly agree that knowledge that is transferred is generally very up-to-date.

The results from India revealed that none of participants either strongly disagree or disagree that knowledge that is transferred is generally very up-to-date, 4.5%

were neutral followed by an overwhelming 95.4% of participants who either agree or strongly agree.

Respondents from Mauritius indicated that 15.8% disagree, 15.8% were neutral and 68.4% who strongly agree or agree.

Participants from RSA recorded 26% disagree, 44% neutral and 30% strongly agree or agree.

The results amongst the countries surveyed show a wide variance in the responses which indicate that institutional practices in updating information and knowledge differs from country to country. South Africa scored the lowest in terms of the currency of its information and knowledge transferred. This could be attributed to several factors, including but not limited to the lack of utilizing IT effectively to update existing with the latest information and knowledge.

(e) Confidence in transferred knowledge

Table 6.24 provides the results to the participants' perceptions on whether decisions could be made confidently using the available knowledge/information.

Table 6.24   Decisions could be made confidently using the available knowledge/information

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Decisions can be made confidently using the available knowledge/information	Disagree	0	.0%	1	5.3%	13	26.0%	**14**	**15.4%**
	Neutral	1	4.5%	4	21.1%	21	42.0%	**26**	**28.6%**
	Agree	17	77.3%	12	63.2%	15	30.0%	**44**	**48.4%**
	Strongly agree	4	18.2%	2	10.5%	1	2.0%	**7**	**7.7%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported that 15.4% disagree, 28.6% were neutral and 55.4% agree or strongly agree that decisions could be made confidently using the available knowledge/information.

The results from India revealed that none of participants either strongly disagree or disagree that decisions could be made confidently using available knowledge/information, 4.5% were neutral followed by an overwhelming 95.5% of participants who either agree or strongly agree.

Respondents from Mauritius indicated that 5.3% disagree, 21.1% were neutral and 73.7% strongly agree or agree.

Participants from South Africa recorded that 26% disagree, 42% were neutral and 32% strongly agree or agree.

Whilst India and Mauritius reported high levels of agreement that decisions could be made confidently using available explicit knowledge resources, South Africa's response was somewhat reserved with a significant proportion showing a neutral response. This result could signal that South African institutions are not codifying and storing knowledge.

(f) Ease of knowledge transfer within the department

Table 6.25 provides the results to the participants' perceptions on whether knowledge/information could be transferred to respective persons within the department with relative ease.

Table 6.25   Knowledge/information could be transferred to respective persons within the department with relative ease

		Country						Total	
		India		Mauritius		RSA		Total	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge/information can be transferred to the respective person within the department/unit without difficulties	Strongly disagree	0	.0%	1	5.3%	0	.0%	1	1.1%
	Disagree	1	4.5%	3	15.8%	7	14.0%	11	12.1%
	Neutral	1	4.5%	3	15.8%	13	26.0%	17	18.7%
	Agree	15	68.2%	12	63.2%	27	54.0%	54	59.3%
	Strongly agree	5	22.7%	0	.0%	3	6.0%	8	8.8%
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported 13.2% strongly disagree or disagree, 18.7% neutral, and 68.1% agree or strongly agree that knowledge/information can be transferred to respective persons within the department with ease.

The results from India revealed that 4.5% disagreed with the statement, 4.5% were neutral followed by an overwhelming 90.9% of participants who either agree or strongly agree.

Respondents from Mauritius indicated 21.1% either strongly disagree or disagree, 15.8% were neutral and 63.2% who agree.

Participants from RSA recorded 14% disagree, 26% neutral and 60% strongly agree or agree.

The results of the survey demonstrate that there is reasonable consensus that knowledge/information can be transferred to other sectors or persons within the department with relative ease.

(g)   Ease of knowledge transfer from other departments

Table 6.26 provides the results to the participants' perceptions on whether knowledge/information could be transferred to other departments with relative ease.

Table 6.26 Knowledge/information could be transferred to other departments with relative ease

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge/information can be transferred to the respective person in other departments/units with relative ease	Strongly disagree	0	.0%	2	10.5%	0	.0%	**2**	**2.2%**
	Disagree	1	4.5%	3	15.8%	14	28.0%	**18**	**19.8%**
	Neutral	9	40.9%	3	15.8%	23	46.0%	**35**	**38.5%**
	Agree	10	45.5%	11	57.9%	11	22.0%	**32**	**35.2%**
	Strongly agree	2	9.1%	0	.0%	2	4.0%	**4**	**4.4%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported 22% strongly disagree or disagree, 38.5% were neutral, and 39.6% agree or strongly agree that knowledge/information can be transferred to respective persons in other departments with ease.

The results from India revealed that 4.5% disagreed with the statement, 40.9% were neutral followed by 54.6% of participants who either agree or strongly agree.

Respondents from Mauritius indicated that 26.3% either strongly disagree or disagree, 15.8% were neutral and 57.9% agree.

Participants from South Africa recorded that 28% disagree, 46% were neutral and 26% strongly agree or agree.

The results of the survey confirm that knowledge transfer between departments remain a challenge for higher educational institutions. Whilst India and Mauritius showed a reasonable level of inter-departmental transfer of knowledge, South Africa is way below par compared to the other countries. Yet, South African higher educational institutions have the technological infrastructure and the capabilities to render a high level of inter-departmental knowledge transfer. This problem could be attributed to cultural barriers to knowledge transfer and lack of procedures to improve the pace of knowledge transfer. Another possibility is that

the knowledge assets are contained in paper documents and files and hence not able to be transferred to areas of need.

The results relating to the knowledge transfer within departments and between departments reflect that higher educational institutions are facing enormous challenges in this regard. There is no doubt that efficient and effective knowledge transfer is critical for the success of higher educational institutions. However, the results confirm that barriers exist that prevent or impede the potential of knowledge transfer. It is therefore important for human resource managers and senior management to identify the impediments and implement interventions to overcome the barriers to knowledge transfer.

6.4.4 Research theme four: Knowledge assets

This research theme reviews the levels of access to tacit and explicit knowledge assets in the institutions.

(a) Accessibility of documented knowledge (explicit knowledge)

Table 6.27 provides the results to the participants' perceptions on whether knowledge/information that is created in paper documentation can be easily accessed.

Table 6.27   Accessibility of documented knowledge/information

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge/information that is created in paper documentation can be easily accessed	Strongly disagree	0	.0%	0	.0%	1	2.0%	1	1.1%
	Disagree	0	.0%	3	15.8%	4	8.0%	7	7.7%
	Neutral	0	.0%	1	5.3%	5	10.0%	6	6.6%
	Agree	8	36.4%	10	52.6%	33	66.0%	51	56.0%
	Strongly agree	14	63.6%	5	26.3%	7	14.0%	26	28.6%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The results overall reported that 8.8% strongly disagree or disagree, 6.6% were neutral and an overwhelming majority of 84.6% agree or strongly agree that knowledge/information that is created on paper documentation can be easily accessed.

The results from India revealed that none of the participants disagreed with the statement, none were neutral and 100% of the participants recorded either agree or strongly agree.

Respondents from Mauritius indicated that 15.8% disagree, 5.3% were neutral and 78.9% either agree or strongly agree.

Participants from RSA recorded that 10% either strongly disagree or disagree, 10% were neutral and 80% strongly agree or agree.

The results confirm that explicit knowledge in hard copy format that are available are easily accessible in the institutions. Whilst respondents in India were unanimous in affirming that knowledge/information in document format is easily accessible, Mauritius and South Africa followed very closely. These results auger well for higher educational institutions in that the file records are accessible to employees in the line of duty.

(b) Electronic access to knowledge

Table 6.28 provides the results to the participants' responses on the accessibility of knowledge/information that is created in electronic format.

Table 6.28 Accessibility of knowledge/information that is created in electronic format

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge/information that is created in electronic format can be easily accessed	Strongly disagree	0	.0%	0	.0%	1	2.0%	1	1.1%
	Disagree	0	.0%	2	10.5%	1	2.0%	3	3.3%
	Neutral	0	.0%	0	.0%	1	2.0%	1	1.1%
	Agree	7	31.8%	12	63.2%	38	76.0%	57	62.6%
	Strongly agree	15	68.2%	5	26.3%	9	18.0%	29	31.9%
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported that 4.4% strongly disagree or disagree, 1.1% were neutral and an overwhelming majority of 94.5% agree or strongly agree that knowledge/information that is created in electronic format can be easily accessed.

The results from India revealed that none of the participants disagreed with the statement, none were neutral and a majority (100% of participants) recorded either agree or strongly agree.

Respondents from Mauritius indicated that 10.5% disagree, 0% were neutral and 89.5% either agree or strongly agree.

Participants from RSA recorded that 4% either strongly disagree or disagree, 2% were neutral and 94% strongly agree or agree.

The findings of the survey show that knowledge in electronic format is easily accessed by users in institutions in all three countries. As higher educational institutions have the relevant ICT infrastructures described, there is opportunity for these institutions to explore the potential to derive maximum benefits from such infrastructures.

(c) Knowledge sharing through formal processes

Table 6.29 provides the results to the participants' responses on knowledge sharing through formal discussions/meetings.

Table 6.29 Knowledge sharing through formal meetings

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge/information from individuals can be shared and transferred through formal discussions/meetings	Strongly disagree	0	.0%	1	5.3%	0	.0%	1	1.1%
	Disagree	1	4.5%	2	10.5%	18	36.0%	21	23.1%
	Neutral	0	.0%	4	21.1%	12	24.0%	16	17.6%
	Agree	15	68.2%	8	42.1%	18	36.0%	41	45.1%
	Strongly agree	6	27.3%	4	21.1%	2	4.0%	12	13.2%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The results overall reported 24.2% strongly disagree or disagree, 17.6% were neutral, and 58.3% agree or strongly agree that knowledge/information can be shared and transferred through formal meetings/discussions without difficulty.

The results from India revealed that only 4.5% of the participants disagreed with the statement, none were neutral and an overwhelming majority of 95.5% of participants recorded either agree or strongly agree.

Respondents from Mauritius indicated that 15.8% either strongly disagree or disagree, 21.1% were neutral and 63.2% registered either agree or strongly agree.

Participants from RSA recorded that 36% disagree, 24% were neutral and 40% strongly agree or agree.

The results of the response to this statement show that India has very strong formal network infrastructures that support knowledge sharing. South Africa in

contrast shows the lowest level of agreement denoting that the respondents view formal meetings as not a very significant means of knowledge sharing.

(d) Knowledge sharing through informal processes

Table 6.30 provides the results to the participants' responses on knowledge sharing through informal discussions/meetings.

Table 6.30 Knowledge sharing through informal meetings/discussions

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge/information from individuals can be shared and transferred through informal discussion without difficulties	Strongly disagree	0	.0%	1	5.3%	0	.0%	1	1.1%
	Disagree	1	4.5%	2	10.5%	17	34.0%	20	22.0%
	Neutral	3	13.6%	4	21.1%	15	30.0%	22	24.2%
	Agree	15	68.2%	8	42.1%	15	30.0%	38	41.8%
	Strongly agree	3	13.6%	4	21.1%	3	6.0%	10	11.0%
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported that 23.1% strongly disagree or disagree, 24.2% were neutral, and 52.8% agree or strongly agree that knowledge/information can be shared and transferred through informal meetings/discussions without difficulty.

The results from India revealed that only 4.5% of the participants disagreed with the statement, 13.6% were neutral, and a majority of 81.9% of participants recorded either agree or strongly agree.

Respondents from Mauritius indicated that 15.8% either strongly disagree or disagree, 21.1% were neutral and 63.2% registered either agree or strongly agree.

Participants from RSA recorded that 34% disagree, 30% were neutral and 36% strongly agree or agree.

The descriptive statistics reveals that knowledge sharing through informal processes does take place in the institutions, but is not very significant. Therefore there is a need for institutions to explore this avenue further as much benefit could be derived if informal social networks are encouraged.

(e) Knowledge retention of employees who exit the institution

Table 6.31 provides the results to the participants' responses on whether the institutions have procedures to retain the knowledge and know-how of employees who leave the higher educational institution.

Table 6.31 The HR department has procedures to retain the knowledge and know- how of employees who exit the institution

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
The HR Department has procedures to retain the knowledge and know-how of employees who leave the Institution	Strongly disagree	1	4.5%	5	26.3%	10	20.0%	**16**	**17.6%**
	Disagree	8	36.4%	2	10.5%	28	56.0%	**38**	**41.8%**
	Neutral	10	45.5%	4	21.1%	9	18.0%	**23**	**25.3%**
	Agree	3	13.6%	6	31.6%	2	4.0%	**11**	**12.1%**
	Strongly agree	0	.0%	2	10.5%	1	2.0%	**3**	**3.3%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported that 59.4% strongly disagree or disagree with the statement, 25.3% were neutral and 15.4% agree or strongly agree with the statement.

The results from India revealed that 40.9% of the participants disagreed and strongly disagreed with the statement, 45.5% were neutral and a mere 13.6% of participants recorded either agree or strongly agree.

Respondents from Mauritius indicated 36.8% either strongly disagree or disagree, 21.1% were neutral and 42.1% registered either agree or strongly agree.

Participants from South Africa recorded 76% who disagree, 18% who were neutral and a mere 6% who either strongly agree or agree with the statement.

Although the overall results are poor, South Africa recorded the lowest level of disagreement. This is an indication that generally none of the countries surveyed have mechanisms that could capture the knowledge profile of employees with scarce knowledge resources for the benefit of the organization. This does not auger well for the institutions concerned, as failure to recruit knowledgeable replacements will cause the institution to suffer a knowledge paralysis with major setbacks.

The majority of participants expressed that explicit documented knowledge is reasonably accessible in all institutions. Most of the participants also agreed that electronic access to knowledge resources is a current practice, supported by the IT infrastructure. However, the results related to knowledge transfer through informal means are generally lacking. The results also confirm that minimal attention is given to knowledge retention of employees who leave the organization.

6.4.5 Research theme five: Organizational culture

This research theme investigates the variables related to organizational culture that is conducive for knowledge generation and knowledge sharing.

Tables 6.32 to 6.35 provide the results of the participants' responses on organizational culture.

(a) **Organizational culture encourage the communication of ideas, knowledge and experience**

Table 6.32 presents the results on whether the culture of the institution encourages and provides an opportunity for the communication of ideas, knowledge and experience amongst employees.

Table 6.32 The organizational culture encourage the communication of ideas, knowledge and experience among all employees

			Country			Total
			India	Mauritius	RSA	
The organizational culture encourages communication of ideas, knowledge and experiences amongst employees	Strongly disagree	Count	1	0	2	3
		Column %	4.5%	.0%	4.0%	3.3%
	Disagree	Count	0	3	12	15
		Column %	.0%	15.8%	24.0%	16.5%
	Neutral	Count	2	4	16	22
		Column %	9.1%	21.1%	32.0%	24.2%
	Agree	Count	16	7	19	42
		Column %	72.7%	36.8%	38.0%	46.2%
	Strongly agree	Count	3	5	1	9
		Column %	13.6%	26.3%	2.0%	9.9%
Total		Count	**22**	**19**	**50**	**91**
		Column %	**100.0%**	**100.0%**	**100.0%**	**100.0%**

The results overall reported that 19.8% disagree or strongly disagree with the statement, 24.2% were neutral and 56.1% agree or strongly agree with the statement.

The results from India revealed that 4.5% of the participants strongly disagreed with the statement, 9.1% were neutral and the majority of 86.3% of participants recorded either agree or strongly agree.

Respondents from Mauritius indicated that 15.8% disagree, 21.1% were neutral and 63.1% registered either agree or strongly agree.

Participants from RSA recorded that 28% disagree, 32% were neutral and 40% either strongly agree or agree with the statement.

The results reflect different perceptions from the respondents in the different countries. The results show that participants from India have a strong affiliation for interpersonal relationships amongst employees with open communication and mutual support.

The results from Mauritius have indicated a good communication flow of knowledge, ideas and experiences amongst employees.

The results from South Africa have shown the lowest agreement (40%) that culture encourages communication of ideas, knowledge and experience amongst employees in the institution.

(b) Employees are willing to assist fellow employees

Table 6.33 presents the results on whether employees are ready and willing to give advice and assistance to fellow employees upon request.

Table 6.33   Employees' willingness to assist fellow employees

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Employees are willing to assist fellow employees	Disagree	0	.0%	1	5.3%	11	22.0%	**12**	**13.2%**
	Neutral	3	13.6%	4	21.1%	18	36.0%	**25**	**27.5%**
	Agree	16	72.7%	8	42.1%	19	38.0%	**43**	**47.3%**
	Strongly agree	3	13.6%	6	31.6%	2	4.0%	**11**	**12.1%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The results overall reported that 13.2% disagree with the statement, 27.5% were neutral and 59.4% agree or strongly agree with the statement.

The results from India revealed that none of the participants strongly disagreed or disagreed with the statement, 13.6% were neutral and the majority of 86.3% of participants recorded either agree or strongly agree.

Respondents from Mauritius indicated that 5.3% disagree, 21.1% were neutral and 73.7% registered either agree or strongly agree.

Participants from RSA recorded that 22% disagree, 36% were neutral and 42% who either strongly agree or agree with the statement.

India followed by Mauritius recorded high levels of agreement that employees are willing to provide advice and assistance to co-workers.

South Africa recorded a low level of agreement compared to the other countries in terms of employees' willingness to provide advice and assistance.

(c)   Knowledge is disseminated widely in the institution

Table 6.34 presents the results on whether knowledge is disseminated to a wide range of people rather than to employees on a need-to-know basis.

Table 6.34 Knowledge is disseminated to a wide range of people rather than to employees on a need-to-know basis.

		Country						Total	
		India		Mauritius		RSA		**Total**	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Knowledge is disseminated to a wide range of people rather than on a need-to-know basis	Strongly disagree	1	4.5%	0	.0%	0	.0%	**1**	**1.1%**
	Disagree	2	9.1%	4	21.1%	27	54.0%	**33**	**36.3%**
	Neutral	3	13.6%	3	15.8%	7	14.0%	**13**	**14.3%**
	Agree	13	59.1%	9	47.4%	15	30.0%	**37**	**40.7%**
	Strongly agree	3	13.6%	3	15.8%	1	2.0%	**7**	**7.7%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicated that 37.4% strongly disagree or disagree with the statement, 14.3% were neutral and 48.4% agree or strongly agree with the statement.

The results from India revealed that 13.6% of the participants strongly disagreed or disagreed with the statement, 13.6% were neutral and the majority of 72.7% of participants recorded either agree or strongly agree.

Respondents from Mauritius indicated that 21.1% disagree, 15.8% were neutral and 63.2% registered either agree or strongly agree.

Participants from RSA recorded that 54% disagree, 14% were neutral and 32% who either strongly agree or agree with the statement.

(d) Inter-disciplinary cross-functional team-work is encouraged

Table 6.35 presents the results on whether inter-disciplinary cross-functional teamwork is encouraged for decision-making and problem solving.

Table 6.35 Inter-disciplinary cross-functional teamwork is encouraged for decision-making and problem solving.

		Country						Total	
		India		Mauritius		RSA		**Total**	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
inter-disciplinary cross-functional team-work is encouraged for decision making and problem solving	Disagree	2	9.1%	2	10.5%	21	42.0%	**25**	**27.5%**
	Neutral	7	31.8%	4	21.1%	8	16.0%	**19**	**20.9%**
	Agree	11	50.0%	8	42.1%	19	38.0%	**38**	**41.8%**
	Strongly agree	2	9.1%	5	26.3%	2	4.0%	**9**	**9.9%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that 27.5% disagree, 20.9% were neutral and 51.7% either agreed or strongly agreed with the statement.

The results from India revealed that 9.1% disagree, 31.8% neutral and 59.1% either agree or strongly agree with the statement.

Respondents from Mauritius recorded that 10.5% disagree, 21.1% were neutral and 68.4% either agree or strongly agree with the statement.

The participants from South Africa showed that 42% disagree, 16% were neutral, and 42% either agree or strongly agree with the statement.

(e) Individuals tend to use knowledge as a source of power for personal advantage and not as an organizational resource

Table 6.36 presents the results on whether individuals use knowledge as a source of power for personal advantage and not as an organizational resource.

Table 6.36: Knowledge is regarded as a source of power for personal gain and not as an organizational resource.

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Within the institution individuals tend to use knowledge as a source of power	Strongly disagree	8	36%	3	15.7%	6	12%	**17**	**18.7%**
	Disagree	6	27%	6	31.6%	10	20%	**22**	**24.2%**
	Neutral	4	18%	7	37%	10	20%	**21**	**23.0%**
	Agree	2	9.0%	3	15.7%	20	40%	**25**	**27.5%**
	Strongly agree	2	9.0%	0	0%	4	8%	**6**	**6.6%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicated that 42.9% strongly disagree or disagree with the statement, 23.0% were neutral and 34.1% agree or strongly agree with the statement.

The results from India revealed that 63% of the participants either strongly disagreed or disagreed with the statement, 18% were neutral and 18% of participants recorded either agree or strongly agree.

Respondents from Mauritius indicated 47.3% strongly disagree or disagree, 37% were neutral and 15.7% registered either agree or strongly agree.

Participants from RSA recorded that 32% strongly disagree or disagree, 20% were neutral and 48% either strongly agree or agree with the statement.

The results show that a significant proportion of the respondents in India and South Africa strongly agree or agree that knowledge is used as a source of power for personal gain. The outcome shows a close relationship between power and knowledge.

6.4.6 Research theme six: Organizational performance

This research theme evaluates the contribution of knowledge management on individual and organizational performance.

(a) Restricted access to information affects individual performance

Table 6.37 evaluates the results of restricted access to information/knowledge which impact negatively on employee performance.

Table 6.37 Restricted access to information impacts negatively on employee performance

		Country						Total	
		India		Mauritius		RSA		**Total**	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Restricted access to key Info. impacts negatively on employee performance	Strongly disagree	1	4.5%	2	10.5%	3	6.0%	**6**	**6.6%**
	Disagree	11	50.0%	6	31.6%	18	36.0%	**35**	**38.5%**
	Neutral	9	40.9%	2	10.5%	15	30.0%	**26**	**28.6%**
	Agree	1	4.5%	8	42.1%	13	26.0%	**22**	**24.2%**
	Strongly agree	0	.0%	1	5.3%	1	2.0%	**2**	**2.2%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that 45.1% strongly disagree or disagree with the statement, 28.6% were neutral and 26.4% agree or strongly agree with the statement.

The results from India reveal that 54.5% of the participants either strongly disagree or disagree with the statement, 40.9% were neutral and 4.5% of participants agree.

Respondents from Mauritius indicated that 42.1% strongly disagree or disagree, 10.5% were neutral and 47.4% registered either agree or strongly agree.

Participants from RSA recorded that 42% strongly disagree or disagree, 30% were neutral and 28% either strongly agree or agree with the statement.

(b) Restricted access to policies and procedures impacts negatively on organizational performance

Table 6.38 presents the results of the problems associated with restricted access to HR policies and procedures that hinder organizational performance.

Table 6.38 Restricted access to policies and procedures have a negative impact on organizational performance

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Restricted access to policies Impacts negatively on organizational performance	Strongly disagree	1	4.5%	3	15.8%	3	6.0%	7	7.7%
	Disagree	12	54.5%	6	31.6%	15	30.0%	33	36.3%
	Neutral	8	36.4%	2	10.5%	16	32.0%	26	28.6%
	Agree	1	4.5%	8	42.1%	15	30.0%	24	26.4%
	Strongly agree	0	.0%	0	.0%	1	2.0%	1	1.1%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The overall results indicate that 44% strongly disagree or disagree with the statement, 28.6% were neutral and 27.5% agree or strongly agree with the statement.

The results from India reveal that 59% of the participants either strongly disagree or disagree with the statement, 36.4% were neutral and 4.5% of participants agree.

Respondents from Mauritius indicate 47.4% strongly disagree or disagree, 10.5% were neutral and 42.1% either agree or strongly agree.

Participants from RSA record that 36% strongly disagree or disagree, 32% were neutral and 32% who either strongly agree or agree with the statement.

The results show differing perceptions regarding the statement on the impact of restricted access to policies and procedures in the organization. The highest level of agreement with this statement was from India, followed by Mauritius and South Africa. Although the majority of respondents in each country agreed with the statement, a significant number recorded a neutral response or disagreed.

6.4.7 Research theme seven: Information and communication technology (ICT)

This research theme assesses the impact of ICT technologies used by institutions to manage and facilitate knowledge sharing within the organization. Tables 6.39-6.41 present the results of the participants' perceptions on the impact of computer technology infrastructure on knowledge transfer, knowledge creation and knowledge sharing.

(a) Impact of computer technology on knowledge management

Table 6.39 presents the results on whether participants perceive the institution as having an up-to-date ICT infrastructure to enable knowledge creation and knowledge sharing and knowledge transfer.

Table 6.39   The institution has an up-to-date ICT infrastructure which enables knowledge creation and knowledge sharing

		India		Mauritius		RSA		Total	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
The institution has an up-to-date ICT infrastructure which enables knowledge creation and sharing	Strongly disagree	0	.0%	1	5.3%	1	2.0%	**2**	**2.2%**
	Disagree	0	.0%	7	36.8%	3	6.0%	**10**	**11.0%**
	Neutral	0	.0%	6	31.6%	6	12.0%	**12**	**13.2%**
	Agree	11	50.0%	5	26.3%	35	70.0%	**51**	**56.0%**
	Strongly agree	11	50.0%	0	.0%	5	10.0%	**16**	**17.6%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that 13.2% strongly disagree or disagree, 13.2% were neutral and an overwhelming majority of 73.6% agree or strongly agree with the statement.

The results from India revealed that none of the participants disagree, none were neutral and 100% of the participants agree or strongly agree with the statement.

Respondents from Mauritius indicated that 42.1% strongly disagree or disagree, 31.6% were neutral and 26.3% agree or with the statement.

Participants from RSA recorded that 8% strongly disagree or disagree, 12% were neutral and an overwhelming 80% agree or strongly agree with the statement.

(b)   Computer technology and speed

Table 6.40 presents the results on whether participants perceive that ICT infrastructure can speed up work in searching for information.

Table 6.40   ICT infrastructure can speed up the search for information

		India		Mauritius		RSA		Total	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
ICT can speed up work in searching for information	Neutral	0	.0%	5	26.3%	3	6.0%	**8**	**8.8%**
	Agree	11	50.0%	9	47.4%	40	80.0%	**60**	**65.9%**
	Strongly agree	11	50.0%	5	26.3%	7	14.0%	**23**	**25.3%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that none of the participants strongly disagree or disagree, only 8.8% were neutral and an overwhelming majority 91.2% agree or strongly agree with the statement.

The results from India revealed that none of the participants disagree or strongly disagree, none were neutral and 100% of the participants agree or strongly agree with the statement.

Respondents from Mauritius indicated that none of the participants strongly disagree or disagree, 26.3% were neutral and 73.7% agree or strongly agree with the statement.

None of the participants from RSA recorded strongly disagree or disagree, 6% were neutral and an overwhelming 91.2% agree or strongly agree with the statement.

(c)   Computer technology and work improvement

Table 6.41 presents the results on whether participants perceive that ICT infrastructure can facilitate employees in their daily work.

Table 6.41   ICT infrastructure helps employees in their daily work

		India		Mauritius		RSA		Total	
					Country				
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
ICT facilitates employees in doing their daily work	Disagree	0	.0%	1	5.3%	0	.0%	1	1.1%
	Neutral	0	.0%	5	26.3%	3	6.0%	8	8.8%
	Agree	11	50.0%	5	26.3%	40	80.0%	56	61.5%
	Strongly agree	11	50.0%	8	42.1%	7	14.0%	26	28.6%
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that only 1.1% of the participants strongly disagree, 8.8% were neutral and an overwhelming majority of 90.1% agree or strongly agree with the statement.

The results from India revealed that none of the participants disagree, none were neutral and 100% of the participants unanimously agree or strongly agree with the statement.

Respondents from Mauritius indicated that 5.3% of the participants disagree, 26.3% were neutral and 68.4% agree or strongly agree with the statement.

None of the participants from RSA recorded strongly disagree or disagree, 6% were neutral and an overwhelming 94% agree or strongly agree with the statement.

6.4.8   Research theme eight: Learning organizations

Research theme eight evaluates whether higher educational institutions conform to the characteristics that apply to learning institutions.
Tables 6.42-6.49 present the results relating to characteristics that determine whether the institution subscribes to the principles of learning organizations

(a) Learning organizations and flat structures

Table 6.42 presents the results relating to whether institutions have flat
organizational structures as a characteristic of learning organizations.

Table 6.42   Flat organizational structures

		Country						Total	
		India		Mauritius		RSA		Total	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Flat organizational structures	Strongly disagree	0	.0%	1	5.3%	0	.0%	1	1.1%
	Disagree	0	.0%	6	31.6%	3	6.0%	9	9.9%
	Neutral	1	4.5%	5	26.3%	9	18.0%	15	16.5%
	Agree	18	81.8%	4	21.1%	34	68.0%	56	61.5%
	Strongly agree	3	13.6%	3	15.8%	4	8.0%	10	11.0%
Total		22	100.0%	19	100.0%	50	100.0%	91	100.0%

The overall results indicate that 11% of participants either strongly disagree or
disagree, 16.5% were neutral and 72.5% either agree or strongly agree that flat
organizational structures are implemented in their institutions.

The results from India reveal that none of the participants disagree, 4.5% were
neutral and the overwhelming majority of 95.4% agree or strongly disagree with
the statement.

Respondents from Mauritius indicate 36.9% disagree or strongly disagree, 26.3%
were neutral and 36.9% agree or strongly agree with the statement.

Participants from RSA recorded that 6% disagree, 18% were neutral and 76%
agree or strongly agree with the statement.

(b) Communication channels

Table 6.43 presents the results whether the HR department subscribes to "open
door" communication policies.

Table 6.43   Communication through "open door policy"

		India		Mauritius		RSA		Total	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Communication through "open door policy"	Strongly disagree	0	.0%	1	5.3%	0	.0%	1	1.1%
	Disagree	1	4.5%	3	15.8%	2	4.0%	6	6.6%
	Neutral	6	27.3%	2	10.5%	12	24.0%	20	22.0%
	Agree	12	54.5%	9	47.4%	30	60.0%	51	56.0%
	Strongly agree	3	13.6%	4	21.1%	6	12.0%	13	14.3%
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that 7.7% of participants either strongly disagree or disagree, 22% were neutral and 70.3% either agree or strongly agree that the institution subscribe to the principle of open door communication.

The results from India reveal that 4.5% of the participants disagree, 27.3% were neutral and 68.1% agree or strongly agree with the statement.

Respondents from Mauritius indicate that 21% disagree or strongly disagree, 10.5% were neutral and 68.5% agree or strongly agree with the statement.

Participants from RSA recorded that 4% disagree, 24% were neutral and 72% agree or strongly agree with the statement.

(c) Team learning

Table 6.44 presents the results regarding teamwork where team members learn from each other.

Table 6.44   Teamwork where team members learn from each other

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Teamwork where team members learn from each other	Disagree	0	.0%	3	15.8%	0	.0%	**3**	**3.3%**
	Neutral	1	4.5%	2	10.5%	5	10.0%	**8**	**8.8%**
	Agree	18	81.8%	9	47.4%	37	74.0%	**64**	**70.3%**
	Strongly agree	3	13.6%	5	26.3%	8	16.0%	**16**	**17.6%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that 3.3% of participants disagree, 8.8% were neutral and an overwhelming majority of 87.9% either agree or strongly agree that their HR departments subscribe to the principle of teamwork where team members learn from each other.

The results from India reveal that none of the participants disagree, 4.5% were neutral and 95.4% either agree or strongly agree with the statement.

Respondents from Mauritius indicate that 15.8% disagree, 10.5% were neutral and 73.7% agree or strongly agree with the statement.

Participants from RSA recorded that none disagree, 10% neutral and 90% agree or strongly agree with the statement.

(d) Employee empowerment

Table 6.45 presents the results regarding empowerment of employees to make decisions

Table 6.45   Empowerment of employees to make decisions

| | | Country | | | | | | Total | |
| | | India | | Mauritius | | RSA | | | |
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Empowerment of employees to make decisions	Disagree	0	.0%	5	26.3%	1	2.0%	**6**	**6.6%**
	Neutral	6	27.3%	1	5.3%	11	22.0%	**18**	**19.8%**
	Agree	13	59.1%	9	47.4%	32	64.0%	**54**	**59.3%**
	Strongly agree	3	13.6%	4	21.1%	6	12.0%	**13**	**14.3%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that 6.6% of participants disagree, 19.8% were neutral and 73.6% either agree or strongly agree that their HR departments subscribe to the principle of empowering employees to make decisions.

The results from India reveal that none of the participants disagree, 27.3% were neutral and 72.7% either agree or strongly agree with the statement.

Respondents from Mauritius indicated that 26.3% disagree, 5.3% were neutral and 68.5% agree or strongly agree with the statement.

Participants from RSA recorded that 2% disagree, 22% were neutral and 76% agree or strongly agree with the statement.

 (e) Integration of vision and mission statement

Table 6.46 presents the results regarding integration of the institution's vision and mission in HR practices

Table 6.46   Integration of the institution's vision and mission in HR practices

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Integration of the institution's vision and mission in HR practices	Disagree	0	.0%	3	15.8%	7	14.0%	**10**	**11.0%**
	Neutral	12	54.5%	2	10.5%	12	24.0%	**26**	**28.6%**
	Agree	9	40.9%	9	47.4%	22	44.0%	**40**	**44.0%**
	Strongly agree	1	4.5%	5	26.3%	9	18.0%	**15**	**16.5%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that 11% of participants disagree, 28.6% were neutral and 60.5% either agree or strongly agree that their HR departments integrates the institution's vision and mission statement in HR practices.

The results from India reveal that none of the participants disagree, 54.5% were neutral and 45.4% either agree or strongly agree with the statement.

Respondents from Mauritius indicated that 15.8% disagree, 10.5% were neutral and 73.7% agree or strongly agree with the statement.

Participants from RSA recorded that 14% disagree, 24% were neutral and 62% agree or strongly agree with the statement.

(f) Learning from best practices

Table 6.47 presents the results regarding HR department encouraging learning from industry trends and best practices

Table 6.47   HR department encourages learning from industry trends and best practices

		Country						Total	
		India		Mauritius		RSA			
		Count	Column %	Count	Column %	Count	Column %	Count	Column %
Learning from industry trends and best practices	Disagree	0	.0%	2	10.5%	6	12.0%	**8**	**8.8%**
	Neutral	0	.0%	4	21.1%	6	12.0%	**10**	**11.0%**
	Agree	19	86.4%	10	52.6%	31	62.0%	**60**	**65.9%**
	Strongly agree	3	13.6%	3	15.8%	7	14.0%	**13**	**14.3%**
Total		**22**	**100.0%**	**19**	**100.0%**	**50**	**100.0%**	**91**	**100.0%**

The overall results indicate that 8.8% of participants disagree, 11% were neutral and 80.2% either agree or strongly agree that their HR departments encourage learning from industry trends and best practices.

The results from India reveal that none of the participants disagree, none were neutral and 100% unanimously agree or strongly agree with the statement.

Respondents from Mauritius indicate that 10.5% disagree, 21.1% were neutral and 68.4% agree or strongly agree with the statement.

Participants from RSA recorded that 12% disagree, 12% were neutral and 76% agree or strongly agree with the statement.

6.5   Means and standard deviations of the dimensions of knowledge management

This section of the study evaluates the mean scores of the observations and standard deviations based on the distribution of the data.

Table 6.48 gives the results of the perceptions that respondents have on the variables of knowledge management.

Table 6.48   Perceptions of respondents on respective dimensions of KM

	India			Mauritius			RSA		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Encouragement of knowledge generation and sharing	22	3.0379	.33701	19	3.2632	.45581	50	3.1900	.44161
Barriers to knowledge generation and sharing	22	1.9727	.51379	19	2.5474	.99296	50	2.6560	.63122
Speed of knowledge transfer	22	3.6364	.78954	19	3.2632	.87191	50	2.8400	.71027
Reliability of knowledge transfer	22	4.1061	.42893	19	3.7193	.74753	50	3.1800	.71654
Ease of knowledge transfer	22	3.8409	.66164	19	3.2895	.96200	50	3.2700	.75734
Explicit knowledge	22	4.6591	.47274	19	3.9737	.87359	50	3.9400	.71884
Tacit knowledge	22	3.5909	.55331	19	3.3860	1.01387	50	2.7600	.78835
Sharing culture	22	3.7955	.68850	19	3.7895	.87505	50	3.0450	.77869
Individualism	22	2.7955	1.03117	19	2.4474	1.15343	50	3.2100	1.04046
Document confidentiality status	22	2.4318	.66000	19	2.8947	1.11279	50	2.8700	.89676
Information and communication technology (ICT) infrastructure	22	4.5000	.51177	19	3.6140	.65039	50	3.9867	.45655
Learning Organization	22	3.8939	.44109	19	3.6374	.88722	50	3.7956	.57291

(a) Encouragement of knowledge generation and sharing

The results indicate that the participants from the different countries have similar perceptions regarding the issues that encourage knowledge generation and knowledge sharing. The mean scores are Mauritius (m=3.2632) followed by South Africa (m=3.1900) and India (m=3.0379).

The mean scores indicate that the participants tend to agree that current policies, unwritten practices, job manuals, filing systems and workflow encourage knowledge generation and knowledge sharing.
The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=.45581) closely followed by South Africa (sd=.44161) and India (sd=.33701).

(b) Barriers to knowledge generation and sharing

The results indicate that the participants from the different countries have differing perceptions regarding the barriers to knowledge generation and knowledge sharing.

The mean scores recorded was for South Africa (m=2.6560) followed by Mauritius (m=2.5474) and India (m=1.9727). It should be noted that the highest level of disagreement came from Indian respondents.

The mean scores indicate different levels of disagreement regarding organizational/departmental structures, political interference, communication channels between employees and command and control procedures.

The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=.99296) followed by South Africa (sd=.63122) and India (sd=.51379).

The results infer that the issues identified have a major negative influence in knowledge generation and knowledge sharing. Rigid hierarchical structures mean strict command and control procedures leaving very little opportunity for flexibility for innovation and introducing new knowledge. Political interference and bureaucratic communication channels mean working to rule and under instruction which does not auger well for knowledge generation and sharing.

(c) Speed of knowledge transfer

The results indicate that the participants from the different countries have different perceptions regarding the speed at which knowledge is transferred. In terms of the mean scores, the highest mean recorded was for India (m=3.6364) followed by Mauritius (m=3.2632) and South Africa (m=2.8400). It should be noted that the response from the South African participants was close to neutral.

The mean scores indicate different levels of agreement that knowledge/information is speedily accessed from within the departments and from other departments in the higher educational institutions. The standard

deviation specifies that the variation in perceptions was highest for Mauritius (sd=.87191) followed by India (sd=.78954) and South Africa (sd=.71027).

Knowledge in this context relies on the speed of communication and access to information and data. Speed is closely aligned to the extent of knowledge related to different problem situations supported by technological capacities which could provide the desired results.

(d) Reliability of knowledge transfer

The results indicate that the participants from the countries surveyed have different perceptions regarding the reliability of the knowledge that is transferred as well as the extent to which decisions can be made in using the available knowledge. In terms of the mean scores, the highest mean recorded was for India (m=4.1061) followed by Mauritius (m=3.7193) and South Africa (m=3.1800). The South African respondents showed a slight agreement.

The mean scores indicate that the respondents show different levels of agreement that knowledge/information that is transferred is reasonably reliable and accurate. The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=.74753) followed by South Africa (sd=.71654) and India (sd=.42893).

Confidence in the outcome of decision-making could only be as good as the quality, accuracy and reliability of the knowledge that is accessed. The results reflect a general consensus at differing levels that the knowledge transferred is reliable.

(e) Ease of knowledge transfer

The results indicate that the participants from the countries surveyed have different perceptions regarding the ease of knowledge transfer in their organizations. In terms of the mean scores, the highest mean recorded was for India (m=3.8409) followed by Mauritius (m=3.2895) and South Africa (m=3.2700). Respondents from India recorded very strong agreement while those from Mauritius and South Africa revealed slight agreement.

The mean scores indicate that the respondents have different levels of agreement that knowledge is transferred with relative ease. The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=.96200) followed by South Africa (sd=.75734) and India (sd=.66164).

Respondents were of the general view that the transfer of internal knowledge within departments as well as across departments was an easy task. This outcome could have been influenced by the investment in communication and technological infrastructures in the institutions. Networking within and across institutions, with organizational structures supporting team working also encourage the ease of knowledge transfer.

(f) Explicit knowledge

The results indicate that the participants from the countries surveyed have different perceptions regarding the accessibility of explicit knowledge in their organizations. In terms of the mean scores, the highest mean recorded was for India (m=4.6591) followed by Mauritius (m=3.9737) and South Africa (m=3.9400). Respondents from India recorded very strong agreement while those from Mauritius and South Africa revealed strong agreement.

The mean scores indicate that the respondents expressed different levels of agreement that explicit knowledge is accessed with relative ease within their organizations. The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=.87359) followed by South Africa (sd=.71884) and India (sd=.47274).

Accessing explicit knowledge requires good infrastructures related to filing systems for the maintenance of knowledge, information and data resources to be able to identify these immediately when the need arises. These must be supported with policies, technology, and the creation of a culture conducive to transforming tacit to explicit knowledge.

(g) Tacit knowledge

The results indicate that the participants from the countries surveyed have different perceptions regarding the transfer of tacit knowledge in their organizations. In terms of the mean scores, the highest mean recorded was for India (m=3.5909) followed by Mauritius (m=3.3860) and South Africa (m=2.7600). Respondents in South Africa chose to remain neutral.

The mean scores indicate different levels of agreement that tacit knowledge can be transferred within their organizations. The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=1.01387) followed by South Africa (sd=.78835) and India (sd=.55331).

(h) Knowledge sharing culture

The results indicate that the participants from the countries surveyed have different perceptions regarding whether their organizations culture encourage the sharing of knowledge. In terms of the mean scores, the highest mean recorded

was for India (m=3.7955) followed by Mauritius (m=3.7895) and South Africa (m=3.0450). Respondents in South Africa chose to be neutral.

The mean scores indicate that the respondents expressed different levels of agreement that the culture that permeates their organizations is conducive for knowledge sharing. The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=.87505) followed by South Africa (sd=.77869) and India (sd=.68850).

(i) Individualism

The results indicate that the participants from the countries surveyed have different perceptions regarding whether individual employees use personal knowledge as a source of power and hence reluctant to share it with others. In terms of the mean scores, the highest mean recorded was for South Africa (m=3.2100) followed by India (m=2.7955) and Mauritius (m=2.4474). South African respondents recorded a slight agreement while those from Mauritius disagreed. Subjects from India were close to neutral.

The mean scores indicate that the respondents expressed different levels of agreement that individual employees use personal knowledge for individual advantage and are therefore reluctant to share it with other employees. The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=1.15343) followed by South Africa (sd=1.04046) and India (sd= 1.03117).

(j) Document confidentiality status

The results indicate that the participants from the countries surveyed have different perceptions regarding the institutions policies and practices in respect of the confidentiality status of documentation and its inaccessibility. In terms of the

mean scores, the highest mean recorded was for Mauritius (m=2.8947) followed by South Africa (m=2.8700) and India (m=2.4318). Respondents from Mauritius and South Africa were undecided while those from India disagree.

The mean scores indicate that the respondents show different levels of agreement that their institutions' confidentiality policies and practices hinder access to documents. The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=1.11279) followed by South Africa (sd=.89676) and India (sd=.66000).

(k) Information and communication technology (ICT)

The results indicate that the participants from the countries surveyed have different perceptions regarding the institutions' ICT infrastructure and its role in knowledge creation and sharing. In terms of the mean scores, the highest mean recorded was for India (m=4.5000) followed by South Africa (m=3.9867) and Mauritius (m=3.6140).

The mean scores indicate that the respondents reflect different levels of agreement that their institutions' ICT infrastructure facilitates knowledge creation and sharing. The standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=.65039) followed by India (sd=.51177) and South Africa (sd=.45655).

(l) Learning organizations

The results indicate that the participants from the different countries have similar perceptions regarding the characteristics of their institutions' in comparison with those applicable to learning organizations. In terms of the mean scores, the highest mean recorded was for India (m=3.8939) followed by South Africa (m=3.7956) and Mauritius (m=3.6374).

The mean scores indicate that the respondents agree that their institutions' characteristics are similar to those applicable to learning organizations. The

standard deviation specifies that the variation in perceptions was highest for Mauritius (sd=.88722) followed by South Africa (sd=.57291) and India (sd= .44109).

6.6   Section B: Inferential statistics

This section describes the inferences that have been made on the basis of the corresponding data obtained from the subjects. Inferences have been established through the use of appropriate tests. The hypotheses formulated for the study are tested against the corresponding data collected from the sample under investigation and are accordingly presented.

6.6.1   Hypothesis 1

There is a statistically significant difference in the perceptions of respondents from Mauritius, South Africa and India in terms of the respective dimensions of knowledge management and knowledge transfer.

The results of the statistical analysis are presented in Table 6.49.

Table 6.49: ANOVA: Dimensions of Knowledge Management by country

	F	p
Encouragement of knowledge generation and sharing	1.596	.209
Barriers to knowledge generation and sharing	7.485	.001*
Speed of knowledge transfer	8.694	.000*
Reliability of knowledge transfer	15.864	.000*
Ease of knowledge transfer	4.355	.016*
Explicit knowledge	8.468	.000*
Tacit knowledge	10.033	.000*
Sharing culture	10.368	.000*
Individualism	3.857	.025*
Document confidentiality status	2.057	.134
Information and communication technology (ICT) infrastructure	15.543	.000*
Learning Organization	.872	.422

*p>0.05)

Table 6.49 shows that there is no significant difference in the perceptions of the respondents in the different countries in respect of encouragement of knowledge generation and sharing, document confidentiality status, and learning organizations. However, significant differences in the perceptions of the respondents in the different countries (India, Mauritius and South Africa) have been noted in respect of the following dimensions of knowledge management:-

(a) Barriers to knowledge generation and sharing

There is a significant difference in the perceptions in terms of the barriers to knowledge generation and sharing amongst the respondents in the different countries surveyed. In terms of the mean scores, the highest mean was for South Africa (m=2.6560), followed by Mauritius (m=2.5474) and India (m=1.9727).

The mean scores indicate that the respondents disagree that organizational structures, political interference, communication channels between employees and command and control procedures create barriers in knowledge generation and sharing in Mauritius, South Africa and India. Respondents from India recorded a stronger level of disagreement.

The Post Hoc Test shows that the difference between Mauritius and India, and South Africa and India to be significant with respondents from India recording the strongest level of disagreement that there are barriers to knowledge generation and sharing compared to participants from Mauritius and South Africa who revealed slight levels of disagreement.

(b) Speed of knowledge transfer

There is a significant difference in the perceptions in terms of the speed of knowledge transfer amongst the respondents in the different countries surveyed.

In terms of the mean scores, the highest mean was for India (m=3.6364), followed by Mauritius (m=3.2632) and South Africa (m=2.8400).

The mean scores indicate that the respondents in the countries surveyed agree that knowledge is transferred speedily. Subjects from South Africa were close to being undecided while those from India revealed a strong level of agreement.

The Post Hoc Test indicates the difference between India and South Africa to be significant. Respondents from India revealed a slightly strong level of agreement that knowledge is transferred with speed in this country while those in South Africa were close to being undecided.

The Post Hoc Test results allude to the possibility that India has knowledge management repositories with a directory of knowledge resources for easy and speedy reference and access, whereas Mauritius and South Africa are still in the developmental stage in creating such systems. This could be the plausible reasons for the outcomes of the Post Hoc Test.

(c) Reliability of knowledge transfer

There is a significant difference in the perceptions regarding the reliability of knowledge transfer amongst the respondents in the different countries surveyed. In terms of the mean scores, the highest mean was for India (m=4.1061), followed by Mauritius (m=3.7193) and South Africa (m=3.1800).

The mean scores indicate that the respondents in India agree that the knowledge that is transferred is reliable, followed by Mauritius. Respondents in South Africa slightly agree on the reliability of knowledge transfer.

The Post Hoc Test shows the difference between India and South Africa, and Mauritius and South Africa to be significant. Subjects from India perceived

knowledge transferred to be reliable in this country while those from South Africa slightly agreed. Respondents from Mauritius showed a stronger level of agreement compared to South Africa.

The Post Hoc Test results show that higher educational institutions are grappling with encoding tacit knowledge or alternatively that employees are reluctant to share their expertise and knowledge for the benefit of the organization. Incomplete or wrongly captured knowledge will therefore compromise the reliability of the knowledge transferred, and decisions based on such information and knowledge resources.

(d) Ease of knowledge transfer

There is a significant difference in the perceptions regarding the ease of knowledge transfer amongst the respondents in the different countries surveyed. In terms of the mean scores, the highest mean was for India (m=3.8409), followed by Mauritius (m=3.2895) and South Africa (m=3.2700). The mean scores indicate that the respondents in India, Mauritius and South Africa agree that knowledge is transferred with relative ease.

The Post Hoc Test shows the difference between India and South Africa to be significant. Respondents from India perceived knowledge to be easily transferred compared to South African participants who showed a slight level of agreement similar to Mauritius.

The results of the Post Hoc Test confirm that there is reasonable confidence in ease and transfer of knowledge internally within and across the organization.

(e) Explicit knowledge

There is a significant difference in the perceptions regarding the accessibility of explicit knowledge amongst the respondents in the different countries surveyed. In terms of the mean scores, the highest mean was for India (m=4.6591), followed by Mauritius (m=3.9737) and South Africa (m=3.9400). The mean scores indicate that the respondents in India, Mauritius and South Africa agree that explicit knowledge is readily available when the need arises.

The Post Hoc Test shows the difference between India and Mauritius, and India and South Africa to be significant. Participants from India strongly agreed that explicit knowledge is accessible in India while those from Mauritius and South Africa agreed.

(f) Tacit knowledge

There is a significant difference in the perceptions regarding the sharing and transfer of tacit knowledge amongst the respondents in the different countries surveyed. In terms of the mean scores, the highest mean was for India (m=3.5909), followed by Mauritius (m=3.3860) and South Africa (m=2.7600).

The mean scores indicate that the respondents in India agree that tacit knowledge is shared and transferred without much difficulty with subjects from Mauritius slightly agreeing and respondents from South Africa adopting a neutral position.

The Post Hoc Test shows the difference between India and South Africa, and Mauritius and India to be significant. Participants in India revealed a stronger level of agreement regarding the sharing and transfer of tacit knowledge compared to South Africans who were undecided. Subjects from Mauritius expressed a slight level of agreement compared to Indian participants.

(f) Knowledge sharing culture

There is a significant difference in the perceptions regarding the knowledge sharing culture amongst the respondents in the different countries surveyed. In terms of the mean scores, the highest mean was for India (m=3.7955), followed by Mauritius (m=3.7895) and South Africa (m=3.0450).

The mean scores indicate that the respondents in India agree that a knowledge sharing culture is prevalent followed by subjects from Mauritius who slightly agree and respondents from South Africa adopting a neutral position.

The Post Hoc Test shows the difference between India and South Africa, and Mauritius and South Africa to be significant. Subjects from India recorded a strong level of agreement that there is a knowledge sharing culture in that country compared to South Africans who were undecided. Subjects from Mauritius also recorded a strong level of agreement compared to South Africans.

(g) Individualism

There is a significant difference in the perceptions regarding the knowledge sharing culture amongst the respondents in the different countries surveyed. In terms of the mean scores, the highest mean was for South Africa (m=3.2100), followed by India (m=2.7955) and Mauritius (m=2.4474).

The mean scores indicate that the respondents in South Africa agree that knowledge is used as a source of power for individual gain. Subjects from India and Mauritius either disagree or adopt a neutral position.

The Post Hoc Test shows the difference between South Africa and India, and South Africa and Mauritius to be significant. The respondents from South Africa recorded a strong level of agreement that knowledge is used as a source of

power for individual benefit whereas subjects from India and Mauritius were undecided.

The Post Hoc Test confirms that individualism has the greatest influence over employees' knowledge sharing behaviour compared to India and Mauritius.

(h) Information and communication technology

There is a significant difference in the perceptions regarding the use of information and communication technology (ICT) infrastructure as a means of managing knowledge and knowledge transfer in the countries surveyed. In terms of the mean scores, the highest mean was for India (m=4.5000), followed by South Africa (m=3.9867) and Mauritius (m=3.6140).

The mean scores indicate that the respondents in India strongly agree that information and communication technology (ICT) is used as a tool to manage knowledge and knowledge transfer followed by South Africa and Mauritius.

The Post Hoc Test shows the difference between India and Mauritius, and India and South Africa to be significant. Indian subjects showed a very strong agreement that information and communication technology infrastructure in the country is used to manage knowledge and knowledge transfer compared to Mauritius. In comparison with South African participants, the Indian participants' perceptions were stronger.

6.6.2 Hypothesis 2

There is a significant difference in the perceptions of the dimensions of knowledge management between the respective gender groups.

Table 6.50: t-test: Dimensions of Knowledge Management by gender

Dimensions of KM by Gender	t	p
Encouragement of knowledge generation and sharing	-1.125	.264
Barriers to knowledge generation and sharing	-1.562	.122
Speed of knowledge transfer	-.806	.422
Reliability of knowledge transfer	.363	.718
Ease of knowledge transfer	1.302	.196
Explicit knowledge	-.045	.964
Tacit knowledge	1.550	.125
Sharing culture	.497	.620
Individualism	.004	.997
Document confidentiality status	.526	.600
Information and communication technology (ICT) infrastructure	.468	.641
Learning Organization	1.441	.153

*p>0.05

The results in Table 6.50 revealed no significant difference at the 95% level (p>0.05) in the perceptions of the dimensions of knowledge management between male and female respondents.

Both males and females showed strong levels of agreement on the accessibility of explicit knowledge, the use of information and communication technology infrastructure to manage and transfer knowledge and the characteristics of their institutions in comparison to learning organizations.

A slightly strong level of agreement was recorded for the reliability of knowledge transfer, ease of knowledge transfer and a knowledge sharing culture.

Participants' responses were close to undecided in the case of encouragement of knowledge generation and sharing, speed of knowledge transfer, tacit knowledge, individualism, and document confidentiality status.

Both groups disagreed on barriers to knowledge generation and sharing with males expressing a slightly higher level of disagreement.

6.6.3 Hypothesis 3

There is a significant difference in the perceptions of the dimensions of knowledge management among the respective race groups. For the purpose of this research, the term "Black" denoted "Africans" although the Constitution of South Africa is clear about the definition of "Black".

Table 6.51: ANOVA: Dimensions of Knowledge Management by race groups

Dimensions of KM by race group	F	p
Encouragement of knowledge generation and sharing	2.268	.086
Barriers to knowledge generation and sharing	2.394	.074
Speed of knowledge transfer	2.489	.066
Reliability of knowledge transfer	11.172	.000*
Ease of knowledge transfer	2.325	.080
Explicit knowledge	4.838	.004*
Tacit knowledge	5.700	.001*
Sharing culture	3.418	.021*
Individualism	1.065	.368
Document confidentiality status	.462	.710
Information and communication technology (ICT)	.877	.456
Learning Organization	.842	.474

*p>0.05)

The results in Table 6.51 reflected a significant difference in the perceptions of the dimensions of knowledge management among the respective race groups at the 95% level (p<0.05) in terms of reliability of knowledge, explicit knowledge, tacit knowledge and knowledge sharing culture.

However, no significant differences have been noted for the remaining dimensions of knowledge management in terms of race groups. Those dimensions with significant differences are discussed as follows:-

(a) Reliability of knowledge transfer

The Post Hoc test noted a significant difference in terms of this dimension. Indians differed significantly from the Black race group with a mean difference (m.d.=1.07943), followed by Indian and White (m.d.=.86494) and by Indian and Coloured (m.d.=.48360), in terms of the reliability of knowledge transfer.

Indian subjects agreed that knowledge is reliably transferred in their institutions while Blacks were undecided. White subjects were also undecided on this issue while Coloured participants showed a slight level of agreement.

(b) Explicit knowledge

The Post Hoc test noted a significant difference at the .05 level in respect of explicit knowledge in the following race groups. Indians differ significantly with the Black race group (m.d.=1.06170) followed by Indian and the White race group (m.d.=.44866).

Indian subjects recorded a strong agreement that explicit knowledge is accessible in their institutions compared to Black participants who slightly agreed. White participants also agreed but not as strong as the Indian subjects. The level of agreement between Coloured and White subjects were similar with the White subjects recording a slightly stronger level of agreement.

(c) Tacit Knowledge

The Post Hoc test noted a significant difference at the .05 level in respect of tacit knowledge amongst the following race groups. The Indian race group differ significantly with the Coloured race group (m.d.=.77970) and with the Indian and White race group (m.d.=.67191).

The Indian subjects revealed a slight level of agreement in the transfer of tacit knowledge compared to the Coloured and White subjects who disagreed bordering on undecided. The Black subjects were undecided.

(d) Knowledge sharing culture

The Post Hoc test noted a significant difference at the .05 level in respect of knowledge sharing culture amongst the following race groups. The Indian race group differ significantly with the Coloured race group (m.d.=.58644) and Indian with the White race group (m.d.=.52937).

Indian participants recorded a fairly strong level of agreement that there is a knowledge sharing culture in their institutions compared to Coloured and White subjects who were neutral.

6.6.4 Hypothesis 4

There is a significant difference in the perceptions of the dimensions of knowledge management among the respective educational levels.

Table 6.52: ANOVA: Dimensions of Knowledge Management in terms of education levels

Dimensions of KM by education level	F	p
Encouragement of knowledge generation and sharing	2.895	.027*
Barriers to knowledge generation and sharing	2.133	.084
Speed of knowledge transfer	2.551	.045*
Reliability of knowledge transfer	1.366	.252
Ease of knowledge transfer	.787	.536
Explicit knowledge	2.125	.085
Tacit knowledge	1.603	.181
Sharing culture	1.366	.253
Individualism	1.134	.346
Document confidentiality status	1.594	.183
Information and communication technology (ICT) infrastructure	.610	.656
Learning Organization	1.092	.366

*p<0.05

There is a significant difference between education levels in respect of encouragement and sharing and speed of knowledge transfer at the 95% level (p<0.05). However, no significant differences have been noted for the remaining dimensions of knowledge management in terms of education levels. Those dimensions with significant differences in education levels are discussed as follows:-

(a) Encouragement of knowledge generation and knowledge sharing

The Post Hoc test noted a significant difference in terms of this dimension. The test reflects that respondents with senior certificate or equivalent differ significantly from those with other educational categories. The respondents with a diploma differed significantly with senior certificate or equivalent with a mean difference (m.d.=.77778) followed by diploma with first degree with a mean difference (m.d.=.25000). The first degree differed significantly with senior certificate with a mean difference (m.d.=.52778). The honours degree equivalent differed significantly with senior certificate or equivalent with a mean difference (m.d.=.67974) and the masters degree/doctoral degree differed significantly with senior certificate equivalent with a mean difference (m.d.=.65873).

Subjects with a diploma recorded a very slight level of agreement that their institutions encourage knowledge generation and sharing whereas senior certificate subjects disagreed. The first degree subjects, Honours/Masters/Doctoral degree subjects were close to undecided compared to the senior certificate respondents who disagreed.

(b) Speed of knowledge transfer

The Post Hoc test noted a significant difference in terms of this dimension. The test reflects that respondents with a honours degree or equivalent differ significantly from those with other educational categories. The diploma differed significantly with the honours degree equivalent with a mean difference (m.d.=.66176) followed by first degree with honours degree equivalent with a mean difference (m.d.=.73529) and finally masters/doctoral degree and honours degree with a mean difference (m.d.=.55462).

Subjects with an Honours degree disagreed on the speed of knowledge transfer in their institutions. First degree participants revealed a slight level of agreement whereas those with a senior certificate, diploma and masters/doctoral degree were either undecided or close to being undecided.

6.6.5 Hypothesis 5

There is a significant difference in the perceptions of the dimensions of knowledge management among the different age groups.

Table 6.53: ANOVA: Dimensions of Knowledge Management by age categories

Dimensions of KM by age categories	F	p
Encouragement of knowledge generation and sharing	1.473	.217
Barriers to knowledge generation and sharing	1.669	.165
Speed of knowledge transfer	.490	.743
Reliability of knowledge transfer	.750	.561
Ease of knowledge transfer	2.351	.060
Explicit knowledge	.419	.795
Tacit knowledge	.748	.562
Sharing culture	.537	.709
Individualism	.944	.442
Document confidentiality status	1.787	.139
Information and communication technology (ICT) infrastructure	2.026	.098
Learning Organization	.972	.427

*p<0.05

The results show that there is no significant difference in the perceptions of the dimensions of knowledge management among the different age groups at the 95% level (p<0.05).

The general perceptions arising from the test was that, irrespective of the age category, the respondents believed that there was opportunity for developing the various dimensions for knowledge management.

6.6.6   Hypothesis 6

There is a significant difference in the perceptions of the dimensions of knowledge management among the different managerial groups.

Table 6.54: ANOVA: Dimensions of knowledge management by managerial status

Dimensions of KM by managerial status	F	p
Encouragement of knowledge generation and sharing	3.140	.048*
Barriers to knowledge generation and sharing	5.347	.006*
Speed of knowledge transfer	1.621	.203
Reliability of knowledge transfer	2.565	.083
Ease of knowledge transfer	1.631	.202
Explicit knowledge	2.766	.068
Tacit knowledge	2.239	.113
Sharing culture	2.923	.059
Individualism	2.072	.132
Document confidentiality status	5.511	.006*
Information and communication technology (ICT)	2.344	.102
Learning Organization	3.868	.025*

*P<0.05

There is a significant difference between the levels of managerial status at the 95% level (p<0.05) in terms of encouragement of knowledge generation and sharing, barriers to knowledge generation, document confidentiality status and learning organization. However, no significant differences have been noted for the remaining dimensions of knowledge management in terms of managerial status. Those dimensions with significant differences in managerial status are discussed as follows:

(a) Encouragement of knowledge generation and knowledge sharing

The Post Hoc noted a significant difference in terms of this dimension. The test reflects that respondents at the middle manager level differ significantly with supervisor level with a mean difference (m.d.=.28331) followed by senior manager and supervisor with a mean difference (m.d.=.27216).

Senior and middle managers recorded a very slight level of agreement compared to supervisors who were undecided.

(b) Barriers to knowledge generation and sharing

The Post Hoc Test noted a significant difference in terms of this dimension. The test reflects that respondents at the supervisor level differ significantly with senior manager level with a mean difference (m.d.=.57506) followed by middle manager and senior manager with a mean difference (m.d.=.53616).

Senior managers disagreed that there were barriers to knowledge generation and knowledge sharing. Middle managers and supervisors showed a slight level of disagreement being close to undecided.

(c) Document confidentiality status

The Post Hoc Test noted a significant difference in terms of this dimension. The test reflects that respondents at the supervisor level differ significantly with senior manager level with a mean difference (m.d.=.66118) followed by middle manager and senior manager with a mean difference (m.d.=.67918).

Senior managers disagreed on the confidentiality status of documents whereas middle managers and supervisors were undecided.

(d) Learning Organization

The Post Hoc Test noted a significant difference in terms of this dimension. The test reflects that respondents at the senior manager level differ significantly with supervisor level with a mean difference (m.d.=.50850) followed by senior manager and middle manager with a mean difference (m.d.=.30295).

All the managerial groups disagreed on the issue of learning organizations with the strongest level of disagreement coming from senior managers followed by middle managers and supervisors.

6.7 Section C: Semi-structured interviews with executive managers

The data obtained from the interviews was analyzed qualitatively and integrated with the findings from the survey. The validation of the semi-structured interview questionnaire has been discussed in Chapter Five. The sample comprised of the executive managers responsible for the human resource function in the higher education institution. The semi-structured interview schedule was pilot tested on one executive manager and the questions were adjusted based on the feedback before the actual interviews were conducted. Nine executive managers, three from each country volunteered to participate in the interview. All interviews were conducted face to face.

The interviews were semi-structured and comprised thirteen questions which probed the following issues:

- Knowledge management policy/strategy
- Senior management support for knowledge management initiatives in Human Resource Departments
- Location and responsibility of the knowledge management function within the human resource department
- Inclusion of knowledge management in the vision and mission statement
- Dedicated budget for knowledge management
- Knowledge sharing enablers/interventions
- Performance management
- HR representation at strategic level in the institution
- Knowledge management and reward policies

6.7.1 Administration of the interview schedule

Interviews were conducted with the executive manager responsible for the human resource function by making a prior appointment via the secretary's

office. The purpose of the interview was explained, and the respective executive managers were informed that the participation is voluntary and that they could withdraw at any time.

The interviews were conducted in the office of the executive manager or a venue allocated by the manager, and strict privacy and confidentiality was maintained throughout the interview. As the interview was semi-structured, questions were not posed in the order that they appeared in the interview schedule. They were introduced as part of the conversation with the executive manager. Emphasis was placed on establishing rapport that would create the environment conducive for voluntary contribution for the purpose of the interview.

6.7.2 Questions framed for the interview schedule

The purpose of the interview was to determine the executive management's perceptions relating to knowledge management/human resource initiatives in higher educational institutions. The questions that guided the interview process are as follows:

- Does your institution have a knowledge management policy/strategy?

- Does senior management support knowledge management initiatives in the HR department?

- Does the institution have a knowledge management function within the human resource department? If so, where is this function located?

- Is Knowledge Management included in the vision and mission statement of your organization?

- Does the organization have a dedicated budget for KM practices?

- If not, why not?

- Is this budget likely to increase in the future?

- If not, why not?

- Name some of the important KM enablers/interventions that are implemented in the Institution as a means of sharing knowledge?

- How does HRM optimize on the HR-KM synergy?

- Is the HR Department represented at the executive management board?

- Is the HR Department perceived as a "strategic partner" to the rest of the Institution? and

- Describe the relationship between KM and the reward policies.

Appropriate notes were taken during the course of the interview, and important comments were recorded. All interviewees were assured that confidentiality will be maintained over the interview data/information that was provided and assurance was given that their identities as well as the names of the institutions will be protected.

Comprehensive records were written after each interview. The researcher faced no difficulties in comprehending and interpreting the context of the responses of the participants as these interviews were conducted personally.

6.8 Conclusion

This chapter objectively presented the results of the study using descriptive statistics in Section A to describe the results and inferential statistics in Section B which provided an interpretation of the results. Section C provided an outline of the questions that constituted the interview schedule. The results enabled the researcher to identify significant relationships and differences between the variables in the study. The analyzes of the data under the relevant themes gave an integrated and holistic overview of the study, and at the same time addressing the research objectives. The presentation and analysis of the empirical data reflects some significant trends and findings. The next chapter presents a structured approach to discussion of the results by way of linking the relevant findings to previous similar studies.

CHAPTER 7

DISCUSSION OF RESULTS

"Among the multitude of animals which scamper, fly, burrow and swim around us, man is the only one who is not locked into his environment. His imagination, his reason, his emotional subtlety and toughness, make it possible for him not to accept the environment but to change it" (Bronowski, 1973:19).

7.1 Introduction

The emphasis of this chapter is on interpreting and discussing results presented in Chapter 6. The discussion will focus on the results obtained for the key variables and themes of the study. Reference will be made to the findings of other similar research studies and literature to support or refute the interpretations of the results of this study. A discussion and comparative analysis will follow based on the findings of other studies as well as national and international trends.

7.2 Discussion of results in terms of the variables of the study

The results of the study show that higher educational institutions have enormous potential to derive significant benefits through the implementation of knowledge management initiatives within the the human resource function.

7.2.1 Education levels of HR managers in higher educational Institutions

The results of the survey reflect that overall only 3.3% of the HR managerial employees have a grade twelve equivalent qualification. All other managerial

employees have a diploma, a first degree, a honours degree, a masters or a doctoral degree.

There is a clear indication that human resource management is moving towards becoming a professional service function and that the requirement for appointment at the managerial entry level is a professional qualification. In this regard, Nel *et al* **(**2004:588) states that the changing role of human resource management from a bureaucracy to a strategic partner is dependant on the professional status of its managers determined by the qualifications that they hold.

7.2.2 Middle-management occupational levels

The survey revealed an overall frequency distribution of 18.7% of junior HR Managers (Supervisor) followed by 53.8% HR Managers (middle-managers) and 27.5% senior HR Managers (senior managers) respectively.

South Africa has demonstrated the highest concentration of middle managers (66%) in the higher educational institutions with the minority (14%) occupying junior HR manager positions.

According to Van Dyk *et al.* (2001: 106-8), promising junior managers must be identified and developed so that voids are not created when managers exit the organization.They further claim that South Africa has a critical shortage of skilled managerial capacity which needs to be addressed as a matter of urgency if it is to become globally competitive.

In a study undertaken by MacNeil (2003), it was concluded that:

" human resource managers are the interface between the strategic intentions of senior management and the implementation level. The role of managers must be seen as that of a facilitator in order to maximize the core competence of learning in the organization".

Claydon & Doyle (1996) state that human resource managers have significant authority not by virtue of their position in the hierarchy but owing to their specific knowledge which influences strategic as well as the operational levels. In view of the responsibilities entrusted to their positions, human resource managers play a significant role in managing the day-to-day HRM activities.

According to Boxall & Purcell (2000) a human resource manager's main responsibility is to integrate the HRM policies with the organization's business policy. Furthermore, it is the responsibility of the human resource managers to oversee the implementation of human resource management policies.

In a study undertaken in Europe, Brewster & Larsen (2000), found that senior management took for granted that human resource managers possessed the requisite technical HRM knowledge to make informed decisions. It hs been assumed that human resource managers will be able to learn managerial responsibilities on the job.

Applebaum & Lavigne-Schmidt (1999) claim that the move to flat structures empowered employees to work in teams. This has in turn extended the human resource manager's role to include facilitating knowledge sharing amongst team members as a collective learning intervention.

The discussion of results will be follow in accordance with the research themes formulated for the study.

7.3 Research themes

The purpose of identifying key research themes for the study was to provide a critical review of groups of variables that underpin the area of knowledge management that impact on human resource management in higher educational institutions.

7.3.1 Research theme one: Knowledge generation and knowledge sharing

According to Holsapple & Joshi (1998:14),

"knowledge generation is a knowledge manipulation activity that produces knowledge by processing existing knowledge where the latter has been acquired by selection, acquisition and/or prior generation".

The sub-activities related to knowledge generation include monitoring the organization's knowledge resources, evaluating organizational knowledge, production of knowledge from existing knowledge resources and transfer of the generated knowledge.

Human resource departments (HR) play a significant role in facilitating the knowledge generation and knowledge sharing processes of its employees. The important factors that have been selected as contributors to these processes are the impact of HR policies, procedures and unwritten practices, job manuals, filing/record systems and work flow. The discussion of the result follows:

(c) Current policies and procedures

The overall results revealed that an overwhelming 90.1% % of participants either strongly agreed or agreed that current HR policies and procedures encouraged knowledge generation and knowledge sharing, followed by 5.5% who were neutral and 4.4% who disagreed.

Holsapple & Joshi (2000) contend that human resource managers are beginning to acknowledge that knowledge resources are more important than the conventional resources such as material, labour and capital. Therefore policies and processes related to knowledge generation are crucial as a means of managing these vital resources. Viljoen (2008) states that considerable time and

effort could be saved if policies and procedures are documented and implemented accordingly.

Based on the responses, it is acknowledged that there is a growing recognition in the HR departments in HEI's about the importance of knowledge and knowledge management policies and procedures to encourage knowledge generation and knowledge sharing.

(d) Unwitten practices and procedures

The overall results revealed that 50.6% % of participants either strongly agree or agree that current unwritten HR practices and procedures encouraged knowledge generation and knowledge sharing, followed by 36.3% who were neutral and 13.2% who either disagree or strongly disagree.

Leopold, Harris & Watson (2005:25) state that unwritten human resource practices must be documented to ensure that decisions are taken consistently and that such practices are correctly interpreted. Pugh & Hickson (1976) however believe that documenting or not documenting HR practices depends on the organizational size, as well as the nature of the organization.

The results to this question yielded mixed responses from the participants, with a substantial proportion of the respondents from India and Mauritius who chose the neutral response. This could be attributed to either the HR managers' preference for written policies or an indication of the respondents' indecision regarding this question. Respondents from South Africa have however reported an overwhelming support for unwritten HR practices and procedures as a means to encourage knowledge generation and knowledge sharing. It does appear that HEI's in South Africa are moving towards flexibile decision-making and hence policies are not written down to achieve the organization's HR objectives.

As higher educational institutions are generally complex operations, often with multiple sites and functions, it would be appropriate to document all human resource practices and procedures to assist with consistent decision-making and more importantly to facilitate knowledge generation and sharing in a structured and consistent manner.

(c) Job manuals

The overall results revealed that 84.6% of participants either strongly agreed or agreed that job manuals encouraged knowledge generation and knowledge sharing, followed by 9.9% who were neutral and 5.5% who disagreed. The overwhelming majority of the respondents acknowledge the importance of job manuals and hence their support for it.

According to Vegter (1980:69) a job manual prescribes a fixed "modus operandi" or a plan of action that outlines the method that must be followed to complete certain work-related activities.

Owing to the overwhelming support for job manuals as a tool to generate and share knowledge, institutions should give additional attention to compiling or documenting existing procedures to form job manuals and make these accessible to employees to facilitate the execution of complex operations or tasks.

(d) HR filing systems

The overall results revealed that 76.9% of participants either strongly agree or agree that HR filing systems encourage knowledge generation and knowledge sharing, followed by 17.6% who were neutral and 5.5% who disagreed.

Viljoen (2008) accentuates the need for proper filing systems claiming that failure to file important documentation could lead to the demise of the institution. Proper filing systems mean easy access to information and documentation which could save the institution from unnecessary time wastage on unproductive and costly tasks and raise productivity levels.

The Promotion of Access to Information Act 2 of 2000 cited by Wessels (2000:2) reinforces the need for organizations to maintain a good records classification system that provides for the the identification, arrangement, storage and retrieval of accurate records. The purpose of the Act includes the right to access information and to foster a culture of transparency and accountability in organizations.

The results yielded an overwhelming support for the maintenance of proper HR filing systems. Respondents from South Africa followed closely by Mauritius reported high counts for the maintenance of HR filing systems. This could be an affirmation of an over-reliance on manual human resource information systems.

The results from India seem to indicate that the HR filing system is being gradually replaced by electronic filing systems for easier accessibility to information.

(e) Workflow

The overall results revealed that 63.8% of participants either strongly agree or agree that workflows encourage knowledge generation and knowledge sharing, followed by 30.8% who were neutral and 1.1% who strongly disagree.

According to Johnson (1998:123-124), proper workflows amongst employees in organizations contributes significantly to the achievement of organizational aims and objectives. Proper workflow processes facilitates information and knowledge

sharing with an entire team of employees rather than on an individual basis. Castells (1989:221) argues that effective workflows in institutions create access to flows of information and resources that encourage worker participation and improved decision making.

Overall, in terms of research theme one, the respondents perceived that structures and mechanisms were currently in place to facilitate knowledge generation and knowledge sharing. There is overwhelming acknowledgement that documented policies and procedures contribute to knowledge accessibility. However, the same perception was not expressed with regard to unwritten practices and procedures in India and Mauritius. South Africa preferred unwritten policies. Flexible decision-making could be attributed unwritten policies. The majority of respondents reported that job manuals, and HR filing systems is a good source of reference for knowledge sharing and access.

7.3.2 Research theme two: Barriers to knowledge generation and knowledge sharing

According to Von Krogh *et al.,* (2000:18), there are two types of barriers to knowledge generation and knowledge sharing. One is individual and the other is organizational. The research theme focuses on the the different individual and organizational barriers to knowledge generation and knowledge sharing.

(a) Organizational structures

The results overall reported 34.1% either disagree or strongly disagree, 20.9% were neutral and 45.1% agree or strongly agree that organizational structures are barriers to knowledge generation and knowledge sharing.

Newell *et al.,* (2002:14) posit that organizations are changing from the traditional command and control structures to flatter, decentralized structures which are flexible, fluid, networked, and integrated. This leads to the creation of ***"business units that are interdependent, relying on one another for critical skills and knowledge".***

According to Dess & Picken (1999), a survey of nearly two hundred organizations concluded that competitive organizations design, and configures the organization's structure in a manner that yields maximum performance.

Bahrami (1998:189) cites the highly successful organizational structures implemented by Apple Computers. The structure promotes a mixed representation of top management teams working with corporate functionaries which include human resource management, to collectively participate in providing direction in the core activities. This type of structure encourages the movement of employees between units and fosters relationship building to enhance inter-unit co-operation.

The results reflect that higher educational institutions in India have flat structures with decentralized teams and a high work ethic. In addition, this is supported with proper policies, procedures and job manuals. The results showed that over 50% of the subjects in Mauritius and over 60% in South Africa agreed/strongly agreed that organizational structures are barriers to knowledge generation and knowledge sharing.

(b) Political interference

The results overall reported that 26.4% of the respondents either disagree or strongly disagree, 49.5% were neutral, and 24.2% agree or strongly agree that political interference is a barrier to knowledge generation and knowledge sharing.

Marshall & Brady (2001:103) state that the potential for conflict in organizations is created due to the divergent interests between individuals and groups. The "*divergent interests, political struggles and power relations*" act as barriers to knowledge generation and knowledge sharing. Craib (1997:21) accentuates that politics stem from individuals and groups competing over scarce resources, or through clashes between personal objectives in receiving acknowledgement for their knowledge in attracting financial rewards or promotions.

According to a study undertaken by Storey & Barnett (2000), the findings revealed that one of the main reasons for the failure of knowledge management projects in a company case study was the interfunctional conflict over the ownership of the project amongst functional groups in using the project as a political tool to advance their personal agenda. The conclusion that they drew from this study was that knowledge management initiatives are often shaped and subjected to political struggles to satisfy a broader agenda.

From the results, it would appear that political interference in Mauritius and South Africa does pose as a barrier to knowledge generation and sharing and to a lesser degree in India. However, a significant percentage of respondents in all countries reported a neutral result denoting indecision.

(c)   Communication channels

The results overall reported 37.4% either disagree or strongly disagree, 16.5% were neutral and 46.2% agree or strongly agree that communication channels between employees are barriers to knowledge generation and knowledge sharing.

Little, Quintas & Ray (2002:11) state that communication between employees is fundamental to knowledge management processes. They stress that if

organizations want to aspire to manage knowledge, good communication channels must be encouraged within and between organizations.

The results reflect that communication channels between employees require much attention in South Africa, followed by Mauritius and India to a lesser degree. In overcoming communication barriers, an environment conducive to knowledge generation and knowledge sharing must be fostered..

(d) Command and control

The results overall reported 35.2% either disagree or strongly disagree, 23.1% neutral, and 41.8% agree or strongly agree that command and control procedures pose as barriers to knowledge generation and knowledge sharing.

Straker (1998) states that command and control processes are strong in institutions where managers uphold the belief that subordinate employees cannot think by themselves and rely implicitly on their managers for the requisite knowledge and wisdom. Watson (1999) draws a relationship between level of commitment and command and control exerted by managers. He posits that low commitment is associated with high levels of command and control, whereas high level of commitment is linked to indirect control. In this context, control and command are organizational means of controlling employees' behaviour.

Turban, Mclean & Wetherbe (1996) posit the need for autocratic decision-making to be replaced by group decision-making through self-directed teams.

Whilst the majority of participants from India state that command and control procedures do not pose as barriers to knowledge generation and sharing, the results reveal that Mauritius and South Africa maintain strong command and control processes that inhibit knowledge generation and sharing.

The overall results to this research theme point to some critical barriers to knowledge generation and knowledge sharing. The results show that organizational structures in HEI's are not conducive to knowledge sharing. It would appear that traditional structures based on command and control characteristics are still prevalent. The results denote overall that political influence did not pose a problem to knowledge generation and sharing. Communication channels are generally lacking between employees, especially in South Africa and to a lesser degree in the other countries. This may be attributed to traditional organizational structures which stifle team work and discourage communities of practice. Command and control processes tend to dominate management practices in the 21st century higher education institutions. The reasons could be attributed to the legacy of apartheid and/or the resurgence of a new management order depicting command and control protocols.

7.3.3 Research theme three: Knowledge transfer

According to Ahmed *et al,* (2002:122) many institutions invest resources to knowledge creation and developing knowledge management best practices, but experience great difficulty in transferring the acquired knowledge from one part of the institution to the other. This research theme evaluates the perceptions of respondents in terms of knowledge access, knowledge transfer and knowledge sharing.

(a) Knowledge access within departments

The results overall reported 18.7% either disagree or strongly disagree, 18.7% neutral were and 62.6% agree or strongly agree that knowledge/information is easily accessed within departments.

Sveby's (2001) model of knowledge transfer is in great support for information technology (IT) as a means to knowledge transfer. The model consists of nine knowledge transfer mechanisms some of which entail:-

- knowledge transfer between individuals;

- knowledge transfer from individual competence to internal structure;

- knowledge transfer from internal structure to individual competence, and knowledge transfer within the internal structure.

In terms of the descriptive statistics, the results show that Mauritius and South Africa are lagging behind in terms of knowledge accessibility within departments. It is therefore necessary for South Africa and Mauritius to improve in this area to ensure that knowledge is freely accessible within departments so that they could derive distinct benefits from this endeavour.

(b) Knowledge access from other departments

The results overall reported that 39.6% either disagree or strongly disagree, 41.8% were neutral and 18.7% agree or strongly agree that knowledge/information is easily accessed from other departments.

The results signal concerns regarding the perceptions on knowledge transfer from department to department, more significantly in South African institutions. There is a dire need to evaluate the barriers to knowledge transfer between departments in the institutions so that mechanisms could be created to overcome such obstacles. Working in silos could have serious implications for organizational effectiveness, efficiency and the economy.

Gottschalk (2005:143) states that many researchers and professionals argue that management commitment has a significant influence over knowledge sharing between employees intra and inter-departmentally. However, this argument was not supported in a research undertaken by Brekke and Pedersen (2003) at LSH

and Schjodt. In addition, the findings revealed a close relationship between knowledge sharing and rewards. Proper reward systems encourage knowledge exchange. This was followed by the view that end-user satisfaction and user-friendly IT systems are important motivators for knowledge transfer and knowledge sharing.

Grover & Davenport (2001) found that in western countries, the most common objective of knowledge management projects involve a knowledge repository. The reason cited for this objective is to capture knowledge for later use and the broader access by others within the same organization.

Based on the findings, it would appear that South Africa, Mauritius and India have yet to embrace the importance of broader access to knowledge to other sectors within the institution.

As each institution would have unique reasons for the barriers to knowledge sharing between departments, it is therefore important for these reasons to be evaluated by the leadership and management so that a culture of knowledge exchange between departments is fostered.

(c)   Reliability of knowledge

The results overall reported that 12.1% disagree, 19.8% were neutral and the majority of the 68.1% agree or strongly agree that knowledge that is transferred is generally very reliable.

According to Alavi & Leidner (2001), empirical studies have shown that while organizations create knowledge on the one hand, paradoxically, they also lose track of acquired knowledge. They therefore posit that storage, organization, and retrieval of organizational knowledge, also termed organizational memory, is an important aspect of effective knowledge management. They claim that the

knowledge transfer would include knowledge residing in various mediums, including written documentation; structured information stored in electronic databases; codified human knowledge stored in expert systems; documented procedures and processes; and tacit knowledge acquired by individuals and networks of individuals.

The results demonstrate that knowledge that is transferred is to a large extent, reliable. This augers well for organizations in that sound decisions could be made based on the reliability of the knowledge that is accessed. However, comparatively South Africa is behind the other countries surveyed, with a large contingent of respondents recording neutral, signaling either undecided or not certain. The fact that the knowledge transferred is reliable is an indication that proper infrastructures are in place to ensure accurate capture, storage, retrieval, and transfer of such knowledge.

(d) Knowledge is up-to-date

 The results overall reported that 17.6% disagree, 28.6% were neutral and 53.2% agree or strongly agree that knowledge that is transferred is generally very up-to-date.

Alavi & Leidner (2001) emphasize the need for continuous renewal of data, information and knowledge in the knowledge repositories to ensure that decisions are based on current and not outdated knowledge.

The results amongst the countries surveyed show a wide variance in the responses which indicate that institutional practices in updating information and knowledge differs from country to country. South Africa scored the lowest in terms of the currency of its information and knowledge transferred. This could be attributed to several factors, including but not limited to the lack of updating IT records effectively with the latest information and knowledge.

(e) Decision-making based on available knowledge

The results overall reported that 15.4% disagree, 28.6% were neutral and 55.4% agree or strongly agree that decisions could be made confidently using the available knowledge/information.

Newall *et al.* (2002) ascribe ineffective decision-making due to lack of information/knowledge resources to two key reasons. Firstly, organizations grapple with the codification and capture of critical knowledge, and secondly, employees are reluctant to have their personal knowledge committed to organizational memory as they view such an act as a reduction of the knowledge power base.

Whilst India and Mauritius reported high levels of agreement that decisions could be made confidently using available explicit knowledge resources, South Africa's response was somewhat reserved with a significant proportion showing a neutral response. This result could be an indication that South African institutions are not sufficiently codifying and storing knowledge.

(f) Ease of knowledge transfer within departments

The results overall reported 13.2% strongly disagree or disagree, 18.7% neutral, and 68.1% agree or strongly agree that knowledge/information can be transferred to respective persons within the department with ease.

Tansley *et al.* (2001) define organizations as a collection of knowledge assets. As a consequence organizations should be investing in the development of strategic computerized human resource information systems. Leopold *et al.* (2005:339) claim that there is capacity for human resource management to exploit the human resource information systems (HRIS) to maximize the

management of its knowledge assets to ensure the effective and timely transfer of knowledge to the areas of need.

The results of the survey demonstrate that there is reasonable consensus that knowledge/information can be transferred to other sectors or persons within the department with relative ease.

(g) Ease of knowledge transfer from other departments

The results overall reported 22% strongly disagree or disagree, 38.5% were neutral, and 39.6% agree or strongly agree that knowledge/information can be transferred to and from other departments with ease.

According to Laudon & Laudon (2004:107), one method of transforming knowledge assets contained in paper format into electronic format is to use document imaging systems. This would enable conversion of images into digital format so that it could be stored electronically and shared amongst those requiring it. This process would enable the transfer of knowledge assets and increase the network of users, and commit such assets to organizational memory.

The overall results of the survey confirm that knowledge transfer between departments remain a challenge for higher educational institutions. Whilst India and Mauritius showed a reasonable level of inter-departmental transfer of knowledge, South Africa is way below par compared to the other countries. Yet, South African higher educational institutions have the technlogical infrastructure and the capabilities to render a high level of inter-departmental knowledge transfer. This problem could be attributed to cultural barriers to knowledge transfer and lack of procedures to improve the pace of knowledge transfer. Another possibility is that the knowledge assets are contained in paper documents and files and hence not able to be transferred to areas of need. It is

therefore important for human resource managers and senior management to identify the impediments and implement interventions to overcome the barriers to knowledge transfer.

7.3.4   Research theme four: Knowledge assets

The discussion of results reviews the level of access to tacit and explicit knowledge assets. According to Nonaka *et al.* (2001), knowledge assets comprise of:

- experiential knowledge assets ie. Tacit knowledge shared through experience;
- conceptual knowledge assets ie. explicit knowledge represented through symbols and language;
- routine knowledge assets ie. tacit knowledge embedded in organizational procedures and practices; and
- systemic knowledge assets ie. systemized explicit knowledge.

Skyrme (2000:58) further classifies knowledge assets into three categories representing human capital, structural capital and customer capital. **Human capital** is tacit knowledge which is in the minds of employees. It comprises knowledge, competencies, experience and know-how. **Structural capital** is explicit knowledge represented by information systems, processes and databases. **Customer capital** refers to customer relationships, patents, copyrights, licences and trademarks.

Due to the significant importance of knowledge assets for organizational competitiveness and survival, this research theme explores the ability of institutions to manage this critical resource.

(a) Accessibility of documented knowledge (explicit knowledge)

The results overall reported that 8.8% strongly disagree or disagree, 6.6% were neutral and an overwhelming majority of 84.6% agree or strongly agree that knowledge/information that is created on paper documentation can be easily accessed.

Accurate personnel records will create efficiency and enhance better working relationships. Organizations should publicise what information and knowledge is available and the procedure to follow in order to access it. Human resource records must be up-to-date and human resource managers must be aware of the job descriptions of HR employees to understand the relationship between their job responsibilities and the knowledge records that they seek (http://www.acas.org.uk/publications/B03.html.

The results confirm that explicit knowledge in hard copy format that are available are easily accessible in the institutions. Whilst respondents in India were unanimous in affirming that knowledge/information in document format is easily accessible, Mauritius and South Africa followed very closely. These results auger well for higher educational institutions in that the file records are accessible to employees in the line of duty.

(c) Electronic access to knowledge

The results overall reported that 4.4% strongly disagree or disagree, 1.1% were neutral and an overwhelming majority of 94.5% agree or strongly agree that knowledge/information that is created in electronic format can be easily accessed.

The findings of the survey show that knowledge in electronic format is easily accessed by users in all three countries. Alavi & Leidner (2001) state that

empirical studies confirm that storage, organization and retrieval of electronic knowledge resources constitute a significant component of knowledge management. They view this process as one means of organizational memory. Electronic methods could include the use of groupware, intranet and internet facilities.

IT plays a significant role in storage and retrieval of electronic and codified human knowledge. As higher educational institutions have the infrastructures described, there is opportunity for these institutions to develop and explore the potential to derive maximum benefits.

(c) Knowledge sharing through formal processes

The results overall reported 24.2% strongly disagree or disagree, 17.6% were neutral, and   58.3% agree or strongly agree that knowledge/information can be shared and transferred through formal meetings/discussions without difficulty.

Nonaka (1994) cited in Newell *et al.,* (2002:5) states that individuals interacting with others in an organizational context create new tacit knowledge. This includes the expression of codified explicit knowledge in that it might mean different things to different people based on interpretation. Nonaka (1994) therefore encourages that organizations should support the interaction of creative individuals to provide the context to share and create new knowledge.

The results show that India has very strong formal network infrastructures that support knowledge sharing. South Africa in contrast shows the lowest level of agreement denoting that the respondents view formal meetings as not a very significant means of knowledge sharing.

(d) Knowledge sharing through informal processes

The results overall reported that 23.1% strongly disagree or disagree, 24.2% were neutral, and   52.8% agree or strongly agree that knowledge/information can be shared and transferred through informal meetings/discussions without difficulty.

A study undertaken by Koch *et al.,* (2002), concluded that accessing knowledge on a personal basis is much quicker and the knowledge is communicated in a qualitative manner compared to the formal, non-personal methods. The knowledge sharing activities included conversations, meetings and informal communications including e-mail. The findings rated the impact of social factors in the workplace as more important than the technology used in supporting a knowledge management environment.

The results of the higher educational institutions are similar to the findings of Koch *et al.,* (2002) study in that the majority of the respondents agree that knowledge sharing is conducted through social and informal means. However, South Africa shows poor support for this method of knowledge sharing. The reasons could be varied, including but not limited to rigid organizational structures. Another reason could be a general reluctance to share knowledge as it represents a significant power resource.

(e) Knowledge retention of employees who exit the institution

The results overall reported that 59.4% strongly disagree or disagree that the institution has mechanisms to capture the knowledge and wisdom of employees who exit the institution, 25.3% were neutral and 15.4% agree or strongly agree with the statement.

Although the overall results are disappointing, South Africa recorded the lowest level of disagreement. This is an indication that generally none of the countries surveyed have mechanisms that could capture the knowledge profile of employees with scarce knowledge resources for the benefit of the organization. This does not auger well for the institutions concerned, as failure to recruit knowledgeable replacements will cause the institution to suffer a knowledge paralysis with major setbacks.

According to Alvesson (2000), organizations could be in grave danger if the turnover rates are high. This problem is more severe if the employees' exiting the organizations possess specialized knowledge which is in great demand in the market. Organizations should, therefore, have knowledge retention strategies to ensure that the knowledge is retained to support the institutions' knowledge strategy.

A study of the Post Office in the UK by Ahmed *et al.,* (2002:253) identified an important tool that was developed by PO Consulting to leverage employee knowledge and disseminate it throughout the organization. They termed this the "knowledge interview". This interview is a systematic process of capturing tacit knowledge from the heads of employees with scarce skills and expert knowledge and displaying the outputs on a regular basis. These interviews are most appropriate in three situations. Firstly, when key employees with scarce knowledge leave the organization. Secondly, when a knowledgeable employee is recruited to the organization. Thirdly, when employees are identified as possessing vital knowledge resources which adds significant value to the organization.

The majority of participants expressed that explicit documented knowledge is reasonably accessible in all institutions. Most of the participants also agreed that electronic access to knowledge resources is a current practice, supported by the IT infrastructure. However, the results related to knowledge transfer through

informal means are generally lacking. The results also confirm that minimal attention is given to knowledge exit interviews as a means to capture and retain tacit knowledge when they exit the organization.

7.3.5 Research theme five: Organizational culture

This research theme discusses the results regarding organizational culture in relation to knowledge generation and knowledge sharing.

According to Koch *et al.,* (2002:13), organizational culture has a significant influence over employees' behaviour in terms of performing knowledge management activities.

The importance of communication between individuals within and between departments, and the integration of organizational arrangements supported by a culture conducive to knowledge transfer and knowledge sharing are very important for the creation of an environment conducive for the performance of knowledge work (Newell *et al.,* 2002:25). However, such processes are often thwarted by the divergence of interests amongst employees, managers and employers. Central to these are political struggles and power relations which often clash between personal objectives and organizational strategies (Marshall & Brady, 2001).

(a) Organizational culture encourage communication of ideas, knowledge and experience

The results overall reported that 19.8% disagree or strongly agree with the statement, 24.2% were neutral and 56.1% agree or strongly agree that organizational culture encourage communication of ideas, knowledge and experience.

The results reflect differing perceptions from the respondents in the different countries. The results show that participants from India have a strong affiliation for interpersonal relationships amongst employees with open communication and mutual support. Nel *et al,* (204:365) attribute such characteristics to successful work teams as well as a clear organizational vision and goal which is internalized by each employee.

The results from Mauritius have indicated a good communication flow of knowledge, ideas and experiences amongst employees. Generally, the culture amongst Mauritians is conducive to healthy social relations amongst employees. This augers well for effective collaboration and the development of trust amongst employees. Bechky (2003) states that trust amongst employees brings about a greater level of sensitivity and understanding of the knowledge, values and assumptions of other members of the same work group.

The results from South Africa have comparatively shown the lowest agreement (40%) that culture encourages communication of ideas, knowledge and experience amongst employees in the institution. This does not bode well for knowledge flows in South African organistions and needs urgent intervention to redress the situation.

Hislop (2005:130) posits that human and social aspects of knowledge processes impacting on organizational culture go beyond behaviour and attitudes of employees. HR practices and policies are important means of changing attitudes of employees to foster a culture of knowledge sharing and enhanced communication amongst employees.

According to a survey conducted by KPMG Consulting reported by MingYu (2002), it found that the main reasons for the failure of knowledge management are the following:

- Insufficient user communication (20%);

- Lack of integration of knowledge management in HR practices (19%);

- Inappropriate use of knowledge management systems;

- Lack of user-training; and

- Perception of little or no benefit for user.

MingYu (2002) claims that for knowledge management to be successful, the starting point should be at the top management level. If there is buy-in from top management, then there is great possibility that its implementation will be successful.

As higher educational institutions (HEI's) in South Africa have excellent IT infrastructure and software, IT could not be the reason for dysfunctional communication breakdown. It is therefore important to identify and overcome barriers to effective communication from an organizational culture perspective.

(b) Employees are willing to assist fellow employees

The results overall reported that 13.2% disagree with the statement, 27.5% were neutral and 59.4% agree or strongly agree with the statement.

India followed by Mauritius recorded high levels of agreement that employees are willing to provide advice and assistance to co-workers. According to Brown & Duguid (1991) such behaviour is displayed in organizations where employees work in close knit teams known as "communities of practice". It therefore appears that such features are common amongst the institutions in India and Mauritius.

South Africa recorded a low level of agreement compared to the other countries in terms of employees' willingness to provide advice and assistance when the needs arise. Developing communities of practice and encouraging teamwork through revised organizational structures may result in the desired outcomes.

(c)   Knowledge is disseminated widely in the institution

The overall results indicated that 37.4% strongly disagree or disagree, 14.3% were neutral and 48.4% agree or strongly agree that knowledge is disseminated widely in the institution.

The descriptive statistics reveal that whilst knowledge is widely disseminated to employees in India and Mauritius, South African respondents expressed a marginal rate of knowledge dissemination amongst its employees. Karakanian (2000) posits that wide circulation of knowledge resources integrates human resource activities with other corporate functions such as finance, supply chain and customer service. Marquardt (2002:31) accentuates this view and states that circulation of human resource knowledge resources to employees, managers, executives, HR service providers and relevant communities will reduce the distance between the HR department and its internal customers.

Storey & Quintas (2001:347/8) suggest that easy access to knowledge and information resources develops trust, motivation and commitment amongst employees and that employees in this environment are more willing to share their knowledge within the organization.

(d)   Inter-disciplinary cross-functional team-work is encouraged

Burke *et al.* (2006) state that cross functional teams that represent members of staff from other functional sub-units come together as a flexible and efficient team to solve problems spontaneously. In view of the different backgrounds of the team members, cross functional teams create and generate innovative solutions to problems. Although cross functional teams have major benefits for the organization, the practical assembly of team members to participate sufficiently is not easy and is time consuming.

The overall results indicate that 27.5% disagree, 20.9% were neutral and 51.7% either agreed or strongly agreed that inter-disciplinary cross-functional team-work is encouraged in the institution.

The results reflect that inter-disciplinary and cross-functional teamwork is more prominently practised in India and Mauritius than in South Africa. This could be attributed to the organizational structures in South Africa being bureaucratic and restricting teamwork and cross-functional activity. Other possibilities include the departments and units working in silos, without proper consultation or integration with other allied functions.

Hislop's (2005:92) statement that *"deep-seated and historically embedded attitudes of mutual suspicion, mistrust and antagonism"* aptly explains the reluctance of staff to share knowledge across functions.

Furthermore, employees in such organizations believe that participation in cross-functional projects would diminish their power and status by sharing their expert knowledge. The results from South Africa could be linked to the concerns highlighted by Hislop (2005) as South Africa has emerged from an apartheid history with a work environment representative of class and race divisions.

(e) Individuals tend to use knowledge as a source of power for personal advantage and not as an organizational resource

Hales (1993:20) defines power resources as

 "those things which bestow the means whereby the behaviour of others may be influenced and power relations arise out of the uneven distribution of these resources".

In applying this definition to knowledge, Hales (193:20) argues that the properties of knowledge that could make it a power resource are scarcity of specialist knowledge which is largely tacit and knowledge that satisfy individual wants such as a means to rewards and status.

The overall results indicated that 42.9% strongly disagree or disagree with the statement, 23.0% were neutral and 34.1% agree or strongly agree that individuals tend to use knowledge as a source of power for personal advantage and not as an organizational resource

The results show that a significant proportion of the respondents in India and South Africa tend to strongly agree or agree that knowledge is used as a source of power for personal gains. The outcome shows a close relationship between power and knowledge. Hislop (2005:95) states that power is not only vested in those that have specialized knowledge but also those in senior positions in the organization who have access to confidential information.

A study which investigated knowledge management at a university information technology department by Koch *et al.,* (2002), found that a culture that is designed to encourage teamwork and socialization leads to a voluntary contribution of knowledge to project related work thus increasing organizational knowledge. However, whilst a high level of knowledge could be transferred in this way, Koch *et al.,* (2002) claim that a major concern is that knowledge is not documented or computed for later reference. Koch *et al.,* (2002) cite Schultze's (2000) findings where the participants in her study maintained extensive records documenting thoughts and actions of important knowledge experiences because of the anti-social culture in the environment.

A study undertaken by Al-Athari & Zairi (2001), examined knowledge management systems (KMS) in 77 Kuwaiti organizations. Their findings revealed that 65 and 75 percent of respondents in the public and private sectors respectively viewed knowledge as a source of power in their organizations. Considering that South Africa recorded 20 percent neutral, the outcome of the Kuwaiti study seems to corroborate the finding in South Africa.

Based on the outcome of the questions on the dimensions related to culture, it is concluded that the creation of a culture conducive to knowledge generation and knowledge sharing will have immense benefits for the organization.

7.3.6   Research theme six: Organizational performance

According to Ahmed *et al.,* (2002:62) organizational performance from a knowledge management perspective refers to the degree to which the knowledge activities influence organizational performance. Some of the key attributes to organizational performance are the following:

- Delegating responsibilities to lower levels;

- Decentralized functions;

- Freedom to act;

- Confidence in individuals ability;

- Flexible and efficient decision-making; and

- Minimum bureaucracy.

In order to support the attributes regarding organizational performance, it is important for employees to have access to information that would facilitate decision-making at all levels. Equally important are policies and procedures that encourage knowledge/information access and the dissemination of such knowledge/information.

(c)   Restricted access to information affects individual performance

According to Anthony *et a.,* (1996:209) cited in Carrell *et al.*, (1998: 530), human resource information should be provided to line managers and human resource employees in order to assist in decision-making. They posit that human resource information is critical to strategic planning and decision-making. They therefore stress that information must be up-to-date, complete, flexible and easily accessible in order to add value to decision-making.

The overall results indicate that 45.1% strongly disagree or disagree, 28.6% were neutral and 26.4% agree or strongly agree that restricted access to information affects individual employee performance

Although the results show that employees have access to information , there is a need to improve the level of access. A large number of respondents have indicated a neutral response, signalling indecision.

According to Sonnenberg (1994), institutions that promote trust, openness and teamwork are more amenable to making information accessible to employees.

A study undertaken by Smith & Schurink (2005) revealed that there is a close link between knowledge management and employee performance. They suggest the adoption of different approaches and changes to organizational structures to create business units that take ownership of the knowledge in each unit, and manage it to improve employee performance. They also posit the need to restructure and reorganize the work environment to facilitate access of employees to one another to promote information sharing. Structural changes to create units of work, project teams and communities of practice will connect employees to share information and better practices.

(b) Restricted access to policies and procedures impact negatively on organizational performance

The overall results indicate that 44% strongly disagree or disagree, 28.6% were neutral and 27.5% agree or strongly agree that access to policies and procedures impact negatively on organizational performance.

The results show differing perceptions regarding the the impact of restricted access to policies and procedures in the organization. The highest level of agreement with this statement was from India, followed by Mauritius and South

Africa. Although the majority of respondents in each country agreed with the statement, a significant number recorded a neutral response or disagreed.

Leidner (2000) states that restricted access to policies related to knowledge management initiatives in organizations produce appropriate attitudes and behaviours that negatively influence loyalty and commitment to the employer.

The results could be construed as a breakdown in the communication of policies and procedures to employees within the organization. Gottshalk (2005:97) advises that workflow automation systems and expert systems are some ways in which work-related policies and procedures could be distributed throughout the organization to influence improved performance.

The overall results to the variables of knowledge management impacting on this theme indicate that there is insufficient alignment between knowledge management and organizational performance. There is a need for the organization and HR strategy in higher educational institutions to address these deficiencies.

7.3.7   Research theme seven: Information and communication technology

The survey assessed the impact of ICT technologies used by higher educational institutions to manage and facilitate knowledge sharing within the organization. Davenport & Prusak (1998) argue that for knowledge management to be effective, information technology must be used effectively to achieve optimal results. Neef (1999) states that information technology should be seen as an essential tool to capture knowledge, as well as organise and transfer knowledge on a worldwide scale.

(a) Impact of computer technology on knowledge management

The overall results indicate that 13.2% strongly disagree or disagree, 13.2% were neutral and an overwhelming majority of 73.6% agree or strongly agree that the impact of computer technology is significant for knowledge management.

The results reflect that of the countries surveyed, South African institutions have reasonably good computer technologies to manage the knowledge resources. Although South Africa showed good technology infracture, capabilities to manage the knowledge resources is lacking according to the survey.

A study conducted by Hansen & Haas (2002) found that electronic information and document dissemination is one of the best means of marketing internal knowledge. However, they caution that this process must be selective, filtered and edited to yield positive outcomes.

Markus (2001) states that the re-use of knowledge saves much time, effort and money in "re-inventing the wheel". Knowledge re-users may be close or distant from the knowledge producers, and computer technologies are useful tools to store and disseminate knowledge resources to areas or people in need of such resources.

In a study undertaken by Kim & Lee (2006), amongst ten public and private sector organizations in South Korea, the findings revealed that IT application utilization was the most significant factor that affected employee knowledge sharing capabilities. They posit that by investing in IT applications and knowledge sharing systems, employees perceive management and executive supporting their knowledge sharing skills. The conclusions indicated that employee usage of IT applications and user-friendly IT systems are significant variables in employee knowledge sharing and that IT and Human Resource Managers' should

encourage employees' knowledge sharing activities and organizational performance.

(b) Computer technology and speed

The overall results indicate that none of the participants strongly disagree or disagree, only 8.8% were neutral and an overwhelming majority 91.2% agree or strongly agree that there is a positive correlation between computer technology and speed.

According to Carrell *et al.,* (1998:530), a human resource information system (HRIS) is a system that is used to collect, record, store, analyze and retrieve human resource data. However, to be of value to the organization, the information in the system must be up-to-date, complete, flexible and easily accessible to facilitate decision-making.

Based on the outcome of the survey, it is concluded that ICT plays an important role in the turn-around time in locating information. Easy and quick access to information has the potential to increase productivity, and efficiency of employees through faster response time to human resource problem solving (Lee, 2004: 62). The opportunity to exploit this facility for maximum organizational advantage must therefore be explored.

(c) Computer technology and work improvement

The overall results indicate that only 1.1% of the participants strongly disagree, 8.8% were neutral and an overwhelming majority of 90.1% agree or strongly agree that computer technology leads to work improvement.

The findings reveal that ICT has become an indispensable tool for capturing, organizing and transferring information on a daily basis. The ICT infrastructure

also has the potential to communicate quickly and effectively through the intranet, groupwise and internet. Due to the acknowledgement that ICT plays an important role in information management processes, the institutions should explore the use of ICT for knowledge management to a larger degree, especially the storage and dissemination of knowledge resources.

The findings are consistent with results of a similar study undertaken by Shih & Chiang (2005) which investigated the strategic alignment between human resource management, knowledge management and corporate development. The findings revealed that information and computer technology make it convenient for employees to repeatedly communicate existing and newly created knowledge through information systems thus making a great impact on work improvement (Shih & Chiang: 2005). The ICT infrastructures could therefore be an excellent form of communication and network tool to ensure that employees stay connected, irrespective of their location.

According to Meyer (2002:73), those organizations that do not keep pace with changing technology, systems and techniques will not be able to survive the information and knowledge era. Meyer (2002:73) posits that in order to remain competitive and strive for excellence in service, organizations must identify with the characteristics of learning organizations.

Overall, this theme produced favourable outcomes with regard to the perceptions concerning the use of information, communication and computer technology for knowledge management. Respondents perceived the importance of technology for quick turnaround times and improved work outcomes regarding its capacity to codify, store and share knowledge resources.

7.3.8 Research theme eight: Learning organizations

According to Gottschalk (2005:61), there is a very close relationship between learning organizations and knowledge development in that, whilst knowledge workers develop knowledge, organizations' learn. Organizational learning takes place when organizations exploit individual competence in new and innovative ways. Learning is a continuous, never ending process of knowledge creation.

Some of the characteristics of learning organizations identified by Meyer (2002:78) are:

- Flat organizational structures;
- Excellent communication channels;
- Teamwork;
- Employee empowerment;
- Integrated vision and mission; and
- Learning from industry best practices.

These characteristics have been surveyed to establish whether higher educational institutions subscribed to the identified criteria to be classified as learning organizations.

(a) Learning organizations and flat structures

The overall results indicate that 11% of participants either strongly disagree or disagree, 16.5% were neutral and 72.5% either agree or strongly agree their institutions preference of flat organizational structures over tall hierarchical structures.

The results from India reveal that none of the participants disagree, 4.5% were neutral and the overwhelming majority of 95.4% agree or strongly disagree with the statement.

Respondents from Mauritius indicate 36.9% disagree or strongly disagree, 26.3% were neutral and 36.9% agree or strongly agree.

Participants from RSA recorded that 6% disagree, 18% were neutral and 76% agree or strongly agree with the statement.

According to Newell *et al.*(2002:15), flat organizational structures and teamwork improve co-operation amongst employees. However, it also impacts negatively on important aspects of knowledge and expertise, in that, layers of middle management expertise is lost through this process. However Newell *et al,* (2002:15) posit that the benefits of flat structures far supersede the disadvantages in that it eliminates functional divisions and encourages horizontal teamwork. It also contributes to immense cost savings and improved knowledge sharing amongst team members.

The results of the survey show that India and South Africa have embraced change from hierarchical to flat organizational structures whilst this shift in Mauritius seems to be lacking pace. However, a significant percentage of respondents from Mauritius have chosen to remain neutral denoting their indecision. Given the low unemployment rate in Mauritius compared to India and South Africa, it is likely that this is attributed to high employment rates created by tall hierarchical structures.

(d) Communication channels

The overall results indicate that 7.7% of participants either strongly disagree or disagree, 22% were neutral and 70.3% either agree or strongly agree that the institutions subscribe to the principle of open door communication.

In a study that examined the relationships between knowledge sharing and communication undertaken by Gumus (2007:7), the findings revealed that open communication systems and communication dimensions have positive relationships with knowledge sharing. People are willing to offer their knowledge in keeping with the communication style that is displayed. The findings also revealed that there is a close relationship between communication, knowledge sharing and influence of position of the knowledge seeker. The finding concluded that academic personnel are less relaxed communicators than administrative personnel.

The findings reveal good communication channels amongst organizational members confirming a favourable environment conducive for knowledge creation, knowledge sharing and knowledge transfer.

(c) Team learning

The overall results indicate that 3.3% of participants disagree, 8.8% were neutral and an overwhelming majority of 87.9% either agree or strongly agree that their institutions subscribe to the principle of teamwork where team members learn from each other.

Nonaka & Takeuchi (2004), emphasize that knowledge development is high in team structures. They posit that the socialization process within teams lead to the transfer of tacit knowledge from the individual to team workers and vice-versa.

Teamwork improves the quality of products and other outcomes, creates efficiency, and advances innovation and creativity.

The findings confirm that higher educational institutions acknowledge the benefits of teamwork, where team members learn from each other. Benefits of teamwork are wide ranging, including, but not limited to multi-skilling of team members and pooling of knowledge resources.

(d) Employee empowerment

The overall results indicate that 6.6% of participants disagree, 19.8% were neutral and 73.6% either agree or strongly agree that their institutions subscribe to the principles of empowering employees to make decisions.

According to Priku (2009) managers and supervisors are often reluctant to embrace the principles of employee empowerment. This is attributed to the belief that empowerment of lower level employees means giving up power. Managers need to recognize and believe in the abilities of their employees. This will allow empowered employees to apply their judgement and expertise to make independent decisions.

The results from the participants show that the higher educational institutions have embraced employment empowerment principles and have delegated decision-making to employees at the lower levels of the hierarchy.

(e) Integration of vision and mission statement

The overall results indicate that 11% of participants disagree, 28.6% were neutral and 60.5% either agree or strongly agree that the HR department integrates the institution's vision and mission statement in HR practices.

Gurteen (2007:1) states that a vision statement is a succinct statement of what the institution would like to see in the long term. A mission statement is what the institution needs to do in order to achieve its vision. The integration of the organization's mission and vision statement with the human resource function is to connect the organizational goals with that of the human resource function so that the organization realizes its mission and vision (Gurteen, 2007:7).

The responses from the participants confirm that higher educational institutions are to a large extent aligning the human resource objectives with the institutions' mission and vision statements.

(f) Learning from best practices

The overall results indicate that 8.8% of participants disagree, 11% were neutral and 80.2% either agree or strongly agree that their institutions encourage learning from industry trends and best practices.

In a study undertaken by Hwang & Lockwood (2006:337) the results showed that there were several factors that promoted the implementation of best practices as well as some critical barriers against such implementation. The factors that supported best practice implementation included achievement of consistent high standards, internal and external communication, strategic human resource management objectives, and improved individual and organizational performance. The barriers to implementing best practices were identified as limited resources, lack of skilled labour and lack of competitive bench-marking.

Overall, the results of the current study do not represent major barriers to institutions learning from industry trends and best practices. However, there is a need for institutions to keep pace with changing best practice industry trends and benchmark its practices against these from time to time.

The findings of the survey confirm that higher educational institutions are learning organizations, as they closely identify with the definition, description and characteristics of such organizations. According to Meyer (2002:74) this is a positive step to knowledge management as in learning organizations:

"learning becomes part of a continuous process of sharing information with people and the environment. To be of value to organizations, organizational learning must be encouraged, nurtured and managed for the improvement of performance".

7.4 Interviews: Executive managers- HR portfolio

The data obtained from the semi-structured interviews with the executive managers responsible for the human resource function was analyzed qualitatively and integrated with the findings from the survey. A summary of the responses to the questions in the semi-structured interview questionnaire are discussed in aggregate fashion as follows:-

7.4.1 Does your institution have a knowledge management policy/strategy?

The results indicate that none of the higher education institutions that participated in the study had a structured or a documented knowledge management policy or strategy. However, all institutions reported that knowledge management initiatives were implemented in an informal way in their human resource departments or institutions. The majority of the institutions felt that there was a need to create a knowledge management strategy for the institution and according to their perceptions such a strategy would impact positively on the overall efficiency and effectiveness of the institution.

7.4.2 Does senior management support knowledge management initiatives in the HR Department?

The responses from the participants showed an overwhelming support for knowledge management initiatives in the human resource departments. This was confirmed by the investments in the latest and up-to-date information and communication technologies and the range of knowledge management related projects undertaken in each institution. The most common ICT uses included the storing, retrieving and sharing of information and knowledge resources via groupwise, intranet, databases and decision support systems. It was noted that the uses of these infrastructures were mainly limited to explicit knowledge, with very few institutions acknowledging its use related to tacit knowledge.

This position is accentuated in findings of similar surveys conducted amongst executive managers. One survey established that 87% of European business directors perceive that knowledge management initiatives would enhance the organization's competitiveness, and 76% of the respondents were of the view that building and knowledge sharing is important for the organization. However, the survey indicated that sharing of tacit knowledge is a huge challenge in their respective organizations (Williams, 2003).

None of the institutions surveyed indicated support for the use of knowledge management initiatives for strategic management purposes. This position is in contrast with the findings of a survey of 500 organizations conducted by KPMG. It was established that 80% of the senior executives felt that knowledge management initiatives was strategic to their organization and 78% held the view that they have missed business opportunities. The study estimated that 6% of revenue was lost due to missed knowledge management opportunities.

7.4.3 Does your institution have a knowledge management function within the human resource department? If so, where is this function located?

Due to the informal application of knowledge management initiatives in the human resource departments in all of the institutions surveyed, none of the institutions surveyed reported a substantive knowledge management function neither within the human resource department nor an established independent knowledge management department. The majority of institutions reported that they are considering the creation of such a function within their human resource departments. Most of the respondents felt that the function should be incorporated within an existing section or division in the human resource department. The preference for the location of such a function was within the human resource information systems division due to its allied relationship with the knowledge management function. Whilst some of the respondents felt that this function should fall within the responsibility of the human resource information systems manager, others felt that it should be managed by an independent person with a title of knowledge resources manager or chief knowledge officer due to the specialized nature of the function but located within the human resource information systems function.

7.4.4 Is Knowledge Management included in the vision and mission statement of your organization?

Very few institutions reported that knowledge management was incorporated in their institutions mission and vision statement. The majority of the respondents saw the need for knowledge management to be part of its institutional strategy and its importance warranted its inclusion in the mission and vision statement. The others did not believe that its importance justified its inclusion in the mission and vision statement. According to Kim & Lee (2006) clear organizational vision and goals have a positive impact on employee knowledge sharing capabilities.

Such inclusion engenders a sense of involvement and contribution amongst employees.

7.4.5   Does your organization have a dedicated budget for KM practices?

None of the institutions that have been surveyed reported that a dedicated budget was appropriated for knowledge management initiatives in the human resource department. However, all institutions indicated that the human resource department had knowledge management related intervention policies to promote knowledge sharing and that such interventions have dedicated budgets. The majority of the institutions indicated the need for a dedicated budget for knowledge management within the human resource department and expressed that this will be viewed as a priority for the next budget year. Some of the institutions felt that there was no need for an independent budget appropriated for knowledge management as knowledge management featured prominently in existing functions within the human resource department. They stated that the technology, both hardware and software contributed to knowledge management initiatives which in itself has budgetary implications.

7.4.6   Name some of the important KM enablers/interventions that are implemented in the Institution as a means of sharing knowledge?

Each institution reported that their institutions implemented knowledge sharing policies and/or practices. Some of the common practices that have been reported are the following:-

- Social networking;
- Job rotation;
- Knowledge sharing as part of the assessment of the performance management system;

- Secondments; and
- Knowledge exit interviews.

However, the institutions reported that when these policies were considered, it was not specifically designed as a knowledge management instrument as some of these policies were implemented long before knowledge management as a discipline was conceived. The institutions rated these policies and practices as excellent knowledge transfer agents as a means of empowering employees to become smarter in their jobs, and to be able to access knowledge and expertise in an efficient and effective way.

7.4.7 How does HRM optimize on the HR-KM synergy

Each institution raised unique HRM/KM synergistic experiences, and indicated that their own cultures and management philosophies shaped these experiences. Some of the common experiences reported are the following:

- Human resource development interventions are designed to develop a wide range of skills to a diverse group of employees. They believe that employees with a skills profile which goes beyond the needs for their specific positions will benefit the institution for the future.

- Only one institution cited performance management as a tool to encourage knowledge sharing amongst employees. In this instance, knowledge sharing is a core competence against which employees are measured, and form part of the criteria against which the overall performance of the employees are evaluated and compensated.

- Teamwork is encouraged, and the organizational and departmental structures of the majority of the institutions are arranged in a way that it encourages team work. The institutions cited that teams are encouraged to operate in a

way that employees learn from each other and that leadership within the team is rotated. They stated that this process contributed immensely to knowledge sharing and learning.

- Some of the institutions noted that their reward management policies gave due credit to knowledge sharing initiatives. Employees are given incentives to contribute to knowledge related projects. Employees with specialist knowledge and scarce skills are awarded training contracts to share their knowledge and skills to those employees who require such expertise to improve their performance. These institutions stated that this initiative saves the institutions financially, in that a similar service is way too costly if provided by an external consultant. The added benefit of in-sourcing this training event is that employees requiring subsequent on-the-job assistance regarding the training event have the consultant on site to source such further assistance and to utilize as an on-site reference.

7.4.8 Is the HR Department represented at the Executive Management Board?

All institutions reported that their HR Departments were represented at the Executive Management Board level to contribute to not only human resource related items but on strategic issues that affect the institution as a whole. The portfolio manager of the human resource management function is a member of the executive management team, and hence represents the human resource department at that level. The respondents have indicated that the human resource function is not viewed as a support function but as a very significant and critical function which impacts on the organizational performance as a whole. Moreover, the respondents were unanimous in their view that over seventy per cent of the operating budget is appropriated for staff salary and compensation related expenditure. The respondents also indicated that their representation at

the Executive Management Board level enabled a communication flow between the HR Department and the Executive level and vice-versa.

7.4.9 Is the HR Department perceived as a "strategic partner" to the rest of the Institution?

This question yielded mixed responses, as the structures of human resource departments varied amongst higher education institutions both nationally and internationally. Some institutions had centralized human resource departments, whilst others had decentralized human resource departments. Those with decentralized structures perceived that the human resource departments were a strategic partner to the rest of the institution. This view was accentuated as the respondents believed that the fact that services were rendered at source, is a show of a strategic alliance with the clients that they service. On the other hand, those institutions that had a centralized human resource function perceived that there was no need for a strategic partnership between the human resource department and the rest of the institution.

In the decentralized human resource department model, the view extended was that every line manager in the institution should be viewed as a human resource manager, as the line managers' responsibilities include managing employees on a day-to-day basis.

7.4.10 Describe the relationship between KM and reward policies?

The responses to this question were varied and not very clear. This could be attributed to the fact that knowledge management had not yet featured prominently in human resource policies and procedures. Most institutions reported that their reward policies did not relate to knowledge management. However, they acknowledge the need for their reward policies to be amended to

make provision for the encouragement of knowledge sharing. Policies that were identified for amendments were the performance management policy, mentorship policy, and the incentive/merit award policy. They stated that in each of these policies, opportunities exist for employees to be rated in terms of their willingness to share expert and specialized knowledge to their colleagues. A positive rating will count towards the overall weighting. These policies would create a culture conducive to knowledge sharing amongst all employees in the institution.

In summary the results of the qualitative survey amongst the executive managers indicated that although knowledge management initiatives are not specifically defined as such, there is a significant evidence of such endeavours in the institutions on an informal basis. It does appear that higher educational institutions are well on track to a knowledge management journey in the first decade of the 21st century based on the perceptions of executive management.

7.5 Conclusion

In this chapter, the research results were discussed and comparisons were made to relevant previous studies as well as reviewed literature. The research shows that in most instances, the perceptions of executive managers were to a large extent consistent with those of the HR managers' perceptions. The results corroborated with the findings of similar studies and in some instances reflected contradictory and conflicting results in respect of certain key variables of the study. This was anticipated due to the changes in the cultural, geographical and environmental factors in each country and industry.

A central feature of the main findings indicates that higher educational institutions support knowledge management initiatives in the HR function. This is evident in the empirical findings under the various research themes integrated with the outcomes of the interviews with the executive managers.

The next chapter will focus on the formulation of a generic integrated model based on the outcomes of the literature review, the empirical survey and industry best practices.

CHAPTER 8

DEVELOPMENT OF A NORMATIVE INTEGRATED KM/HRM/HEI MODEL

"All the value of this company is in its people. If you burnt down all of our plants and are just left with our people and information files, we would be as strong as ever. Take away our people and we will never recover" (Watson, 1998:34).
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8.1 Introduction

An important objective of this chapter is to develop a credible institutional mechanism in the form of a normative model for the management of knowledge in higher educational institutions. The model proposes practical and coherent strategies that combine strategic management, strategic human resource management and knowledge management initiatives with particular reference to higher educational institutions. The variables and factors represented in the comprehensive model are derived from the outcome of the results of the empirical study, literature review, examination of case studies and KM/HRM best practices.

The model acknowledges the continuing decline in skills and knowledge profiles in organizations due to the exodus of experienced professional employees from higher educational institutions. Serious concern is expressed in that the knowledge that they take with them far supersedes the knowledge that remain behind. This constitutes a significant brain drain as the employees who replace those severed from the higher educational institutions are generally lesser skilled, and without the requisite knowledge levels of their predecessors. This leads to a situation where organizations suffer a "knowledge paralysis". A solution to the problem is to transfer knowledge from those who are highly

knowledgeable and skilled to those who are lesser qualified relatively, but with the potential and the need to acquire such knowledge in the performance of their functions. Transfer of knowledge to a wider spectrum of employees will enhance the capability of the organization and lead to increased competitiveness. If individual knowledge can be converted to organizational knowledge, the circulatory knowledge from skilled and experienced employees to the younger and inexperienced will no doubt have a significant impact on the future of the organization.

Against the backdrop of the literature review and the outcome of the empirical study, the investigation culminates in the formulation of a model that link knowledge management, human resource management, higher educational institutions and strategy. The model proposes an integrated knowledge and human resource management solution with distinct strategic benefits for the purpose of making knowledge accessible amongst employees in higher educational institutions.

8.2 Challenges for HRM

The 21st century heralds a new approach to human resource management where employees are regarded as investments that provide long-term rewards to the organization if effectively managed and developed (Carrell, Elbert & Hatfield, 2000:7). Knowledge is a factor of production with a value greater than land, labour or capital. It is therefore the responsibility of human resource management to capture intellectual capital, codify it and transfer it to the other employees in need of such knowledge. It is considered as:

"HR's challenge to provide a blue-print of how to put knowledge to work as a source of competitive advantage" (Davenport & Prusak, 1998:24).

In order to address these challenges, it is important to review the role of human resource management in managing knowledge as a strategic asset. Human

resource management should create mechanisms that lever its knowledge assets for the benefit of the organization.

8.3 The strategic alignment of HRM

Human resource managers need to play new and innovative roles due to the dramatic changes in the internal and external environments. In order to be successful, HRM professionals must link their objectives, policies, systems and practices with the strategic objectives of the organization (Martell & Carroll, 1995: 253).

Figure 8.1 illustrates the integration of the human resource and other functional area objectives with the corporate objectives of the organization.

Figure 8.1: Integration of human resource objectives
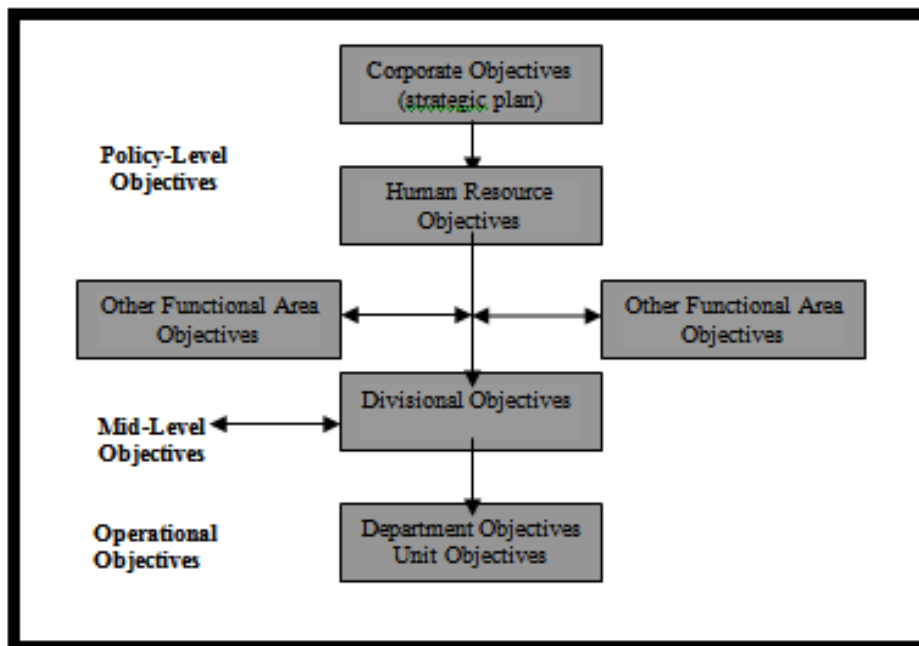
Source: Anthony, Perrewe & Kacmar, 1999: 141

Ackerman (1989) posits the view that those organizations that align its core functions with the corporate strategies derive the following distinctive benefits:

- Contribute to the survival and goal accomplishment of the organization;
- Support the implementation of the corporate and business strategies of the organization;
- Create and maintain the competitiveness of the organization;
- Enjoy representation at top management level and participate in strategic planning and influence the strategic direction of the organization; and
- Foster co-operation between the human resource department and line managers.

Skyrme (2008:1) claims that there is a significant relationship between corporate strategies, employees and the knowledge of the employees. Despite rating employees as the organization's greatest asset in official records, it is the cost on the profit and loss account that attracts greater attention. Employees are most often regarded as a cost to cut when the times get tough.

8.4 Background to the development of the model

The proposed model endeavours to expound a set of basic points of departure within the framework of higher educational institutions. The model could be utilized for the enhancement, adjustment or replacement of existing models or systems currently in place in HR departments in HEI's relating to HRM/KM integrated practices. The model could be used as a guide to the executive management at higher educational institutions to serve as a control measure whereby the integrated human resource management and knowledge management outputs could be evaluated.

The approaches linked to the integrated model could assist to maintain and enhance the corporate strategy and the mission statement of the higher educational institutions. Simultaneously it could serve as a motivation for the executive management and the human resource management to ensure that the

KM/HRM/HEI integrated model will contribute to the realization of the provisions of the institutions strategic plan on a continual basis.

In order to create models of efficiency and effectiveness for KM/HRM integrated systems, it is appropriate to evaluate the capabilities of existing employees at higher educational institutions.

8.4.1 Development of the normative integrated model

Majority of employees at higher educational institutions have permanent appointments. This type of employment contract could result in employees' expectations of a lifelong employment contract with the institution. Those employees who have scarce skills tend to be attracted to competitors whilst employees' whose skills are not in much demand remain in the organization. This situation is exacerbated by the exodus of quality employees to other countries due to a multitude of reasons as cited in the Work in Life (WIL) Survey of 2002.

According to the Work in Life (WIL) Survey conducted by Sunday Times newspaper in 2002, seventy two percent of the readers responded that they would consider emigrating from South Africa. As the respondents came from a well-educated and high earning background, the potential brain drain would no doubt result in a loss of critical skills and knowledge (Lee, 2004: 3). Higher educational institutions suffer similar experiences in competing for scarce resources in a market which has a high unemployment rate and a huge shortage of skilled employees.

From the state level in South Africa, executive mandates through the office of the former Minister of Education, Professor Kader Asmal to higher educational institutions have led to the mergers of like institutions within the region, leading to reduced operating costs, circumventing the duplication of services and enhancing cost effectiveness and service delivery. This has forced institutions to re-examine their internal business methods and develop strategic plans as a

commitment to transforming and enhancing service levels in the re-configured higher educational institutions. Senior management has therefore demonstrated their commitment to enhancing the quality of institution-wide service delivery.

However, as higher educational institutions respond to the ever-increasing pressures to improve performance and reduce costs, managers turn to their support staff for results which are most often beyond their capabilities as they have neither received the training nor have the desired knowledge to be able to deliver quality services. This position is accentuated by the World Competitiveness Yearbook results of 2007 where South Africa ranked 50th out of the 55 countries surveyed in the human resource development category (IMD World Competitiveness Yearbook, 2007). The IMD has issued a stern warning to those nations that are losing ground, such as South Africa, in stating that:

"these nations will, sooner or later, lose their standing in world competitiveness if they do not improve their overall performance" (IMD World Competitiveness Report, 2007).

It is, therefore, a priority for senior management to recognize the perceived deficiencies and manage the process of integrating knowledge management initiatives with human resource management as a step towards addressing the problem. Failure to do so could have a detrimental effect on institutions in terms of service delivery as well as its image.

The model in Figure 8.2 enshrines the most important variables that impact on the integrated model. The model stresses the point that if higher educational institutions are to function successfully, senior management must acknowledge the relationship between corporate objectives and human resource management objectives.

Rothwell & Kazanas (1988:15) claim that this relationship does not exist in all circumstances for the following reasons:

- Senior managers do not see the need for this relationship;

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- Human resource information is not compatible with other information used in strategy formulation; and

- Senior management and human resource management are in conflict between human resource short term and long term objectives.

As a means of addressing the shortcomings identified, Figure 8.2 expresses the importance for the human resource management objectives of the organization to be linked to the various sub-objectives of the broad functional areas that report to the human resource department such as the human resource administration, human resource development, industrial relations and human resource information systems functionaries. The relationship between the strategic objectives of corporate management, human resource management and the sub-objectives of the functionaries of the human resource department will enable these objectives to operate sequentially and holistically.

The proposed model represented in Figure 8.2 emphasizes the importance of developing a relationship between senior management and human resource management in order for the model to be effective. The model strives to create a link between corporate strategies, human resource management strategies and its integration with knowledge management with the primary objective of improving overall organizational performance.

8.4.2 Description of the normative integrated model

The model in Figure 8.2 reflects broad categories and these are represented in frames. The arrows point out the link between the broad category and the elements within the category as well as the linkage between categories and the elements within the respective categories. The main category frames impacting on the integrated HR/KM strategic model are as follows:

- Executive management;
- Human resource/knowledge management interventions;
- Internal environment; and
- External environment

The important features reflected within each broad category frame represent the core elements of the model with each element labeled with a sub-heading. The relationship between the broad categories and within and between elements is illustrated by arrows.

8.4.3 Executive management at higher educational institutions (HEI's)

According to Kroon (1994:13) strategic management is usually conducted by executive management comprising of the board of directors, the chief executive officer, and other senior managers who together make up the management committee. According to Oosthuizen (1981:39) the executive management of higher educational institutions rests with the management committee, the membership of which shall include the Vice-Chancellor, the Deputy Vice Chancellor/s, the Registrars, and other senior office bearers in the administration that are co-opted to the management committee.

8.4.3.1 Vision and mission statement

The first element under executive management is the institution's vision and mission statement. The vision statement outlines the goals of the organization. It succinctly describes the direction that the institution wishes to pursue. The time frame for a vision statement is five years during which period a review should be conducted (Schultz et al, 2003:251).

The formulation of the mission of the organization is the responsibility of executive management. The mission determines the reason for the existence of the organization. It is future-orientated and defines the organization's service industry, its market, and management philosophy (Pearce & Robinson, 1985:79).

According to Nel *et al.*, (2004:524) the mission statement encapsulates a general plan on how the organization intends achieving its goals and objectives. There is also a close relationship between the mission of the organization and its culture.

8.4.3.2 Management strategy and corporate culture

Mitchell (1990:56) is of the view that management strategy and corporate culture are closely related. The culture of the organization and corporate strategy are mutually inter-dependant. New management brings new cultures, and new cultures breed new strategies. Often personalities clash with culture and this must be managed with great sensitivity. During horizontal mergers, culture clashes lead to major failure. Two different philosophies collide with one insisting that the other conform. As a result, the combined merged organization tends to suffer huge losses. It is therefore recommended that during mergers, individual organizations commit to creating an entirely new organization with a combined culture building on the strengths of the former organizations. Senior management

must therefore be cognizant of the dynamics of the strategy/culture relationship in organizations.

8.4.4 Strategy formulation

Strategy formulation refers to long term planning by the top management. Anthony *et al.*, (1999:10) define strategy as:

"the formulation of organizational missions, goals, and objectives, as well as action plans for achievement, which explicitly recognize the competition and the impact of outside environmental forces".

Strategy formulation is a dynamic process where action sometimes dictates the strategy to follow and vice versa. It is subject to change depending on the environmental factors, competition or internal politics. Nel *et al.*, (2004:527) posit that the mission statement of an organization should ideally encapsulate the following elements.

8.4.4.1 Goals and objectives

Goals are a desired result that an organization strives for. It is part of the mission of the organization and not finitely defined. Goals guide groups and individual employees to achieve the maximum output with the least input. Therefore goals direct performance or results. Whilst goals are long term, objectives are short term performance targets. Objectives are based on the goals of the organization and contribute to the attainment of the goals. Objectives are normally deadline date driven for the attainment of results (Kroon, 1994:149).

8.4.4.2 The strategic planning process

According to Quin (1980:7) the strategic planning process involves the integration of an organization's major goals, policies, and action sequences into a cohesive whole. Higgins & Vincze (1989) cited in Greer (2001:125) concurs with

this definition and adds that the strategic planning process generally adopted the following steps:

- Development of a mission statement;

- Environmental scanning;

- Analysis of strengths, weaknesses, opportunities, and threats (SWOT analysis);

- Formulation of strategic objectives;

- Alternative strategies for achieving objectives; and

- Selection of strategies after due evaluation.

The framework of the integrated model, presented in Figure 8.2 begins with the organizational mission statement with a view to guiding managerial decision-making. According to Greer, 2001:xv) the organization's mission, strategy and goals:

"provides a rational, financially justifiable basis for analyzing the value of alternative human resource strategies, policies, and practices".

In order to meet the challenges of improving service delivery at higher educational institutions, it is necessary to conduct an evaluation of the human resources department.

8.4.5 Strategic human resource management

Strategic human resource management activities focus on a variety of people related activities that are linked to business strategy. Strategic human resource management oversees all functional areas in the organization and is fully integrated with all of its components. The human resource management portfolio is led and coordinated by a member of the executive management (Erasmus & Grobler, 1993). The human resource management portfolio in the higher educational institutions surveyed is led by a Deputy Vice-Chancellor, an Executive Director or a Registrar depending on the executive management structure of each institution.

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Whilst people management in the past was a sole responsibility of the human resource function, the 21st century organizations view people management as every manager's responsibility irrespective of the departments that they service. Therefore managers need to acquire complementary competencies to deal with the complex human resource management issues (Caron, 2006:33-34). This view is further accentuated by the White Paper on Human Resource Management (1997), in that managerial responsibilities to manage human resources within departments should be delegated to line managers.

Anthony *et al.*, (2007:18) state that strategic human resource management differs with traditional human resource management and entails the following distinct areas of responsibilities:

- Participate in the formulation of the organization's strategic plan and align HR functions with the plan;
- Integrates with all line managers and employees;
- Involved in making strategic decisions;
- Integrates with other organizational functions; and
- Coordinates all HRM activities.

As advocated by Caron (2006:33-34), Anthony *et al.*, (2007:18) and the White Paper on Human Resource Management (1997) there is a need for a shift of the HR focus in higher educational institutions to realign its human resource processes, policies and functions with the organizations strategic agenda.

8.4.6 Evaluation of the human resource function

According to Cashman & McElroy (1991:70-73) a study at the University of Iowa revealed that approximately one-third of the organizations in their survey seldom or never conduct evaluations of their human resource departments. Another one-third indicated that they conduct human resource reviews at least annually, whilst the final one-third fell somewhere in the middle. The main reason cited for not

evaluating the human resource function is due to the difficulty in conducting a scientific evaluation for quantifying the human resource function. However, those that conducted evaluations indicated that they used a more judgmental and qualitative process rather than a quantitative or scientific process. It was also established in the survey that the majority of the institutions which had a system of evaluation, actually evaluated the human resource function internally within the human resources department. The results of the survey revealed that the evaluation was not conducted properly, and consequently the informal information gathered was insufficient to determine the actual level of service rendered by the human resource function.

It is therefore concluded that procedures must exist to determine the quality of service rendered by the human resource staff functionary. A human resource audit is an important tool to evaluate service levels as well as the effectiveness of policies, programmes and practices in the human resource department.

8.4.6.1 Human resource audit

Human resource audit is one method of assessing the effectiveness and efficiency of human resource employees in terms of servicing the human resource needs of the organization. This process also helps the organization to analyze the effectiveness of its human resources policies and practices and to determine whether changes or improvements are necessary (Mathis & Jackson, 1988:599).

According to Seagal &Quin (1989:67) a human resource audit becomes necessary when management perceives that human resource programmes and policies are not meeting the goals of the organization. For a human resource audit to be effective, the organization must determine what it seeks to achieve by performing it. This process will determine who is to perform the audit and the methods to be followed in conducting it. The audit team could comprise in-house

employees in view of their familiarity with the organization. However, the disadvantage is that they may perpetuate past errors. Engaging an external consultant may yield innovative solutions to the project. However the obligation is on senior management to decide which option best meets its needs.

Anthony *et al.,* (1999:100-101) aver that the human resource audit involves collecting data through a number of methods such as observations, surveys, questionnaires and computer data reviews. The audit techniques are used to gather information and benchmark these to some expected or predicted outcome. The idea of the audit process is to evaluate the various knowledge management/human resource related programmes to determine its effectiveness in relation to the corporate and human resource strategies.

Once the service levels and the KM/HR programmes and policies are evaluated it is important to determine where these policies are to be implemented. It is therefore necessary to conduct a knowledge needs analysis to provide a map of the level of knowledge, skills and abilities of employees within the organization.

8.4.6.2 Knowledge needs analysis

According to Mills, Pace & Peterson (1988:5) cited in Meyer (2002:115), analysis is defined as:

 "the act and process of separating any material or abstract entity into its constituent elements, which involves determining its essential features and their relations to one another".

In the context of knowledge management, a knowledge gap is the difference between what knowledge employees possess, and the knowledge that is required in order for the employees to perform their functions optimally. Figure 8.3 illustrates this knowledge gap approach.

Figure 8.3   Knowledge Gap
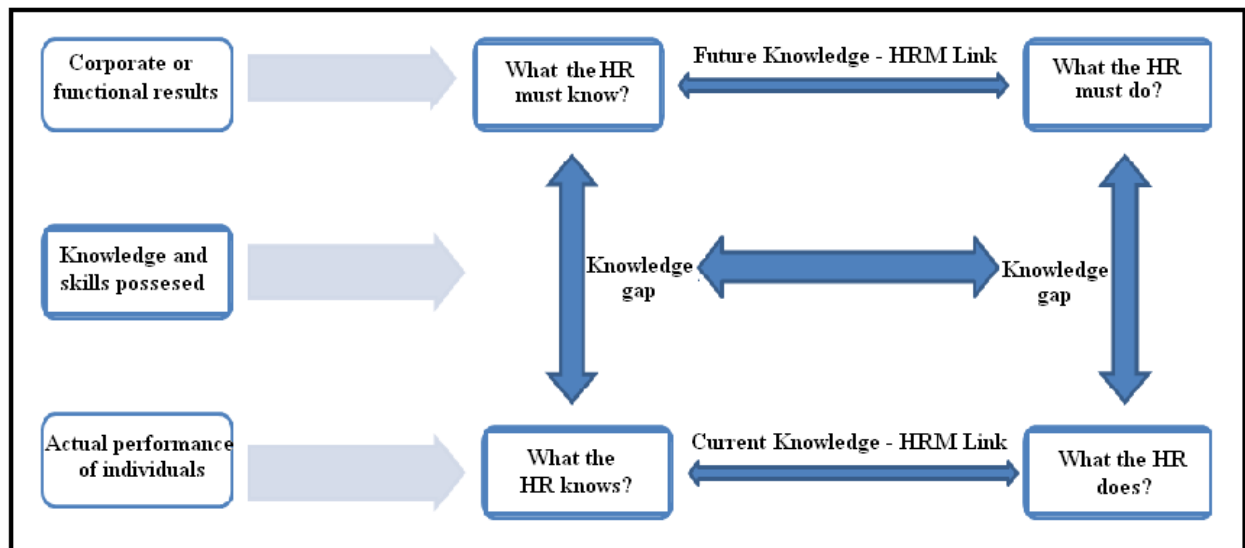
Source: Adapted from Gottshalk (2005:76)

A need should ideally be identified as the essential knowledge, skills and abilities that an employee must acquire in order to perform duties competently to accomplish desired results. A knowledge needs analysis therefore is a process of identifying an issue or a problem, through the collection, analysis, and interpretation of data; and using the information obtained to select or design appropriate knowledge management/human resource interventions to address the issue or problem (Meyer, 2002:115).

Once the knowledge needs analysis is conducted by the human resources department, the actual knowledge level of all employees in the organization will have been established. According to Kao (1996), such internal knowledge audits ought to be conducted by organizations to remain or become competitive. The desired knowledge of each job category could be ascertained from the job analysis and the job description. The difference between 'what is', and 'what should be' (Figure 8.3) will constitute knowledge gaps. Before the selection and design of knowledge sharing/transfer strategies to address the identified knowledge gaps, it is important to undertake a knowledge competency analysis

to determine the actual knowledge required by an employee to be able to render a task competently.

8.4.6.3 Knowledge competency analysis

A knowledge competency analysis involves an in-depth analysis of the knowledge necessary to be able to perform each of the tasks associated with a job. Mager (1988:41) advocates that when considering such analysis, it is necessary to commit in writing the knowledge that the employee would require in order to perform a task. This knowledge list constitutes the areas in which knowledge interventions need to be designed and implemented. This list could also be categorized into pre-requisite knowledge, and requisite knowledge. Meyer (2002:127) posits that pre-requisite knowledge must be acquired before implementing interventions to address acquisition of requisite knowledge. This could be achieved by creating a knowledge hierarchy which clearly highlights pre-requisite knowledge. According to Rothwell & Kazanas (1992: 129-130) cited in Meyer, one method to identify knowledge needs is to repeatedly enquire of each task and sub-task "*what does the learner need to know to do that?"* The responses could then be represented in a flowchart so that successors to the tasks could use it as a knowledge map.

Tiwana (2002:97) suggests that a knowledge analysis should be conducted by a multidisciplinary group of people representative of the key functional areas as follows:

- Senior management: to link the knowledge needs to the business and corporate strategy;
- Finance: to attach financial value to the knowledge assets;
- Human resource manager: to articulate the importance of employee knowledge and knowledge distribution within the organization;

- Information systems/Information technology expert: to mobilize the technology implementation aspects of knowledge management strategy; and

- Knowledge manager: to integrate inputs from the various participants of the knowledge audit team for implementation.

Having established the knowledge gaps and the pre-requisite and requisite knowledge needs hierarchy in the organization, the next phase of the developmental model is to determine some of the causes of the knowledge deficiencies.

8.4.6.4   Knowledge gap cause analysis

This step in the model (Figure 8.2) focuses on the identification of some of the causes of knowledge deficiencies in organizations. It is important that executive management identifies these causes and addresses such impediments to ensure the success of the knowledge empowerment strategies. Some of the causes could include the following factors.

a) Organizational Culture

The challenge for management is to align the culture with the strategic direction of the organization. Culture could be a major obstacle and contributor to knowledge gaps in organizations. According to Beer, Eisenstat & Spector (1990), outstanding results could be achieved when employees share common beliefs and subscribe to common norms of behaviour. Tobin (1998:33) is of the view that organizational culture could act as a barrier to sharing knowledge between and amongst employees. When organizational culture promotes a competitive "***winner-take-all mentality***" employees are encouraged to hoard knowledge so that they have an edge over others in competing for rewards. In addition, organizations tend to discourage the use of external knowledge. The "***not invented here***" myopic vision of management prevents employees from seeking

external knowledge to solve organizational problems. Hence benchmarking human resource management practices against leading organizations is prevented in the process.

b) Organizational and departmental structures

Closely linked to organizational culture are organizational and departmental structures. Poorly designed structures could stem and prevent the flow of knowledge amongst employees both vertically and horizontally. According to Walker (1992:134)

 "***organizational structure accommodates and nurtures informal relationships and networks that provide for effective information flow and influence***".

Flexible structures empower employees to act and nurture teamwork. Flexible structures encourage communication flow and cooperation amongst employees bringing about a highly motivated teamwork, improved response and turnaround time, and a "***turned-on work force***".   Therefore flexible structures foster networks of relationships so necessary in a knowledge economy. Although formal hierarchies exist in flexible structures, the work gets done because employees interact in teams and work directly with each other. Flexible structures are flat, lean and fluid. Knowledge flows freely amongst employees in flexible organizations, supported by direct access to information systems (Walker, 1992:134)

c) Implementation barriers

Fahey & Prusak (2000) have identified several implementation errors, and state that if these are not managed and corrected, genuine knowledge could be prevented from being developed or leveraged. They rate these errors as the "***deadliest sins of knowledge management***". Fahey & Prusak (2000) suggest that

the following factors could have implications for human resource management if not clarified or addressed:

- **Working definition of knowledge**: Human resource management (HRM) must differentiate between data, information and knowledge. It is therefore important for human resource departments at higher educational institutions to develop a working definition of knowledge so that employees could identify with this phenomenon.

- **Knowledge flow**: Knowledge is dynamic and is in constant flux and change. Therefore knowledge must be adjusted with the latest updates to ensure that it remains current.

- **Tacit knowledge**: The role of tacit knowledge is downplayed in organizations. Tacit knowledge plays a crucial role in influencing explicit knowledge. Therefore interventions to facilitate the transfer of tacit knowledge to other employees or devise methods to capture such knowledge must be sought.

- **Focus knowledge on future**: Knowledge generation and its use is a never ending cycle. Management tends to focus knowledge on the past and the present but fail to exploit it for future benefit. The purpose of knowledge is to inform and influence decision-making and therefore must be future orientated.

- **Encourage experimentation**: Encouraging employees to do things differently have significant benefits for the organization. A new and innovative approach to the interpretation of data and information, and initiation of pilot projects leads to the creation of new knowledge.

8.4.6.5 Technology

The study has highlighted the use of computer technology by human resource management as an enabling tool to facilitate knowledge management initiatives. The results of the study have confirmed that higher educational institutions are capitalizing on the benefits of computer technology as a means to improved decision making, reduced turn-around time, improved administrative services, and reduced costs. In this regard it is important for human resource management to work with the information technology department to determine how best to optimally utilize this resource to organize, store, share and retrieve organizational knowledge.

According to Alavi & Leidner (2001), empirical studies have confirmed that whilst organizations create knowledge, such acquired knowledge is forgotten over a period of time. Therefore existing knowledge assets have to be committed to organizational memory via knowledge repositories. Computer technology is an effective tool in enhancing organizational memory and accessing it whenever the need arises. Gottschalk (2005) views groupwise as a useful intra-organizational memory tool to share both structured and unstructured knowledge across time and space.

The knowledge transfer strategies links to strategic knowledge management illustrated by way of the downward two-way flow line arrow in Figure 8.2.

8.5 Knowledge transfer/knowledge sharing strategies

Sufficient attention has been given to knowledge management strategies arising from the literature review undertaken. However, the success of such strategies will depend on the knowledge transfer/knowledge sharing mechanisms that are implemented in the institutions. Knowledge transfer is a systematic process to

capture, collect and share tacit knowledge in order for it to become explicit knowledge (http://www.pao.gov.ab.ca/).

For knowledge transfer strategies to become effective, the generic model recommends that higher educational institutions create a knowledge transfer/knowledge sharing directory to assist all employees in choosing knowledge transfer/sharing methods that are most appropriate for their circumstances.

Several knowledge transfer and knowledge sharing interventions were identified that support knowledge management strategies. Some of these interventions include:

- **Mentorship programmes**: employees who are on the verge of retirement could be appointed as mentors to those employees who are inexperienced. Mentoring programmes could also create communities of practice to facilitate knowledge transfer amongst employees (Kim & Lee, 2006).

- **People, culture and technology**: these are important factors for successful knowledge transfer/sharing. People need to change their attitude to knowledge management. This could be achieved by including knowledge sharing as a generic function in all employees' job description. The organizational culture should encourage direct and open communication amongst employees. The culture should promote commitment to the organizations success through knowledge sharing. Knowledge sharing and transfer must be supported by up-to-date technology so that knowledge resources are captured, stored and accessed as and when the need arises (Sydanmaanlakka, 2002:154).

- **Communities of practice**: the acknowledgement of people as creators of knowledge has led to the realization that knowledge lies less in databases and more in people. Therefore, organizations are recognizing the value of

informal networking where employees informally share experiences and expertise. These informal groups are labeled "communities of practice (Ward & Peppard, 2002).

A literature review has confirmed that organizations, in their attempts to implement knowledge transfer and knowledge sharing interventions encounter obstacles which are counterproductive to knowledge management.

8.6   Barriers to knowledge management

Some of the common cited barriers to knowledge management that have been identified are as follows:

- **Cultural barriers**: This is recognized as a major barrier to knowledge management. The culture and sub-cultures influences the relationship between individual and organizational knowledge. The culture determines the ease in knowledge creation, knowledge sharing and knowledge transfer, the context for social interaction, and how to overcome knowledge hoarding behavior (Long & Fahey, 2000). In this regard, Sonnenberg (1994) states that organizations should create a culture of trust, openness and teamwork amongst employees. People who trust each other will share knowledge freely and will co-operate in a team situation.

- **Political influence**: The attitude of "knowledge is power" gives employees political influence and promotes employees to work in silos. Consequently, employees hoard personal knowledge and are averse to knowledge sharing and learning new knowledge (Ahmed *et al.*, 2002:64).

- **Communication channels:** For knowledge management to work, the communication channels between employer and employees and between employees and employees must be frequent and effective. Communication should be encouraged and take various forms in addition to technology such

as bulletin boards, policy documents and newsletters (Fuchs *et al.*, 2000). Newell *et al.*, (2002) state that contemporary organizational structures lead to semi-autonomous business units, cross-functional project teams, inter-organizational networking and globalization of the organization.

8.7   Monitoring and evaluation

The monitoring and evaluation phase is intended to identify any deficiencies or gaps in the proposed model. If any deficiencies are identified, corrective action or amendment to the model could be made.

In Figure 8.2, the two independent and distinct components indicate the importance of monitoring mechanisms. The "internal monitoring" component is reflected as a responsibility of the "strategic human resource management" component. The "strategic human resource management" component is accountable to the "strategic management" component.

Provided proper control mechanisms are in place, well formulated mission and vision statements will ensure the successful implementation of the proposed model. In terms of the scope of this study, and the proposed model, it is important to establish an internal monitoring body to oversee the implementation of the model. This initiative involves the process of establishing an internal monitoring process.

8.7.1   Internal monitoring process

The model (Figure 8.2) shows the reporting of the internal monitoring process to the human resource management function under the leadership of the executive HR Director/Manager. The internal monitoring body evaluates feedback reports and monitors the implementation of HR/KM programmes, policies and practices. The ongoing feedback provided by respective HR line managers identifies gaps

and shortcomings. This may require revising or realigning the HR strategy/integrated HR/KM programmes, policies and practices with the organization's strategy.

This is illustrated in Figure 8.2 by the linkage from the internal monitoring component with the human resource management component and in turn, joining with the strategic management component. The control is vested in the office of the executive manager responsible for the HR function who is the custodian of the human resource management policy implementation. The composition of the internal monitoring committee is envisaged to include:

- Executive manager responsible for the HR function in the HEI;
- Executive Director: HR function in the HEI;
- Human resources information systems manager;
- Chief knowledge officer;
- Institutional forum representative; and
- Trade union participation.

It is proposed that the chairperson of the internal monitoring committee should be the executive manager and the vice-chair should be the executive Director of HR. Senior management representation is important to indicate commitment at that level. Commitment is also demonstrated by the provision of the necessary budget for the effective implementation of the proposed integrated model as reflected in Figure 8.2. This is articulated in the corporate executive action and strategy implementation plan.

The responsibilities of the internal monitoring committee should incorporate several strategic functions which include, but not limited to:

- Review KM/HR strategies, policies, procedures, programmes effectively and timeously after the feedback and internal monitoring process;

- Network with members of the external monitoring stakeholders to ensure that legislative and state mandates are consistent with the human resource strategy and corporate strategy;

- Network with allied external organizations to benchmark KM/HR integrated policy interventions against industry best practices; and

- Liaise closely with the chief knowledge officer and human resource information systems manager to ensure that targets set in respect of KM/HR integrated objectives are achieved.

Communication amongst all stakeholders, including human resource employees at the operational levels must be maintained to ensure that information is accessible. The inclusion of trade union and institutional forum representation to the internal monitoring committee will create a climate of trust between the respective constituencies within the organization.

The evaluation and management of the integrated KM/HR strategy implementation is the responsibility of the internal monitoring committee. Reviews must be conducted on a quarterly basis. The evaluation reviews should consider feedback from the internal and external monitoring process.

8.7.2 External monitoring process

External monitoring is as important as the internal evaluation process. Ramphele cited in the Daily News (Forde, 2009:2) expresses concern at the poor quality of education in South Africa by stating that:

"If you frame your national ambition as a vision to greatness, then everything else follows. You are not going to be satisfied with third-class education. We are where we are because we have lowered our ambition about what it is that we can achieve as a nation".

She believes that it is the responsibility of the government to provide the necessary leadership and make education in South Africa a national vision and a key focus area.

Although higher educational institutions in South Africa are autonomous, they are still subject to and accountable to the State. Higher educational institutions are partially funded by the government and report to the Ministry of higher education through the DoE.

The government has made it clear in its transformation agenda of the higher education sector that it seeks blue print strategies and mechanisms for the achievement of its strategic goals. Some of the goals that it identified in the National Plan for Higher Education (NPHE) include human resource capacity development and knowledge production, acquisition and application. It entrusts this responsibility to higher educational institutions to integrate the identified goals with the needs of industry (http//www.polity.org.za/govdocs/pr).

In the absence of clear guidelines on the level of control from the external environment, it is envisaged that the important stakeholders will comprise of the following:
- Council on Higher Education South Africa (HESA)-formally South African Universities Vice-Chancellors' association (SAUVCA)
- Department of Education (DoE)
- Higher educational institutions (national)
- Higher educational institutions (international)
- Knowledge management/human resource management best practice organizations
- Trade unions

It is assumed that composition of the external monitoring committee with members representing the relevant external stakeholders will be an effective and legitimate body. The aims and duties of the committee could be similar to those identified for the internal monitoring committee. Its role is regarded as critical for

the evaluation of the implementation of the model and the review of knowledge management initiatives in the human resource department.

8.8 Conclusion

This chapter articulated the relationship between strategic management, strategic human resource management and knowledge management at higher educational institutions. The proposed model reflect an application of the key elements and variables that were derived from the outcome of the results of the empirical study, literature review, examination of case studies and KM/HRM best practices.

The model identified some important characteristics of knowledge management and human resource management and placed emphasis in knowledge assets as a strategic resource for higher educational institutions. Based on the outcome of the study, potential benefits to the implementation of knowledge management practices in human resource management at higher educational institutions were identified. Although knowledge as a strategic resource is difficult to manage, the proposed model argues that if the proposed steps in the model are implemented, this situation could be turned around. A careful selection of knowledge transfer mechanisms will help realize immense benefits for human resource management and the higher educational institutions as a whole. The integrative model provides a useful framework for higher educational institutions in their quest to manage knowledge resources. Arising from the outcomes of the empirical study, it is likely that the application of the model will pose challenges and identify gaps that will need to be addressed.

CHAPTER 9

CONCLUSIONS AND RECOMMENDATIONS

"Education is the great engine of personal development. It is through education that the daughter of a peasant can become a doctor, that a son of a mineworker can become the head of the mine, the a child of farmworkers can become the president of a country" (Nelson Mandela cited in Daily News, 2009).

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9.1 Introduction

The important objective of the study was to examine the status of knowledge management initiatives implemented by human resource departments at higher educational institutions (HEI's) in South Africa and to compare these with higher educational institutions in Mauritius and India.

In addition, the study tested some important hypotheses related to the biographical variables (gender, race, age, qualifications and managerial status) in respect of the dimensions of knowledge management and human resource management.

The study was conducted amongst executive managers responsible for the human resource function, human resource managers and supervisors of core and support HR functions. The rationale for the choice of subjects was that they formed the specific target group for the study as they either influenced HR policy formulation and/or were responsible for HR policy implementation.

A literature review was conducted on concepts related to the key variables that impacted on the study in order to establish a theoretical framework for this study. The review explored the work of established authorities on the relevant subject matters.

Following from the main and sub-objectives of the study, the conclusions and recommendations of the study are presented.

9.2 Findings and conclusions based on the empirical survey

Based on the literature review and the empirical survey undertaken through the survey questionnaires and semi-structured interviews, the study provide responses to the research questions.

For ease of reference, the conclusions of each chapter are coherently presented:

Chapter 1 provides a general orientation by demarcating the field of study and outlining the research approach. The research objectives and hypotheses are formulated and an overview of the proposed study is presented. Each objective contains a theme for the study and the themes permeate the study.

Chapter 2 focuses on the conceptual framework of the study. The discussion highlights the relationship between human resource management and knowledge management within the higher educational institution paradigm. The important legislation impacting on higher educational institutions are evaluated to glean an understanding of the prevailing legal environment in South Africa.

Chapter 3 evaluates the impact of knowledge management and the distinct benefits that this discipline brings to the human resource management function. Specific human resource issues and how these contribute to knowledge management initiatives are examined.

Chapter 4 provides a review of industry and international knowledge management best practices (KMBP). Initiatives and experiences as well as research findings in organizations in the international sector provide useful benchmarks for the proposed study.

Chapter 5 presents the research design and methodology in conducting the research. A discussion is provided on quantitative and qualitative methodologies of research theories. A discussion on sampling is provided, followed by a description of the population under study. The methods of data collection, questionnaire design and interview schedules are described. The concluding sections of the chapter discuss pilot study, fieldwork and data analysis.

Chapter 6 focuses on the presentation of the results of the study and an empirical analysis of the data.

Chapter 7 entails the discussion of the results based on the objectives, sub-objectives and hypotheses formulated for the study. Findings, evaluation of the results, and comparison of results with similar research studies also form part of the chapter.

Chapter 8 proposes an integrated normative model for knowledge management/human resource management as a strategic tool for implementation at higher educational institutions. This model is formulated against the backdrop of the literature review as well as the findings of the study.

Chapter 9 concludes with the findings of the study, and proposes recommendations/strategies that could be tailored to suit the needs of human resource management at respective higher educational institutions before its implementation.

The findings, recommendations and conclusions are related to the themes, objectives and sub-objectives identified for the study. The specific findings, conclusions and recommendations drawn from the study are now presented:

9.2.1 Knowledge management policies and practices

- **Findings and conclusions:**

Although higher educational institutions did not have structured knowledge management policies within the human resource function, there is strong evidence to suggest that the specific features of the human resource management policies and practices made them suitable to encourage the creation and sharing of knowledge. There seems to be a good fit and coherence between the existing HR policies and practices and knowledge management. In some instances, there is a need to make minor changes to the existing policies and practices to take into account knowledge management requirements.

9.2.2 Linkage between knowledge management and human resource management

- **Findings and conclusions:**

An important objective of the study was to determine the linkages that exist between the broad domain of knowledge management and human resource management in higher educational institutions. This objective was achieved by evaluating the human and social factors that impact on knowledge management and human resource management. The study had identified the potential that exists for senior management and human resource managers at all levels to acknowledge employees as a critical knowledge asset and not as a cost to the organization. An important finding in the study was the need for knowledge sharing and knowledge transfer to be integral to the institutions' human resource management strategy The study also revealed that whilst senior management and human resource managers acknowledge the importance of HRM/KM initiatives, they are yet to fully embrace and engage with knowledge management concepts and frameworks.

All three elements that constitute the triangle of the study, namely, knowledge management, human resource management and higher educational institutions are dynamic. Latest research studies have demonstrated that the integration of knowledge management with human resource management is continuously providing innovative insights. Managing knowledge as a strategic resource continues to be a challenge for human resource management. The outcomes of this study combined with the best practice examples and the implementation of proposed model will constitute the first steps towards finding solutions to these challenges.

9.2.3 Importance of HRM perspectives of knowledge management

- **Findings and conclusions**

Whilst literature reviews on knowledge management leaned heavily towards technological issues, this study established the importance and prominence of human resource management perspectives of knowledge management. This study has come to the conclusion that knowledge management depends to a large extent on the human aspect (human resources), and yet this critical area of research is grossly under-developed in studies. This study has attempted to close the gaps and also concluded that human resource managers are making slow but gradual strides in redressing the challenges and embracing the benefits of knowledge management integrated HRM practices in higher educational institutions.

9.2.4 Regional, national and international trends

- **Findings and conclusions:**

As the research was conducted amongst higher educational institutions in South Africa, Mauritius and India and across a number of regions within each country, some significant differences between respondents' perceptions on a national,

regional or geographic basis have been noted. This was anticipated given the differences in cultures and work environments in the higher educational institutions in each country and region surveyed. The review of knowledge management best practices identified significant lessons, benefits and challenges for organizations. Best practice benchmarking confirms that knowledge management for human resource management is a strategic tool that significantly impact on the pace of service delivery, and creates world class organizations through innovative knowledge management strategies. Each institution and country reflected unique experiences based on circumstances, cultural factors and the level of commitment to knowledge management policies and practices at all occupational levels ranging from senior management to the operational level. Moreover, the review of knowledge management best practices reflect that knowledge management is an important discipline essential for improved performance and organizational survival in the 21st century.

It is noted from the literature review and supported by the empirical evidence that knowledge management best practices could be adapted and applied by human resource managers at higher educational institutions. It is further argued that applying best practices will instill an ethos of commitment to encourage knowledge sharing amongst employees. However, the problem of rejecting this approach on the basis of *"not invented here"* syndrome or *"it is not applicable to our culture"* needs to be addressed and resolved. Implementing tried and tested knowledge management best practices could only add value to the institution.

9.2.4 HRM strategies support knowledge management initiatives

- **Findings and conclusions:**

The results of the study allude to several human resource management strategies that senior management at higher educational institutions might want to consider to enhance knowledge management initiatives within the

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organization. Examples include the improvement of internal social networks to focus on improved communication and interaction amongst employees within the departments as well as amongst employees within and between departments. Higher educational institutions should therefore review human resource strategies to give effect to improved communication and networking both within departments and across departments to foster a culture of teamwork. Human resource strategies should focus on creating a knowledge profile of employees with scarce skills and reward such employees with a scarce skills allowance to sustain and retain such employees. Strategies could also include the development of interventions such as knowledge exit interviews, communities of practice, job rotation, secondments, mentorship programmes, and selective rehiring of retired employees with scarce skills as mentors on fixed term contracts.

9.2.6 Investment in ICT infrastructures

- **Findings and conclusions:**

The results of the study demonstrate that technological advancement lead to improved interaction between employees, within departments, between departments, between institutions and the external environment, both nationally and internationally. Technology has become an indispensible tool for sharing knowledge resources. With the growth of information technology and electronic communication systems, it is necessary for higher educational institutions to prioritize investments in ICT infrastructures to ensure that it is up-to-date and appropriate for knowledge management initiatives. This would certainly enhance employee perception of senior managerial support. In this regard it would be appropriate to solicit the views of the end users of the information and computer technology before committing investments. Higher educational institutions could derive significant benefits from employee participation in the design process to secure employee buy-in.

9.2.7 Hoarding of knowledge

- **Findings and conclusions:**

Hoarding of knowledge and reluctance to share it is identified as a major barrier to knowledge sharing and knowledge transfer. The results of the survey reflect that employees may not willingly share information or knowledge within the department and amongst peers or with members of staff of other departments. This could be attributed to the premise that knowledge is power, and withholding or hoarding of personal knowledge places their positions in the institution at a distinct advantage. Higher educational institutions should create mechanisms whereby sharing of knowledge is encouraged. Creating incentives for positive knowledge sharing behaviour could lead to positive attitudinal change and voluntary knowledge sharing in the institution.

9.2.8 Enabling factors to encourage knowledge sharing

- **Findings and conclusions:**

In the perceived absence of enabling factors to encourage employees to share knowledge, it is an extremely difficult task to ensure that the right knowledge is in the right place at the right time to assist in efficient decision making. This is notwithstanding the fact that most of the higher educational institutions that have been surveyed have invested in ICT infrastructures to facilitate the integration of knowledge and information. Institutions should invest in other forms of knowledge sharing enablers such as creating organizational structures that foster teamwork, implement mentorship programmes, encourage job rotation to facilitate multi-skilling, and implement the characteristics of learning organizations.

9.2.9 Culture

- **Findings and conclusions:**

It is imperative for higher educational institutions to redefine the mission and vision statements to incorporate knowledge management as part of its culture and strategic agenda. In this regard senior management commitment is critical to confirm the organizations corporate ethos and philosophy. Human resource departments at higher educational institutions have demonstrated that infrastructures are already in place to manage the success of knowledge management initiatives. In addition, human resource managers have expressed the need to create or strengthen existing culture that encourages the capture, use and re-use of employees' knowledge. The redefined mission and vision statement would contribute significantly to the promotion of a culture that encourages knowledge sharing for meeting both departmental as well as organizational goals.

9.2.10 Barriers to knowledge management

- **Findings and conclusions:**

Although senior management and human resource managers generally recognize the importance and relevance for the need to integrate knowledge management initiatives in the policies and practices, there are impediments to the success of such initiatives. Some of the barriers identified by respondents in the study include, but not limited to rigid hierarchical structures, anti-social cultural traditions, unfriendly KM/HRM policies, and communication barriers. Therefore, the need to overcome these obstacles by devising innovative interventions such that the HRM managerial concern could be transformed into effective managerial ability must be regarded as a priority for human resource management and executive management.

9.2.11 Human resource information systems (HRIS)

- **Findings and conclusions:**

The study revealed that the human resource information systems (HRIS) section of the human resource departments surveyed were not specifically designed to manage knowledge resources, knowledge creation and knowledge sharing. However, systematic patterns were found which confirm a close relationship between the human resource information systems and knowledge management initiatives. There is enormous potential for human resource information systems (HRIS) to play a more constructive and meaningful role in knowledge management initiatives. Due to the close link between information management and knowledge management, it is deemed appropriate to locate the knowledge management portfolio within the human resource information systems function. The human resource information systems manager could be the functional manager responsible for the knowledge management key performance area. This would be cost effective and obviate the appointment of a separate senior position such as a knowledge manager or chief knowledge officer.

9.2.12 Management of knowledge assets

- **Findings and conclusions:**

It is established that the important elements, namely, human resource management, knowledge management and technology are dynamic elements and undergoing constant change. Although knowledge as a strategic asset for institutions is still difficult to manage, it is concluded that with the selective implementation of best practices in knowledge management enumerated in Chapter 4 and the application of the principles of the integrated model described in Chapter 8, will have a positive impact in managing knowledge assets in higher educational institutions.

9.2.13 Lack of understanding of the concept "knowledge management"

- **Findings and conclusions**:

An important finding is the lack of understanding of the concept of knowledge management and the benefits of knowledge management initiatives in human resource management by human resource managers in the higher educational institutions that were surveyed. Due to this lack of understanding a significant proportion of the responses drew a 'neutral' response which denotes 'uncertainty' or 'don't know'. This may be attributed to knowledge management being relatively new to human resource management and/or a signal that interest in this area may be lacking the support of senior management. As a consequence, knowledge management initiatives in human resource management tend to be given low priority. The reason for this attitude could be attributed to the fact that senior management in higher educational institutions have yet to realize the significant benefits that knowledge management initiatives could bring to the human resource function.

9.3 Findings and conclusions based on the integrated KM/HRM/HEI model

In the empirical study a number of reasons have been established as to why human resource departments are slow to adopt knowledge management initiatives. These findings are crucial and have significant implications for the proposed integrated model as a strategic intervention for human resource management. Important outcomes of the study show strong support for the broad elements of the proposed integrated model. The impact of the findings is enhanced by the presentation of the objectives of the study and is further complemented by the presentation of the hypotheses as well as the central

themes identified for the study. The important findings and conclusions central to the proposed integrated model are presented.

9.3.1 Benefits of the normative integrated model for HRM

- **Findings and conclusions**:

Human resource managers are unlikely to acknowledge the benefits of an integrated knowledge management/human resource management model for the institution as the human resource managers are perceived as complacent and content with the "status quo". This could signal that managers' are resistant to progressive change. Senior management intervention in inducing acceptance by human resource management for the implementation of the knowledge management framework outlined in the generic model would be a significant step in the right direction in instituting a knowledge management implementation programme.

9.3.2 Lack of integration: HRM objectives with organizational objectives

- **Findings and conclusions**:

A significant obstacle in the higher educational institutions is perceived as human resource managers' reluctance to integrate human resource management objectives with the strategic objectives of the organization. This may pose an obstacle to knowledge management initiatives within the human resource functions in higher educational institutions. One method of addressing this challenge is to devise special training /management development interventions for Human Resource Managers to create awareness of the potential benefits of the integration of knowledge management principles with human resource management.

9.3.3 Mission statement

- **Findings and conclusions:**

There is strong support for the inclusion of a knowledge management/human resource management clause in the corporate mission statement at higher educational institutions due to the perceived lack of support determined through the outcome of the findings. The inclusion of such a clause will ensure that this important dimension will become part of the organization's overall culture and strategy.

9.3.4 Flexible application of integrated model

- **Findings and conclusions:**

A distinct benefit of the proposed integrated KM/HRM model is its flexible application to human resource departments at higher educational institutions (HEI's) in different countries and settings, and hence not narrowly confined to the sample undertaken for the study. However, its applicability must be adapted to suit the uniqueness of the institution taking into account situational constraints and circumstances. For example, some higher educational institutions have centralized human resource departments whereas others have highly decentralized human resource functions spread across campuses throughout the region or country. Therefore some aspects of the integrated model may become more significant whereas others may have to be considered less prominent. It is however contended that models are subject to change, and hence the recommendation for the variability, refinement, and review of the elements of the model from time to time after its implementation to ensure that maximum benefits are derived. The implementation of the proposed HR/KM integrated model is one method of institutionalizing knowledge management initiatives in human resource departments in higher educational institutions. Due to the complexity of the study and the variables intervening with the research study, the integrated model is

recommended as an area of empirical testing to evaluate its viability and subject to further adjustments and refinement where necessary.

9.4   Overall findings and conclusions

Several findings and conclusions have been presented based on the outcome of the study. However, the broad overriding conclusions derived are presented as follows:

- Based on the data collection, interpretation and presentation of results, there is sufficient evidence to suggest that higher educational institutions are well positioned and have the necessary infrastructures to be able to create a culture through the human resource department that would encourage a free flow of knowledge within departments and across departments. However, there appears to be a lack of cohesion which is demonstrated by the absence of strategy linkages to knowledge management, as well as a lack of inclusion of a knowledge management clause in the higher educational institutions' mission and vision statements.

- This study enhances the universalistic approach to the relationship between knowledge management, human resource management and higher educational institutions. The research findings are important because it was conducted in higher educational institutions in three countries which drew useful comparisons. This research provides useful data to HRM practitioners in general, as it measures the orientation of the knowledge management and human resource management functions. This could lead to the development of a practical tool that could be used by HRM professionals in higher educational institutions and adapted to suit organizations in different settings as well.

9.5 Recommendations of the study

Finally, it is now possible to make recommendations based on the findings of the study. The findings of the study highlight the importance of knowledge management (KM) as a strategic tool for human resource management in higher educational institutions in the 21st century organizational era. This turbulent environment poses new challenges to organizations, and there is an urgent need for a drastic shift in human resource roles, functions and responsibilities. It is contended that the recommendations that are proposed are appropriate, relevant and practical.

The study makes the following recommendations to higher educational institutions as a means of realizing the objectives of the study.

9.5.1 Formulation of a knowledge management strategy

The empirical evidence, and supported with the literature review, demonstrates a significant finding, namely, that there is an urgent need for human resource departments in higher educational institutions to seriously consider formulating a knowledge management strategy. It is therefore recommended that the executive management should firstly revise its organizational strategy to include knowledge management as part of its vision and mission statement. Thereafter, a revision of its human resource management strategy should follow, to integrate knowledge management initiatives. The formulation of such a strategy will enable higher educational institutions to create and/or formalize existing human resource policies and practices to integrate a knowledge management focus thus facilitating a committed line of action.

9.5.2 Integrate the KM function within the human resource information systems section.

In order to create a strategically integrated HR/KM system in higher educational institutions, it recommended that a new KM/HR unit be created under the wing of the human resource information systems section in the human resource (HR) department. The head of this unit should ideally be the Chief Knowledge Officer. The KM unit should operate independently of the HR department to capitalize on the benefits offered through the integrated knowledge management and human resource initiatives. The Chief Knowledge Officer should independently evaluate HR policies and practices and suggest amendments with a view to making it conducive to knowledge management with knowledge sharing capabilities. As the human resource information systems section is already designed to manage the institution's human resource information, it could be transformed to support a knowledge management paradigm to enable it to store, manage, and share its intellectual capital for the benefit of the institution.

9.5.3 Formulation of HR "Knowledge Vision" strategy

The integrated generic HR/KM model emphasizes the relationship between the organization's mission and vision statement and the organization's strategy. Whilst higher educational institutions have vision and mission statements, none of the institutions that have been surveyed have incorporated the institution's "knowledge vision" as part of the organization's strategic agenda. It is therefore recommended that knowledge management should be prioritized by having it incorporated in the mission and vision statement of higher educational institutions. Moreover, once included, it shall be the responsibility of the human resource department to orientate employees on how the institution's mission, values and knowledge management framework links with the human resource strategy.

9.5.4 Developing managers through succession planning

A serious challenge facing higher educational institutions in South Africa is the shortage of qualified and experienced human resource managers. This has become evident during the survey where several higher educational institutions reported a large contingent of human resource manager positions being occupied in an acting or temporary capacity. This problem could be exacerbated as many institutions have cohorts of human resource managers who are over fifty years old and who are on the verge of retirement. It is therefore recommended that higher educational institutions should make concerted efforts to identify potential candidates and train and develop them to be in readiness to occupy such positions when the need arises. Institutions should also be proactive and compare internal candidates with external candidates through innovative recruitment strategies to ensure that the best appointments are made in these critical positions.

9.5.5 Employment equity and affirmative action

Statistical data confirm that the race and gender composition of human resource managers in South African higher educational institutions does not represent the demographic race and gender composition of the region within which the institution is situated. This is not withstanding the fact that most, if not all higher educational institutions in South Africa have equity and affirmative action policies. Meeting the challenge of changing this profile to meet the desired equity targets will require proactive recruitment, or human resource development strategies to address the filling of acting or vacant positions.

9.6 Suggestions for further research

The following areas are suggested for further research.

- As the study undertaken was specific to higher educational institutions, further research could use this study as a basis to engage in research in other organizational sectors. The variables that constituted this study in higher educational institutions were generic and could be adapted to fit into any other organizational setting. The results of this study therefore could be compared to findings of similar studies to check for consistencies and dissimilarities.

- As this was an exploratory study, the results of which were based on the perceptions of human resource managers, a further study could be conducted using objective measures, complemented with an evaluation of human resource policies and practices for knowledge management relevance. The outcomes would then be more realistic based on objective data and evidence.

- Further research could also include the implementation of the proposed integrated generic KM/HR model in higher educational institutions to test the model for its effectiveness. As the model entailed the use of several organizational variables related to the study, the outcomes of the applied model could reinforce or reject the findings of the study.

9.7 Conclusion

Integrating knowledge management with human resource management to achieve competitive advantage is a complex area of focus. This study has attempted to shed light on some important perspectives related to core variables in the study. A variety of approaches to knowledge management and human resource management were presented in which knowledge was identified as a strategic resource. Information systems and information technology, culture,

organizational structures and learning organizations were viewed as enablers that support organization, human resource management and knowledge management strategies.

As research is limited in the area of knowledge management, human resource management and higher educational institutions, this study is viewed as meaningful contribution to established research in the field.

This concluding chapter viewed the thesis as the completion of the study initially set out to accomplish. It provided an overview of the contents covered in the different chapters. It transpired, during the course of this research study, that the subject under investigation, namely, ***"Knowledge Management (KM) as a strategic tool for human resource management (HRM): A study of selected higher educational institutions"*** remains a complex field of study.

The competition for and the relative scarcity of knowledge resources especially in the 21st century organizational era provide compelling reasons for organizations to micro-manage this critical and strategic resource.

It is suggested that as a means to providing a service of excellence at all sectors and levels in higher educational institutions, the human resource functions should implement the proposed recommendations and address the findings of the study. In addition, they should consider the provisions and the implementation of the integrated normative model proposed in Chapter 8.

The insights and experience gained in this study project, as well as the foundations established are viewed as a useful point of departure for continued research and study in this complex and diverse area of knowledge management (KM) and human resource management (HRM).

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ANNEXURE A

LETTER TO GATEKEEPER

ANNEXURE B

LETTER TO RESPONDENT

ANNEXURE C

QUESTIONNAIRE

(HUMAN RESOURCE MANAGER)

ANNEXURE D

LETTER OF CONSENT

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ANNEXURE E

INTERVIEW SCHEDULE

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ANNEXURE F

LANGUAGE EDITING

ANNEXURE G

ETHICAL CLEARANCE