



**Knowledge Management in the IT Outsourcing Service Industry of South Africa:
A Case of Western Cape and Gauteng Provinces**

by

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I, Ontiretse Lesley Matshwane, declare that “**Knowledge Management in the IT Outsourcing Service Industry of South Africa: A Case of Western Cape and Gauteng Provinces**” represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any institution. Furthermore, it represents my own opinions and not necessarily those of Cape Peninsula University of Technology.

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ABSTRACT

The sourcing of IT solutions (whether to provide internal solutions or to outsource services to specialized IT service providers) is a major strategic decision for all organizations. This study sought to explore the dynamics of Knowledge Management (KM) implementations in the Information Technology (IT) services outsourcing industry. A qualitative research method was then used to carry out the investigation. Using the purposive sampling technique, the IT services industry, comprising IT services clients and service providing organizations (contractors) in both the public and private sectors were the main sources of primary data, whereas secondary data came from the literature. Then, because of its alignment to the interrogation of a subjective nature that requires interpretation (KM in IT outsourcing industry), critical paradigm together with interpretive paradigm collectively known as critical-interpretive paradigm became appropriate for this study. The primary data was collected through the use of interviews which were subsequently subjected to content analysis and the Actor Network Theory (ANT) was deployed as the analytical lens. ANT aided in drawing a comparison between the ideal IT services industry network and the actual meaning of the findings.

Findings reveal that whilst most service providing organizations (contractors) demonstrate significant improvement in the management of knowledge assets, particularly the protection of intellectual property, the same cannot be said of their clients. Further, although there are encouraging cases of good practice and comprehension of the benefits of outsourcing in both sectors, IT services clients still engage in careless practices when appointing their contractors. For example, in most cases the clients' appointing panels are not representative of all stakeholders but only limited to management with no regard for the input from IT professionals. Low numbers of dedicated KM departments in IT services client organizations is also a concern since it is these departments who should champion the KM processes and implementations.

On outsourcing, it is recommended that organizations must implement clear and representative selection policies during the selection of contractors and not just rely on past experiences or exclude other key stakeholders. On the protection of intellectual property (IP) and organizational culture, a recommendation is that organizations should define clear KM processes aimed at addressing issues from deliberate protection of knowledge assets to timely and secure dissemination of knowledge. The allocation of sufficient time to knowledge workers to integrate, discover better ways of doing things is also proposed, together with a concise definition of how new ideas will be evaluated and selected for further development and investment.

Key words: Knowledge; Outsourcing; Information Technology; Knowledge Management; Service; Intellectual Property

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DEDICATION

I wish to dedicate this thesis to my family; my wife Tshegofatso and my son RebaOna Matshwane. Thank you for your undying support, sacrifices and sufferings you had to endure in my absence and late nights during my time of study. If it was not of your support and unwavering love, the completion of this study would have not been realized. Thank You!

ABBREVIATIONS

3G	- Third Generation
ANT	- Actor Network Theory
COBIT	- Control Objectives for Information and Related Technology
DBA	- Database Administrator
DHA	- Department of Home Affairs
DNA	- Deoxyribonucleic Acid
DTI	- Department of Trade and Industry
GPS	- Global Positioning System
HGP	- Human Genome Project
HR	- Human Resource
IC	- Intellectual Capital
ICT	- Information Communications and Technology
IP	- Intellectual Property
IS	- Information Systems
IT	- Information Technology
ITIL	- Information Technology Infrastructure Library
ITSMF	- Information Technology Service Management Forum
JSE	- Johannesburg Stock Exchange
KM	- Knowledge Management
SA	- South Africa
SARS	- South African Revenue Service
SN	- Social Networking

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CHAPTER ONE

1. INTRODUCTION

1.1. Introduction

Information technology (IT) is an umbrella term used to define technological tools, systems and processes to develop, store and facilitate the exchange of information at a fast pace (Austin & Hughes, 2001; Turban & Volonino, 2012) for social, educational (Bates, 2005), work and other economic innovation purposes. IT is also used to describe a discipline and a field of practice (Mlitwa & Birch, 2011). It is in this context that the IT term is used in this study – with particular emphasis on the IT services industry as a field of practice. It goes without saying however, that IT as a technological tool is an inseparable part of the IT field of practice, for it is through the application and use of such tools and systems that the IT services industry defines its operations.

Whilst this study focuses on the aspect of knowledge management within the IT services industry, information is a building block of knowledge, knowledge management and a central component of the IT phrase.

To introduce the thesis and the study, this chapter opens with a background to a research problem in section 1.2. This is followed by a problem statement in section 1.3, a research objective in section 1.4, a research question in section 1.5 and ethical considerations in section 1.6. The thesis timeline and the definition of key concepts are presented in sections 1.8 and 1.9, respectively. The chapter closes with a conclusion to chapter 1 in section 1.9.

1.2. Background

1.2.1. Information Technology as a Tool

As a technical tool, a computer can be used to develop text documents, database systems and software applications, among other things, for private, educational and/or work purposes, efficiently and conveniently (Bam & Mlitwa, 2009). Unlike the clay tablets used as far back as 300BC for developing documents (Liu, 2004), a computer allows for the quicker, neater and accurate development of documents and normalized

databases (Turban & Volonino, 2012). A computer also detects spelling mistakes, which can be corrected speedily, and minimizes efforts of storage, mobility and retrieval (*ibid*). In contrast, clay tablets which followed a tedious process of development, engraving and huge storage requirements could not permit the correction of text and their propensity to breakage presents a risk of information loss (Liu, 2004).

IT has not only improved efficiencies in the way we develop and store information. It has also revolutionized the way individuals and organizations exchange information (Piccoli, 2012). The Internet for example, has become an efficient tool to access and exchange different formats of data and information, across time and space (*ibid*). That is, whilst analogue phones are limited only to transmitting audio (voice) messages, the internet-enabled post third generation (3G)¹ mobile phones can now send and receive textual, video, audio and picture formats of data, efficiently, regardless of time and location of the sender and receiver (Kundra & Sharma, 2014). The Internet also serves as an enabler of key public information systems services. For example, networked facilities such as the electronic filing (e-filing) system of the South African Revenue Services (SARS), (Naidoo, 2008) enable the public to transact and interact with the revenue office online, effectively and conveniently (*ibid*). Unlike the tedious paper-based methods of tax submissions for example, taxpayers can now use the e-filing system to submit their tax returns, update their details and view their statuses at the touch of a computer-button (Piccoli, 2012). In other words, instead of long queues at revenue offices, the public can now complete their tax transactions quickly, conveniently and without leaving their homes or offices.

The Internet is also a catalyst for social networking, entertainment and information exchange for private, learning and work purposes. Through social networking (SN), family members and friends can connect, re-connect with each other and share important information (Turban & Volonino, 2012). For example, they can converse on birthday, wedding celebrations and plan leisure trips. Students also use social networks, on an average of 30 minutes daily (Pempek *et al*, 2009) to share academic content

¹ 3G – “is a cellular system following on from 2G mobile communication system, extending its capabilities through a new communication infrastructure” (Rodriquez *et al*, 2004)

between themselves or social content among friends anytime, even when they are in different locations (*ibid*).

Similarly, business organizations are increasingly turning to social networks such as Facebook and Twitter among others (Weber, 2007) for marketing purposes and to connect to their target markets (Threatt, 2009). This enables business to constantly update consumers and stakeholders on promotional campaigns and on company information (*ibid*). For example, companies on SN are able to instantly view what is being said about their products (negative or positive publicity) and respond timely. This way, companies are able to keep their brand presence in the market so as to increase their competitiveness. In effect, the Internet has also revolutionized modern communication processes. In contrast to the ordinary post office services that rely mainly on time-consuming processes of posting letters, for example, e-mails make interpersonal and business interactions instantaneous and efficient.

1.2.2. Information Technology as an Academic Discipline

As a discipline, Computer Science and Information Systems (IS) would be dedicated to research, teaching and enquiry into scientific processes of knowledge advancement in the field (Mlitwa, 2011). It is through these advances that the development of specialized IT skills is achieved and made available to the IT service industry (Lunt, *et al*, 2008). Specialized IT services include the management and development of databases, the configuration and deployment of networks, as well as software engineering, among others (Lunt, *et al*, 2008). The development of skills through academic channels assists in mitigating the specialized IT skills shortages (Daniels, 2007) in the IT services Industry. Equally significant is that when skilled individuals are employed and retained, the company is able to improve its productivity, profitability and competitiveness, with benefits to the national economy and social development (*ibid*). However, IT is more than just an academic discipline; it is also regarded as a technical field of practice.

1.2.3. Information Technology as a Field of Practice

As a field of practice, IT is a series of development processes that include the automatic acquisition, storage, manipulation (including transformation), management, movement,

control, display, switching, transmission and reception of data; the development and use of the hardware, software, firmware, and procedures associated with this processing (Piccoli, 2012; Turban & Volonino, 2012).

When using a global positioning system (GPS) (Garmin, 2012, Online; Turban, 2007; Ngah, 2006) for example, a driver becomes a direct consumer of already developed geo-positioning software that makes his geographical navigation simpler and effective. Further, savings in costs, time, and vehicle wear and tear are realized during the use of a GPS compared to when the GPS is not used. This is achieved because during the navigation the software is able to calculate the shortest possible route to the destination, with the least traffic congestion (*ibid*).

The role of IT in the medical field is also quite noteworthy. As far back as 1999, the medical industry was still subjected to manual processes of data capturing, reporting writing and sampling (Mchunu, 2013) which resulted in doubtful, inaccurate outputs, which had also halted the development and diversification of the medical industry. However, with the aid of IT, the industry is exposed to technological tools, systems and efficient processes (Castro, 2009). Through these, diagnosing, analysis, records storing and reporting amongst others are enhanced in speed, consistency and accuracy (McKinney, 2012). One example is the analysis of the deoxyribonucleic acid (DNA) modeling protein structure, whereby a discovery was made through the Human Genome Project (HGP), which correctly stores three (3) billion chemical base pairs which constitute the human DNA (*ibid*).

Therefore, IT is a contributing aspect to the growth of organizations, and to the improvement of living standards (Wessels *et al*, 2005). That is, through modern healthcare information systems we can access healthcare services more efficiently than has been the case in the past with manual processes (Mchunu, 2013). Similarly, with management information systems, management processes and planning can be improved. We can even use geographical navigation systems such as the Garmin (Garmin, 2012, Online) or TomTom (TomTom, 2013, Online) to easily identify or locate destinations speedily. Networked technology in general, facilitates easy access to

quality and relevant data quickly, enabling online transactions (Piccoli, 2012) such as e-commerce, e-business, e-government and importantly e-Learning.

Either as a tool, a process or a field of practice therefore, IT is a central feature of every economic discipline. In effect, every modern business structure needs one form of IT service or another. The sourcing of IT solutions (whether to provide internal solutions or to outsource services from specialized IT service providers) therefore is a major strategic decision for all organizations. Within the IT field of practice therefore, the IT service sector is just as critical to business processes, as are the IT tools, processes and services it renders to various sectors.

In the case of the IT services industry, the relationship between the client and services provider results to a significant exchange in knowledge, where either party parts with knowledge to enable the other in fulfilling their obligation as part of the agreement. During this process then, it remains vital for each party to share knowledge in a controlled, deliberate manner without compromising on their know-how, and ultimately competitiveness. This however, does not happen by chance but requires deliberate engagement, practice and adoption of Knowledge Management (KM) processes and principles, to ensure that organizations' know-how and competitiveness is sheltered.

1.3. Problem Statement

In the case of an under-performing IT industry in SA, effective Knowledge Management (KM) has become urgent. This is because KM is considered a nucleus of business processes and competitiveness of organizations across the public and the private sector (Kruger & Johnson, 2009). A reported rise in KM maturity across different companies in the SA private sector in 2009, illustrates this point. Despite this growth in the maturity of KM across SA industries, a serious concern that remains is that the IT industry and the educational sector were among the least improved sectors for KM maturity and growth (*ibid*).

1.3.1. Research Problem

The problem in SA however, is that whilst IT organizations do seem to understand the dynamics and significance of KM, this is not reflected in implementations (Kruger & Johnson, 2009). Whilst KM encompasses sound planning and control of knowledge

assets, the SA IT industry is plagued with operational system failures, to the extent of threatening the competitiveness and survival of many organizations. In the IT service contract between Gijima (service provider) and the Government Department of Home Affairs (DHA) for example, where Gijima Ast was to develop a new system (Who Am I Online) to effectively produce identity documents, the project was marred by poor planning and inter-organizational coordination failures, leading to non-delivery (De Waal, 2012; Kirendharen, 2012).

The major KM shortfalls cited in this project were, under-costing and poor management of the project overall. This is the reflection on the lack of financial management knowledge and the deficiency in the know-how on coordinating organizational resources, skills and experience to the successful completion of projects. Clearly in this case, the factors were amongst others, the absence of experience and expertise. As a result, the scope of work was not reached and deadlines were not met (De Waal, 2012). Subsequently, the service provider (Gijima) and the client (DHA), both incurred excessive costs in the process of terminating the relations, and getting the project completed (Techcentral, 2011; Top 500 Companies, 2012). Unless KM issues are addressed in the SA IT service organizations, productivity and competitiveness will be compromised, and there will be a risk of not only losing market share but also some organizations. This could have negative socio-economic consequences in the form of lost jobs and ultimately, a growing level of unemployment, poverty and stagnation in development.

1.4. Research Objectives

The objective of this study is to explore the dynamics of knowledge management (KM) implementation in the information technology (IT) services outsourcing industry in South Africa (SA). Given the significance of KM in business processes and for the success of organizations, the aim is to understand the actual status, describe best practices, interrogate the enabling and inhibiting factors in the sector, and seeks out explanations for them. For example, the relationships between the IT services provider and their clients were explored.

The knowledge assets of services providers and clients (which promote their competitive advantage) need to be protected at all times. This study will explore measures put in place by both services providers and clients during the course of their outsourcing relationship. For each to retain their competitive advantage their assets should be protected against each other whilst operational continuity is also ensured and undisturbed. To explore these dynamics then, the following research question and sub-questions were presented.

1.5. Research Question and Sub-Questions

- What are the dynamics of KM implementations in the IT Services outsourcing industry in South Africa?

1.5.1. Sub-questions

- What are the Knowledge Management best practices in the IT services industry?
- What is the KM implementation (outsourcing) status within the industry?
- What are the KM structures that exist between IT services organizations and their clients?
- What is the level of KM awareness and practice within the IT services industry?

1.6. Ethical Considerations

The nature of the study largely relies on the literature for its secondary data. Since people are its source of primary data, permission had to be granted by the Faculty's Ethics Committee before the study was initiated. Approval from the committee entailed that the study conforms to the Faculty Code of Ethics and that the human consideration in terms of confidentiality and openness should be upheld. After the research and all its corresponding processes of execution had been evaluated, the committee declared the study (and the proposed methods) ethical and not harmful to participants.

The researcher undertook to ensure that the study and the processes were not deceitful to the participants and that the outcomes would not be influenced in any unwarranted manner. Furthermore, the researcher agreed, during and post the study, to uphold an academic integrity of distinction by ensuring that no views, findings or observations

were misrepresented. All work is fully credited using the Harvard Referencing guide and a list of corresponding references is outlined in the reference section of this thesis.

1.7. Thesis Outline

This study as depicted in Figure 1 is divided into six (6) chapters. The first Chapter, Introduction, provides the overview of the research that includes the background, the problem statement, research questions as well as sub-questions.

The second Chapter, which constitutes the literature study, provides an overview of the IT services industry and its constituents with a closer view on the South African context. Furthermore, the knowledge management component, its issues and best practice cases in the industry are discussed.

In Chapter three (3), Theoretical Framework, the adopted theory, Actor Network Theory (ANT) of the study is discussed, which presents how various components of the research, the actors are connected by forming a heterogeneous network. This framework also serves as an analytical lens through which the findings are viewed and compared with the ideal actor-network of the research study.

The Research Methodology in Chapter 4, addresses the research design, the methods, the approach as well as the philosophy used to address the research problem, as outlined in Chapter one. This includes the techniques used to collect and subsequently interpret the research data. The examination of various methods, techniques and philosophies and the motivations for the selection of each technique are also discussed.

Chapter five (5) discusses the Findings with respect to each issue of investigation using the research data (interview transcripts).

Chapter six (6) presents the conclusion as well as the recommendations. A discussion on possible future research that was identified during the course of the study is also presented in Chapter 6.

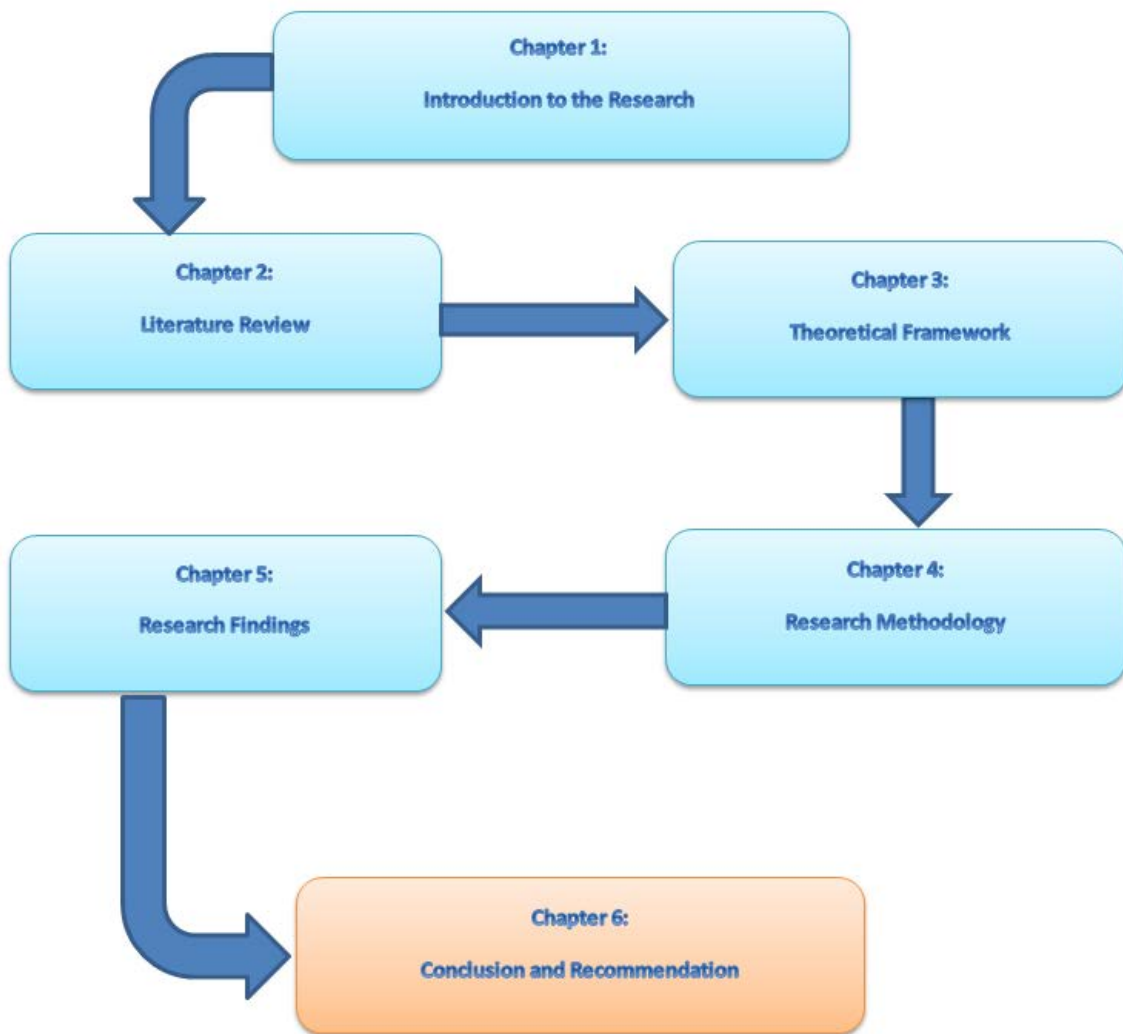


Figure 1: Thesis Outline

1.8. Definition of Key Terms

This section outlines the definitions of the key terms occurring in the study and the context in which they are being used.

1.8.1. Information Technology

Information technology (IT) is an umbrella term used to define technological tools, systems and processes to develop, store and facilitate the exchange of information at a faster pace (Austin & Hughes, 2001; Turban & Volonino, 2012) for social, educational

(Bates, 2005), work and other economic innovation purposes. The term is also used to describe a discipline and a field of practice (Mlitwa & Birch, 2011).

1.8.2. Knowledge

Knowledge is defined as “the fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information” (Davenport & Prusak, 2005:4). It is also defined as the acquisition of facts, truths and principles from a study or an investigation (*ibid*).

1.8.3. Management

Management is defined as a process of planning, organizing, leading and controlling activities so as to achieve organizational objectives (Smit *et al*, 2011). Management is also defined as a process of appropriating the use of the organization’s human and other resources to provide products and services to fulfill company needs and to achieve company goals as efficiently as possible (Oosthuizen, 2006).

1.8.4. Knowledge Management

Knowledge Management (KM) encompasses the process of leading, planning, controlling, organizing knowledge, knowledge assets and related resources – for effective realization of organizational objectives. It is on this basis that KM is described as the activity to acquire the right knowledge, from the right context at the right time to organize, share and apply it (Jashapara, 2004) towards the realization of a common objective (*ibid*).

1.8.5. Outsourcing

Outsourcing refers to a process of transferring a service function, human resources and possibly assets (hardware) to a specialized service provider for a specific duration, at a fee (Wijers & Verhoef, 2009). In the field of IT, this could include services like database management, networking and server configuration, application design and development and IT service management amongst others

1.8.6. Service

IT service can be defined as a “means of delivering value to the customer by facilitating the outcomes customers want to achieve without the ownership of specific costs and risks” (itSMF, 2007:6).

1.8.7 Dynamics of Knowledge Management

In this study, the dynamics of Knowledge Management (KM) refer to the implementation status, existence of KM departments/ divisions, best practices and the cultural influence to the adoption of KM practices in both the clients and IT services providers. These are the themes referred to in the study in cases where the dynamics of KM implementation is discussed

1.9. Conclusion to Chapter One

This chapter has introduced and explained the prominence of Information Technology by outlining it in various disciplines like IT as a tool and academic discipline amongst others. The chapter also provides an overview on the importance of IT in various facets of life, from social, business and academic disciplines.

Information Technology has effectively become the integral part of the services offering in various other sectors, from manufacturing, health, education as well as telecommunications. Through its evolution then, it has remained relevant in the socio-economic sphere thus promoting efficiency and effectiveness in how things are done, in various economic sectors.

CHAPTER TWO

2. LITERATURE STUDY

2.1 Introduction

The purpose of this chapter, in line with the research problem is to review the literature relating to knowledge management, in the context of the South African IT services industry and examples of KM best practices. The chapter consists of a close examination of the IT services industry and its status in South Africa. It looks in depth at the definition of knowledge management by first probing the definitions of its key components being knowledge and management.

2.2 The IT Services Industry

IT service can be defined as a “*means of delivering value to the customer by facilitating outcomes customers want to achieve without the ownership of specific costs and risks*” (itSMF, 2007:6). Furthermore, it is defined as the application of business and technical expertise to enable organizations in the creation, management and optimization of or access to information and business processes (Gartner Inc, 2013), and as a coherent, ready-to-use deliverable that is of value to the customer allowing customers to do business without concerning themselves with underlying technology or respective IT infrastructure ((UCSC, 2014). What is common between these definitions is that a service seeks to address the needs of the customer, for the betterment of business operations. The first definition however, offers an expansion on that and presents the costs and risk transference from customer to service provider. In this definition, a “*...means of delivering value to the customer...*” implies the presence of a service, a service provider (contractor) and a service recipient or customer. Also embedded in this statement is an assumption that there is a need for a service (on the part of the customer), the expertise, willingness and ability on the part of the service entity (contractor) to provide a specific service in a required quality and format. This may include the development and distribution of tangible assets such as specific software, hardware components and artifacts to facilitate effective business processes.

The question of a right format and quality in this definition is presented as “*value to facilitate outcomes*” wanted by a client. The closing part of this definition refers to the “*ownership*” of expertise, where the “*costs*” and related “*risks*” determine a customer’s decision whether to provide their own solutions, or to go on the outsourcing route (ITSMF, 2007).

Outsourcing refers to a process of transferring services function, human resources and possibly assets (hardware) to a specialized service provider for a specific duration, at a fee (Wijers & Verhoef, 2009). This includes services like database management, networking and server configuration, application design and development and IT service management amongst others. The IT services industry can therefore be considered as a sector (or department) that offers IT related services to either external or internal clients. The economic value achieved by this practice is that organizations are able to focus on their core competencies through which their goals and objectives can be met. The IT industry in SA has grown significantly, and is considered a very competitive and robust environment in the African continent (Taylor, 2012).

2.3 The South African Context

The IT services industry in South Africa (SA) is regarded as a developing sector with a mixture of local and international, larger, medium and small IT service organizations (Taylor,2012).These organizations offer professional services (consulting), telecommunication equipment manufacturing and services, computer hardware manufacturing, and software development (Hordge & Miller, 1997) which are value adding to customers. The local (BCX², GijimaAst³, Fundamo⁴, etc.) and international (Oracle, SAP, Accenture, etc.) companies, taking into consideration their size enables the industry to evolve, by continuously manufacturing high end computer components, developing robust application systems and offering efficient managed services (consulting) to customers.

² BCX –an integrating ICT solutions provider organisation...(www.bcx.co.za)

³ GijimaAst –a complete IT company, offering infrastructure, solutions, networking and system integrating services (www.gijima.co.za)

⁴ Fundamo - is a mobile money system operating and developing company, with clients across Africa and Europe (www.fundamo.com)

Universally, the IT services industry is competitive due to the evolution of standards, frequent product development and market demands, and South Africa is no exception. The SA IT service industry consists of subsidiaries of both local and multi-national enterprises, and has been growing at a fast rate, from around \$US3bn in 2010 to over US\$4.4bn in 2012 (SAITR Q2, 2012). The sector continues to grow with a rate of no less than 45% projected for the period 2013 - 2016 (*ibid*). This industry plays a significant role in the growth of the country's general industrial sectors, by taking a lead in the development of fraud prevention and banking systems, revenue management applications and the manufacturing of set-top boxes that are successfully exported to the rest of the world (Mauson, Online, 2012).

The growth can further be accelerated by the services providers' ability to take advantage of the infrastructure-as-a-service concept, which is made viable by the reduction in broadband tariffs locally. However this will require these organizations to stimulate a lot of awareness and education considering that the current shortage of specialized IT skills significantly impedes the expansion of the services industry (*ibid*). For example, there is a small number of respondents to vacant IT specialized posts (Daniels, 2007). This situation results in high staff turnover and an attractive IT job market, which can leave organizations that had the skill and knowledge to perform certain tasks, destabilized.

Whilst the growth rate of the local industry seems impressive at face value, the size of the sector is still minute by comparison to other developing countries. The Mexican IT services industry for example, is larger. It was estimated to be over US\$4.5bn in financial terms in 2010 (MITR, 2010), growing to over US\$5.8b in 2012 (MITR, 2012). Similarly, South Korea's (SK) IT services industry is fast growing, larger and more competitive with a size estimated to have grown from US\$6.4bn in financial terms in 2010 (SKITR, 2010), to over \$US7.5 in 2012 (SKITR, 2012). Similar to the SA industry, service outsourcing in South Korea is a major component of the IT industry, contributing over 24% (US\$1.2bn) to the sector.

In South Korea particularly, success is attributed to the availability of a wide pool of knowledge based skills (Asongu, 2014; Cho & Mclean, 2009). IT firms create an enabling environment for knowledge sharing and creation etc. and recognize employees who partake in these exercises (*ibid*). Highly specialized skills, a motivated workforce and potent knowledge management across the sector promotes productivity, performance (IT turnover) and consequently, competitiveness of the entire IT market in South Korea. South Korea therefore is becoming a perfect example of what can be described as a knowledge-based economy (Joonghae,2011; Lee, 2012; KDI, 2006). It makes long term investments in education, in the development of innovation capabilities and information infrastructure to support effective market conditions. In this regard, SK implemented the digital libraries, where knowledge on various sectors including IT and agriculture amongst others were digitalized (Cho & Mclean, 2009). Through the digitalizing, knowledge is easily accessible to the vast majority of people. This ensured that there was constant up-skilling and that better efficient ways of creating and promoting knowledge were discovered (*ibid*)

Whilst the SA IT industry has shown significant growth over the years, IT still needs to address issues of skills shortages, workforce productivity, and effective management of knowledge assets in order to reach competitive maturity, in all its economic sectors particularly in the IT service sector.

2.4 The Outsourcing Component of IT Services

The outsourcing of services, which is a major component of the IT service sector, was accountable for over a third of the SA IT market (totaling over R30 billion) at the end of 2008 (Leandi & Kolver, 2009). As a major component of the sector, service outsourcing clearly shows contracted IT services to be in great demand in many SA economic sectors. In other words, there are many organizations (be they IT related or otherwise) that rely on contracted IT products and services to survive and become competitive in their core operational areas.

For example, a company like Medscheme in the healthcare industry relies on Oracle's specialized software and EMC hardware products as the backbone of its operations, for

fast claims processing, seamless integration with other systems and reliability (Medscheme, 2012). Amalgamated Banks of South Africa (ABSA) bank in SA also outsources its desktop support services from Gijima Ast (Vorster, 2012). This is regarded by ABSA, as a strategic approach ensuring that they focus on their key competency. This relationship has lasted for over 10 years involving revenues in excess of R10 million (*ibid*). These are just two examples of the many non-IT companies that are contracted to reliable IT services providers for the supply of key IT services. With the growth of IT service outsourcing, effective management of knowledge assets for the IT service provider and the recipient company (client) becomes crucial. The service provider for instance, needs an accurate record of clients' needs and ultimately, an accurate account of routines, without compromising their knowledge capital with respect to competitors. Because the IT service providers need to understand how their clients work in order to conduct their operations, they have access to their clients' competitive information which they must safe guard at all costs. In other words, knowledge is a major asset of modern economic processes. The formulation of the knowledge management strategy therefore, becomes important for both the IT services providers and clients alike.

In effect, IT is seen as a defining feature of the knowledge society⁵ and its knowledge economy of the information age where transactions are initiated and concluded over a computer keyboard (Castells, 2000). Hence, the management of this asset (knowledge) is paramount.

2.5 Knowledge Management

2.5.1 Knowledge

As a phrase, Knowledge Management (KM) is made up of the terms: “knowledge”, and “management”. Whilst the management component will be looked at further in the following section, first, the knowledge component is examined. The knowledge component is defined as “*the fluid mix of framed experience, values, contextual*

⁵ Knowledge society is a society that processes information and knowledge to stimulate and maximize learning (Hargreaves, 2005)

information and expert insight that provides a framework for evaluating and incorporating new experiences and information"(Davenport & Prusak, 2005:4). It is also defined as the 'justified true belief', acquisition of facts, truths and principles from a study or an investigation (Nonaka & Takeuchi, 1995).It is clear from this definition that knowledge, encompasses dexterity, skill, learnt practices or ways of doing things (experience) as well as the underlying philosophies and beliefs (values and expert insight) about reality, and a way of going about to know. Therefore, knowledge in all its types (and forms) can be created/ nurtured in a controlled process to achieve its ripe form.

2.5.1.1 Knowledge Types and Creation Process

Knowledge comes in tacit and explicit forms (Parboteeah *et al*, 2010) that are acquired both from specialized training (expert insight) and practical experience. Specialized knowledge can be owned (Davenport & Prusak, 2005), which makes it the greatest asset in the knowledge-based economy of the information age, where the competitive advantage is determined by 'how well an entity is managing its knowledge assets and secrets'(Nonaka, *et al*, 2000). Knowledge can be owned and encoded in humans and sometimes tends to be challenging to codify and transfer it to others.

This type is called tacit knowledge (*ibid*). The other form, called explicit knowledge is easier to codify, understand and transfer from one person to another (Al-adaileh *et al*, 2012). It can be documented, stored in files and does not always require the engagement of a person to directly translate. For example, in the IT services industry, in a network configuring company, an engineer can easily follow the documented steps compiled by one of the specialists to set up the network with ease, whereas with tacit knowledge, the specialist will need to engage with the engineer to transfer the knowledge, which may be hindered by external factors (culture, personalities etc.). Before expanding on the management component of Knowledge Management which follows, it is worth noting that although tacit and explicit knowledge differ, the knowledge conversion process addresses the desire to have tacit converted into explicit knowledge and the reverse as illustrated in the following picture.

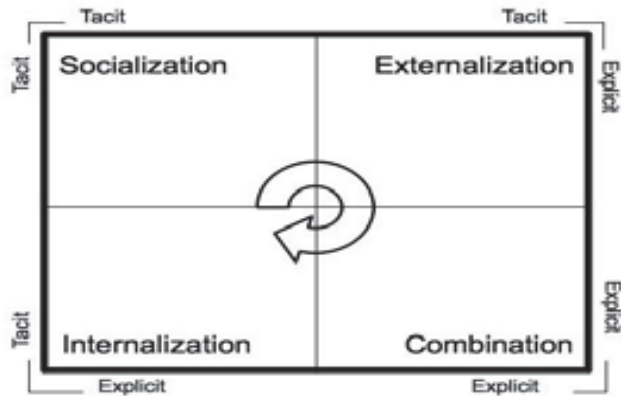


Figure 2: SECI Model
 Source: Nonaka & Takeuchi (1995)

Nonaka's knowledge conversion model, otherwise known as the SECI (for Socialization, Externalization, Combination and Internalization) model outlines the four modes of converting knowledge (Adachi, 2011). It argues that tacit knowledge can be re-converted into tacit knowledge in the process called socialization, and that through the externalization process, it can be converted to explicit knowledge. In this case, there is a requirement for one person to translate that which is known to them in a form that others can understand. It further presents that the internalization processes sees the explicit knowledge being converted to tacit knowledge in a form of continuous learning, where explicit knowledge ultimately becomes their second nature. The fourth process of the conversion model, combination presents the conversion of explicit knowledge to explicit knowledge (Byosiere & Luethge, 2008), where the storing, classification and sharing or knowledge is continually improved.

2.5.2 Management

The management component of KM on the other hand, is defined as a process of planning, organizing, leading and controlling activities so as to achieve organizational objectives (Smit *et al*, 2011). Management is also defined as a process of appropriating the use of the organization's human and other resources in providing products and services to fulfill the needs of the company and to achieve its goals as efficiently as possible (Oosthuizen, 2006). These definitions outline that the core objective of each organization is to render a service or product in the market, thus satisfying the market's needs and achieving its own goal (making profit). However, management definitions

bring about a point of organization and controlled measures, where activities are undertaken in a planned, organized and controlled manner, by relevant leaders. In other words, management is associated with the leadership component, where the manager or leader plans, controls, appropriates resources and executes activities.

Knowledge Management (KM) therefore, encompasses the process of leading, planning, controlling, organizing knowledge, knowledge assets and related resources – for effective realization of organizational objectives. It is on this basis that KM is described as the activity to acquire the right knowledge, from the right context at the right time to organize, share and apply it (Jashapara, 2004) towards the realization of a common objective.

2.6 Knowledge Management Best Practices and Implementation Challenges

Knowledge Management plays a vital role within organizations, with the aim of elevating their competitive edge (Anand, 2007) the ability to create new knowledge and to recreate further knowledge from what already exists (Arling & Chung, 2011). For this reason, KM should not only form part of the business operations, but must also be a key factor of the corporate strategy. KM therefore, seeks to address issues and create enabling environment(s) at the individual and organizational levels of operation. Ideally, such an environment eliminates silos within departments (of the same organization), and promotes sharing amongst workers so that effective use of knowledge may be achieved. Examples of best practice to this effect are found in international, large and successful corporate organizations such as Accenture⁶ and Oracle, among others.

Accenture for example, developed a KM technological platform known as ‘Accenture People’ which integrates employees’ information, their skills/ trades and levels of experience, with respective business processes (including functions and procedures) (Accenture, 2012). Employees are then able to tap into each other’s expertise to discuss specific business issues from anywhere in the world at any time, whilst safeguarding the confidential aspects of the knowledge assets of the company. They

⁶ Accenture is a global management, technology services and outsourcing company (www.accenture.co.za)

are able to search colleagues who have got specific skills about specific business matters instantly. Through this 'enabling environment', Accenture reports benefits such as quick turnaround times to clients' problems and easy accessibility to highly skilled individuals within the organization (Accenture, 2008). In this manner, knowledge is shared from rightful sources to intended recipients at the right time.

The 'Oracle Knowledge for Contact Center' (OKCC) offers another example of a useful KM practice. Driven by pressure in relation to a high volume of dropped calls and numerous unresolved service requests due to escalating demand for its services, Oracle devised a revolutionary OKCC solution to its KM challenges (Oracle White Paper, 2011). Prior to the OKCC innovation Oracle had slow responses, and inaccurate query resolution results in their conventional business processes. OKCC is a call center system, through which the customers contact Oracle (service provider) for support related issues of their products. Oracle consultants are then able to identify each customer with a unique identification number (obtained post support license purchase) from which they will query the knowledge base for solutions (*ibid*).

The first advantage was that it was quick and simple to train consultants to understand and implement OKCC, and this led to an immediate turn around in business process efficiencies. In the post OKCC implementation era, the organization has been able to improve query resolution accuracy with a reduced response time, amongst others benefits (Oracle, 2011). The knowledge embedded in the system was much more accurate and issue specific than previously, leading to improved customer confidence and satisfaction. Oracle as an IT company, whose nature is to produce and support IT services and products, has, through OKCC, managed to organize, collect and disseminate its knowledge timeously and with accuracy.

The appointment of equitable KM leadership with strategic focus also ensures business efficiency and adaptability towards market changes (du Plessis & Boon, 2004). In this way, the sharing of knowledge, ideas and opinions amongst employees can improve, leading to the retention of skills and thus reducing possible knowledge loss to competitors (Oracle, 2011; Netswera *et al*, 2005). It is for this reason that human

resources should be placed at the center of most, if not all, of KM planning, since effective KM is dependent on sound processes and social interactions (Uriarte Jr., 2008). The South African IT service Industry can draw lessons from these best practices to ensure growth, sustainability and innovation through effective management of knowledge assets.

Although Knowledge Management and its respective initiatives have proven crucial to organizations' development and sustainability (King, 2009), it is not short of challenges with regard to its adoption and implementation (Asoh *et al*, 2002). Organizations are often faced with KM barriers relating to power, opportunism and cultural dynamics amongst others (Smith & Lumba, 2008). Often, because of KM's complexity and association to non-technical and technological elements, organizations battle with the alignment of KM, that is, to which department (HR, IT, Governance) it should belong (Smith, 2013). Another challenge is the measurability of knowledge, which has proven more complex and challenging because of its reliance on human relations and experiences (*ibid*). For example, in the IT services Outsourcing industry, a junior Networks Engineer cannot easily measure the knowledge gained from their Senior trainer if they themselves cannot quantify that which the junior engineer needs to know and by when. Hence, the learning process cannot be deemed complete, but continually ongoing. Another instance will be on how the junior engineer will easily validate the information disseminated against what he himself doesn't know. These challenges have in some instances resulted to the KM and its principles/process being abandoned.

2.7 Knowledge Management in the South African IT Service Industry

Knowledge Management as defined earlier in section 2.5 is concerned with the planning, controlling, organization and acquisition of knowledge assets to increase the efficiency and efficacy of business processes (Islam *et al*, 2015). KM therefore, should improve business processes, productivity and enhance competitiveness. In this efficiency improvement process, KM should also ensure that the confidentiality of the organizations' knowledge assets and the competitive advantage of the organization are not compromised. This is particularly important to the growth of developing IT sectors and markets such as those of South Africa. The skill (as embedded in skilled personnel)

for example, as the main knowledge asset in the IT service industry, requires vigilant management. This sentiment is more relevant to the SA industry with its challenges of excessive labor mobility (job-hopping) and a limited supply of skilled workers (Marambire & Mlitwa, 2010). High labor mobility in the sector tends to delay the completion of projects (Vorster, 2012). This in turn, increases recruitment costs and time loss in the up skilling of new recruits (Engineeringnews, 2012). With this trend comes the risk of organizations' trade secrets' being compromised. In this case, professionals who opt to be independent consultants can easily work for rival organizations at the same time, with a high possibility that key knowledge assets may be transferred to competitors (*Ibid*).

Knowledge Management in the SA IT industry is critical in enabling companies to effectively manage their relationships with clients (and contractors). In this way the IT service provider will better understand the client's needs, and better plan for the solution/s and their implementation. Vigilance in knowledge management (KM) is equally important for the client, in that they need to optimize understanding between themselves and the service provider, whilst striking a balance between what can be disclosed to the service provider, and what should be withheld, and how. A relationship between ABSA (client) and Gijima (service provider) that appeared healthy at face value does, on closer examination, carry a potential KM challenge in case the employees of the service provider leave or get retrenched with trade secrets of their employer and those of the employer's clients. Whilst the relationship between ABSA and Gijima Ast have stood the test of time with both parties citing satisfaction over a 10 year period (Voster, 2012), the know-how of systems operations may be compromised by Gijima's ongoing retrenchments. Vigilant KM practices, particularly by the service provider, not only strengthen service continuity, but also safeguard the competitive information of the client and protect the service provide from acquiring unhappy clients and from potential lawsuits.

As if IT skills shortages and excessive labor mobility were not harsh enough, the SA IT industry continues to shed jobs, particularly the highly skilled resources (SAPA, 2012). Companies in the forefront of this include Gijima and Nokia amongst others while at the

same time the State Information Technology Agency (SITA) is continually undergoing restructuring. According to Marius Croucamp⁷, this is already forcing local organizations to outsource and offshore-source scarce skills which incur inflated salary packages (*ibid*).

2.8 Conclusion to Chapter Two

Since this present study is about Knowledge Management in the IT services industry, this chapter had predominantly focused on the literature relating to knowledge, management, IT and outsourcing. It commenced by describing the IT services industry from the South African perspective, followed by a review of the outsourcing component. Knowledge management and underlying best practices are also explored by looking at two KM case studies which both deal with the relationship between an IT client and a service provider organization in the South Africa market. Furthermore, the value of the IT services outsourcing industry in South Africa is bench-marked against those of other developing countries. In the next chapter (Chapter 3), the theoretical framework, which is used/ employed during the analysis phase of the study, is presented.

⁷ Marius Croucamp is the spokesperson for AfriForum (SAPA, 2012)

CHAPTER THREE

3. THEORETICAL FRAMEWORK

3.1. Introduction

This chapter outlines the theoretical framework adopted in this research study. A theory is explained as a “system of interconnected ideas” (Neuman, 2006) where the relationships assist to explain the phenomena in a social world (*ibid*). The “system of interconnected ideas” in the definition implies that the manner in which the society is perceived, patterns, causes and reasons for certain behaviors are directly linked to and associated with each other (Clarke, 2005). The aim of theory usage in any study is to search for an explanation, predict as well as to understand the phenomena of the research problem and to also broaden the existing knowledge within the limits of assumptions (*ibid*). In this chapter, the use of a theory in an interpretive study is also discussed. The application thereof, with relevance is identified followed by an in-depth discussion on the employed theory and its overall appropriateness to this study.

3.2. Theories and their Use

Theories seek to organize and explain the knowledge about societies, by providing an insight into how certain aspects of the society relate, work and the accompanying reasons (Welman, Kruger and Mitchell, 2005). Theories are also used as analytical ‘lenses’ (Irvine & Deo, 2006; Mlitwa, 2011) to form the framework of the research process, serving as either object of validation or of analysis. Theories bring about stability and cohesion in confronting the ambiguities in social research (Llewelyn, 2007) by equipping researchers with a ‘set of spectacles’ by means of which they can focus on the inquiry and discover the meaning of what is been observed (Irvine & Deo, 2006). In this study, the theory is used as a ‘lens’ to view and explore the dynamics of Knowledge Management in the IT services sector, by identifying the common issues, challenges, divisions (departments) as well as awareness in the broader IT services industry.

Therefore, as a complex socio-technical phenomenon, knowledge management can be conceptualized from a variety of assumptions and viewpoints within the Information

Technology services sector (Sajeve, 2010; Lytras *et al*, 2008). In the study of Knowledge Management, then, there are many assumptions associated with the creation, nurturing, protection and distribution of Knowledge and its Management. Management cannot exist in a vacuum but will only be possible through the interactions of the society (humans) and technical (technology) aspects.

The sustainability of any organization can directly be linked to the effectiveness of its implementation of Knowledge Management and its processes (Farsan *et al*, 2013; Liao & Wu, 2009; King, 2009), whereby through KM, the organization can competitively position itself in the global market. From this, the organization should be able to identify, understand its knowledge and how it could be used in achieving its objectives. These objectives can be achieved by incorporating technological tools as well as human elements (Sajeve, 2010). The complexity of Knowledge Management as a social-technical phenomenon requires the use of a theory, a set of spectacles or analytical lenses in order to help understand the associated aspects, stakeholders and their relations, and consequently the objectives of the study. To that effect, the assumptions and principles offered by Actor Network Theory (ANT) which is preferred and adopted as a framework for this study will be used (for analysis) and in understanding the phenomena of the research problem. The discussion of ANT follows below.

3.2.1 Actor Network Theory

Actor Network Theory (ANT) also known as 'sociology of translation' (Law, 1992), was pioneered by Latour and Callon in the 1980s (Cressman, 2009) and developed drawing from its key concepts and assumptions from the social shaping of technology, to understanding heterogeneous networks by making use of the actor-network approach (Callon, 1986). ANT holds the view that what appears technical is partly social and what appears social is partly technical (Heeks & Se-Zindy, 2013). Similarly, ANT rejects the notion that purely social and purely technical relationships are possible, but accepts the viewpoint of associations amongst both technical and social beings (Law, 1992).

This theory focuses most on the technology, with its effect on the social processes (Mlitwa, 2011) and is concerned with the mechanism of power (Law, 1992), where the

focal actor (initiator) initiates the network. What stands out in ANT in comparison to other theories is that it comprises not only human beings, but also processes, objects, and organization etc, collectively referred to as actors or actants (Cressman, 2009). Likewise, ANT rejects the convictions that seek to render a distinction of any sort between the network actors, be they human or otherwise (Williams-Jones & Graham, 2003) as outlined in the principle of generalized symmetry (Callon, 1986).

The significance of the actors is not entirely realized when they are on their own (in isolation), but when they build relations with other entities, where they will evolve over time (Law, 1992; Callon 1986). Another fundamental principle of ANT is on the concept of heterogeneous/assorted networks, which consist of varying elements which can be social as well as technical in nature assuming no distinction between them (principle of free association), towards understanding the phenomenon being researched (Callon, 1986; Bird, 2009). Because these elements/ actants within a network cannot be separated and all have equal importance within the network, then the state and manner in which the network functions and exists will be impacted if any actants are removed/ disconnected from the entire network (Nimmo, 2011). Furthermore, ANT offers the principle of agnosticism, which urges the researcher to be impartial towards all actors of the network, be they human or non-human (Callon, 1986; Bird, 2009).

These perspectives are pivotal in the construction and transformation of the heterogeneous networks in an Actor Network Theory, taking into account how they emerge, compete, and come into formulation and their durability over time. It takes one actor (initiator) to impose others with interests, desires, projects, strategies as well as thoughts amongst others to forge the heterogeneous networks, in a process referred to as Translation (Callon, 1986). It is also a mechanism by which the social and natural worlds progressively take form (*ibid*) resulting in situations where certain entities control others (Cressman, 2009), and previously unconnected elements are brought into alignment. This however, is not linear nor a one-way process, but includes interrelated moments which have the probability of overlapping, and sometimes in a disorganized

manner. These four moments include; Problematisation, Interressement, Enrolment and Mobilisation (Callon, 1986 and Mahring *et al*, 2004).

The Problematisation moment is initiated when one or more key actors (initiators) in a network maps out, in their own terms and understanding the nature of the problem (Callon, 1986). Once this 'problem' is established, they (initiators) attract and involve other actors, forming an initial problem solving network where the identity and roles of the other actors will be defined. The main actor/s therefore, has/have the responsibility of defining the problem in their own terms rendering it as an Obligatory Passage Point (OPP) and rendering itself as essential (Cressman, 2009). With the establishment of the OPP, the views of the controlling actor are then imposed on others rendering the OPP as the only means/ passage towards resolving problems. It is only when other actors align their views and interests with those of the main actor that they can pass through the OPP (*ibid*).

Interressement as the second moment is concerned with the formation/ identity of a group of actions which the main actor will use to lure others into agreeing with its proposal (Nimmo, 2011,). During this stage, the actors in favor of the 'emerging network' (problem solving) encourage others to take their rightful positions within the network, in an attempt to weaken any efforts of destabilizing the network. Targeted actors for this moment may also be involved in the Problematisation stage, which makes it crucial for them to also define their identities, views and interest within this developing network. The success of this stage is dependent on the strategies deployed by the main actor (Rhodes, 2009), one of which is ensuring the presence of a constant link between itself and the interested actors. Secondly, the main actor does not necessarily need to convince all actors at the same time, but can do so by communicating directly with the representatives of the masses, who will then be their spokesmen. Caution should always be placed in the center of the agenda whereby any possibilities of alliances that may challenge the legitimacy of OPP may be eliminated (*ibid*). For this moment to be fully successful, Enrolment (as the third moment) needs to be achieved.

It can therefore, never be taken for granted that the alliances in the Interressement moment will automatically render it successful, but will require strengthening by means of enrolment (Nimmo, 2011 and Rhodes, 2009). During this moment, actors may need to negotiate (in the same way as during the Interressement moment) to achieve successful enrolment. These negotiations do take place across the board; the actors targeted for enrolment are those with the potential of weakening the network stability (of other forces). Sometimes these negotiations are not even necessary as actors close and those who share in the Problematisation statement may enroll with no hesitation at all (Creswell, 2009). Moreover, the identity and positions of these actors are tested through these negotiations at the moment of enrolment.

It is through the last moment, Mobilisation that the initiator of the network takes charge of the masses from the spokesmen and directly engages with them. This is directly linked to the need for the initiator to accumulate enough allies in one place and re-affirm the belief and behavior of other actors to their own (Callon, 1986, Rhodes, 2009 and Nimmo, 2011). The relationship with the initiator might be limited to the spokesmen and the assumption that those represented might simply follow on can prove detrimental to the network stability. The success of the 'translation' therefore is directly linked to the strength of the relationship of the initiator with the rest of the masses (actors). There is a possibility that the masses challenge and refuse to follow suite. If this occurs then a situation emerges where new representatives may be listened to. The consequence of this could be that the new representatives can influence those already enrolled to deviate. This situation renders the process of ordering incomplete, but the network keeps evolving and is never ending (Callon, 1986).

3.2.2 Appropriateness and Application of ANT to the study

This study has its focus on Information Technology services providers, their clients, knowledge and the management thereof. The IT industry, in which the Knowledge is created, nurtured, protected, disseminated by both clients and services provider is key to this study as the obligatory passage point (OPP) (Latour, 2005). Yet, it cannot be

deemed to be of greater significance than the actual services providers and/ or their clients or their know-how or their intellectual property. Knowledge workers' skills as well as data and the crucial processes that the companies have developed over the years of their existence also have equal significance (*ibid*)

The heterogeneous network is therefore reflected in this study, by the linkage of various actants (Law, 1992) where both providers and clients develop the know-how, impart it to employees, where providers are then contracted to render services to clients to make profit for both organizations. The network is further realized when both providers and clients have the task to nurture and protect their intellectual properties from one another, yet ensuring a smooth and frictionless working relationships (as they are both reliant on one another).

Non-human actors in this network, amongst others, are the knowledge creation process, the policies, development source code, computers for Information technology professionals as well as the software they use for development and management of the databases. It is important to remember that, ANT emphasizes that all actants, irrespective of their nature are always of equal significance to the well-being of the established networks (Law, 1991). Therefore the human actants like IT professionals, knowledge and IT managers, Human resources and IT directors do not hold any more value in the network than the non-human actors (technology, source code, computers etc.).

Actor Network Theory emphasizes the importance of each actor in the network and also highlights the uniqueness of the role each plays. None of the actors can therefore claim to be superior to the others and cannot remain within the network in isolation (with no link) (*ibid*).

Figure 3: (Application of ANT in the study) overleaf, depicts the actor-network as applicable to the study, comprising both human and non-human actors.

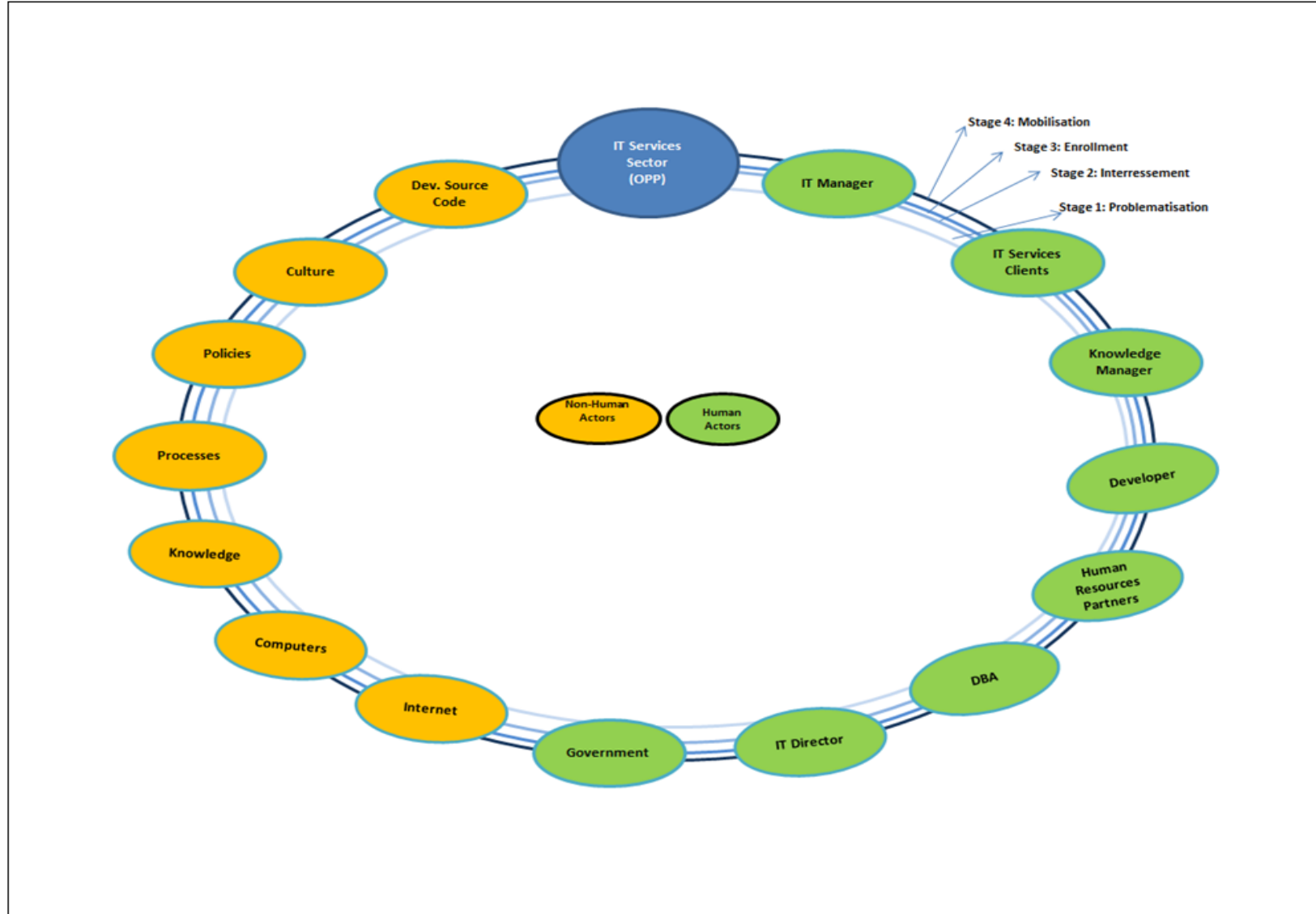


Figure 3: Actor Network Theoretical Framework on Knowledge Management in the IT Outsourcing Services Industry

The previous diagram is drawn to illustrate the heterogeneous network of this study, by showing the IT Services sector as a focal point (initiator), around which the network is formed (problem-solving network), addressing the KM issues. As the OPP, the IT services sector draws the interests, views and ideas of other actors to partake in the formation of the network. Furthermore, as the initiator of the network, it endeavors to render itself indispensable in the network, ensuring that its domain remains the passage through which other actors will pass whilst addressing the KM issues in the sector. The problem in the study as discussed in section 1.3 relates to the substantial low levels of KM maturity in the IT services sector, which are in fact concerning taking into account the central role of IT in a multitude of disciplines like education, healthcare, banking, tourism, mining etc.

Secondly, the figure represents both the human and non-human actors. All actors (actants) are illustrated in oval shapes; the human actors are represented in the green colour, and the yellow colour represents the non-human actors. This presentation is merely to draw the distinction and does not in any way attempt to render one more significant or superior to another. All the actors are equal and so is each's contribution to the well-being of the network. The human actors (in green) are placed on the right side and non-human actors (in yellow) on the opposite side. Similarly, their position and grouping in the network abandons any prior assumptions that exist between human and non-human actors. What is fundamental, as per the ANT, is that all actors are connected to one another and are all equal in significance. For example, the figure illustrates the actors connecting to one another through a series of lines, presenting an ideal presentation of the network. Now, should any one of these actors be dropped from network, it will be compromised and so will the efforts undertaken to address the KM maturity issues in the IT services sector.

Thirdly, all actors are connected through a series of blue lines, each representing one of the four moments of translation (Problematization, Interressement, Enrollment and Mobilisation). All the actors are connected to one another with all the four lines, which is symbolic of the presence of all the actors in any of the moments/ phases of translation.

For example, the application developer can be lobbied in the problematisation moment by the OPP and later in the fourth moment, mobilisation, the applications developer can be a lobbyist for the OPP, by assisting in the recruitment of new network actors. From the first moment of translation to the last, the color shading (on the blue lines representing the moments) is lighter, and then gradually turns darker over time, indicating that as the network goes through each of the moments, it becomes steadier. However, this is only ideal and requires ongoing lobbying of all network-actors to be successful, or else a point of stability may not be achieved. In this study, the sector should constantly be lobbying all actors through its positive efforts to combat the decline of KM maturity levels by ongoing conferences, consultations, mergers and outsourcing, amongst others. For example, during the Interressement moment, the industry should propose actions like communities of practice; IT services management frameworks like Information Technology Infrastructure Library (ITIL) and Control Objectives for Information and Related Technology (COBIT) amongst others. These actions can encourage the organizations to participate to achieve sound KM practices by having uniform services offering standards across the board.

Similarly during the enrolment moment, negotiations and engagements continue to take place with the various stakeholders within the industry. All these are efforts to make sure that the common goal (focus) is maintained and still remains an issue deserving resolution. Likewise, the identity, interests and view of these actors is verified to ensure alignment to the network and what it stands for.

The success of the translation process will be tested during the Mobilisation moment, by ascertaining the alliances of the initiator. In this case, the improvement in the KM maturity levels will be evident to the stakeholder (actors) in the industry. Government policies, trends and increased levels of competition amongst others, have the potential of derailing the 'network' and sending it off course, by impeding the ground work already done.

Furthermore, the study assumes that during the life cycle of knowledge, humans are bound to interact with technology on the same level (Callon, 1986 & Latour, 1987) for ease of planning, organizing, protecting, controlling, nurturing as well as disseminating knowledge and that both humans and technical facets are of equal importance towards (Berntsen & Seim, 2007) the realization of a strong knowledge management culture/ implementation within organizations (services providers & clients). Such a culture will enable organizations to identify, nurture, distribute and protect their know-how (intellectual property) by competitively positioning themselves well within the global competitive market place (Anand, 2007).

For example, the Database Administrator (human actor) in an IT services company working on a specialized relational database management system (technology) will require specific technical training (knowledge creation and development), from which he will then be able to render services to the company's clientele (dissemination and protection). Therefore, the process of managing the company's data has the society and technical facets working together, whereby without one another, success will not be realized. In this sense therefore, neither technology nor humans can be perceived to be above one another, but are seen equally as actors in a heterogeneous network (Callon, 1986). Hence, the success of a sound Knowledge Management implementation in the IT services sector is not dependent on technology or social factors alone, but instead on associations that should exist and are created between technology and its actors that can be both technical and social in nature.

3.3 Conclusion to Chapter Three

Chapter 3, the Theoretical Framework has provided insight into what the theory is, by providing the definition as a "system of interconnected ideas" (Neuman, 2006) where there is a relationship to help explain any phenomena in a social world (*ibid*). The usage of a theory in a study as an analytical 'lenses' (Irvine & Deo, 2006 & Mlitwa, 2011) and the forming of the framework of the research process have been pointed out. The review of ANT as the adopted framework has indicated that there must be an acknowledgement that the value of the various actors in the study is appreciated, and the contribution of each is considered to be equal. Further in the chapter, the four

moments of the translation process are outlined indicating the appropriateness of ANT to the study, by identifying the network initiator (which is the OPP), actors and substantiating on the progression of the moments as the network created for problem-solving gradually stabilizes.

CHAPTER FOUR

4. RESEARCH METHODOLOGY

4.1. Introduction

The research methodology chapter presents the research designs, methods, approach as well as the philosophy used to address the research problem as outlined in chapter 1 (one) of this research project. This project is directed at exploring the dynamics of Knowledge Management implementations in the IT Services outsourcing industry in South Africa. The chapter begins by presenting a research design followed by the discussion on the research paradigms, then the data collection and sampling methods. Thereafter, the sampling selection table is presented and discussed under each issue of investigation, followed by the analysis method deployed, then the conclusion.

4.2. Research Design

A research design is the overall scientific approach of the research process, from the theoretical underpinning to the collection and analysis of data (Bhattacharjee, 2012). It consists of the research approach, and the methodology (Babbie & Mouton, 2001). It is also defined as a blue print/ plan employed in conducting a research study (Mouton, 2001).

4.3. Research Paradigms

A research paradigm is defined as the underlying assumptions and intellectual structure upon which the research and development within the field of investigation is based (Mlitwa, 2011). It is also referred to as a way of thinking (*ibid*). The paradigms commonly used in the research studies are positivist, critical and interpretive (Mchunu, 2013).

4.3.1. The Positivist Approach

The Positivist approach is an approach through which phenomena can be studied, observed and described without being interfered with. Through this paradigm, the facts about the phenomenon are presumed to be measurable and objective, in that the subject is separated and not connected to the context (Mlitwa, 2011; Hancock, 1998). This approach further goes on to generalize, in that both natural science and social

science researches are of the same nature. With this assumption, the natural science research methods would need to be applied to all types of research, employing the qualitative methods (Mlitwa, 2011; Hancock, 1998). An interpretation on the textual, words and explanatory data gathered from this study will be sought, and as such positivism approach is not appropriate. This study cannot be based on predictions or of having the variables measured.

4.3.2. The Critical Approach

The Critical approach on its own is not necessarily exhaustive, but it mostly serves as an additional level of analysis to both positivism and interpretive approaches (Hancock, 1998). For example, the results once included as an additional analysis level amount to critical-positivist and critical-interpretive approaches. The assumptions with this approach are that there is already an imbalance in the social context. The Critical approach then seeks to intensively examine the factors leading to these imbalances and attempts to bring about preventive measures by ensuring that all the oppressed individuals are freed and the playing fields are leveled (Mlitwa, 2011). The current study is concerned with issues of knowledge management practices, which involve more than just the critical issues of power relations and oppression, but also a wide array of decision making and operational factors in IT service organizations (*ibid*). Because of its nature in dealing with problems where the oppression/ dominance is already known and evident, this approach would not have been adequate for adoption on its own in this study, but is drawn upon as a supplement to the interpretive paradigm.

4.3.3. The Interpretive Approach

The Interpretive approach then, focuses primarily on the vast variety of people, in terms of their approach to and thinking on, situations and circumstance around them (Mlitwa, 2011; Neuman, 2011). It seeks to interpret the manner in which humans see and understand things. The assumptions of the interpretive approach are that knowledge is subjective and through social constructions it can be fully understood (Neuman, 2011). The Interpretive approach is concerned with understanding the world from the perspectives of the experiences of individuals through meaning (instead of measurement) oriented methods. These methods include, but are not limited to,

interviews, participants observation etc., which consist of the subjective relationship between the researcher and the subjects (Neuman, 2011). As the current study explores KM implementation, in the South African IT industry context, this paradigm, with the aid of the critical paradigm (collectively known as critical-interpretive paradigm) becomes appropriate because of its alignment to the interrogation of a subjective nature that requires interpretation. In order to understand the KM implementation dynamics, the researcher has engaged with representatives from a small number of IT services organizations and both the public and private clients of these IT services. This will result in a considerable amount of data collected which will require the researcher to study, interpret and present robust and effective recommendations.

4.4. Research Methodology

A research methodology refers to the collection of methods, techniques, assumptions and values regarding their use in the research study (Mlitwa, 2011). The research problem, question/s, data type and sources inform the choice of the research methodology. It is also a systematic process adopted by the researcher in conducting a research study (Babbie & Mouton, 2001). The research methods can be classified in two forms, namely quantitative and qualitative. Quantitative research method is a formal systematic process through which numerical data is used in obtaining information about the research problem (Neuman, 2011).

With a quantitative method, the researcher uses statistical data to obtain information about variables (*ibid*). For example, a researcher may issue a survey about an existing product in the market, with the intention of establishing the product's popularity and usage. The statistical data obtained from the survey will indicate to the researcher just how much more/less the product is known and favoured in the market. Since the aim of the present study is to explore the dynamics of KM implementations, it does not rely on numerical data, but on data collected in various other forms like text, pictures, discussions, interviews and observations amongst others. Therefore, a Quantitative research method is not appropriate for this study.

Qualitative research on the other hand, is a method concerned with the subjective assessment of attitudes, opinions, behaviors, descriptions and explanations of textual (rather than numerical) data (Neuman, 2011). It is concerned with explanatory analysis of social phenomena, meaning that it aims to assist in understanding why things are the way they are (Hancock, 2003). It relies on data obtained in forms like interviews, documents and even observations. The data for this study (exploring KM implementation in IT services organizations) is mostly qualitative, predominantly based on in-depth-interviews with representatives of various institutions. Although it may be time consuming, a Qualitative research method is appropriate for this study.

Qualitative research consists of various methods, ethnography, grounded theory, phenomenology and case study, amongst others (Hancock, 2003). This study seeks to explore KM implementations using a number of cases of IT organizations (contractors) and their clients. Therefore, the case study method, which seeks to identify the case, which is the object of the study, becomes appropriate. It is defined as a method that examines a phenomenon in its natural setting, through the employment of multiple data collection methods from one or a few entities (Yin, 2014; Stake, 2006). It is able to assist the researcher in observing a case from multiple angles thus enhancing the understanding of the researcher.

The first IT organization case study is that of Oracle, an organization that operates both locally (SA) and internationally. SanGuard is the second case organization that is known locally and has had relationships with both public and private sectors. The case of SanGuard is distinctive, in that not only do they operate both locally and globally, but they develop customized banking, insurance, risk management applications amongst others (SunGard, 2015) that can be customized according customer's needs and preferences. Two of the IT clients' cases for this study are; Department of Trade and Industry's (DTI) Companies and Intellectual Property Registration Commission (CIPC), as well as Department Home Affairs (DHA). Not only are these cases from the public sector in South Africa but both these departments rely heavily on the uses of IT, through software applications (DHA, 2014). For example, the DHA uses the National Identification system to capture and store the finger prints of civilians for official records

(DHA, 2014). On the other hand, CIPC is mandated with the registration of companies and IP using high-end, sophisticated technological application with integration to various banks, Johannesburg's Stocks Exchange (JSE), Revenue office and DHA (Greve, 2014). The single case of the private sector is that of ABSA bank, which also relies on IT softwares applications to execute its objective, but it is known for its reputation as the leader of the four major banks in SA in terms of clientele (CGAP, 2011).

4.5. Data Collection

The study makes use of the literature review for secondary data, and direct observations and interviews for the primary data. Sampling however, is a significant factor that informs primary data collection.

4.5.1. Sampling

Sampling is the process of selecting the units of observation in the research study (Neuman, 2006). It is also about selecting a workable sum of the units of observation from the research population (Mlitwa, 2011). The two types of sampling are probability and non-probability sampling (Latham, 2007).

4.5.1.1. Probability Sampling

Probability sampling refers to the likelihood of selection within the research population where the number and location of each unit of a research population is known and reachable to the researcher (Babbie & Mouton, 2001). There are different methods of probability sampling, with variations ranging from cluster, simple random, stratified and systematic sampling methods. A common denominator among probability sampling methods is that it is a random (albeit, in varying degrees) process of selecting the elements of a research population, thereby giving each unit an equal chance of ending up in the sample (Neuman, 2011).

The aim of this study is to explore the dynamics of knowledge management (KM) implementation in the information technology (IT) services outsourcing industry in South Africa (SA). The conditions for this study are unlike those needed in the probability sampling technique because the location and numbers of the units of the research

population in this study are not precisely known to the researcher. For example, the number of IT services outsourcing organizations globally is so large and almost impossible to count and locate. So, it is not possible to randomly select them for inclusion in the sample. For this reason, a Non-probability method of sampling is applied.

4.5.1.2. Non-Probability Sampling

Non-probability sampling refers to a sample selection technique where the numbers and location of the research population elements are not readily identifiable or easily located for a random selection into the sample (Mlitwa, 2011; Conway & Powell, 2010). Non-probability sampling includes snowball, quota, sequential and purposive sampling methods (Neuman, 2006; Neuman, 2011). Snowballing for example, refers to a method where the units of a research population are hard to locate, such that a researcher has to rely on referrals to get to each unit. It is often used in cases of researching a sensitive subject, where the members of that community are too secretive to be easily located by the general public. Quota sampling on the other hand refers to a mixture of random and non-random techniques (Neuman, 2011). It requires a categorization of various characteristics of a population, and then the proportional selection of these categories through a random process. Units of a research population in this study can be identified without referrals (Neuman, 2011). So, the snowballing method is not entirely appropriate. Further, the purpose of research is more significant than a mere blending of different characteristics in this study. So, the purposive sampling technique (rather than quota sampling) is used.

4.5.1.2.1 Purposive Sampling

Purposive sampling (also known as judgment sampling), is a “*non-random sample in which the researcher uses a wide range of methods to locate all possible cases of a highly specific and difficult-to-reach population*” (Neuman, 2011: 267). With purposive sampling, the researcher is able to select cases with characteristics that better represent a research population, by drawing from the knowledge s/he has about a research population (Babbie & Mouton, 2001). In other words, the characteristics of the participants needed are clear and known to the researcher (Mlitwa, 2011).

The purpose of this study is to explore the dynamics of Knowledge Management implementation in the IT services outsourcing industry in South Africa (SA). Therefore, IT services outsourcing organizations are the research population. Though the number and locations of all the units are difficult to identify, it is easy to describe and identify their characteristics and ultimately use these criteria to select the most appropriate samples. Purposive sampling therefore, is appropriate for this study because the subset representation of the IT services outsourcing organizations enables a reasonable representation of the target population.

Using the purposive sampling method, the sampling process of this study is outlined in Table 1, and elaborated in detail in sections that follow.

Table 1: Sample Selection

Research Question: What are the dynamics of KM implementations in the IT Services outsourcing industry in RSA?				
Issue of Investigation	Data Source	Unit of Analysis	Unit of Observation	No. of Participants
Background; Methodology; Theories	• Literature	• Books, Journals, Internet	• Methodology, IT & KM books & journals • Websites of IT organizations with KM best practices	
KM Best Practices	• Literature	• Books, Journals, Internet	• IT & KM books, journals & websites	IT Managers: Oracle (1), Fundamo (1), SanGuard (1) =3 IT Directors: Dept of Home Affairs (1), CIPC (1) =2 IT Professionals: Oracle (2), Gijima (2), SanGuard (2), DoH(2), CIPC (2), ABSA (2) =12 Knowledge Manager: Absa Bank (1) =1 HR Partners: Oracle (1), Fundamo (1), SanGuard (1) =3
	• IT services organizations	• Oracle, Fundamo, SanGuard,	• IT Managers (1 per organization), IT professionals (2 per organization)	
	• IT services clients	• Dept of Home Affairs, CIPC*, Absa bank	• IT Directors(1 for each department), Knowledge Manager (1 for Absa Bank)	
Status of KM implementation (outsourcing & retention efforts)	• IT services organizations	• Oracle, Fundamo, SanGuard	• IT Managers (1 per organization), IT professional (2 per organization), HR* partners (1 per organization)	
	• IT services clients	• Dept Home Affairs, CIPC*, Absa bank	• IT Directors(1 for each department), Knowledge Manager (1 for Absa Bank), IT professionals (2 per organization)	
Existence & effect of KM divisions (departments) in the IT services organizations	• IT services organizations	• Oracle, Fundamo, SanGuard	• IT Managers (3), HR* partners (1 per organization), HR* partner (1 for each organization), IT professionals (2 per organization)	
	• IT services clients	• Dept Home Affairs, CIPC*, Absa bank	• IT Directors(1 per department), Knowledge Manager (1 for Absa Bank), HR partner (1 for each organization)	
KM awareness & practice in the services industry	• IT services organizations	• Oracle, Fundamo, SanGuard	• IT Managers (3), IT professionals (2 per organization),HR* partner (1 for each organization)	
	• IT services clients	• Dept Home Affairs, CIPC*, Absa bank	• IT Directors(2), Knowledge Manager (3), HR partner (1 for each organization), IT professionals (2 per organization)	
Total number of Participants:				21

*Human Resources (HR)

*Companies and Intellectual Property Registration Commission (CIPC)

Table 1 draws on the main research question to outline four (4) issues of investigation upon which data sources and research samples are identified. In other words, sources of data for information on the (a) Background; (b) Knowledge Management (KM) Best Practices; (c) Status of KM implementations in the sector; (d) Structure of KM Divisions within IT Service Organizations, and Levels of KM Awareness in the Industry, are outlined together with the units of analysis and the units of observation in Table 1.

4.6 Issues of Investigation

The following sections outline the sources of data for each issue of investigation as presented in the previous table (sample selection). It also presents the factors motivating the selection of each unit of analysis and of observation for each area investigated. At first, the sources of data for the background and methodology adopted is examined

4.6.1 Secondary Sources: Background and Methodology

Background, methodology and theories are, by default, based on secondary data from the literature, including books, journals and websites of IT services organizations.

4.6.2 KM Best Practices

On KM best practices, secondary data is obtained from the literature whilst primary data in terms of the actual practices is obtained from IT service organizations (service providers and clients). Since Oracle is one of the dominant international leaders in the field of specialized IT services, and given its widespread presence in South Africa, it was considered a useful representative unit of a research population of the conglomerate service providers (Oracle, 2013). For comparative purposes however, a local IT service provider, Fundamo, was also selected on the basis of its strong footprint in the Southern African Mobile Banking applications front and its recent acquisition by a multi-national organization, VISA Inc. (Fundamo, 2013). The third IT services provider, SanGuard, was also selected on the basis of its special focus on a financial services niche of the software market, which was seen as important in facilitating a diverse comparison (SanGuard, 2015).

Within these organizations, IT managers were considered to be the ideal units of observation because of their seniority in the organization, which gives them broad familiarity with almost all aspects of data sought in the study. Most organizations have one IT manager, hence one IT manager from each of the three organizations was considered adequate for this purpose. For validation purposes however, insight from IT professionals (practitioners) was also sought. For this purpose (practical insight on KM best practices), one senior software developer and one senior Database administrator were then selected in each of the three organizations. Both developers and database administrators are knowledge custodians in most IT departments in organizations. The developers translate business rules and/ know-how into application softwares and the database administrators administer the data repositories the security, auditing and access.

The perspective of clients on best practices was also considered useful (for validation purposes). From the private (corporate) sector, ABSA was selected firstly, because it is one of the largest clients of Gijima (an IT services outsourcing company) (Gijima, 2010). It was also selected on the basis of its reputation in KM best practices which has earned it the accolade of a best financial service provider in South Africa for six consecutive years up to 2012, and a best performer for 5 consecutive years in the JSE Social Responsibility Index (ABSA, 2012). In terms of the units of observation, one national knowledge manager (or equivalent) was identified as the adequate source of data for this purpose. Public organizations such as the Government Department of Home Affairs and the Companies and Intellectual Property Registration Commission (CIPC) were also chosen on the basis of their heavy reliance on outsourced software systems in rendering their identification and passport documents (Home Affairs), and in the registration of companies and intellectual property.

4.6.3 Status of Knowledge Management Implementation

The data on the status of KM implementation refers to the levels of awareness, and implementation, the highlights as well as the shortcomings. The data will be obtained from both the IT services organizations and their clients. Similarly, Oracle, Fundamo and SanGuard have been selected as IT organizations' representatives and the clients'

category will be represented by both the DHA and CIPC. The clients' category in the private sector will be represented by ABSA bank. For each IT organization representative, one (1) IT manager and two (2) IT professionals will be used as the units of analysis. Similarly, one IT director for each department and one knowledge manager from ABSA bank will be selected. Furthermore, for comparison purposes, the same number of IT professionals selected for IT services organization will be sampled for the IT services clients (for both public and private) sector organizations.

4.6.4 KM divisions and level of awareness in the IT services industry

KM Divisions within IT Service Organizations and Levels of KM awareness and implementation in the Industry will also be investigated. The primary sources of data for both these issues will be the IT organizations and their clients. The study will continue to focus on Oracle, Fundamo and SanGuard for the organizations' category and departments of transport and home affairs for the clients' category in the public sector, then ABSA bank for the private sector. Whilst one IT manager and two IT professionals will be selected for each organization, one IT director per department and two IT professionals (developer and database administrator) will be selected for comparison purposes. For both these issues of investigation, additionally, the input of the HR manager/ partner will be sought after and therefore only one per organization will be selected. These professionals (HR managers) are directly linked to the recruitment processes, formulation of human resources retention strategies, development policies and overall well-being of the human resources, in which the tacit knowledge resides. Only one knowledge manager for ABSA bank was selected. However, the data collected under each area of investigation will be meaningless without assessing the importance and in-depth analysis.

4.7 Data Analysis

In order to bring meaning to the collected data, an analysis or interpretation of some sort will be needed. This requires the researcher to adopt a disciplined, creative and systematic approach. Data analysis, using a Qualitative research method, can employ various techniques like ethnographic analysis, narrative analysis, grounded theory analysis, policy and evaluation analysis and content analysis amongst others (Mlitwa,

2011; Taylor-Powell, & Renner 2003). However, for the purpose of this study, the selected data analysis needs to be useful in tabulating the results of open ended questions (interviews) that is employed in the study. Furthermore, the selected technique would need to assist in reviewing data captured in words, phrases, ideas etc. within the body of work being analyzed (Taylor-Powell & Renner 2003). Content analysis therefore, is a technique that has enabled the researcher to balance the translation of the data (from the interview transcripts) and content (from reference papers) has been selected. Firstly, the questions for each participant in the selected sample were prepared, followed by interviewing each of them. The interviews were about forty five (45) minutes long on average then each interview recording was transcribed with the aim of identifying keywords, similarities and differences. This is done by identifying the themes in the study, with focus on how they are presented and the frequency of their appearance within the data. Using content analysis then, in each area of investigation in the study, the responses of the participants were matched against each other (similarly for clients and service providers), the compared against the ideal Actor Network, the implications of what each response per theme mean and how they compare to the literature together with possible remedial actions in line to key ANT principles and the literature.

4.8 Conclusion to Chapter Four

Chapter 4, on the Research Methodology discussed the overall scientific approach of the study and also presented the sampling, data collection and analysis techniques. Since the study is subjective in nature, a qualitative research method was the preferred process for undertaking the study. Using the purposive sampling technique, the sample selected from the IT services industry comprised of participants in the IT service clients and services providing organizations (contractors). The clients included representatives from both the public and private sectors. The sampling table, which presented the four areas of investigation as well as their respective data sources and units of analysis, was also discussed. Finally, content analysis technique was selected to assist in the analysis and interpretation of the data collected which is presented in the following chapter (Chapter 5).

CHAPTER FIVE

5. RESEARCH FINDINGS

5.1 Introduction

This chapter presents the findings of the data collected from the research interviews conducted during the course of this study. In accordance the analysis process and the findings are presented according to different themes referred to as the issues of investigation, ranging from knowledge management (KM) best practices, awareness of KM, structures of KM divisions to the implementation of KM. In this process, key findings in each theme are linked to the respective respondents, with further elaboration offered under the discussion of findings in section 5.3.

This chapter therefore, is divided into five (5) sections, these are: the description of the research process in section 5.2, the presentation of findings in section 5.3, a discussion of findings in section 5.4 and a conclusion of the chapter in section 5.5. Following this introductory passage then, a discussion of the research process is presented in section 5.2.

5.2 The Research Process

That knowledge is a fundamental asset of modern organizations in the knowledge-based economy of the information age is a well-accepted phenomenon (Dimovski & Penger, 2009) within the business sector and across academic circles (Mlitwa, 2011). Equally critical is the effective management of this organizational asset (knowledge) in the IT services rendering industries. The question of knowledge assets, and the significance that the industry (including the IT services sector) attaches to it, illustrates this point. The challenge to this research project, and a motivating rationale however, was that the maturity levels of KM practices remain minimal in the South African (SA) IT services industry relative to other economic sectors (Kruger & Johnson, 2009).

To address this challenge, the researcher sought to understand the factors affecting minimal adoption of KM in the IT services sector, which is a crucial part of various other

sectors of the economy. To this effect, interviews were held with representatives of IT services providers and client organizations, to understand the actual status of KM adoption, to understand best practices, to interrogate the enabling and inhibiting factors to KM practices in the sector, and to find explanations for these factors. The research question was subdivided into various research themes with related sub-questions posed to respective respondents in a sample of 21 (*n*) participants of which twelve (12) were service providers and nine (9) were clients. Out of 12 service providers, 3 were IT managers, 6 were IT professionals and 3 were Human Resources Business Partners (managers). For the clients' organizations, 2 of the participants were IT Directors, 6 were IT professionals (Database Administrators and Systems Developers) and 1 was a Knowledge Manager. A breakdown of responses per question in each theme is outlined in Table 2 to Table 7. The first theme or area of investigation, Knowledge Management (KM) best practices in the IT services sector, is presented in following diagram (Table 2).

Table 2: Knowledge Management Best Practices in the IT services sector

1. Do organizations exercise any safety precautionary measures in protecting their IPs?	Total # of Participants	Yes		No		Don't Know/ No Response	
		Clients	SP*	Clients	SP*	0	
	21	7	11	2	1	0%	
		33%	52%	10%	5%		
2. Which measures are being implemented towards the protections of knowledge assets?		Legal Contracts	Policies (Governance)		System Tools/ Processes	No Response	
		7	2		9	3	
		33%	10%		43%	14%	
3. How are the human resources up-skilled in organizations?		Development Courses	In-house Training (On the job dev.)		Tertiary Qualifications	Own/Personal Development	
		9	8		3	1	
		43%	38%		14%	5%	

*Service Provider (SP)

In terms of the literature review and the theoretical framework (Figure 3), KM best practices include amongst others, the protection of the organizations' intellectual

property (IP), advancement (up-skilling) of critical skills and the retention thereof. Often, the intention is to ensure that organizations continue to remain competitive and capable to forge strategic relationships with partners, clients and other role players in the sector (Chong *et al* 2011; Rasoulinezhad, 2011).

All 21 research subjects responded to the question(s) under this theme. On the first question of whether organizations had safety precautionary measures to protect their intellectual property (IP) for example, 18 participants said yes whilst 3 responded negatively. In terms of a detailed breakdown, 11, (52% of n) of 13 service providers (FUN, BJ – R23; FUN, JN – R23; FUN, LM – R49; FUN, MP – R39; ORA, FM - R22; ORA, OL – R63; ORA-TM–R101; SUNG, KM – R42; SUNG,AR–R73; SUNG, ES – R78; SUNG, JW – R51) and 7, (33% of n) of 8 clients (ABSA, TM – R56; ABSA, PM – R43; ABSA, MM – R50; CIPC, SS-R33; DHA, LK – R45; DHA,MM–R60; DHA, RN – R71) confirmed that there are efforts being made to safeguard IP in their organizations. The rest of the participants, 2 clients (CIPC, SN – R24; CIPC, TL – R43) and 1 service provider (ORA, MJ - 33), reported a lack of efforts to protect knowledge assets in their organizations. Statistically, it is clear that the protection of the IP is considered important, with notable implementation efforts in the sector. On this topic, the findings present a high engagement on the safety precautionary measures by service providers compared to their clients. This result further highlights that, although there is a considerable engagement on both services providing and services consuming organizations, the services providers are more concerned than their clients.

When the 18 respondents were asked to elaborate on the safety measures commonly taken, responses varied from the use of policies to specific processes, amongst others. In this case, 5 service providers (FUN, LM–R49; ORA,FM-R22; ORA-TM–R110; SUNG,AR–R73; SUNG, ES–R79) and 2 clients (CIPC,SS-R33; DHA,MM– R60) mentioned the use of legal contracts when describing existing safety measures in their organizations. The use of internal processes and related tools to safeguard IP in their organizations was cited by 5 service providers (ORA, MJ – R33; FUN, BJ – R23; FUN, JN – R23; FUN, JW-) and 4 clients (DHA, LK – R45; DHA, RN – R71; ABSA, TM – R56; ABSA, PM – R45). Thus internal processes and related tools were cited more

often than legal contracts. Policies on the other hand were adopted by only 2 clients (ABSA, MM-R50; ORA, OL-R63) as their preferred control measures implemented within their organizations towards protecting their intellectual properties. The findings on this point suggest a reasonable level of information security consciousness in the IT services sector, with a varying mix of security initiatives undertaken by each organization. Motivations and the adequacy of these measures, as well as related implications on Knowledge Management (KM) in IT services are interrogated in detail under the discussion of findings in section 5.3

It emerged strongly in the literature that effective management of the knowledge assets requires a deliberate undertaking and practical adherence to established best practices. The understanding of new technologies, as supplemented by continuous training of relevant employees and strict enforcement of best practices compliance - are cited as significant in the literature and in the ANT framework (Figure 1), as the key ingredients of success in this respect. To establish the status of these practices in the IT services sector, a question was raised on how organizations were keeping abreast of the evolving technological climate in terms of development measures of key resources in the IT services sector.

Out of the 21 participants, 6 clients (ABSA, TM – R28; ABSA, PM – R23; CIPC, SN – R16; CIPC, SS - R16; DHA, LK – R26; DHA, MM – R21) and 3 service providers (FUN, MP – R20; ORA, FM – R8; SUNG, JW – R11) confirmed that they have been sent to development courses in order to keep abreast of the technologies. This was closely followed by 7 service providers (FUN, BJ – R18; FUN, JN – R10; FUN, LM – R15; ORA, MJ – R18; ORA- TM – R81; SUNG, AR – R30; SUNG, ES – R37) and 1 client (ABSA, MM – R36) who indicated that most of their learning and development took place in-house as they interacted with fellow colleagues and industry experts brought in to facilitate trainings. In this case, the findings point out that the organizations in the IT services sectors do engage in various forms of skills development to keep abreast of the evolution of the technological spectrum. However the services providers seem to have embraced development courses and in-house trainings more than the clients.

On the same question, 2 service providers (ORA, OL – R19; SUNG, KM – R18) and only one client (DHA, RN – R55) mentioned the use of the traditional tertiary education system as a way of advancing their professions. Surprisingly, one IT professional (client) revealed that he was responsible for their own development saying “...I do my own studying on the side. Whenever there’s something new that comes up I always read up on it, I always read up on stuff...” (CIPC, TL – R26) and felt that the organization was not very active in fostering or promoting human resources development.

Through the lens of ANT in this theme (KM best practices), there are certain practices that should be implemented by various actors (stakeholders) in their respective organizations within the IT services industry, through which KM maturity issues could be addressed. In this study, the human actors are IT professionals, managers, human resources administrators and non-human actors are policies, outsourcing, computers and the Internet amongst others. None of the actors should be perceived to be greater than any other, but their contribution to the resolution of the problem of the study can only be effective once they (actors) share common interests irrespective of their social or technical standing. Ideally, this should start at the translation moments of the problematization and interesement phases where actors are approached to come together (forming a network) in order to solve a particular problem and to continual lobby other actors to follow suit, so that all actors have the same intents and interests.

It is clear in this study that all actors have indeed shared a common interest in addressing the shortcomings of KM maturity growth in the IT services industry. The fact that over 90% of the sample indicated the drive within their organizations to ensure that the intellectual property (IP) of their organizations is safely guarded – substantiates this sentiment. Of concern however, to the strength of the network, is the remainder of the sample, (5% of n) of the clients, who do not share these ‘interests’ with the rest of the network actors. The collective use of IT professionals, policies, and tools amongst others, indicates that all actors of the study appreciate the importance and ability of these types of measures to bring about industry specific solutions. It becomes

imperative however, for the network to remain strong and continue to address the same interest (and problems) it initially sought to, that a continuous reaffirmation and lobbying of others to the common interest take place. But in a situation where such interests are no longer shared and viewed alike, then the network can be weakened and this will derail it from achieving its core objectives. In this case study, there is one respondent (client) who does not seem to be aligned with the common organization-led skills development programmes and has opted to embark on their own development agenda. According to the principles of ANT, this may have an undesired impact on the actor-network that has been established to address the common concern within the IT services industry. Reasons and related implications of this discrepancy are interrogated further under the discussion of findings in section 5.3. In order to comprehend outsourcing as a pivotal component of the services sector, the question on the extent of its practice was further explored. Table 3 presents results on the significance of outsourcing in the IT services sector.

Table 3: Significance of Outsourcing in the IT Services Industry

4. Do organizations outsource contractors for their internal IT solutions	Total # of participants	Yes	No	Don't know/ No response (NR*)		
	21	17	2	2		
		80%	10%	10%		
5. Why is the use of external contractors important?		Skills scarcity	Cost efficiency	Focus on core competencies	Don't know	NR*
		10	4	2	1	4
	47%	19%	10%	5%	19%	

*No Response (NR)

Outsourcing, according to the scientific literature, has grown in significance in the IT services industry (Gereffi & Fernandez-Stark, 2011). It is also seen as a strategic implementation for most organizations that need to focus on their core competencies, save costs and remain competitive (*ibid*). Companies consider outsourcing not only to balance their organizational assets with the never-ending business requirements, but also to tap on the knowledge, expertise and capabilities external to theirs (Pratap, 2014; Gewald, 2010).

The extent to which the significance of outsourcing is understood, accepted and practiced in the IT services industry therefore, is an important aspect of this investigation. Hence, the question on whether organizations do engage in this significant practice was raised. Overwhelmingly, 17 of the 21 participants responded positively to this question, with 9 clients (ABSA, TM-R36; ABSA, PM-R29; ABSA, MM-R26; CIPC, SS-R17; CIPC, SN-R20; CIPC, TL-R28; DHA, LK-R32; DHA, MM-36, DHA, RN – R82) and 8 services providers (FUN, BJ-R18; FUN, JN-R19; FUN, MP-R25; ORA, FM-R26, ORA, MJ-R11; ORA, OL-R70; SUNG, KM-R11; ORA, TM -) citing that their organizations had on one or more occasions outsourced some of its services to external services providers (contractors).

These findings therefore, clearly cement outsourcing as a pivotal component in the IT services industry from the perspective of both clients and service providers. The encouraging factors in its implementation such as the use of contractors, cost savings and, most importantly, the need to tap into the expertise of service providers as furnished by participants are in line with arguments by key authors in the literature. Although the positive assertions can be said to be statistically significant, a concern remains that 2 clients (SUNG, JW-R42; SUNG, ES-R68) were not aware of such a practice in the organization. Two of the participants (service providers) did not participate in the question.

In explaining reasons for the outsourcing practice, 10 participants (7 clients (ABSA, PM-R34; CIPC, SS-10; CIPC, SN- 25; CIPC, TL – R29; DHA, LK – R31; DHA, MM – R39; DHA, RN – R86)) and 3 service providers (FUN, JN – R21; ORA, MJ – R-30; ORA-TM-R81) cited skills scarcity in their organizations as the key motivating factor. In line with the common assertions in the literature, arguments from 2 service providers (ABSA, MM-R31; SUNG, KM-R30) were that it allows their organizations access to the expertise, knowledge and capabilities outside their own bounds. On this point, one respondent even stated that “...we have resources from Telkom that are here 24/7...we’ve got about 10 people from Telkom that sit in this building...” (ABSA, MM-R31). Other reasons, such as cost efficiency and allowing employees to specialize on their key competency areas were also cited. For example, 3 service providers (FUN, BJ-

R24; FUN,MP–R27; ORA,OL–R71) and 1 client (ABSA,TM–R39) mentioned that through the implementation of outsourcing, their organizations could still remain profitable as it allowed for costs savings as compared to when their organization performed these services in-house. One client (ABSA, MM–R9) and one service provider (SUNG, KM–R30) added that outsourcing their non-core services gave them space to focus on their respective areas of competency. However, 1 service provider participant said “...no I wouldn't say I have much knowledge on that [outsourcing], the person who can share more is obviously the person who deals with all the partners...” (ORA, FM-R29). These findings do highlight the fact that there is a greater degree of skills scarcity in the clients than in the service providers, which drives clients to use the services of the services providers. These findings also point to diverse factors leading to the practice of outsourcing in the IT services sector.

The ANT framework (Figure 1) suggests that in a case where a problem exists, and requires the intervention and resolution of various actors, a need for an obligatory passage point (OPP) also exists. The OPP serves a role of a network initiator (Best, 1992) who defines the identities of other actors and attracts them to the interests of the actor-network being formed. In this process, the OPP renders itself as indispensable, in that it will be the most appropriate ‘channel’ through which all solutions will be made available. This takes place during the entire process of translation, particularly in the second translation moment of interessement, where it convinces other actors to accept the definition of what a solution is, locking allies into their roles (Law, 1992). During this process however, the actors that do not conform to the views and perspective of the OPP are excluded from the actor-network as they could weaken the network in the long term.

According to the findings, the IT services industry (as represented by companies and vendors) has established itself as an OPP within the Knowledge Management (KM) network, in that it has locked allies (actors) (clients and service providers) in to the practice of engaging into outsourcing. For example, there is a clear pattern of deliberate actions towards a common practice to outsource certain services – with a commonly accepted code of ethical practice in terms of knowledge management in the IT services

sector. Over 70% of the sample indicated that their organizations have at one point or another sought the services of external services providers. Whilst remaining at the center of addressing the KM growth issues in the industry, the IT services industry, as the OPP, has afforded the organizations a platform to address skills shortage issues and development, enabled organizations to focus on their key competencies and remain cost effective in their service operations. However, these are not the only opportunities offered by the OPP. The IT services industry is in this instance, attracting the other network actors (stakeholders) of the industry by instilling in them the interest and belief that, through outsourcing, some of the key KM maturity and implementation challenges, can be addressed.

The impact of this pattern of outsourcing on the security of company information, and its implications for the maturity of Knowledge Management practices in the IT services sector is critiqued in more details under the discussion section later in this chapter. Meanwhile, findings on the status of KM implementation in IT centric organizations are outlined in Table 4.

Table 4: Knowledge Management Considerations in the IT Services Outsourcing Industry

6. What are the selection criteria for the appointment of service providers?	Total # of participants (n)	Tendering Process (PFMA*)	S.P already appointed/ SLA partner	Not involved/ don't know	No Response
	21	3	5	7	6
		14%	24%	33%	29%
7. What measures are implemented to retain skilled professional?	21	Counter Offers	Development/ Training	No efforts	No Response
		5	1	0	15
		24%	5%	0%	71%

*Public Finance Management Act (PFMA)

Knowledge Management (KM), as discussed in the literature encompasses the planning, organizing, controlling as well as the leading of knowledge assets (King, 2009) in a manner that is beneficial to organizations (Massingham, 2014; Whelan & Carcary, 2011).The theoretical framework (ANT), suggests that the actors should share a common interest, which in this investigation refer to the issues of KM implementation in order to maximize its maturity. Both clients and vendors should play their roles

effectively in addressing the network challenges by realizing that none is superior to the other, and that it is only through collaboration any problem (in the network) can be addressed. In this investigation then, the ideal considerations of KM would include adequate measures undertaken in planning, organizing, protecting and the retention of their knowledge assets (ManPower Group, 2012) in organizations. It is only when human actors (IT professionals, IT managers, Knowledge managers etc) identify and understand KM maturity and considerations issues that they can align themselves to carry out proposed implementations that are key to achieving KM maturity levels. For example, in this study the key considerations amongst others are the selection criteria of preferred services providers (outsourcing) and the measures undertaken by organizations in retaining the knowledge workers, who are key drivers in the creation, maturity, protection and dissemination of tacit knowledge. In this way, the human actors in the study, particularly managers and IT professionals should be aligned on how preferred services providers are appointed and be clear on what their key deliverables will be. Similarly, managers should constantly concern themselves with relevant, innovative ways of keeping the interests of knowledge workers in organizations to avoid any undue loss of intellectual capital that may harm the competitive advantage of the organizations.

In this study therefore, research participants were asked to reflect on the criteria used by organizations to select service providers (contractors). Established ethical codes of behavior as well as policy frameworks emerged as the most prioritized measures in the findings. In response to this question for example, 3 clients cited various national policy frameworks as guidelines for the selection of services providers for the public sector, using the Public Finance Management Act (PFMA) guide, from which the most appropriate providers were selected, to support their tender process (CIPC, SS-R21; CIPC, SN-R22; DHA, LK-R32). This means that the supply chain processes in the public sector are governed by this act, ensuring that competent contractors are engaged to deliver required services. These contractors would have had to undergo a stringent evaluation process on their capabilities (previous work completed), financial position and conformance to other legislative requirements. Only upon satisfying these requirements, can the providers then be trusted with the various departments'

knowledge (in protecting, nurturing etc.) as they carry out their responsibilities (Madue, 2007).

The reputation of the service providers and the trust invested in them, also emerged as a significant determinant of the choice of contractor in the IT service space in these findings. To emphasize the significance of using reliable contractors, 4 service providers (FUN,BJ-R29; FUN,JN-R20; ORA,MJ-R11; ORA,OL-R71) and 1 client (ABSA,MM-R35) indicated that their organizations preferred using the same providers they had worked with before/ with whom relationships (outsourcing) already existed. In such cases, the relationships built over the years between organizations are of paramount importance when forging new engagements; because the trust built assures both of the organizations (service provider and clients) of the security of their respective intellectual capital. However, many participants lacked the understanding of internal processes related to KM dynamics related to the outsourcing of IT services in their organizations. In this instance, 5 clients (ABSA, TM-R42; ABSA, PM-R47; CIPC, TL-R31; DHA, MM-R51, DHA, RN-R88) and 2 services providers (FUN, MP-R29, ORA, FM-R29) mentioned that although they were aware of the implementation of outsourcing in their organizations, they were not directly involved in the appointment of service providers nor did they know the measures taken into account during the selection process.

It is realized from these findings that although the practice of outsourcing is widely used in these organizations, certain members of the IT departments, particularly the professionals seem to be excluded from decision-making platforms during appointments of contractors. 6 service providers did not participate in this question. The highlight in this segment of the findings is that, the public sector clients predominantly make use of the government driven framework, PFMA in selecting their preferred service providers, whereas other clients (24% of *n*) prefer using service providers with whom they already have business relations. Of concern, though, is that 33% of *n* do not have visibility, nor influence and account on the selection of providers to whom the work has been outsourced.

Still looking at KM considerations in the IT services industry, this study sought to establish measures undertaken by organizations to retain their knowledge workers so that the knowledge they possess could still be of assistance to these organizations in order that the protection of IP, capturing, processing and the dissemination of knowledge is achieved. This question was particularly directed at participants who held management positions in their organizations (total of 6). Three (3) service providers (FUN, LM-R34; ORA, FM-R20; ORA,MJ-R26) and 2 clients (CIPC, SS-R9; DHA, LK-R22) mentioned the use of monetary incentives (counter offers), and only 1 service provider (FUN,BJ-R18) cited the practice of development/training to persuade valued knowledge workers to remain and not resign. The rest of participants did not participate in the question. It becomes evident therefore, that for the management in the IT services sector, and the preferred instrument for retention of knowledge seems monetary incentives. The effectiveness and implications of such an engagement will further be assessed in the succeeding discussion section of the findings.

In terms of the Actor Network Theory (Figure 3), the KM phenomenon is presented as an actor in the actor-network, whereby the link between itself and other actors like organizations, technology and knowledge assets form a stable, solid relationship in order to resolve the KM maturity and implementation issues in the IT services sector. However, for this stable relationship of the network to be achieved, each of the actors should assume their rightful roles in the network, also maintaining similar interests. For example, although organizations in this study are appreciative of outsourcing and its underlying benefits, they have not been consistent in its implementation, particularly in the selection (appointment) endeavors. It appears that management alone has the right to practice, in this process, with the exclusion of IT professionals. In this case then, management and their roles in the network are seen as superior to those of the professionals, which is contrary to the principle of equality as assumed by ANT.

In this study for example, organizations have realized that the retention and protection of knowledge assets cannot happen by chance, but through planning, organizing and strategy implementation by reflecting on the ANT translation moment of

problematization. In the first place, this takes into account the criteria the organizations use whilst selecting their preferred external services providers. During this problematization phase, organizations do not just elect any services provider, but they implement certain criteria through which they can compare the interests of the service providers with their own, so that they can gain confidence in these allies. The increased KM maturity levels and the implementation of key considerations may be as a result of the network actors sharing common interests and being able to relate together in harmony. In this study therefore, organization do not just elect service providers, but subject them to tendering processes amongst others where their 'interests' (work experience, credibility, references etc) are closely examined in establishing whether they can carry out the duty at hand or not.

Enrollment, is the process by which actors become part of and are subscribed to the network and its interests (Hu, 2011; Kraal, 2007), where they are in agreement with the proposed solutions and channels of addressing problems in the network. The shortcoming in this set of the findings however, is the indication that there is no widespread representation of all stakeholders in the selection and appointment phases of the services, where 33% of the sample has cited no involvement or inclusion during this phase. This is an unfavorable situation for the wellbeing of the network, if there is misalignment to the principle of enrollment because actors (stakeholders) who are not attracted to the similar interests of others in network then these actors may weaken the network by creating new interests and lobbying support from the other actors. In this case, for example, the actors who are not included in the selection and appointment of the outsourced vendors may reject them or retaliate by various non-compliant actions which may hinder the progress, quality and deliverables of the vendors.

These results do not present a complete alignment to the enrollment principle of the framework (ANT), but the examination of the causes and implications for that misalignment will be addressed in section 5.3. In the meantime, the question on the existence of KM divisions/ structures was posed to participants as outlined in Table 5 to further understand the KM dynamics in the IT services sector.

Table 5: Knowledge Management Divisional Structures in the IT services Industry

8. Is the Knowledge Management unit/ division existent?	Total # of participants	Yes	No	unsure	Setup/ implementation in progress	No response
	21	7	8	3	3	0
		33%	38%	14%	14%	0%
9. Is the existence of a KM division significant to the organization?		14	7	0	0	0
		67%	33%	0%	0%	0%
10. How is the existence of the KM division (in) significant?	<p>Yes: 1. Knowledge Repository; 2. Capturing/ identifying Knowledge; 3. Timely distribution; 5.Compliance and Protection of Info.</p> <p>No: 4. Diverse Organization; 5. Less critical concept</p>					

Whilst Knowledge Management (KM) is at the center of organizations' capability of ensuring the effective use and nurturing of their intellectual capital (King, 2009), such an important process cannot be left to take place in isolation but requires the necessary engagement. Such an engagement is vital for ensuring that there is proper planning in the planting, harvesting and nurturing of organizational intellectual capital. Therefore, not only is the existence of a dedicated KM unit vital in organizations that regard their IP as an exclusive capital, but also the extent to which such a unit (if existent) is deemed to be a value-adding driver in the knowledge management processes and engagements (*ibid*). Since such a department is key to advocating for increased awareness and adoption of KM processes and its implementation in organizations, its absence could rob organizations of identifying, planning, controlling, nurturing and protecting their knowledge assets to their full potential.

As outlined in Table 5 above, a question was posed to the whole sample about the existence of any formal knowledge management unit/ structures and the value they/ would add (if non/existent) in organizations. Such divisions would champion the KM processes, the nurturing and protection of knowledge, amongst others, for the advantage of the organizations in the global economy. Only 2 clients (DHA,LK-R51; DHA,RN-R74) and 5 service providers (FUN,BJ-R48; FUN,LM-R42; ORA,FM-R22; ORA,TM-R101;SUNG,JW-R23) confirmed the existence of knowledge management units in their organizations. While, 4 clients (ABSA,TM-R62; ABSA,PM-R67; CIPC,TL-

R71;DHA,MM–R67) and equally, 4 service providers (FUN,JN–R38, FUN,MP–R46, SUNG,KM –R53, SUNG, ES–107) indicated that no such units/ structures existed in their organizations, resulting in there being no formal structure/s advocating for KM processes, or implementation.

Those who were unsure or did not respond to this question were 2 service providers (ORA, MJ–R48; ORA, OL–R89) and only 1 client respectively. Encouragingly, 3 clients (ABSA, MM – R43, CIPC,SS–R47, CIPC,SN–R35) indicated that although the units were not yet existent, much ground work was already underway (in progress) towards setting up these structures after their organization realized the value such units would add. On the same theme, one participant [a knowledge manager] said “...*I have actually started something with knowledge management to come up with a knowledge management strategy. We are working on that. There is a company called KMI that we are working with, to put together the strategy...*” (ABSA, MM – R43).

Whilst the existence of the KM departments is key in the promotion and facilitation of KM processes and implementations, there is also a greater need for the organization-wide appreciation of the KM phenomenon and its benefits. Hence then, a question was posed to the participants on whether the existence of the KM departments could/add(ed) value in their organizations. Of the total sample, 67% of participants mentioned that they noted the significant value the KM unit was adding in their organizations. Although some (67% of *n*) had previously mentioned that the KM units were non-existent in their organizations, they went on to communicate that much could be gained by their organizations with the existence and functioning of the KM departments. Only 33% of the sample maintained that the existence of a KM department would not be as effective in making knowledge management principles evident and implemented in their organizations. On that note, one of the participants responded by saying “...*I think it would be difficult to have [KM department], for the simple reason that there are too many of these disparate skills components in our organization, the software architect who focuses on development...*” (FUN, BJ – R50) whilst another said “...*I do not think it's necessary. Even if it slightly was, I would not think it would work efficiently because [Company X] is a big company. It grew from*

mergers and acquisitions, so it's got a kind of a different hierarchical structure...." (SUNG, KM – R54). These results highlight that the existence of formal KM units, who champion the KM processes, nurturing, protecting and capturing of organizations' knowledge is slightly more established in service providers than in clients, but the results equally highlight an overall concern for the non-existence of these departments. Moreover, they also indicate considerable appreciation within the sample, even from those who do not have a KM department at present. Of concern nonetheless, are the views still held in the IT services sector that KM remains just a concept and that KM will have difficulties in interacting easily with complex operating models of large corporations.

Like in every actor-network, the need for a network advocate can never become more significant than in the third moment of translation, enrolment. In this moment the process of negotiation with the actors aligned with the network in the first moment (problematization) ensues, in which they are now required to act out their roles. In the case where this process does not keep the interests of these actors cemented (to the initial interest) then there is the risk of a sudden emergence of a new OPP which may result in the dissolution of the existing actor-network. These network advocates lobby the rest of the actors to remain focused on the common purpose, and to do the same to the rest. This ensures continuity and focus on the same course. According to the findings of this study in this section, there is a great need for the emergence of network lobbyists, who will champion the KM processes, nurturing, protecting and capturing of organizations' knowledge, in the form of a formal KM structure/ division in these organizations. In this case, for example, the emergence of such lobbyists is not entirely effective because only 33%, compared to 38%, of the sample had indicated the existence of a KM unit in their organization.

Furthermore, it was encouraging to establish the extent to which (if any) the organizations inspire their knowledge workers to think out of the box and creatively, addressing the areas of culture (in organizations) or KM practice. Table 6 therefore, presents the output of such an examination.

Table 6: Knowledge Management Practice/ Culture Awareness

	Total # of participants	Yes	No	Unsure/ in progress of implementation	NR*
10. Is there an encouragement in the promotion of innovative thinking/ ideas?	21	15	3	3	0
		71%	19%	5%	0%
11. What are the controls used in enforcing/monitoring compliance to the KM guidelines & processes?	21	Use of Legal Contracts	Policy Guidelines	Implementation of Tech. tools	NR*
		8	2	9	2
		38%	10%	42%	10%

*NR: No response

A critical obstacle to the knowledge workers' cognitive development is attributed to the increasing lack of attention (Cronquist, 2003). For example, in cases where the development of a knowledge worker is neglected, growth will be at a halt and benefits arising from their thinking, experiences and understanding (on how things work) will not be realized (*ibid*). To mitigate against this situation, it is crucial that the environment in which knowledge workers operate affords them opportunities for innovation and the promotion of new ideas as well as better ways of doing things. Similarly, the culture of KM practice, whereby processes can be enforced and monitored for compliance becomes fundamental in ensuring that KM is not reduced to a paper-based notion, but rather a concept that can be instilled (with ease) in individuals organization-wide.

It becomes important therefore, for organizations to link the development of these knowledge workers directly to organizational performance on all fronts taking into account their ability to use internal knowledge strategically in the global economy by affording them with an environment and a culture that is conducive. In line with the ANT framework, formal and binding ethical codes of practice around the handling of knowledge assets by knowledge workers among both the service providers and the vendors would be necessary for an ideal KM network. This point refers to the holistic measures in the sector, where vendor representatives may not act improperly by transferring confidential information outside.

It was therefore posed to the sample whether they were encouraged (by organizations) to think laterally and whether their working environments encouraged innovative

thinking. Of the 15 participants that confirmed satisfaction in how their organizations' efforts towards encouraging innovative and lateral thinking, an overwhelming count of 10 were service providers (FUN, BJ-R18; FUN, JN-R39; FUN, MP-R48; ORA, FM-R24; ORA, OL-R101; ORA, TM-R112; SUNG, KM-R10; SUNG, AR-R80; SUNG, ES-R120; SUNG, JW-R67) and 5 were clients (ABSA, TM-R67, ABSA, PM-R49, CIPC, SS-R50, DHA, LK-R50, DHA, MM-R72). In contrast to that, only 1 service provider (FUN, LM-R48) and 2 clients (CIPC, TL-R89, DHA, RN-R94) felt that not much was done by their organizations to encourage the promotion of innovative ideas. On the other hand, 2 clients (ABSA, MM-R34, CIPC, SN-R37) and 1 service provider (ORA, MJ-R55) mentioned that the results of such implementations were starting to show, but that their organizations' efforts were not quite fulfilled yet.

Regarding the controls used to enforce and monitor the compliance with the implementation of the set of KM processes and guidelines, respondents cited a wide variety of methods, from engaging in contracts to using deployed technological tools, amongst others. The use of contracts was particularly dominant on the service provider front with 5 (FUN, LM-R49; ORA, FM-R22; ORA, TM-R110; SUNG, AR-R73; SUNG, ES-R79) citing that their organization relied heavily on contracts as their control on how knowledge was managed, compared to only 3 clients (CIPC, SS-R33; DHA, MM-R60; FUN, MP-R39). Whilst fewer (2) respondents named policies as one of the control measures, 3 services providers (ORA, MJ-R33; FUN, BJ-R23; FUN, JN-R23;) and 4 clients (DHA, LK-R45; DHA, RN-R71; ABSA, TM-R56; ABSA, PM-R45) mentioned the deployment of technological implementations as controls to enforce key KM guidelines and processes, on how knowledge was being harvested, protected and made useful to the entire organization.

In terms of the culture, there seems to be an overwhelming appreciation of any organizational efforts that are made by organizations towards the promotion of KM initiatives. This however is more evident in the area of the services providers than the clients' organizations.

But, now is the time to address the ongoing development of knowledge workers (IT professionals), post recruitment or during their employment, and to examine their current roles/ positions.

Table 7: Development of Critical Information Technology skills

12. Have you been to training since you filled your current role?	Total # of participants	Yes	No	No response
	21	7	5	9
		33%	24%	43%

Knowledge workers in organizations actively seek, use, share, protect and create knowledge enabling the organizations to remain competitive by utilizing their knowledge assets to their advantage. In the rapidly changing global markets, it becomes imperative for such workers to be developed continually (re-training), to keep up with changes, such that their understanding and experiences, particularly know-how remains relevant and useful (Wang & Noe, 2010).

In this case therefore, an inquiry was made to understand the development opportunities offered to these workers, looking into whether each of them has been offered any kind of training (relevant to their roles) since employment to their current positions. This question was posed to the 12 IT professionals in the sample (DBAs & Developers) from which 5 clients (ABSA, TM-R28; ABSA, PM-R23; CIPC, SN-R16; DHA, MM-R26 ;DHA, RN-R59) and 2 service providers (FUN, JN-R13, SUNG, JW-R12) agreed that they had participated in some kind of training relevant to their roles since their employment started. It was disappointing to find that 4 service providers (ORA-TM-R54; ORA, OL-R32; FUN, MP-R20; SUNG, KM-R19) and 1 client (CIPC, TL-R18) said that such training opportunities had not been offered to them yet.

As much as IT skills are specialized and critical in various economic sectors, to harness and recognize them (in practice) is still neglected, as only about 33% (7 of *n*) have being trained further to work and produce results more quickly and in an efficient way. This is an illustration that the development of critical IT skills in the IT services industry is not getting its deserved attention and engagement. Since this question was only directed to the 12 professionals in the study, no responses were sought from the other 9

participants who were either in HR or in IT leadership roles. Although the development of IT professionals, (who are pivotal in organizations fulfilling their IT services objectives) is crucial in the sustainability of organizations, it appears in the findings that the industry has not come to fully appreciate that. There is an evident neglect in advancing the skills and capability of knowledge workers in the IT services industry, where training is not at the fore to maximize the organization's competitiveness.

5.3 Discussion of Findings

This study set out to explore the dynamics of Knowledge Management (KM) implementation in the IT services sector, focusing on, best practices, the current status and probing impeding factors, effects as well as their causes. Accordingly, the main question; "What are the dynamics of KM implementations in the IT Services outsourcing industry in South Africa?" was posed to research participants. The findings were presented in a factual descriptive format in the previous section (Section 5.2), followed by a critical discussion of these findings in this section (sec 5.3).

In this process, inferences are also drawn from the literature and the ANT theoretical framework to inform the interpretation, analysis and discussion of the underlying implications. In summary, a detailed discussion on the findings, addressing the causes of some scenarios, implications for the IT services industry (and associated organizations) and explanations thereof, for each area of investigation, are critiqued in this section.

Then, to address the main research question and sub-questions the format and content of this section is presented according to issues of investigation – Each issue is then related to a research sub-question outlining the findings, the effect of the findings in the organization and ultimately, the IT services industry and the explanations thereto. For example, the theme 'Knowledge Management Best Practices in the IT services industry' addresses the sub-question: 'What are the Knowledge Management best practices in the IT services industry?' The issues of investigation are:

- Knowledge Management Best Practices in the IT services industry
- The significance of Outsourcing in the IT services industry
- Knowledge Management Considerations in the IT Services Industry
- Knowledge Management Divisional Structures in the IT services Industry
- Knowledge Management Practice/ Culture Awareness
- Development of Critical Information Technology skills.

5.3.1 Knowledge Management Best Practices in the IT Services Sector

The key objective in this section was to establish which best practices regarding Knowledge Management (KM) were being applied in both the clients and service provider components of the IT services industry. Adequate protection of the organization's IP according to (Rasoulinezhad 2011; Chong *et al*, 2011), is the most significant aspects upon which, all KM implementation best practices should be based. The advancement (up-skilling) of critical skills and the retention thereof are also added to the list of best practices. Therefore, participants were asked about whether their organizations were engaged in any efforts to protect their knowledge assets.

The findings present a high compliance rate with the precautionary safety measures, and service providers seemed more committed to this aspect than their clients. There is a reasonable level of information security consciousness in the IT services sector, with a varying mix of security initiatives undertaken by each service provider. However, the parties contributing to the KM practice in the IT services industry are not limited to service providers, but also include clients. From the ANT perspective therefore, where actors are equally important (and should take their respect responsibilities in the network, equally), it is arguable that compliance by service providers alone may not be adequate if clients do not also comply.

So, whilst the positive of outcome commitment to the IP protection amongst service providers is commendable, it is also important that their clients also comply with the protection of the organizational IP. Unfortunately, a negligent approach on the clients' side where protective measures are entirely non-existent has emerged in the findings. In this case, the neglect of the clients to practice KM best practices hampers the

organization's ability to tap into KM benefits, like protected IP and improved know-how, amongst others. KM best practices can enable organizations to be self-reliant and competitive in the markets, however, a lack of KM best practices can possibly result in compromised trade secrets and a lack of innovation. Whilst ANT suggests that the core of each association (network) is dependent on the sturdiness of the actors' relations, such an assumption does not apply in this case, thus weakening the network, that may see a lack of competitiveness and less self-reliance in the clients than in the service providers.

5.3.2 Significance of outsourcing in the IT services industry

Outsourcing is a significant component of KM. It is seen as a strategic implementation in various economic sectors (Gereffi & Fernandez-Stark, 2011), and it also affords organizations the potential of minimizing operational costs, focusing on core competencies whilst maintaining their competitiveness. In this section then, the respondents in both service providers and consumers' organizations in the IT services industry were asked whether their organization has outsourced any of their internal IT solutions and services.

In response, the findings cement outsourcing as a pivotal component in the IT services industry with both clients and service providers overwhelmingly citing outsourcing as a common practice in their organizations. In the true ANT fashion, outsourcing involves a number of actors from the business, the contractor and agents of the contractor on site, which necessitates diligence in the way knowledge is managed between the varying stakeholders (actors). Whilst the IT service industry boasts a varying pool of specialized skills, respondents have agreed on the importance of outsourcing being practiced by their organizations, citing benefits such as cost efficiency and the ability to focus on core competencies. Therefore, this illustrates interreusement in the network (IT services industry) where actors are of one voice. They are in agreement over what they want and need accomplished, resulting in a desired, constant view that is required by any network if it is to remain existent and relevant, whilst resolving current issues.

Of concern nonetheless, was the finding that there were participants who had knowledge of the outsourcing being practiced in their organizations, but did not entirely

comprehend the underlying incentives/ benefits. According to the ANT's translation moment of interessement, there needs to be ongoing interest from all actors at all times to sustain the existence of the network. Therefore, whilst ANT also assumes equal role and responsibility for each network actor, the loss of interest by one actor is as detrimental to the network as it would be if many actors lost interest. So in the case of the organizations practicing outsourcing it is vital to ensure alignment and cohesion or else, the much desired benefits and objectives outsourcing seeks to address, will not be attainable.

5.3.3 Knowledge Management Considerations in the IT Services Industry

Whilst knowledge management (KM) contains aspects of how knowledge assets (amongst other things) are to be organized, controlled and disseminated (King, 2009), organizations should take into account the criteria adopted during the appointment of service providers and the retention measures that are in place for knowledge workers (Mohlala *et al*, 2012). On this point, participants were asked about the considerations made by their organizations in appointing services providers and also in retaining the intellectual property through their knowledge workers.

The findings suggest that there is no widespread representation of all stakeholders in the selection and appointment phases of the services. However, 33% of the sample has cited no involvement or inclusion during this phase. This is an unfavorable standing on the wellbeing of the network, and misalignment to the ANT principle of enrollment because actors (stakeholders) who are not attracted to the similar interests as those of the network may weaken the association by creating new interests and lobbying support from the other actors. In this case, for example, the actors who are not included in the selection and appointment of the outsourced vendors may reject them or retaliate by various non-compliant actions which may hinder the progress, quality and deliverables of the vendors.

Furthermore, these results are not representative of the complete alignment to the enrolment principle of the framework (ANT). The ANT process of translation constitutes four moments, problematisation, interessement, enrolment as well mobilisation. Each of

these moments involve actors, from where they lobbied into agreeing to the proposed solution, to being used as allies as the OPP targets the buy-in (enrolment) of actors not already lobbied. Now, whilst in this very same study the importance of actors (IT professionals, managers etc) is sought to achieve desired benefits of outsourcing, there is not wide spread representation of all actors, raising questions on how the stability of the network could be attained, in order to address all the KM issues in the IT services industry. So, a successful translation can only be attained once actors are obliged to remain faithful to those who control the network (OPP), and start representing mobilized actors. Therefore, whilst there are still actors with no knowledge of why the service providers are appointed and the benefits they bring about, then the IT service industry cannot claim to have achieved complete translation for this particular issue of investigation.

5.3.4 Knowledge Management Divisional Structures in the IT services Industry

The Knowledge Management (KM) phenomenon is vital in nurturing, planning and the facilitation of the effective use of knowledge assets (Massingham, 2014). However, KM's full potential or benefits cannot be realized whilst in isolation, and there is a need for a champion in a form of a department/ unit to effect its implementation within the organization.

A question under this section was aimed at establishing the extent to which KM divisions exist, their significance and the value which they contribute to organizations. According to the findings, the KM units championing the effective implementation of KM were more common in service providers than clients' organizations. Therefore, with no cohesion and the existence of championing departments/ divisions to lead the planning, the control and organization of knowledge and related processes, amongst others, the clients' organizations may not come to realize the benefits of such formal structures. These benefits vary from the protection of IP, the nurturing of knowledge and the timely dissemination of knowledge to relevant stakeholders.

Whilst some participants were unsure of the existence of these units, some indicated that plans were underway to establish them. Of concern nonetheless, are the views still

held in the IT services sector that KM remains just a concept and will have difficulty in interacting smoothly with complex operating models of large corporations. Moreover, when asked about how significant these institutions were in organizations, participants cited benefits such as secured knowledge repositories, ease of knowledge identification and timely dissemination of knowledge to relevant recipients. Those who did not recognize KM units as having significance cited that the diversity of their organizations rendered KM as being less of a critical concept in their line of business. The diversity was seen as a hindering element towards the realization of potential KM units within their organizations.

These views, such as KM being complex and proving difficult to integrate within large corporates and that their (KM units) existence are less pressing (to implement/consider) than the core business objectives at hand, are opposite to the ANT principle of generalized symmetry. This principle assumes that all actors to the network are of equal importance, be they human or technological in nature. Therefore, these views reject this principle and regard knowledge (and the management thereof), which is an actor, and also forms part of the IT services Industry network (Figure 2), inferior. This is of course without the consideration that, should this principle be abandoned, the solid, most required network aimed at addressing the KM issues in the IT services industry cannot be achieved. Then, it is only until the value and importance of all actors within the IT services sector network is appreciated, that the sturdiness that is required can steer efforts in addressing the KM issues.

5.3.5 Knowledge Management Practice/ Culture Awareness

This section sought to assess the extent to which the management of knowledge was actively practiced and whether KM was reduced to a mere paper-based concept, rather than being a model that could influence business operations and decision making within organizations. Also, the aim was to establish how organizations were performing in promoting innovation through their employees' ability to produce new ideas and efficient solutions as well as gaining the insight on how the practice of KM was conducted, particularly regarding the issues of enforcement and monitoring.

Interestingly, the majority of respondents cited satisfactory levels of organizational support for being innovative and coming up with new, efficient solutions through the formation and promotion of communities of practice, amongst others. Remarkable however, is the use of a variety of measures in ensuring that the KM practices, particularly in the area of protecting the organizational IP are appreciated and effective. In terms of this issue of investigation, the overall findings are indicative of a reasonable level of KM being practiced in these organizations, even though it is not always deliberate or knowingly done. In instances where there are healthy practices and an appetite to share, cultivate and protect knowledge, there will always be the rewards (which these organization can benefits from) of high levels of competitiveness, motivated and learning employees and knowledge that is carefully retained within the institutions. Like the ANT translation of mobilisation, employees are able to capture each other with interest (during in-house trainings). These employees remain loyal to the network, which subsequently remains solid and can easily promote addressing the key aims and objectives that it sought to do.

5.3.6 Development of Critical Information Technology skills

Knowledge workers are by far the most critical carriers of the intellectual properties of organizations. As such, the need for continual development of these workers cannot be left unattended especially in the rapidly changing technological markets (Wang & Noe, 2010). To gain maximum benefit of their experiences, beliefs and understanding, knowledge workers' skills should be kept up to date and contribute to the competitiveness of their organizations. That being the case, this section sought to explore the rate of the ongoing development of the knowledge workers once in employment.

The question was only posed to the IT professionals (developers and database administrators). Overall, the majority of IT professionals working for service clients organizations indicate having had received additional developmental (outside) training since employment by their respective organizations. The service providing organizations still prefers the in-house training (peer-peer) in contrast to the clients' organizations. In-house training afforded the trainees a first-hand opportunity to obtaining the

organizations' know-how. Obviously, those who had never received any form of training were at a disadvantage because they cannot really add much more value in their respective organizations without first gaining the competency in the insider trade norms of organizations. This situation was passed on as a weakness in the organizations' efforts to remain competitive in their respective markets. Therefore, according to the ANT principles, the interests of all actors should be renewed/ lobbied constantly to ensure organizational goals are achieved.

5.4 Conclusion to Chapter Five

In closing, the study sought to explore and investigate the dynamics of Knowledge Management in the IT services outsourcing industry as well as the underlying motives on the findings. To understand these dynamics, areas of investigation such as KM status, existence of KM departments, best practices, and culture were pivotal. Whilst Knowledge Management in essence does not only refer to the use of technology (database, computers etc.) but it also encompasses humans, culture etc, all of which are either technical or human in nature. To address these and the complexity both human and no-human actors posit, the Actor Network Theory as a theoretical lens was adopted to explore and analyze these KM dynamics.

The findings revealed that the implementation of Knowledge Management best practices in the IT services industry is somewhat imbalanced between the IT services clients and the services provider organizations. In terms of intellectual property protection, the IT service providers appear to have more controls in place than the clients' organizations. On the other hand, the industry seems to agree on outsourcing being pivotal for both clients and service providers, with financial benefits being one of the many factors cited. However, the findings, in the section dealing with considerations of KM present a concern on the earlier cited significance of outsourcing, since some actors cite dissatisfaction over the lack of representation during the appointment of the contractors.

Of concern again, was the discovery of the prevailing existence of KM departments championing the implementation of KM processes in the service provider organizations to a greater extent than in clients' organizations. However, the clients' situation was

mitigated by findings that, although such units were not existent, participants were aware of intentions and efforts currently underway in establishing these units/ departments in the clients' organizations. The awareness and cultural practice aspects were overwhelmingly appreciated by participants on all fronts (clients and service providers), who acknowledged and appreciated the space provided to be innovative, which allowed them to come up with new ideas and solutions for their respective organizations. Lastly, in instances where service providers preferred in-house trainings to advance the skills of their knowledge workers, clients' organizations resorted to the use of external development programmes for their IT professionals, which by itself is also another form of outsourcing, but in this case, for skills development. The following chapter, chapter 6 renders a conclusion to the study and also presents the recommendations for each area of investigation explored.

CHAPTER SIX

6. CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter draws on the findings from the previous chapter to present conclusions and set of recommendations for each of the issues of investigation. It opens by providing an outline of the summary of the thesis in relation to the Knowledge Management (KM) dynamics in the IT services outsourcing industry. Further this section reflects on the research problem and objectives as well as the sample, questions, methodology and the application of the theoretical framework for analysis.

Following that is the summary of the findings and recommendations, and the conclusion of the chapter thereafter. Whilst sub-section 6.4.1 addresses the limitations of the study, the suggestion on the possible future research concludes the thesis in sub-section 6.4.2.

6.2 Summary of Thesis

The introductory chapter of this thesis (chapter one), outlines the overview and background to the research study. The problem of the study is that whilst the IT services industry seems to understand the benefits of Knowledge Management, this understanding is not obvious in the industry's implementations of KM resulting in, amongst others, operational issues and lawsuits which could have been avoided with adequate and proper KM adoption and implementation strategies. On this topic, the literature offers best practices, as adopted by some multi-national organizations, and the conversion of knowledge from one form to another, to produce ease of sharing, further advancement (innovation), sufficient planning, controlling and mostly the use of knowledge. This study therefore, seeks to explore the dynamics of Knowledge Management implementations in this crucial industry (IT services) by gaining insight into the best practices, KM cultural issues and (non)existence of KM departments within organizations amongst others.

In order to conduct this research then, the critical-interpretive paradigm was chosen as being the most relevant, considering its alignment to the interrogation of the research study's subjective nature, which required some interpretation and meaning to understand the KM dynamics. This approach then, aided the researcher in engaging with the participants from both services offering and consuming organizations, who are representatives of both the public and private sectors. Because of the subjective nature of the study, the qualitative research method was employed, using purposive sampling to select the organizations (service providers and clients) and their respective participants. In total, 2 public and 1 private sector organizations were selected as client organizations and 3 private organizations were chosen as IT service providers. These six (6) organizations provided the 21 respondents who participated in this research. These included IT managers, IT professionals (administrators and developers) human resource managers and knowledge managers amongst others.

A set of questionnaires was then prepared for each of these participants. The questions related to each of the issues of investigation as presented in the sampling table (Table 1). The data collection technique used was that of interviews. However, because the raw interview data was not meaningful unless interpreted, content analysis, which is appropriate for the analysis of written text or transcripts of recorded interviews, was then deployed. To aid the analysis process, the Actor Network Theory was also employed as the lens through which the results were analyzed. This framework encompasses principles and assumptions which are instrumental in determining whether the results were ideal or not, informing on their consequences and underlying implications. The findings as discussed in chapter 5 were then presented according to each issue of investigation. On the basis of these findings, the recommendations were then expressed.

6.3 Summary of Findings and Recommendations

According to the literature, Knowledge Management as a phenomenon encourages the promotion of sound management of organizations' IP, referring to the protection, nurturing, controlling, timely and appropriate dissemination of knowledge assets amongst others. Since the research was aimed at exploring KM dynamics by studying

the status of KM implementation, the existence of formal KM departments in organizations, the key issues and their causal factors, then the following table, presents a summary of the findings, explanations and corresponding recommendations. The table outlines the issues of investigation and splits the findings, explanations and corresponding recommendations between the client and service providing organizations.

Table 8 : Summary of Findings and Recommendations

Issue/ area of Investigation	IT Services Clients Organizations			IT Services Provider Organization		
	Summary of Findings	Explanations	Recommendations	Summary of Findings	Explanations	Recommendations
Knowledge management Best Practices	<ul style="list-style-type: none"> In terms of IP protection efforts, there is little evidence of implementation control measures Minimum use of security initiatives IT professionals offered additional skills development since employment (in-house) 	<ul style="list-style-type: none"> Lack of monitoring small internal capacity for hand over processes Use of contracts, policies and process {for the minimum no that protects their IP} Keep up with technological change Work output improvement 	<ul style="list-style-type: none"> Formulation of a proper and clear KM strategy Strategy should include monitoring of KM efforts 	<ul style="list-style-type: none"> In terms of IP protection efforts, SPs seem to have more controls in place Skills development offered to knowledge workers Presence of varying mix of security initiatives 	<ul style="list-style-type: none"> Advantages the organization in the competitive markets Contracts, policies and tools/ process 	<ul style="list-style-type: none"> To continue implementing Best Practices in all divisions of the organization
Status of KM Implementation (outsourcing) – retention efforts	<ul style="list-style-type: none"> Outsourcing is recognized as a pivotal component in the IT services industry No wide presentation of all stakeholders during the appointment of contractors Tender process the most preferred appointment method 	<ul style="list-style-type: none"> Skills scarcity amongst clients organizations alarming (major factor) Cost efficiency Core competencies Selection process limited primarily to management 	<ul style="list-style-type: none"> Succession plans should be in place to curb skills exit Implement complete representation of all stakeholders during appointment of contractors. 	<ul style="list-style-type: none"> Likewise, outsourcing is recognized as a pivotal component by SP* Service Providing organizations also sub-contract to other SP* SP organizations reliant of sustainable relationships/ past partners 	<ul style="list-style-type: none"> Cost efficiency Core competency Trust worthy and knowledge of their capabilities 	<ul style="list-style-type: none"> Reliance on historic relations alone is not sufficient – implement clear selection criteria and processes Protection of internal and clients' IP against sub-contractors is also key
Existence of KM units/ departments in organizations	<ul style="list-style-type: none"> Inadequate existence of the KM departments Set-up of KM units in progress 	<ul style="list-style-type: none"> KM is just a concept – organizations are bigger than it Difficult to integrate 	<ul style="list-style-type: none"> Ensure complete representation of all stakeholders during implementation of these units Complete integration of units to all functional units, not just IT Define clear measurable goals for the KM department 	<ul style="list-style-type: none"> KM dedicated departments are most common 	<ul style="list-style-type: none"> Ease of KM processes deployment Promotion of innovation and IP protection and timely dissemination of knowledge Competitive advantage 	<ul style="list-style-type: none"> Integration should not be limited to the IT departments alone, but to all organizations' units Define clear measurable goals for the KM department to ensure

KM awareness/cultural practices	<ul style="list-style-type: none"> Promotion of innovation and creation of new ideas moderate 	<ul style="list-style-type: none"> Time restrictions Immediate benefits unrecognizable 	<ul style="list-style-type: none"> Dedicate time and resources for knowledge workers to discover new methods of doing things Implement criteria for deciding which proposed ideas can be evaluated prior to investment 	<ul style="list-style-type: none"> Moderate promotion of innovation and development 	<ul style="list-style-type: none"> A lot of time dedicated to projects generating profit 	<ul style="list-style-type: none"> Dedicate time and resources for knowledge workers to discover new methods of doing things Implement criteria for deciding which proposed ideas can be evaluated prior to investment
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6.3.1 Knowledge Management Best Practices in the IT services industry

One of the key assumptions of the Actor Network (ANT) framework is that all network-actors are equal and none has dominance over the other. For the actor-network (IT services industry) to remain stable and address key concerns regarding KM implementation therefore, all industry stakeholders are equally required to join forces and ensure that all KM implementation discrepancies are adequately addressed. In this case, the responsibility of protecting organizational assets does not only lie with the service providers, but also with the clients.

6.3.1.1 Recommendations on Knowledge Management Best Practices in the IT services industry

As a recommendation then, the client organizations should ensure that there is a clear and proper KM strategy addressing amongst others, the harvesting of knowledge, inventory/ recollection of knowledge assets and most importantly knowledge protection. For example, client organizations should not solely rely on the integrity of the service provider and the goodwill of their internal workers, but they should ensure ongoing compliance and monitoring of the set KM principles and likewise have a clear set of corrective actions, should a case of non-compliance occur.

Similarly, in a case of service providers, who have a better appreciation, than their client, of their knowledge assets, by their apparent protective stance, should ensure that remedial measures are in place in cases of non-compliance. In this case, service provider organizations should be able to react to non-compliance issues within the frames of these establishes measures. For instance, where one of their employees has gained access at the client's organizational sensitive information, they should know how best to respond to that, and ensure that the well-being (competitiveness) of their client is not in any way compromised. This could include informing the client about the vulnerabilities identified in their operations and even offering suggestions on how best to address them.

6.3.2 The Status of Knowledge Management Implementations in the IT services sector

From the analytical point of view as informed by the framework, the actors should, during the translation process, be very closely linked by a common set of interests ensuring that they are all working together towards the same goals, and are able to interest/ recruit new actors to the actor-network. In the case of the IT services industry, this situation appears to exist since both service providing and services-consuming organizations are appreciative of outsourcing as a pivotal component in this industry.

Within these findings, it is highlighted that the service providers likewise rely on other external parties (contractors) to fulfill some of their contractual obligations to their clients. This appears to be pertinent in instances where they lack the required skills in-house and for financial reasons too. Whilst this view on outsourcing is generally good for the industry, the client's organizations appear to be primarily driven by the lack of skills in-house. As if that is not alarming enough, the client organizations leave the responsibility of the contractors' appointment to senior management alone, excluding the professionals from the process.

Whilst client organizations are seeking to address skills shortage by appointing contractors, these efforts will be fruitless if the in-house professionals (system developers and DBAs), are excluded from the negotiations since these professionals are prone to rejecting such efforts by retaliation and non-cooperation with contractors. Such actions can only make the already bad situation, worse. In this case, the framework (ANT) clearly indicates that the consequences of silos and exclusion of other actors from the key decision making processes will be dire, rendering the actor-network unstable and weakening its capability of addressing its objectives. On the subject of the contractor appointments the client organizations in the public sector were found to be heavily reliant on the tender processes, deployed with the aid of the PFMA framework, whilst the service providers relied on using contractors they already had had already worked with in the past.

6.3.2.1 Recommendations on the Status of Knowledge Management Implementations in the IT services industry

As a key component and appreciated by both sectors (service providers and client organizations), outsourcing processes cannot be limited to the elite in the organizational structures, but should be appreciated by all. In the case of the client organizations, there should be a wider representation of all stakeholders during the appointment of contractors with clear and precise selection criteria. According to the ANT it is only when similar interests exist that the actor-network can be sustainable and addresses the KM implementation shortcomings. The actor network will not be sustainable if all actors pull in different directions with varying interests. Likewise, in a case of service providing organizations the selection of these key stakeholders (sub-contractors) cannot be left to chance, it is important to develop and implement clear and rigorous selection criteria against which potential subcontractors can be assessed and selected. Whilst trust and past experiences may be good on some fronts, it (the selection of service providers) cannot simply be a process left to reliance on good past relations, but should have clear guidelines against which these service providers will be judged, considering that the protection of the IP in question is not only limited to their own, but also that of their clients.

6.3.3 The existence of Knowledge Management departments/ divisions in IT services organizations

From the perspective of the ANT framework, during the translation process the obligatory passage point (OPP) may gain lobbyists who will recruit new network-actors on their behalf. The literature has presented the Knowledge Management departments in organizations as the champions of sound KM planning, organizing and of knowledge creation and dissemination processes. It proposes that the process of managing knowledge and its processes cannot be left to chance, but requires a custodian with all the right and influential attitudes in the form of dedicated KM units/ departments, who are able to duly influence other network-actors. In the case of the IT service industry however, these departments are more common in the service providing organizations than the client organizations, with the implication that sound KM practices and

implementations in the client organizations are regrettably inclined to be lacking, resulting in operational failures and compromised competitiveness.

6.3.3.1 Recommendations on Knowledge Management departments/ divisions in the IT Services Industry

Therefore, in ensuring that the value of the KM departments is fully appreciated across the IT services sector, it is recommended, in the case of the IT services client organizations that KM should be viewed as more than just a paper-based concept. Management on all fronts is recommended to study and understand KM and its benefits and to plan for its full integration in the organization. Where some participants reported that it was difficult to incorporate KM in their organizations, management should learn of those issues (obstacles) and seek appropriate and adequate means of addressing them. Most importantly, these efforts should, for both sectors (client and service provider organizations), be collective, so that all levels of the organizations' structures can appreciate all the paybacks these departments have to offer.

Because an IT department alone does not constitute the entire organization, any KM division/ department should not be associated exclusively with an IT divisions, but with all the functional divisions of the organization. For instance, all KM departments should be very closely incorporated into the finances, procurement and decision support structures of the organizations, amongst others. The processes used for drafting and spending, on the budget allocated to IT divisions, involve other departments and likewise, the association of the KM department such processes front can ensure that sound procurement processes, particularly in the appointment of contractors, are rigorously adhered to.

On the other hand, they too (KM departments) should not exist with no clear mandate, but they should have measureable objectives and targets for which their performance and value to the broader organization can be quantified. They should, amongst others, be tasked with ensuring the ongoing competitiveness of the organization, by first identifying all organizational assets (and their value), their protection and nurturing to ensure that the organization remains abreast with all markets developments.

6.3.4 The cultural considerations of Knowledge Management in the IT service sector.

The literature clearly points out that, KM should not be reduced to just a paper-based concept but it is much more of a cultural issue (social) than anything else (Dalkir, 2005). This implies that, for sound knowledge management implementations to be existent, the organizations cannot rely merely on processes, procedures, tools and technology, amongst others, and ignore the human factor. The humans and their cultural perception of the organization is a major part of making KM succeed or fail. So, in the case of the IT services industry, the encouragement of innovation and further development is at a moderate level with participants citing little time allocation for finding new ways of doing things because the main focus is on immediate profit generating projects. It seems that organizations are confided by their profit-making efforts to the exclusion of searching for better methods of doing things efficiently and effectively, which might in turn, increase their profits.

6.3.4.1 Recommendations on the cultural considerations of Knowledge Management in the IT services sector

To make amends in relation to the cultural considerations of KM in the IT services sectors, organizations (clients and service providers) are encouraged to provide knowledge workers with time and resources to make improvements to the current processes. Once the processes are improved and efficient, they can accelerate organizational growth (profits) and competitiveness. Organizations should of course not invest in every idea that is deemed innovative and alleged to benefit them, but they should establish a set of restrained criteria against which all ideas will be judged before further consideration.

For example, the organization can draw up and implement a set of criteria that evaluates the value of developing/ advancing the 'innovative idea' further for market use against the projected value (profits/ rewards) the organization it will gain from such an idea before injecting any investment. These criteria should be approved by a wide representation of stakeholders within the organization, to avoid approval on the basis of prejudice, and to make sure that the risks, process and projections are understood by

all. Also, to avoid 're-inventing the wheel', these innovations should be clearly documented and recorded, address a particular issue/ process improvement and always be referred to when evaluating newly proposed ideas, in order to eliminate fruitless expenditure in the form of monetary value, time and resources.

6.4 Conclusion

In conclusion, this thesis sought to study the KM dynamics, including issues associated with, and the status of, KM implementation in the IT services outsourcing industry, amongst others. In terms of the implementation of KM best practices, the findings reveal that service provider organizations are better at protecting their intellectual property than their counterparts, the client organizations, although the clients organization do boast of some erratic measures of their own.

With reference to KM implementations, particularly in the outsourcing space, both sectors agree that outsourcing is definitely a value adding component in their operational spaces. However, a finding that does not impress is that some client organizations still prefer restricting the selection process of the external contractors to management alone with no input from other stakeholders, like IT professionals amongst others. Service provider organization on the other hand; only rely on past relations to appoint contractors, with no clear definition of the selection matrix, which is something the ANT framework cautions against for the well-being of the actor-network.

In terms of the KM champions, in the form of Knowledge Management departments (units), it seems that only service provider organizations appreciate their existence and value to the broader organization. These units are more often present in service provider organizations than in client organizations. Promisingly though, some client organizations cited that the value of these departments was in fact sought after and efforts were underway to establish and ensure complete integration of KM departments into their respective organizations.

In the case of the KM cultural considerations, they were found to be somewhat mediocre (in terms of providing conducive innovative workplaces), with participants citing that profit-making projects are always of prime importance, whilst innovation,

further research and the development of processes suffer from restricted time and resources allocation. In this area then, organizations were recommended to allocate time and all necessary resources required for the promotion of innovation and advanced research. In closing, KM dynamics seem not to be the same throughout the IT services outsourcing industry, with some evident improvement in the service providers' sector and still somewhat worrying in the clients' sector.

6.4.1 Limitation of the study

The study of Knowledge Management in the IT services Industry is socio-technical in nature, meaning that it includes both humans and technology. Therefore, before any interviews and engagement with the participants from the sampled institutions could take place, approvals had to be sought and granted. Whilst this was time consuming in terms of advancing the research, some selected organizations (initially preferred) declined to participate in the study citing the protection of their intellectual capital and public image from their competitors. As a result, the preferred organizations had to be replaced with other companies giving a similar services offering, in the same industry.

6.4.2 Consideration for future research

The sampled organizations in this study were primarily those who have a footprint in both Gauteng and Western Cape provinces, this suggests that the viability of a similar study should be explored in other provinces. This could assist in comparing and understanding and adoption the KM dynamics in the two power provinces, with that of the rest of the country. Whilst this study was limited to exploring the KM dynamics, another future research should consider the relation of KM practice and adoption to the academic profiling (levels of education) of IT professionals in both client and service provider organizations of the IT services industry. In addition, possible future research could be in areas of the organizations' demographics in relation to the implementation of KM. This could also be expanded to include not only the IT services providers, but the clients too.

LIST OF REFERENCES

ABSA, 2012. http://absa.investoreports.com/absa_iar_2011/absa-at-a-glance/our-accolades/ [20 April 2015]

Accenture, 2012a. Accenture People: Connecting Colleagues online for High Performance <http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-People-Connecting-Colleagues-Online-for-High-Performance.pdf> [13 May 2012]

Accenture, 2012b. <http://www.accenture.com/za-en/company/Pages/index.aspx> [20 February 2012]

Adachi Y., 2011, An Examination of the SECI Model in Nonaka's Theory in terms of the Team Linguistic Framework, Department of Global Policy Management and Communications, Yamanashi Prefectural University

Al-adaileh, M.R., Dahou, K., Hacini, I., 2012. The impact of knowledge conversion processes on implementing a learning organization strategy, *The Learning Organization*, Vol. 19 Iss 6 pp. 482 – 496

Anand, S.K., 2007. Information and Knowledge Management : Role of Knowledge Audits, Benchmarks, Maturity Measures in Knowledge Management. , PP.8-10.

Arling, A.P., Chun, W.S., 2011. Facilitating new knowledge creation and obtaining KM maturity, *Journal of Knowledge Management*, Vol. 15 Iss: 2, pp.231 - 250

Asoh D., Belardo S. & Neilson R., 2002. Knowledge Management: Issues, Challenges and Opportunities for Governments in the New Economy. School of Information Science and Policy, SUNY/Albany, NY 12222

Austin, J., and Hughes D., 2012. *Information Technology*. Encyclopedia of Business and Finance. Ed. Burton S. Kaliski. Vol. 2. New York: Macmillan Reference. USA

Babbie E. and Mouton, J. 2001. *The Practice of Social Research*. OUP, Cape Town, SA.

Babbie, E. 2007. *The practice of social research*. 11th Edition. Belmont, CA: Thomson Wadsworth

Babbie, E. 2010. *The practice of social research*. 12th Edition. Belmont, CA: Thomson Wadsworth

Babbie, E. 2011. *The basics of social research*. 5th Edition. Belmont, CA: Wadsworth

Bam, P.T and Mlitwa N. 2009. *ICT resources and the quality of education amongst disadvantaged schools in the Western Cape*. *Information Technology: BTech research advance*. Faculty of Informatics and Design, Cape Peninsula University of Technology. Pp. 3-16.

Bates, T., 2005. Technology e-learning and Distance Education. 2nd Edition. New York, Routledge.

Berntsen, H.O., & Seim, R. 2007. *Design Research through the Lens of Sociology of*

Technology http://www2.uiah.fi/sefun/DSIU%20Berntsen%20_%Design%20research.pdf [14 May 2013]

Bhattacharjee, A., 2012. Social Science Research: Principles, Methods, and Practices. USF Tampa Bay Open Access Textbooks Collection. Book 3. http://scholarcommons.usf.edu/oa_textbooks/3 [12 September 2013]

Bird, P., 2009. *Methodological Issues in a study of Mobile Learning as a Disruptive Innovation: Actor Network Theory and Case Study Unit Analysis in a Qualitative study of three mobile Learning Projects in UK Higher Education*, Manchester Metropolitan University Business School

Byosiere, D.P., Luethge, J. 2008. Knowledge domains and knowledge conversion: an empirical investigation", *Journal of Knowledge Management*, Vol. 12 Iss 2 pp. 67 – 78

Callon, M. 1986. Some Elements of Sociology of Translation: *Domestication of the Scallops and the Fishermen of St. Brieuc Bay*. In *Power, Action, and Belief: A New Sociology of Knowledge*. Ed J. Law. London: Routledge & Kegan Paul.

Callon, M., 1987. Society in the Making: *the Study of Technology as a Tool for Sociological Analysis*. In W. E. Bijker, T. P. Hughes and T. J. Pinch (Eds.) *The Social Construction of Technical Systems: New Directions in the Sociology and History of Technology*. Cambridge, Mass. and London, MIT Press: 83-103.

Castro, D., 2009. Atlanta Conference on Science, Technology and Innovation Policy The Role of Information Technology in Medical Research The Role of Information Technology in Medical Research.

CGAP, 2011 Technology Program Country Note: South Africa <http://www.cgap.org/sites/default/files/CGAP-Technology-Program-Country-Note-South-Africa-May-2011.pdf> [05th June 2013]

Cho, Y., & McLean., G.N. 2009. Successful IT start-ups' HRD practices: four cases in South Korea, *Journal of European Industrial Training*, Vol. 33 Iss: 2, pp.125 – 141

Chong, AL., Chan, T.S., Ooi, K.B., Sim, J.J. 2011. Can Malaysian firms improve organizational/innovation performance via SCM?, *Industrial Management & Data Systems*, Vol. 111 Iss: 3 pp. 410 – 431

Clarke, R.J., 2005. Research Models and Methodologies, HDR Seminar Series, Faculty of Commerce, Spring Session, 2005 <https://business.uow.edu.au/content/groups/public/@web/@commerce/documents/doc/uow012042.pdf> [04th July 2013]

Committee on Enhancing the Internet for Health Applications: Technical Requirements and Implementation Strategies, Computer Science and Telecommunications Board, National Research Council, 2000, *Networking Health: Prescription for the Internet*, National Academies Press

Connaway, L.S., Powell, R.R., 2010. *Basic Research Methods for Librarians*, 05th Edition, Greenwood Publishing Group, US

Cressman, D., 2009. A brief overview of Actor-Network Theory: Punctualization, Heterogenous Engineering and Translation, Centre for Policy Research on Science and Technology, School of Communication, Simon Fraser University

Cronquist, B., 2003. Enabling Knowledge-Workers' Commitment to Organizational Intelligence Activities

Dalkir, K. 2005. *Knowledge Management in Theory and Practice*. Elsevier Butterworth–Heinemann, McGill University <https://dianabarbosa.files.wordpress.com/2009/03/knowledge-management-kimiz-dalkir.pdf> [02 April 2015]

Daniels, R.C., 2007. *Skills Shortages in South Africa: A Literature Review*. Development Policy Research Unit, Cape Town, 2007

Davenport, B.T.H., Prusak, L. & Webber, A., Working Knowledge : How Organizations Manage What They Know. , pp.1-15.

De Waal, M., 2012. Analysis: Gijima's Groundhog Years. Daily Maverick <http://www.dailymaverick.co.za/article/2012-05-19-analysis-gijimas-groundhog-years/> [02 March 2015]

DHA **see** Department of Home Affairs

DHA, 2014, Department of Home Affairs: Annual Performance Plan 2014-2015 http://www.dha.gov.za/files/DHA_APP_2014.pdf [20 January 2015]

Dimovski, V., & Penger, S. 2009. Creating The Knowledge Based Organization through Learning Implementation Framework: Conceptual Model of Slovenian Enterprises, Vol 3, Number 10

DOT **see** Department of Transport

DOT, 2013, National Department of Transport Annual Report 2012/ 2013, Vote 37 <http://www.transport.gov.za/Portals/0/Annual%20Reports/DoT%20Annual%20Report%20WEB.pdf> [20 January 2015]

Du Plessis, M., & Boon, J.B, 2004. *Knowledge Management in e-business and customer relationship management: South African case study findings*, International Journal of Information Management, 24, 73 – 86

Farsan M.E, Rizi, M.R, Azadi1 A & Aroufza S. 2013. Relationship between Knowledge Management and Organizational Learning among Physical Education Teachers. Department of Sport Management, Islamic Azad University, Mobarake Branch, Iran

Garmin, Online. 2012. http://www.garmin.co.za/garmin_maps.php [14 June 2012]

Gartner Inc, 2013. IT Glossary. Available: <http://www.gartner.com/it-glossary/it-services> (10 July 2015)

Gereffi, G & Fernandez-Stark, K., 2011. Global Value Chain Analysis, Center for Globalization,

Governance & Competitiveness (CGGC), Duke University Durham, North Carolina, USA

Gewald, H., 2010. *The perceived benefits of business process outsourcing*, *Strategic Outsourcing: An International Journal*, Vol. 3 Iss 2 pp. 89 – 105

Greve, N. 2014. CIPC launches JSE-based 'special service' for listed companies: Edited by: Chanel de Bruyn <http://www.engineeringnews.co.za/article/cipc-launches-jse-based-special-service-for-listed-companies-2014-12-05> [02 March 2015]

Hancock, B., 1998. *Trent Focus for Research and Development in Primary Health Care: An Introduction to Qualitative Research*. Trent Focus

Hargreaves, A., 2005. *Teaching in the Knowledge Society*. pp.1-14.

Heeks, R., & Seo-Zindy, R. 2013. *ICTs and Social Movements under Authoritarian Regimes: An Actor-Network Perspective*, Centre for Development Informatics, IDPM, University of Manchester, UK

Hodge & Miller, 1997. <http://www.intoweb.co.za/info/et-it-industry.html> [09 August 2013]

Hu, D., 2011. *Using Actor Network Theory to Understand inter-organizational Network Aspects for Strategic Information Systems Planning*. Unpublished Master Thesis, Business Information Technology, School of Management and Governance, University of Twente, The Netherlands

Information Technology Service Management Forum (ITSMF), 2007. *An Introductory Overview of ITIL-V3: A high level overview of IT Infrastructure Library*, itSMF, UK

Irvine, H., & Deo, H., 2006. *The power of the lens: a comparative analysis of two views of the Fiji Development Bank*", *Accounting, Auditing & Accountability Journal*, 19:2, 205 – 227.

Islam, M.A., Kumar, N., Ikeda, M. 2015. *Knowledge management for Service innovation in academic libraries: a qualitative study*. *Library Management* 36:1/2, 40-57.

Jashapara, A. 2004. *Knowledge Management: An Integrated Approach*, Pearson. UK

Kirendharen, NP. 2012. *e-Government in South Africa: Predictors to Failure and Success*. Faculty of Engineering and the Built Environment, University of Witwatersrand. JHB Master of Science in Engineering Unpublished Thesis

Kraal, B.J. 2007. *Actor-network inspired design research: Methodology And reflections*. In *Proceedings International Association of Societies for Design Research*, Hong Kong.

Kruger, N & Johnson, R.D., 2009. *Determining the Value of Knowledge Management: A South African Perspective*. *GlobDev* 2009. Paper 3.

Kundra, T & Sharma, A. 2014. *A look on 3G Mobile Services*, *International Journal of Research*, Vol 1, Issue-11 December 2014

Latham, B., 2007. *Sampling: What is it? Quantitative Research Methods*, ENGL 5377 [http://webpages.acs.ttu.edu/rlatham/Coursework/5377\(Quant\)\)/Sampling_Methodology_Paper.pdf](http://webpages.acs.ttu.edu/rlatham/Coursework/5377(Quant))/Sampling_Methodology_Paper.pdf) [08 March 2012]

Latour, B. 2005. Reassembling the Social – An introduction to Actor-Network Theory. Oxford University Press

Law, J. 1992. Notes on the Theory of the Actor-Network: Ordering, Strategy, and Heterogeneity. *Systems Practice*. 5(4) p. 379 – 394

Lee K.E., 2012. Higher Education Expansion and Economic Growth in Japan and South Korea. Unpublished PhD Thesis, University of Pittsburgh

Liao S. 2009. The Relationship among Knowledge Management, Organizational Learning, and Organizational Performance, Graduate School of Management Sciences, Tamkang University, Taiwan

Liu, Z., 2004. The evolution of documents and its impacts, *Journal of Documentation*, Vol. 60 Iss 3 pp. 279 – 288

Llewelyn, S. 2007. In Bryman, A. (Ed). *Qualitative research 2 volume II – Quality issues in qualitative research*. 261–280. Thousand Oaks: Sage.

Lunt, B.M., Ekstrom, J.J. & Lawson, E., 2008. *Curriculum Guidelines for Undergraduate Degree Programs in Information Technology*. , pp.1-139.

Lytras, M.D., Russ, M., Naeve, A. 2008. *Knowledge Management Strategies: A Handbook of Applied Technologies*, IGI Publishing, New York

Madue, SM., 2007. *Public Finance Management Act, 1 of 1999 – A compliance Strategy*, Politeia, vol 26 No 3, Unisa Press

Mahring et al, 2004 – four moments

ManPower Group, 2012, *Align Workforce Strategies to achieve Business Strategy: Identify the talent demanded by business tomorrow, today*. Milwaukee, USA

Marambire, T., & Mlitwa, N. 2010, *ICT skills shortages and related solutions among career-seeking women in South Africa*, Faculty of Informatics and Design, Cape Peninsula University of Technology, 2010, Cape Town

Massingham, P. 2014. An evaluation of knowledge management tools: Part 1 – managing knowledge resources, *Journal of Knowledge Management*, Vol. 18 Iss: 6, pp.1075 - 1100

Mchunu N, 2013. *Adequacy of health information systems to support data quality in the public healthcare sector, in the western cape, South Africa*. Unpublished Masters Dissertation, CPUT

McKinney, M., 2012. *Human Genome Project Information*", *Reference Reviews*, Vol. 26 Iss: 3, pp.38 – 39

Medscheme, 2012. <http://www.medscheme.com/products-and-services/health-administration/> [20 June 2012]

Mlitwa N. 2011. *Integration of e-Learning systems into Academic Programmes in Modern Universities. A South African Perspective*. South Africa, Cape Town:TVK eNNOVATIONS

Mlitwa, N., and Birch, D., 2011. *The role of intrusion detection systems in electronic information security: From the activity theory perspective*, Journal of Engineering, Design and Technology, Vol. 9 Iss: 3, pp.296 – 312

Mohlala, J., Goldman, G.A., & Goose, X. 2012. Employee retention within the Information Technology Division of a South African Bank. SA Journal of Human Resource Management/SA Tydskrif vir Menslikehulpbronbestuur, 10(2), Art. #438, 11 pages.

Mouton, J. 2001. *How to succeed in your master's and doctoral studies*. Pretoria: Van Schaik.

Naidoo, G., 2008. An overview of eGovernment Policy Initiatives in the South African Government, Computer Society of India, pp. 322 – 331 http://www.csi-sigegov.org/1/34_322.pdf,

Netswera, F.G., Rankhumise, E.M., Mavundla, T.R., 2005. Employee Retention Factors for South African Higher Education Institutions: A case study, SA Journal of Human Resource Management, 3 (2), 26-40

Neuman, W.L. 2006. *Social Research Methods: Qualitative and Quantitative Approaches*, 6th edition. USA: Viacom

Neuman, W.L. 2011. *Social Research Methods: Qualitative and Quantitative Approaches*. 7th Edition. Boston: Pearson.

Ngah, N.E., 2006., *GPS Technology: Optimizing Car Navigation*, Business Mathematics and Informatics,Vrije Universiteit Amsterdam

Nimmo, R. 2011, *Actor-Network Theory and Methodology: Social Research in more-than-human World*, School of Social Sciences, University of Manchester, UK

Nonaka, I. & Takeuchi, H. 1995, *The Knowledge Creating Company*, Oxford: Oxford University Press.

Nonaka, I., Toyama, R., Nagata, A., 2000. *A Firm as a Knowledge-creating Entity: A new perspective on the theory of the firm*. Japan Institute of Science and Technology, Japan

Oosthuizen, T.F.J. 2006. *Business Management: a Value Chain Approach*. 02nd Edition. Van Schaik, Pretoria

Oracle, 2012. Oracle Knowledge for Contact Center
<http://www.oracle.com/us/products/applications/knowledge-management/knowlg-contact-center-ds-1509260.pdf> [20 May 2013]

Parboteeah, P, Jackson, T & Ragsdell, G. 2010. Evaluating a Living Model of Knowledge Electronic Journal of Knowledge Management Volume 8 Issue 1 (pp129 – 138

Pempek, A.T., Yevdokiya., Calvert. A.L, 2009 College students' social networking experiences

on Facebook - Department of Psychology, Georgetown University, USA

Piccoli, G., 2012. Essentials of Information Systems for Managers, John Wiley & Sons, Inc.

Pratap, S. 2014. Towards a framework for performing outsourcing capability”, Strategic Outsourcing: An International Journal, Vol. 7 Iss 3 pp. 226 – 252

Rasoulinezhad, E. 2011. Measuring the Role of Knowledge Management Processes in the Commercial Banks of Iran. The Electronic Journal of Knowledge Management Volume 9 Issue 4 (pp353-364),

Rhodes, J. 2009. Using Actor-Network Theory to trace an ICT (Telecenter) Implementation Trajectory in an African Women’s Micro-Enterprise Development Organization, USC Annenberg School for Communication

Rodríguez, C., Jean Claude., C., Bohlin, E.B., 2004. Prospects beyond 3G, info, Vol. 6 Iss 6 pp. 359 – 362 <http://dx.doi.org/10.1108/14636690410568632> [02nd June 2013]

SAITR **see** South African Information Technology Reports

Sajeva, S. 2010, The analysis of key elements of socio-technical Knowledge Management System. Economics and Management, Kaunas University of Technology

SAPA, 2012. <http://businesstech.co.za/news/it-services/12832/ict-industry-sheds-jobs-despite-skills-shortage/> [15 July 2015]

Simplice A. Asongu, 2014, “The “knowledge economy”—finance nexus in SSA and MENA countries”, International Journal of Islamic and Middle Eastern Finance and Management, Vol. 7 Iss. 2 pp. 200 – 213

SKITR **see** South Korea Information Technology Reports

Smit, Cronje, Brevis, Vrba, (Eds) .2011. Management Principles: A contemporary Edition for Africa. Juta & Co. Ltd, 05th Edition Cape Town South Africa

Smith, J. G & Lumba, P. M. “Knowledge Management Practices and Challenges in International Networked NGOs: The Case of One World International.” The Electronic Journal of Knowledge Management Volume 6 Issue 2 2008, pp. 167 - 176

South Africa Information Technology Report (SAITR), Online, 2010.
<http://www.businessmonitor.com/it/southafrica.html> [02 March 2012]

South Africa Information Technology Report (SAITR), Online, 2012.
<http://www.businessmonitor.com/it/southafrica.html> [02 March 2012]

South Korea Information Technology Report (SKITR). Online, 2010.
<http://www.businessmonitor.com/it/southkorea.html> [15 March 2012]

- South Korea Information Technology Report (SKITR). Online, 2012.
<http://www.businessmonitor.com/it/southkorea.html> [15 March 2015]
- Stake, R.E. 2013, Multiple Case Study Analysis, Guildforce Press, NY
- Sungard, 2015. <http://financialsystems.sungard.com/Regions/Africa/solutions> [20 April 2015]
- Taylor, A. 2012. How The World Rates South Africa.
<http://www.southafrica.info/business/economy/globalsurveys.htm#it> [June 2012]
- Taylor-Powell, E., & Renner, M., 2003, *Analyzing Qualitative Data, Program Development & Evaluation*, University of Wisconsin-Extension
- Threatt, R. S. 2009. Facebook and the Ideal Social Market Place: A Study of The Contemporary Management Research. 83 Marketing Benefits of Social Media Practices. Unpublished Master's Thesis, University of Southern California, U.S.A.
- TomTom, 2013. <http://www.tomtom.com/howdoesitwork/> [20 May 2014]
- Turban, E., and Volonino, L, 2012. *Information Technology for Managers*, 08th Edition, John Wiley & Son, Asia
- Turban, E., Aroson, J.E., Liang, T., Sharda, R., 2007, Decision Support and Business Intelligence Systems, 08th Edition. Pearson Prentice Hall, New Jersey
- USCS, 2014. Information Technology Services. Service Definition Process. University of California Santa Cruz. <http://its.ucsc.edu/itsm/servicedef.html> [10 July 2015]
- Vorster, 2012. Absa To Continue Business with Gijima
[http://businesstech.co.za/news/general/7264/absa-to-continue-business-with-gijima/-Absa to continue business with Gijima](http://businesstech.co.za/news/general/7264/absa-to-continue-business-with-gijima/-Absa%20to%20continue%20business%20with%20Gijima) [20 February 2012]
- W.R. King (ed.), 2009. Knowledge Management and Organizational Learning, 3 Annals of Information Systems 4, DOI ,Springer Science Business Media, LLC
- Wang, S., & Noe, R.A. 2010. Knowledge Sharing: A review and directions for future research, Human Resource Management Review 20, 115-131. Elsevier
- Weber, L., 2007. Marketing to the social web. How digital customers communities build your business. Hoboken, NJ: Wiley.
- Welman, C., Mitchell, B. & Kruger, F. 2005. Research Methodology. 3rd Edition. Cape Town: Oxford University Press.
- Wessels, P.L., Grobbelar E, Mc-Gee, A., Prinsloo G.T.M. 2005. Information Systems in the South African Business Environment, 03rd Edition, Lexis Nexis, Butterworth
- Whelan, E., & Carcary, M., 2011. *Integrating Talent and Knowledge Management: where are the benefits?*, Journal of Knowledge Management, Vol. 15 Iss 4 pp. 675 – 687
- Wijers, G and Verhoef, D. 2009. IT Outsourcing, Contracting the Partner, 1st Edition, Van Haren

Publishing, Netherlands

Williams-Jones, B., & Grahan, J.E., 2003. Actor-Network Theory: A tool to support ethical analysis of commercial genetics testing. Centre for Family Research & Homerton College, University of Cambridge, UK

Yin, K.R. 2014, Case Study Research Design and Methods, 05th Edition, Sage Publications, Inc.

APPENDIX 1 APPROVAL LETTER TO CONDUCT RESEARCH AT DEPARTMENT OF HOME AFFAIRS



home affairs
Department:
Home Affairs
REPUBLIC OF SOUTH AFRICA

SECURITY CLASSIFICATION		PRIORITY	
Normal	X	Low	
Restricted		Standard	
Confidential		High	
Secret		Very High	X
Top Secret			

ENQUIRIES:	
Name:	X.S.X Mpono
Designation:	DD
Unit:	IT Contracts
Contact Numbers:	
Tel:	(012) 406 2761
Fax:	(086) 668 2061

File Number:

SUBJECT: REQUEST FOR AUTHORISATION TO GRANT LESLEY MATSHWANE INTERVIEWS FOR PURPOSES OF HIS MTech STUDIES IN IT

DEPUTY-DIRECTORS GENERAL: IS AND HR

1. PURPOSE

- 1.1 To request the DDG's IS and HR to approve and authorise the issue of information to Lesley Matshwane for purposes of completing his thesis titled: Knowledge Management in the IT Services Outsourcing Industry: A case of Gauteng and Western Cape Provinces.

2. BACKGROUND AND DISCUSSION

- 2.1.1 Mr L.O Matshwane is currently registered with the Cape Peninsula University of Technology as an MTech student, with student number 205106757. See annexure A 1 –A3
- 2.1.2 Prima facie evidence that Mr Matshwane is indeed a student is attached as annexure B
- 2.1.3 Part of his studies involves completing a thesis and he has elected the Department of Home Affairs as the organisation which will be the focus of his case study.
- 2.1.4 It is because of the understanding that information cannot be shared randomly with members of the public that authorisation is sought.
- 2.1.5 The request from Mr Matshwane requires interviews that will be no more than 45 minutes with the following personnel. See
1. Director Information Technology or similar
 2. Human Resources Manager or similar
 3. Knowledge Manager or similar

SUBJECT: REQUEST FOR AUTHORISATION TO GRANT LESLEY MATSHWANE INTERVIEWS FOR PURPOSES OF HIS MTech STUDIES IN IT

- 4. Senior Developer or similar
- 5. Senior Database Administrator

2.1.6 Mr Matshwane is based in Cape Town for the duration of his studies but has proposed the 24th of May 2013 as a possible date, this date is not cast in stone but could be negotiated with him, bearing in mind that the due date for submission of his thesis is September 2013.

2.1.7 All communication between myself and Mr Matshwane has been attached and no commitment has been made so far, save indicating that I would consult with my principals and due authorisation would be granted at a higher level. See *annexure C*

2.1.8 The Director: IS Strategic Alignment will serve as the nodal point for all future engagements and communications with Mr Matshwane

3. POLICY / REGULATORY COMPLIANCE

N/A

4. FINANCIAL IMPLICAITONS

N/A

5. SUPPLY CHAIN MANAGEMENT IMPLICATIONS

N/A

6. LEGISLATIVE FRAMEWORK

Includes but not limited to the Promotion of Access to Information Act 2 of 2000, Protection of State Information Act 84 of 1982 and the Protection of State Information Bill which will replace the 1982 Act.

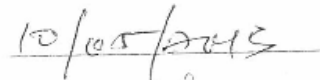
7. RECOMMENDATION

7.1 It is recommended that the DDG's approve and grant authorisation to conduct interviews and resultantly give information to Mr Matshwane for purposes of his MTech studies in IT.

Recommendation in **paragraph 7** approved, or



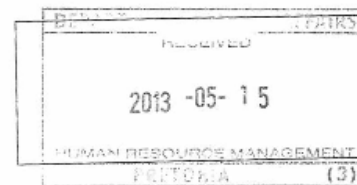
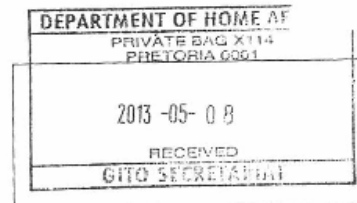
S. MMAKAU
CHIEF INFORMATION OFFICER
DATE:



A. Williamson
DDG: HR
DATE:



28/05/2013



APPENDIX 2 APPROVAL TO CONDUCT RESEARCH AT FUNDAMO

Matshwane, Ontiretse

From: Jordaan, Rikus
Sent: Friday, January 24, 2014 4:34 PM
To: Matshwane, Ontiretse
Subject: RE: Academic Research: Case Study, Fundamo

Hi,

As per our discussion the interviews of the employees is approved for use as part of your case study.

Regards,

Rikus Jordaan | Legal Counsel | Fundamo, A Visa Company | T +27 21 917 0278 | M +27 79 058 0689 |

From: MATSHWANE, ONTIRETSE
Sent: Tuesday, August 06, 2013 11:03 AM
To: Jordaan, Rikus
Subject: Academic Research: Case Study, Fundamo
Importance: High

Good morning, Rikus

Our yesterday's discussion regarding the use of Fundamo as a case study for my academic research hereby refers.

As indicated, I'm currently undertaking my Masters (IT) at the Cape Peninsula University of Technology (CPUT), and presently focusing on a study in the "Knowledge Management in the Information Technology Outsourcing services Industry". With this study, I aim to explore the Knowledge Management dynamics within the industry, by studying the issues, challenges, practice as well as awareness.

To that effect, I have selected to use your Fundamo, A Visa Company as a case study because of its leading role in mobile money fraternity as well as its strong presence and footprint both locally and abroad.

I kindly request the participation (of a (developer, HR partner, Development Manager)) in an interview to share their experiences in line to their respective role and responsibilities in the organization, challenges and opportunities as well as related matters on this subject. The interview will be limited to no more than 30 minutes, and the data thereof will solely be used for academic purposes. Special care in terms of confidentiality and disclosure of company name, participants etc will be highly upheld during the data collection, findings and reporting stages of the thesis (as prescribed by the Research and Ethics committee of the institution).

If you have any further questions, please do not hesitate to contact me.

Thank you once more.

Sincerely,
Matshwane, O.L

APPENDIX 3 SAMPLE OF SIGNED CONSENT FORM BY PARTICIPANTS



INFORMED CONSENT FORM MTech :Thesis

Dear Mr/Ms: S.M. SEKORELA

I am Lesley Matshwane, a student at Cape Peninsula University of Technology. I am researching on the dynamics of Knowledge Management implementation in the IT outsourcing services industry in both Gauteng and Western Cape provinces.

Purpose: This research examines the dynamics of Knowledge Management by exploring the KM best practices, the status of implementation, KM structures in organizations as well as KM awareness and practice. The aim is to understand the actual status, describe best practices, and interrogates the enabling and inhibiting factors in the sector, and explanations thereto. For example, the relationship between the IT services provider and clients' needs to be explored.

Benefits: This research is expected to give insight to both IT services providers and client on the management of their intellectual assets during the tenure of their contractual relationship. This will enable both clients and services providers to remain competitive and benefit from the services relationship without neither parties being left vulnerable towards another post the relationship.

Confidentiality: This study has been approved by an Ethics Review Committee of Cape Peninsula University of Technology, Faculty of Informatics and Design.

Your answers to the interview questions and the results will be kept confidential and will only be used for academic purposes. Some feedback however, will be used towards making both clients and IT services providers within the industry aware of the key benefits of Knowledge Management and the implementation thereto. Your name or details will not be used in any reports without your consent.

If you have any concerns you may ask. You may also contact the project promoter (supervisor) at Miitwan@cput.ac.za if you need additional clarity.

1

P.O. Box 1906 Bellville 7535 South Africa
086 123 2788

Certificate of consent:

I have been invited to take part in a research study on the dynamics of Knowledge Management implementations in the IT services outsourcing industry in the Gauteng and Western Cape provinces. I have read the foregoing information, or it has been read to me. I have had an opportunity to ask questions, and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a subject in this study and understand that I have the right to withdraw from the study at any time.

Name: SM SEGOBECA Signature: [Handwritten Signature]

Date: 2013-07-19

Name of Researcher L. MATSHWANE Signature: [Handwritten Signature]

Date: 19-07-2013



APPENDIX 4 SAMPLE OF INTERVIEW QUESTIONS FOR IT PROFESSIONALS

1. May I ask your name
2. If you can describe your organization, what does it do?
3. What is your title here at work (what exactly do you do)?
4. Which department do you fall under?
5. Who do you report to?
6. Please describe the make-up of the team you are part of?
7. What are the most important skills needed for the team to be functional?
8. What do you think is the significance of these skills in your environment (and industry)?
9. Would you say you are adequately skilled for this position?
10. Please elaborate how you have got skilled up for this profession
11. Was it easy to be appointed for this role, please outline the recruitment process?
12. Did you undergo any practical examination before being appointed?
13. Since the duration of your employment in the company, have you been to any training to up-skill yourself?
14. Did it improve your performance?
15. How does the organization up-skill its human resources, generally?
16. Is there a way you and/ the organization ensure that you are constantly developed for this position?
17. How is the organization's intellectual capital safe-guarded against loss and misuse?
18. How is the organization's knowledge assets (information, secrets) protected against loss and unintended recipients?
19. Does the organization ever need to outsource the services of external providers over and above the existing internal skills?
20. Why do you think that is the case?
21. What are the criteria used to select these service providers?
22. Does it impact on your performance directly – please elaborate how?
23. How long have the organization been using these service providers?
24. Who were used before this?
25. Why do you think the organization changed to these service providers?
26. Do you play any part in the sourcing of these service providers?
27. What is your role during the tenure of the relationship?

28. How is the relationship of your organization and the services providers during the services outsourcing duration?
29. How does the organization ensure that the safety of its knowledge assets is not compromised during the tenure of the relationship?
30. What do you think are reasons for the organization to outsource these services over and above your team?
31. Do you they provide the organization with added advantage?
32. How important do you think Knowledge Management is in your organization?
33. Is there a dedicated department for KM in this organization?
34. Why is that the case (in terms of significance)?
35. What exactly does such a department do in this organization (in terms of specific tasks)?
36. If existent, how does your unit relate to it, from project initiation with external vendors to completion?
37. Are there any issues with regard to the relationship?
38. How effective do you think KM practices are in the organization (please clarify)?
39. If non-existent, how is KM managed (if that effective, do you feel there should be a department dedicated to that role?)
40. How do you and team make sure that there is knowledge creation and sharing from the services providers?
41. Do you think the knowledge management is sufficient promoted within the organization?

APPENDIX 5 SAMPLES OF THE INTERVIEWS DATA TRANSCRIPTS

Name of Interviewer : Lesley Matshwane, Masters IT Student
Name of Interviewee : ██████████, Senior Manager Applications Support, ICT - CIPC
Place of Interview : Department of Trade and Industry Campus, Sunnyside Pretoria
Date of Interview : 19 July 2013
Subject : Knowledge Management in the IT services outsourcing Industry

Lesley Matshwane: Thank you for taking your time out sir, to participate in my study.

CIPC, SS – R : You're welcome.

Lesley Matshwane:

This study is in knowledge management in the IT outsourcing services industry. Good day, once again, and my name is Lesley. As we've discussed, I would like to reiterate that our conversation will be recorded for future reference and for academic evaluation, as well as proof that our meeting did take place. But before we proceed though, may I please ask you to introduce yourself in the following manner, your name and your position?

CIPC, SS - R 1: Thank you Mr Matshwane. My name is ██████████. I am the Senior Manager in CIPC, ICT department, responsible for Business Applications.

QUESTION:

Thank you Mr ██████████....if you could please describe the core objective of your department, of CIPC, what is it that CIPC is tasked to carry out?

CIPC, SS - R2: Well, the mandate of the CIPC as an organisation is to perform legislative administration that relates to companies, close corporations and intellectual properties, in brief. That is we are responsible for registering companies, for registering intellectual property, that is, trademarks, patents, copyrights, and patents.

QUESTION:

Okay, and your business unit, Business Applications. How does it conform to that mandate?

CIPC, SS - R 3: Business applications, it is one part of ICT. In ICT, we've got about four units, one that focuses on Infrastructure, one that focuses on Applications, that is the portfolio that I'm responsible for, and one that focuses on Enterprise Architecture, and the other one that focuses on Security.

QUESTION:

Okay, could you give me an outline of the makeup of your team?

CIPC, SS - R4: In the application team, we've got a group of maintenance. These are the people who look after the system on a day to day basis from a functional perspective. We've got system developers, these are the guys who write code and fix bugs. And we've got testers. These are the people who during the SDLC process, perform the testing, building the test case, and ensure that whatever that has been built has been thoroughly tested. And, we've got data base administrators, who are the custodians of the data and information in the organisation. We've got others who assist in this process, but that are outside the division, but they form a core of all the functions of what we do. We've got system analysts that sit at another division, but they come in when we need to do business analysis and architecture.

QUESTION:

Okay, thank you very much for that. What would you say are the key skills within your business unit that you've just outlined now?

CIPC, SS – R5: You need a number of skills in the development area. You need somebody who can write programmes, who can translate functional requirements into a machine language that can be understood and data can be processed. That is one area then. In the maintenance unit, people who know how the system functions, who will be able to help the end user on how to process the applications that they receive and how to assist in times where there are incidents of applications that are not running, or they are unable to perform their jobs.

QUESTION:

Okay, would you then consider these skills to be critical to your business unit?

CIPC, SS - R6: Yes, definitely. Because as a whole, the mandate of the organisation depends on an Information Systems for it to be able to administer the legislation....

QUESTION:

Thank you. Based on the objectives of your business applications business unit, would you, just on face value assessment, regard your candidates to be adequately skilled?

CIPC, SS – R7: You know, the ICT skills in the country or in South Africa as a whole, it is generally a scarce skill. When you've got the resources that are fully trained and experienced over time, usually you've got the guys who leave the organisation and join other organisations for lucrative deals. So, we always battle with the skill component in that regard, but the ones that we have currently, they have been with the organisation for some time, and they are fully skilled, and I will say, we are doing well in that regard.

QUESTION:

Okay and how do you counter the loss in terms of the specialised skills within the organisation? Like, if such circumstances were to surface, are there any business measures in place to counter that, or to retain those skills within your business unit?

CIPC, SS – R8: Well, we are working within the framework of public service in South Africa. So should we be in a position whereby certain skills are not on site, then we go onto the market to go and request the service providers outside to provide us with the service that contains that skill for a limited period of time, while the recruitment process is running. So you ensure a continued service delivery, while the skill in your organisation is not available at that point in time.

QUESTION:

Okay, so, but the department does not engage in any retention efforts for individual specialised candidates?

CIPC, SS – R9: Ja, no, we have a retention policy that we offer the guys if they are on their way out, and usually you will find that a higher percentage, in three out of five, the three guys will leave, the two guys will take the retention.

QUESTION:

Okay, are there any similarities to the reasoning, as to whether, as to why such offers would not be accepted?

CIPC, SS - R10: ICT is a very dynamic environment. You find that as an organisation, we haven't moved forward technologically at the pace in which technology moves. For example, the technology that we have might be providing us with what we want in terms of the business mandate. And the skills that the people have, they might be interested in working with the new technology. And we might not have that technology; we might not even have the plans to introduce that technology in three to five years. And this is some of the motivation of why you find that some of the guys are leaving, despite all our efforts to retain them, because they are interested in developing themselves in other or new technologies.

QUESTION:

Okay, so in terms of adopting newer technologies, are there any hindrances or impediments towards the adoption of such technologies, within the department?

CIPC, SS – R11: What we do, the business requirements will drive the solution that we will go and look for. As an organisation, we are not like an IT organisation. We are more business-like. We say this is our business; we are looking for a solution that will enable this business. We are not going out to look for a technology.

QUESTION:

So, the business needs at some stages do not require the investment in new technologies?

CIPC, SS – R12: In new technologies. Yes, those are the drivers. However, when that decision is made, you find that the system's life cycle, as you compare them to the business requirements, the system will meet the business requirements in the long term, as compared to the life cycle of the software. For example, you can host your data on SQL 2008, and your business requirement hasn't changed, so your system is still meeting that requirement, whereas the SQL database has emulated maybe two versions up. So when the business requirements change, or when the technology is not supported anymore, that is where the migration or the new technology comes in.

QUESTION:

Thank you. You've mentioned earlier that you are confident that your existing staff members are adequately skilled to perform the mandate of the business applications unit.

CIPC, SS - R13: Yes.

QUESTION:

In that sense, what measures are there in place to ensure that they are at the required level to meet the business unit's objectives?

CIPC, SS - R14: You see, as an organisation, the organisation has a strategic direction that it follows. It has a vision of where it wants to be. From that strategy, it translates into a business plan on how the business is going to operate, on what are the action plans for the business. From that you develop performance agreements with the staff. This will relate to what they need to achieve, on how they need to maintain this system, as well as take into consideration the development needs. For example, if the requirements are that you will support the system for the next five years, what training will you need to develop yourself, to skill yourself to repaying that level of competency that you have? So that is provided for.

QUESTION:

Okay, so those measures are already in place?

CIPC, SS – R15: Are already in place...

QUESTION:

It is up to the staff members to identify the courses, and then the department will willingly assist them with that?

CIPC, SS - R16: The department will finance that and will go as far as financing other courses that add to your own personal development at the company's cost.

QUESTION:

And over and above that, are there any other sorts of interventions in place, other than just the formal structured courses?

CIPC, SS - R17: No, we have what we call skill transfer from the services that we get from other service providers. For example, if there is a certain specialist skill that we need, that we don't have, or a service that we need, we will contract a service provider to come in. What we do with this contractor, we contract the service provider to do a skill transfer, in terms of whatever the value that we are receiving from them....

QUESTION:

At which point of the contract would that process be initiated... of skills transfer?

CIPC, SS - R18: At an operational level.

QUESTION:

Okay, it does not only get executed at the end of the contract? So it's an ongoing approach?

CIPC, SS - R19: No, it's an ongoing. To say when the contract is operationalised, the service provider is duly contracted to see that the staff members on site must be trained on how to operate. Because theirs is just a short term contract and the staff members must be able to step forward when the contract ends. So part of their deliverables is to train staff.

QUESTION:

Okay. Are there.... do you ever experience any challenges in that regard?

CIPC, SS – R20: Yes, you find other service providers who'll claim that the training cannot happen because that's intellectual property that they must maintain in order for them to be able to make money. So, usually when we get such challenges we negotiate around what actually is the intellectual property that we can put aside, and take the operational part of the service and train the staff on.

QUESTION:

Okay, let's talk briefly about these external service providers. When such needs are, or what constitutes the need basically to go to the extent of acquiring their services.

CIPC, SS – R21: You see, in a government framework, the procurement of services is governed by what is called a PFMA.

QUESTION:

What is that?

CIPC, SS - R22: This is The Public Finance and Management Act. The PFMA will give guidelines on how to go and procure for a service. It is related to the constitution of South Africa that offers everybody the right to trade with the government fairly. The process will entail whereby you give your business requirement on, what you need, without specifying the product that must do that. You must specify your business need, certain requirements, and then you go and advertise those and you invite service providers to come. So you will give a certain criteria on how you appoint. I think that is your question to say how do you appoint these people? The first one will be compliance to South African regulations. These are, are you tax compliant? Are you registered with CIPC? Are you registered with SARS...so that your relationship with government is above board? Secondly, you will go for a functional, to say are you able to do the job? You measure this job by putting in an evaluation criteria. You can evaluate the person based on has he done this service before? What is the skill that he has? Does he have references? Can he provide evidence of all that?

QUESTION:

And that is still guided by the PFMA?

CIPC, SS – R23: Yes. It is guided by the PFMA. So, whoever passes all those points, then it goes into the final evaluation to say that we've got four guys who are able to provide this service, and according to the pass mark they all made it to the pass mark. The other one could have made it with seventy, the other one was ninety, and the other one was eighty five. It doesn't matter. In that case you're going to say how much is he going to cost me?

QUESTION:

Then that will be the determinant...the cost?

CIPC, SS - R24: That will be the determinant. Because, you have qualified the guys in terms of their capabilities and you have said, these four guys, they are lucky people. That means that any one of them can run the service according to criteria. It means that the four guys have passed the test; all of them have passed the test. That means you can take anyone of them to give you the service. Then it's a question to say, how much is it going to cost me to get this service? The one guy will say it will cost you X plus two, the other will say X plus three.

QUESTION:

Then you will go for the lowest.....?

CIPC, SS - R25: Then you will go for the lowest in order not to waste the state expenditure.

QUESTION:

Okay, which would be later audited on? Is that the case?

CIPC, SS - R26: Yes.

QUESTION:

Okay, so you have now gone to the extent of acquiring the services of an external services provider. Then, have you had challenges whereby the services provider, having gone through that selection process, did not live up to the expectation as per the business requirements that were initially set out, or as per the operational service level agreements?

CIPC, SS - R27: Yes, you get to such situations. Fortunately, in the applications department we haven't experienced such. But, we have had experiences where our colleagues within the network and the infrastructure department have experienced such a lapse in service, whereby the service provider will bid lower in terms of the consumable that he provides. A recent example was a supplier who won to provide toners to the printers and cartridges. He was the one who was lowest and he supplied fakes to us and cartridges that were being rejected by some of the printers to say this is not them. We're an HP shop in terms of the printers and the printers will reject the toners to say, this is not an HP toner, so it cannot work.

QUESTION:

In terms of such instances what measures are available within the department to counteract?

CIPC, SS - R28: When the situation arrives, it is a non-deliverable on the contract and it is a violation of the SLA, and then the contract is immediately cancelled. The matter is referred to a state attorney and efforts made to recover costs from the service provider,

QUESTION:

...from the initiation of the contract to that point...?

CIPC, SS - R29: Yes, all monies paid to that contractor, the state attorney will recover from the contractor, including that the contractor will not be allowed to do business with any state department, whatsoever, so he is now blacklisted in terms of business with the state.

QUESTION:

Okay, not only with the department...

CIPC, SS – R30: Not only with the department, with the entire state.

QUESTION:

Okay.

CIPC, SS - R31: Then the directors of the organisation are also blacklisted as well, in terms of the government strategy of dealing with delinquent directors.

QUESTION:

Thank you very much for that Mr [REDACTED]. You have mentioned the mandate of the department or CIPC as being critical, or being of the utmost importance to the economic sector within South Africa and globally.

CIPC, SS - R32: Yes.

QUESTION:

As you articulated, So I think that would immediately constitute that the role of the department is to deal with very sensitive economic data of the country. Such that all companies registered, all directors and their associated companies will be... you will be the custodians of that data. So having gone to the point of acquiring the services of the external services provider, take for example in the development portion as well as data management. Are there any measures in place, once the services providers are recruited, to make sure that they can only carry out their mandate, and that at the same time the company's data, which would be deemed as private and as sensitive as you have outlined, is protected?

CIPC, SS - R33: Ja, we put what we call a non-disclosure agreement. This is a legal binding document that you sign, that you affirm that there would not be any business data that leaves the system unauthorised. In a case whereby the service provider can be in a position that he takes out data or so on, then it becomes a criminal matter that other units of the state like the State agency, the police or the commissioner must deal with. Then it becomes a criminal matter, then for us it is just for us to report this to our colleagues in the intelligence or in the police, for them to investigate and take appropriate action.

QUESTION:

But what about on an operational level....How is that managed?

CIPC, SS - R34: On an operational level, we have a security manager who looks after the content of our information repository.

QUESTION:

Have you had any such issues or challenges before?

CIPC, SS – R35: No. As of now we don't have any challenges in that regard. But contrary to that, the information we have as well, it relates to what companies are there in the repository. Part of our mandate as well, is to disclose the information on our database to relevant stake holders, as and when required. So the information about the company ownership and directors is not classified in terms of the minimum information security standards. But the information is

classified as restricted, it's not either secret or that we must implement other measures such as one would implement in a national key point.

QUESTION:

But, there are obviously, there is a framework in place or the processes rather for the dissemination of such information?

CIPC, SS - R36: Yes.

QUESTION:

Okay. So the processes.....?

CIPC, SS - R37: There will be other agencies that will need this information. For example, you could have another organisation that you intend doing business with, and they would like to confirm to say that we want to do business with company ABC. Are they really company ABC? Is Mr Matshwane the director of ABC? It is within us for that person to apply to us to say he needs this information, and we say the protocol for acquiring such information is a legal form ABC and you apply for that and the information will be disclosed to you.

QUESTION:

Okay. How do you find the relationship between business applications and the external service providers you've got engagement with at the moment?

CIPC, SS – R38: Ah, you know you always find the turf wars in terms of the guys that work on there. Like you will have guys who are passionate about what they do, who wouldn't be willing to easily let somebody look at their system. So, but from an overall picture, this is where senior management must step in to say, guys the end point is, it's a better life for all of us. These guys are here to assist us with 1, 2, 3, and you need to cooperate in that regard. The turf wars are always there

QUESTION:

Okay, Mr [REDACTED], thank you very much for that. If you could please take me through the knowledge sharing within your existing team members. Is there some sort of a platform existing to make sure that maybe your data management division, your architecture, your support and development, to make sure there is a constant link between the departments? Is there some sort of a formal or informal sort of framework readily available?

CIPC, SS - R39: Yes. We don't have a formal framework that we strictly adhere to, but we have sort of governance structures where the guys from different units meet. For example, you will have a change control team that will sit from different units, and discuss the changes in each unit, on how do they impact. This can be existing changes, can be new initiatives. This is where

the information between various departments starts to come. And also an architecture review board, where you've still got a representative from other divisions where you say architecturally this is hot. The enterprise architect is proposing that we go and you get input from the rest of the guys, at an information or cooperation level, not at a specialist or execution level.

QUESTION:

So should one of your senior developers.... If any of your senior developers were to leave the organisation at the moment, would you still remain afloat and carry out the business objectives? Would there be enough transfer of skills between the team members to make sure that if such a specialised skill were to leave the company, then the boat would still remain afloat?

CIPC, SS - R40: Ja. We had a number of resources who left the company, and our recruitment process it usually takes about three months, and the resignation period for a resource is a month. So you can tell that there is already a two month gap between one guy leaving and another guy coming in. If it is an area where the other guys are unable to fill in, this is where we go on procurement, we get a service provider to come and fill that role for that duration.

QUESTION:

I would think that the environment or the technologies deployed within the department are to a certain extent, unique in nature. Such that if you had to bring in anyone from outside, how easily would they find it in adapting and being able to get the ball rolling operationally?

CIPC, SS - R41: You might find that for the company's division, we're using Informix database, we're using ORACLE database for IP. These are Informix IBM tools, so you bound to find IBM technical okes, or you could appeal to IBM directly to send you a guy from there. If you have a development you are bound to go to a development house to say I'm developing in C Sharp, I'm developing in .Net; I need a guy with that skill. What is required there is for the people with the business knowledge, being team leaders or being managers, to ensure that access is granted to that guy. The guy must just familiarise himself in a period of a day or so and hence that delivery within a short space of time. Remember, when we go to a service provider to get a skill, we are usually paying a premium, and for that premium amount we expect a very skilled guy who will be able to get on with the job in a period of about two days or so.

QUESTION:

And the internal business processes, are they never a challenge? Because an individual might come in as specialised as they are, to find that there are obviously business processes to adhere to, say for example, the acts or the legislation that is binding the running of the department. Are those never a hindrance in getting the ball rolling?

CIPC, SS - R42: No, in a good environment you will... the guy must be given... If he is an assistant developer for example, he would need to be provided with a document relating to that system. He must have the functional document on how the system functions. He must have a technical document on how the system is configured, or installed. He must have a sort of an operational to say that this is how, but he must know who the customers are. That's the important part.

QUESTION:

Okay. You have mentioned that now and then there are challenges with the external services providers. Could you just maybe briefly give me a few examples of what those challenges could at times be?

CIPC, SS - R 43: Usually, you will find that the challenges are that the service provider will now and again try to sell you something that you don't really need. Operationally, because we have contracted a service provider to deliver certain deliverables, we don't really have those problems.

QUESTION:

So, you never have any issues during handovers....?

CIPC, SS - R44: No, we usually align the payment of the contractor with the deliverables and handover as well will be linked to a payment. So the services providers will, if that does not happen, will be missing out on the payment for that and he will be in breach of contract.

QUESTION:

Okay. And in terms of maybe escalated costs? Do you ever experience such?

CIPC, SS – R45: No. The State pays the price that you have asked for. If there are any inflation costs that arise in between the process, the State doesn't....

QUESTION:

And the deadlines in terms of the deliverables, do you always find them to be delivering on time?

CIPC, SS – R46: Yes, remember when you do the contract you go through a SLA discussion on what you expect from the guy and what does he need from you in order to effect that. So during the negotiations period, this is where those matters are resolved. Then when the contract is signed and in effect, then there is delivery all the way.

QUESTION:

With the abundance of all this information and intellectual property existing within the department, Is there some sort of a formal knowledge management division within CIPC, or the department as a whole, that solely looks after the innovative processes, the creation of knowledge and the intellectual property, the retention thereof, and the dissemination?

CIPC, SS – R47: That is the area that we would like to establish and see ourselves in the next two years. So, currently we just have a knowledge team that we refer to as a knowledge team, that comprises of certain different individuals from other business units but it is not formalised in the form of a knowledge management structure. But this is the area that we will effect in the next two years.

QUESTION:

What value would you say, once fully implemented, that particular division will add to the entire business unit?

CIPC, SS - R48: Firstly, it will insure the intellectual property that we have. Secondly, it will keep in line that business continuity, so that the information that we have does not reside within the possession of individuals. So that there is an approximate handover if ever we have a situation whereby there is a discontinuation of services, the guy can just tap into the knowledge management sector to be able to get that data.

QUESTION:

Okay. And then, I'm about to wrap up now. In terms of your team in general....do you find them keen, in terms of, to share knowledge that which they know in order to get the operational objectives met on a daily basis, and are they able to generally share and learn from each other, with no restrictions?

CIPC, SS - R49: In terms of technology wise, or programme wise, or how to share ideas on how to make improvements, we don't have a problem with that. But you will now and again have a challenge in terms of developers who want ownership of the source code, if I can put it that way? This is the problem of where you have, but in terms of the skills exchange, that we don't have a problem. But in terms of having a product that has been developed in work, you always have issues when the product must be owned....

QUESTION:

...on that.....how do you deal with that? How do you promote that culture of sharing and openness amongst the various team members?

CIPC, SS – R50: We overcome that by reminding the team now and again to say that our mandate as a unit is to support the business. And that it is in the interests of the business that these components, whether being the programmes or any other component that you are responsible for, you are being paid to deliver that. So, if ever we are going to have the turf wars, then we are not doing the business any justice, and we might find ourselves not being able to support the business and close down. So we highlight that we are sensitive to the risk that is posed by that type of competence.

QUESTION:

Okay. Over and above that, in terms of the operational duties or the business applications unit's mandate towards CIPC, are there any sort of improvements that you feel could be implemented to make sure that the mandate as a whole is achieved?

CIPC, SS - R51: Yes. You see currently we have got too many forms that our customers feel when they need to do business with us. So, we eventually would like to be in a situation whereby our customers don't give us any page at all. Our customers can be able to transact with us from any electronic mechanism that they have, be it their cell phones, or be it their computers, and push the transaction end to end, without even having any intervention or having to contact us. Definitely the business application we will like to evolve into that era whereby...

QUESTION:

Into that technological space?

CIPC, SS - R52: And find a solution within that technological space that can deliver that.

QUESTION:

Mr [REDACTED], thank you very much for your time. If I could just give you a quick update...what then transpires from here, I'll have to make a transcription of our audio recording, make an analysis thereof, and submit the result within my thesis, which I will then have to submit for academic evaluation at my university. But once again, thank you very much for your input, it's very much valued.

CIPC, SS - R53: You are most welcome Mr Matshwane, all the best with your education. I hope you do well. Thanks.

QUESTION: Thank you sir.

End of Transcription

Name of Interviewer : Lesley Matshwane, Masters IT Student
Name of Interviewee : [REDACTED], Human Resources Business Partner
Place of Interview : Visa, Fundamo – Willowbridge Offices, Cape Town, SA
Date of Interview : 27th August 2013
Subject : Knowledge Management in the IT services outsourcing Industry

Lesley Matshwane: Good evening. Thank you for taking time out to participate in my study which is in Knowledge management in the IT Technology Services Sector. This study, as we've discussed, is about knowledge management from the perspective of the information technology's client, as well as the services providers. Looking into the dynamics of knowledge management as to what the current issues are. Whether there are any divisions within the institutions that are looking into knowledge management, as well as the challenges and the awareness within the professional services.

As we've also discussed, this discussion will be recorded for future reference and also to serve as proof that the discussion has indeed taken place. I'm from the Cape Peninsula University of Technology by the way. Before we proceed though, may I ask you to introduce yourself, giving your name as well as your position and your position here?

FUN, LM – R1: My name is [REDACTED] and I'm the HR Business Partner for The Professional Services Business Unit within Fundamo

QUESTION:

Okay, thank you Mrs [REDACTED]. What is the nature of Fundamo? What is it that Fundamo... Or what is the core business objective of Fundamo?

FUN, LM – R2: In terms of Fundamo, as you know it's part of Visa, which we were acquired two years ago, so it's a global payments company. The core business is mainly focusing on emerging markets and implementation of our platform-wide technology in emerging markets for our clients, to enable payments.

QUESTION:

Thank you for that, and in your role as a human resource business partner, how do you align to that objective? What is your role?

FUN, LM – R3: The core role of HR is obviously focusing on talent management, that's sourcing the talent, retaining the talent and also the general human, or personnel practices around Human Resources.

QUESTION:

Should I continue? Okay and in terms of the linkage or the link, or the relationship between Human Resources and IT or the professional services division, how does that work out?

FUN, LM – R4: The link between?

QUESTION:

Between Human Resources and the professional services unit, like for the various business units within.....

FUN, LM – R5: Okay, in terms of that, there are five different business units within professional services, so the role of the HR business partner is to support the business unit managers and also support the employees with any HR related queries or activities.

QUESTION:

Do you... Can you maybe give me a brief overview, or the makeup of the various business units that you have? Like in terms of the structure as to... maybe you've got certain developers, testers and stuff like that.

FUN, LM – R6: Okay. Traditionally the structure... So there are three regionally focused business units and the structure is very much around your typical Question that you see in the software development life cycle. There's usually a business unit head, or a general manager and project managers, software architects, developers, testers, trainers as well who focus on the readiness of the business and the business readiness knowledge transfer. Have I left anyone out? Deployment engineers, systems analysts and solution architects, those are the general roles or the makeup of the regional teams.

We have an additional team of client development managers and their role is basically to be the interface between the client and the business and making sure that there's a point of contact between the client and the business. And you forget there's delivery optimisation, whose focus, because there are regional business units, the focus of delivery optimisation is on the effectiveness of the processes as a whole and ensuring that there are less silos and ensuring that processes are standardised and more efficient.

QUESTION:

Okay and given the nature of this very business unit, are you responsible for the recruitment of the individual team members on all of them?

FUN, LM – R7: Yes. Me, in partnership with our recruitment team, here in Cape Town, the onus for recruitment obviously starts with the manager, the line manager and then, ja, it's a

partnership really for the recruitment, but there are various responsibilities along that recruitment life cycle.

QUESTION:

And how do you find the recruitment process? I would typically now focus on the information technology resources, your developers, your architects, your analysts, as well as development engineers.

FUN, LM – R8: How do I find the process personally?

QUESTION:

The recruitment process...? Would you say it's somewhat difficult or easy? How do you generally find the process?

FUN, LM – R9: There are a lot of answers to that question. So how do I find it? I find that it can be quite long, but we work in a global organisation where there are certain processes that have to be followed. So maybe to understand the process, just to explain what it is, obviously the manager needs to submit a requisition form for any role, which has to be signed off by senior management, then the role profile has to be checked and double checked, and then it has to be advertised.

The role profile has to be checked by the people who'll be recruiting for the role, so specifically on the technical skills, because that's where you have the direct line manager. So it has to be right from there otherwise you won't get the right candidate. And then it's advertised and then you go to an application process. You leave it open for at least one week internally, sometimes simultaneously advertising externally, and then the candidates will apply.

It's usually a minimum of two interviews and often including a technical assessment as well. So it's quite a stringent process as you're hearing from what I'm describing and then the candidates are also required, once they've been shortlisted to obtain reference checks. We have to do all the reference checks and then they have to do background investigation checks which are a global requirement in Visa. So that can vary, depending on the role and the availability of skills and the interest in the role, it can be a very quick process, if we have candidates. We can turn it around quickly, but sometimes it can take a longer time.

QUESTION:

Let's talk briefly about the role profile.

FUN, LM – R10: Yes...?

QUESTION:

What sort of process goes into identifying that there is a specific role that needs to be filled and these are the particular skill sets required of the candidate?

FUN, LM – R11: I think probably in terms of recognising that there is a role specifically that needs to be filled, your business unit managers are good people to speak to, because they are responsible for the structure and the optimisation of their business unit. In terms of the role profiles, remember that we're part of the global organisation and that every role profile is levelled globally and evaluated globally. So we have a global compensation and benefits team that evaluate all our local role profiles.

QUESTION:

So could that mean as an international company now... What the person in Singapore for example, is getting in terms of remuneration will be the equivalent to the person in South Africa, or would the market be?

FUN, LM – R12: No, it's based on local markets; remember our global compensation team come to visit us. They do surveys in all the markets that Visa operates in, so I don't know. In terms of job content, the roles might be similar. Obviously we work in the payments, you know we work specifically with our product and that might differ from what a developer in Singapore does. So the products might differ, but the role profiles are levelled globally. But it's all based on local market data.

QUESTION: Okay, thank you for that. You've also outlined within the recruitment process that you have two terms for interviews, including a technical assessment, obviously for the technical resources. Is there any specific reason as to why such measures have been included within the recruitment process, say for example your technical assessment as well?

FUN, LM – R13: Well I think it's to make sure that people have the level of experience that they state on their CV, or have the minimum technical skills to meet the criteria of the role. So people can say whatever they want on their CV, but unless they prove it in practice and that's usually either through an online assessment. So we can benchmark developers for example, if an online assessment is applicable. So if it's a different programming language that's required proving the skills in that, or making sure that the references that we take can attest to those skills.

QUESTION:

Do you find that particular point within the process to be affective, or to really meet that which it's supposed to do?

FUN, LM – R14: I'm not sure it's stringent enough. So a lot of the process depends on the manager interviewing. So Products, the other business unit in our company might have a different approach and it really depends on what questions the manager asks or what technical tasks the manager asks the person to do. And we try to stick to standard technical questions for

certain roles, but it really depends on how stringent the manager is with applying that. Managers, because of skills shortage, they can tend to be desperate and they will see what they want to see, so it needs to almost be more stringent in some cases.

QUESTION:

And making reference to the skills that you've just mentioned, are they what you find to be the norm within, or existing within the organisation? Or could you say that perhaps it's an IT industry sort of norm that the skills for certain roles, say developers or engineers are somewhat in demand?

FUN, LM – R15: Hard to find, yes. I think in general, in IT where it's a really competitive market and so the skills can be very hard to find and sometimes we ask for a combination of skills. So your systems analysts for example, there are a lot of analysts around, but are there a lot of analysts who have technology, finance, and banking systems experience? You know those sorts of things? So the shortage is not just in the programming or the architecture side of things, although that is prevalent but it's also in other areas as well, like industry experience and knowledge. And we always say, yes you can hire for attitude, train for skill, you know you can, but you have to have those people who have the attitude and can learn quickly. So you can train people on the job, but there's still a shortage of people ready to go, you know.

QUESTION:

Certainly, thank you for that. Say now you have gone through that stringent process of getting the right person for the right position that you've advertised. How do you then going forward, make sure that the person does not stay on the same level that you have recruited them on, that to a certain degree they get some sort of development?

FUN, LM – R16: Okay. Ambition is great, but we want people to stay in the same role for at least 12 months. That's a global policy. So people can't just start and move... jump straight into another role or be promoted up a level etcetera. What we want people to do is get as much on the job training and on the job knowledge as possible. And the onus there lies upon the business unit to ensure that those structures are in place and that the necessary support is in place.

In terms of encouraging development, every employee and it's up to them, is required to complete a development plan and that development plan they must discuss with their manager, as to what the gaps are. So where do they need to up-skill? Maybe there's new technology that they need to go on a course, or take one of our online courses. We've got an online learning management system of over 3000 courses, varying from technical to professional development. So it's all there at people's fingertips, so it's up to people to take advantage of it.

How do we ensure that people do it? The onus is on the managers and the employees to have those conversations. So Visa enables employees by providing a learning and development budget. The manager supports the employees by discussing what their plans should be and approving any submissions, but it's really up to the employee to drive their development.

QUESTION:

So normally the resources are readily available for any employee to progress and develop their careers?

FUN, LM – R17: Absolutely!

QUESTION:

And...?

FUN, LM – R18: For example there's Java certification, so to move from a junior developer to an intermediate developer, there's a very clear experience level required. So you need to have X number of years' experience and there's a very clear requirement that you need to be certified. So you can't expect to move up unless you have the necessary experience or certifications, or proven ability. So there are some requirements to be able to progress up the ladder.

QUESTION:

Thank you for that. And as the Human Resources department, do you take part, or are you involved in the process of employees' on-the job training and development? Say for example, if a new engineer has joined the institution, do you keep track of their progress, or how well he is settling in within the institution...does that take place?

FUN, LM – R19: It does take place. When someone new starts, there are monthly probation check-ins. That's usually with the manager. The manager then communicates with us if there are any issues or anything that needs to be addressed in those first three months. We also have a check-in with dates with new starters.

QUESTION:

So, say sort of in those three months of probation, things are not going as well as expected what sort of measures are in place to assist?

FUN, LM – R20: It depends on what is not going well... It might be a case that everything is not going well and maybe it's a case to implement a performance improvement programme, so...

QUESTION:

So you do not fire the employee straight away?

FUN, LM – R21: You can't, not during probation. It's the same thing applies, there's a... read up about probation, because you've got to performance manage someone okay? You can't surprise them at the end of three months and say you haven't passed. You still have to give them the requisite notice and you still have to give the required attention to showing that you've actually helped develop someone.

QUESTION:

So the onus is within the organisation to assist...?

FUN, LM – R22: The onus is still within the organisation to provide the necessary mentorship, coaching, training, additional assistance or time to help that person come right. If they still don't come right after the additional things have been done, or the additional intervention has taken place, then you can give notice, but you still have to go through the performance plan.

QUESTION:

So the intervention process, how long would it normally take? Or it depends on...?

FUN, LM – R23: It depends on what it is. So if it's a quick thing about someone not grasping a process, you would spend time making sure that that is clear, right? That that is absolutely crystal clear and then you would test that. So next time you know, that they have to do that process, you know, can they do it? Usually another employee grasps this in... Another new starter got it in a week, why is this person taking two months? You know, there are different learning levels but you need to... you've also got to be realistic, it's a business.

QUESTION:

Has the business unit experienced these challenges? Or has it always been the right person for the job and after three months, you are satisfied.

FUN, LM – R24: That would be perfect. That would be a perfect life, so, no we've had the odd challenge, but generally new hires, it's fine. Sometimes we've extended, we can extend, obviously in this process, but no generally it's all right.

QUESTION:

It's been okay, so now...??

FUN, LM – R25: Which is why I'm saying, no hiring decision should ever be made in a rush.

QUESTION: Never...?

FUN, LM – R26: Ever!!

QUESTION:

So you've now recruited 'Peter' for the software development position. You've groomed him to certification level, and you've groomed him to be maybe a senior developer for example. After

24 months, 36 months, five years or whatever the case may be, Peter feels that this is now time for him to make a move. And considering the duration he has spent within the company, he has sort of acquired the insight or the trade secrets if I could say, of the organisation.

FUN, LM – R27: Intellectual property?

QUESTION:

Intellectual property, that's the right word, yes. Are there some sort of interventions or processes in place to say, as much as Peter, you would like to move on to more challenges rather, we'd still like you to stay. This is what you've gained out of the organisation. We'd still like you to give back and you're a valuable member of the team, or is it sort of okay? Peter wants to go, he can ship out and we'll get the next one?

FUN, LM – R28: I think everything is on a case by case basis. So every skill is valuable to the company and every person is valuable to the company. But let's say someone makes a decision to check out, we're not going to get into a price war or a bidding war, or forcing someone to stay, if they really don't want to stay. If someone's checked out, they've usually checked out, okay. But we will, if we know that someone is unhappy and they haven't yet got an offer or moved on... They must raise it early, you know, they must meet with their manager and say what exactly they are not happy with, so that we can put interventions in place. Nothing can be done unless the person actually raises a concern.

QUESTION: Of course. So when the person has made a decision to check out, then it's left to that process unfolding and there are no measures to retention of any kind?

FUN, LM – R29: It's too late don't you think? Someone's checked out. I'm speaking of my personal experience as a... if someone wants to leave, they're either here or they're not, they must make that decision. If someone... let's say it's a skill that there's only one other person in the whole world has, of course we will make every effort to retain that, okay? But generally, maybe I shouldn't talk from my personal view but, generally when someone's checked out, what's the point of then only throwing money at it? If it's only about money, then is that someone you really want in your employ? Question.....?

QUESTION:

Yes. Okay, I think...

FUN, LM – R30: But there's no process, no. We don't just throw money at anyone who resigns.

QUESTION:

Okay, maybe some sort of encouragement, because where I'm going with this is, the intellectual property as you've rightfully indicated that this person has acquired. Say he is part of a three

member team, he is a senior developer. He knows the process and the product in and out, so how can you retain that which he has nurtured and developed within that particular space?

FUN, LM – R31: Okay, so we've decided we're not going to keep him, but we want to make sure that a good hand over is facilitated. That's the most important thing, right? So I would expect that the manager, when they have the resignation conversation with the employee, that the manager would say, you know we... you've gained a lot from working for us. Now we expect you to also contribute and make sure that the right candidate is hired to replace you, to help put the recruitment or you know, find the right person or... and help up-skill those people, those other people in the team. Hand over the knowledge, share the knowledge, otherwise you get someone leaving who has all those skills. So a logical handover plan is logical, yes.

QUESTION:

I would imagine the process would take about a month...?

FUN, LM – R32: At least a month, jah, because remember it's a calendar months' notice, so the 1st of the month to 30th of the month.

QUESTION: So, in that case would that duration be sufficient for knowledge transfer or offloading to the remaining team members?

FUN, LM – R33: In most cases. I'm not sure, but sometimes people can be asked to consult if the new company allows them to or depending on what their circumstances are, but that doesn't often happen. It depends. Is the person a regretted loss, or are they not a regretted loss, you know? What has their performance been over the time? Ja, generally it's only a month. Some of our senior resources, they have a two month notice period, so it depends.

QUESTION:

So now the retention efforts, you've mentioned that when the person has already made the decision, I wanted to quote you here, you're not going to sort of 'throw money at them'. But then before the person has made an indication that he needs to leave the company, are there any proactive retention efforts that would already be taking place within the institution?

FUN, LM – R34: Of course. Remember we've got a stringent performance development, performance management plan and performance is linked to pay. So performance is linked to compensation, so it depends on what your rating is, your performance during the year as to what your bonus will be for example. So if someone has performed well, they might get a high bonus, a higher increase as well as equity or long term shares in the company.

So there's the monetary incentive, but money doesn't float everyone's boat, so you've also got to make sure that if there is someone...we have a talent management process, which is separate to performance management, where the managers actually look at what their key

value roles are and who their key talent is, and then we make sure that those people go on training, or there is extra focus given, or that they are put onto challenging projects, challenging work, where they are making use of their skills. For example, if someone has shown an inclination towards management, then to make sure that they are developed accordingly if they have that aptitude.

QUESTION:

Thank you for that Mrs [REDACTED], and within professional services, I'll use that 'term', and within professional services, is there ever a need for maybe engineers and developers to be outsourced, or to render professional services onsite to the actual clients?

FUN, LM – R35: Yes, there is a need.

QUESTION:

Is there a need, or does that take place at the moment?

FUN, LM – R36: That does take place, I presume it's because it's needed.

QUESTION:

Okay...??

FUN, LM – R37: I'm not responsible for project allocations, so I don't know.

QUESTION:

So there is no intervention from Human Resources to maybe the development or technical managers in terms of skills allocations to certain projects?

FUN, LM - R38: No.

QUESTION:

Why do you think there would be a need for clients now generally from the Human Resource perspective for them to request the services of Fundamo as a service provider?

FUN, LM – R39: I'm not sure of the question?

QUESTION:

The engineers for example from professional services, they would be requested by clients to come on site under certain circumstances. From Human Resources perspective, what do you think would be the motivating factor for such requests to come through?

FUN, LM – R40: Well I think the motivating factor is probably the knowledge and skills that our employees have for the products specifically so the client may not have those skills in their employment. So we actually have the skills and we can, you know, we can harness those and use them off-site, so to provide the best services. We're providing professional services and that's why they ask us because they don't have the skills.

QUESTION:

Of course and so in terms of, is there some sort of a process now to transfer the same set of skills that resides within the institution, to transfer to the client? Are there such programmes in place?

FUN, LM – R41: I would say that's part of the partner enablement programme and you should speak to ██████████ in Delivery Optimization on that. It's nothing from the Human Resources side. Human Resources do not interact with the client.

QUESTION:

In wrapping up, could we please talk briefly about the knowledge management division? Does one exist within the organisation?

FUN, LM – R42: We do. There's one in the form of ██████████ and his team. He's Product Knowledge Manager and he is responsible for knowledge across the company and obviously Product and Technology. Main focus is EE, so all the enterprise edition, knowledge and technical documents and all those sorts of things are under ██████████ responsibility, so...

QUESTION:

I didn't realise there was one....?

FUN, LM – R43: Ja.

QUESTION:

So is the relationship extended to various others, or to the rest of the business units?

FUN, LM – R44: Ja.

QUESTION:

Or is it only for product and technology?

FUN, LM – R45:

I think it's extended through also delivery optimisation, so as far as I'm aware all the knowledge is available on the Wiki, on SharePoint. ██████████ and ██████████ from Delivery Optimisation work very closely together and ██████████ is also very involved in the induction process, where you get an organisational induction. So HR does organisational induction, what the company is, your benefits, all the HR process and things like that.

And then there's functional induction, and part of that is the education around the product, spending time with people in various roles, so understanding the different roles in the software development life cycle. So there's a solutioning in our extent with solutioning, how it's done, what the framework is, and the process, project managers, all sorts of things. So there's a

whole, I think it's about a two week induction schedule, where there are different slots that new starters attend.

QUESTION:

Do you find that.... Not to make an assessment of the division, but is that effective, the knowledge management team? Is it known within the organisation? Is there sufficient interaction from various business units.....?

FUN, LM – R46: I think they could do more around collaboration and making themselves known. I think they're definitely known in product and technology, but remember that is their area of responsibility. So we have trainers, dedicated trainers in each team. So in MTN for example we have a Business Readiness manager, trainer, in the form of [REDACTED], a trainer in CEMEA, a trainer in APAC and that's also part of their responsibilities is to make sure there is documentation and that training happens. And the clients are also trained, so it's a lot of... They work a lot on the induction too, or are involved in that area too.

QUESTION:

And how do you find the use of the Wiki as the platform for sharing knowledge or information across the company?

FUN, LM – R47: As far as I understand I think it's very good. I'm in HR so I don't use it for technical purposes, but as far as I understand it's still very active and there's a lot of, all the updated information is on the Wiki.

QUESTION:

And generally the culture of sharing knowledge, the culture of various business units maybe engaging with each other on maybe new ways of doing things, solutioning, would you find that to be a common practice within the institution or could that be somewhat still lacking that can be promoted?

FUN, LM – R48: I think it's still lacking. So one of our values, one of the Visa values and it might be good if you say what the values are in this, if you're allowed to, is 'Collaboration' and I think that's one of the areas where we still need to greatly improve. It helps now that all the different business units are in one building, but there needs to be more collaboration as all our clients are not in the same building. So we need to collaborate more and I think we're quite good at that although we can get better, but I think we depend far too much on certain individuals for their knowledge. Like you say, they've gained a lot of knowledge over 13 years. Have they shared it you know? So, we tend to depend on certain individuals too much and we need to put more responsibility on them actually transferring that knowledge.

QUESTION:

And finally, in wrapping up, in terms of maybe the creation or the acquiring, the identification of knowledge, the organisation thereof, as well as the control or the protection, how do you find the practice within the institution? Are there any sorts of interventions from the organisation's point of view to encourage the culture of knowledge protection? Knowledge that should be, yes... that the knowledge should be protected and which is our intellectual property, which is our actual bread and butter. That we should protect it against for example, our competitors and that which we have acquired, or that we have come up with, is distributed to the relevant individuals within our business units within the organisation?

FUN, LM – R49: So I think, definitely. I think it's important for any organisation to protect their intellectual property. As a global organisation, there's a stringent document management, resource management classification. So special handling individuals, people, or confidential, whatever... there are certain definitions and that's why we do compliance training to make sure people comply.

And that's also why we have an active legal department which bears the responsibility to file any patents etcetera and make sure that there is compliance, and that contractual documentation is signed etcetera. With regards to knowledge, so our knowledge manager, Gareth, makes sure that the documents are up to date and also that versions are controlled etcetera.

QUESTION:

Okay and finally now, in wrapping up, are there any... From our discussion, in gathering where or what the context of the discussion was about, sort of improvements that you think could be of value to the entire organisation, in terms of knowledge and the management thereof?

FUN, LM – R50: Definitely. Lesley, how much more time do you have? No definitely, there are lots of improvements. I think specifically with technical staff, or staff in the technology industry, a lot of people believe that the only path to go is management and not everyone can be a people manager. So I think it's important to make sure that the career paths are attractive for those who want to stay in the specialist field, which is why we have our global job levels of individual contributors, people managers, as well as sales.

So there is an individual contributor's job level and stream, which means not everyone, has to be a people manager to move up the ladder in the organisation. So career pathing, I think we can do better. I think we can also do better on the people management side of things. A lot of this development, identifying skills, identifying gaps, all of those things...

QUESTION: Retention...?

FUN, LM – R51: Retention, knowing your people, having the necessary conversations. It relies on your managers. If we don't have the right management skills and we don't have the right people in management roles, you're not going to be able to retain people. So it's a known fact that people leave their managers, rather than their work, right? So ja, I think there's a lot of work in terms of management development as well that we need to do, but I really think those are... If we get those things right, we'll be steps ahead of where we are currently.

QUESTION:

All right. Thank you. We've come to the end of the discussion. What then transpires from here is that I will transcribe the audio recording...,

FUN, LM – R52: Good luck.

QUESTION: ...make an analysis of and then obviously incorporating my final output for academic evaluation, but thank you once again for your time.

FUN, LM – R53: It's a pleasure....

QUESTION: That was very helpful, thank you.

FUN, LM – R54: Thank you.

End of Transcription