THE EFFECT OF KNOWLEDGE MANAGEMENT PRACTICES ON
PRODUCT INNOVATION. A CASE STUDY OF ECONET WIRELESS
ZIMBABWE

BY

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DISSE...
APPROVAL FORM

The undersigned certify that they have read and recommend to the Bindura University of Science Education for acceptance, a dissertation with title, — The effect of knowledge management practices on product innovation. A case study of Econet wireless Zimbabwe, by Patson Mutsvandiani, in partial fulfillment of the requirements for the Degree of Master of Business Leadership (MBL).

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DECLARATION

I hereby declare that this submission is my own work towards the award of a degree of Master of Business Leadership (MBL) and that, to the best of my knowledge, it contains no materials previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

Patson Mutsvandiani
(AUTHOR)    SIGNATURE    DATE
DEDICATIONS

I dedicate this work to my wife Martha and my two sons, Patson Jnr. and Nathan K., who supported me through and through. May God richly bless you.
ACKNOWLEDGEMENTS

I am very grateful to Almighty God for His protection and kindnesses for seeing me through this research. Secondly, I would like to thank my wife, Martha, for all her support and inspiration. When the going got tough, she encouraged me to soldier on. Of special mention are my two sons, Patson Jnr. and Nathan K. who were very patient with me during the time of this study as I was not always available when they needed me.

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ABSTRACT

The advent of the twenty first century have seen economies becoming more and more knowledge-based. New knowledge management strategies, information technologies and mobile phone reengineering are radically changing mobile network operations, creating new opportunities for innovation and for the enhancement of productivity. Consequently, knowledge and innovation have become a key piece for the achievement of a sustainable competitive advantage. This research’s main purpose was to find out how knowledge management practices influence product innovation for a mobile network operator using Econet Wireless Zimbabwe as a case.

A qualitative research methodology was used in a survey design. Questionnaire, interview and document analysis methods were employed in collecting data. The data for the research was collected from eighty three Econet employees after one hundred questionnaires were distributed in six departments. Further to distributed questionnaires, document analysis and interviews were also carried out to better interrogate the issues of knowledge management and product innovation. Results indicated that most of the products developed and offered to the market by Econet are knowledge driven and are very innovative. Knowledge management practices at Econet were however found to be lacking in areas of enough support from executive management, knowledge creation and sharing culture including the requisite social structures, communications and optimum use of the existing ICT infrastructure. From these findings, the researcher recommends that the organisation puts in place social structures that encourage knowledge creation and sharing and also reward systems to enforce knowledge creation and sharing. The executive should make clear and be more practical in their intentions towards knowledge management activities. The existing ICT infrastructure should be fully utilised so that the support it is intended to give to knowledge management practices is achieved.
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<td>HR</td>
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CHAPTER 1

INTRODUCTION

1.1 Introduction

Society has become more and more knowledge-based, therefore the organisations that can identify, value, create and evolve their knowledge assets are likely to be more successful than those that do not. Knowledge in a modern organisation is an essential resource especially because it is not readily replicated by rivals. Jain (2007) and Senge (1994) point out that some organisations are unable to function as knowledge-based organisations because they have learning disabilities. It is important for an organisation to have a clear understanding of what knowledge management means to its operations if it needs to consider using those knowledge management practices that enhance efficiency and lend value to organisational knowledge. In this way knowledge becomes a strategic resource (Kok 2012).

These knowledge management practices include knowledge generation, which encompasses activities that bring to light all the knowledge that is new to a group or to an individual. Knowledge generation, according to Nonaka and Teece (2001), comprises the exploitation of existing knowledge to create new knowledge, as well as finding new knowledge through interacting and collaborating with other individuals or systems. This process therefore involves the acquisition of knowledge if it is to be successful. The acquired knowledge is of limited value if it is not organised and stored for easy retrieval. Once it is available for retrieval, there is a need to have systems that enable its sharing and transfer. A process of knowledge retention results when an organisation is able to facilitate the capture and transfer of both formal and informal knowledge through knowledge networking, thereby using the available intellectual capital to its advantage.

Nowadays, innovation is a core competency of all mobile telephone organisations. Furthermore, new information technology and mobile phone reengineering are radically
changing mobile network operators, creating new opportunities for innovation and for the enhancement of the productivity of the actual processes. Innovation in mobile network industry continues to be a driving force in the quest to balance profits and cellular network quality. Consequently, innovation has become a key piece for the achievement of a sustainable competitive advantage.

The resource-based view of the firm is characterized by the idea that capital, labour and natural resources are the factors influencing the economic growth of a company. In the last decades, the awareness of knowledge as an important driver of economic growth has increased, and led to the development of a knowledge-based theory of the firm stating that a firm has to create value through the generation, application and capitalization of knowledge.

The objective of this study is to investigate how knowledge management practices influence product innovation of a mobile network operator.

1.2 Background to the study

Knowledge management is emerging as an important concept and is often cited as an antecedent of innovation (Carneiro 2000, Nonaka and Ichijo 1995). While the need to effectively manage knowledge is generally accepted, knowledge management is still an elusive concept and much of the literature continues to explore issues of definition. Until a definition is widely accepted, measuring knowledge management and identifying its effect on outcomes such as innovation and firm performance will be hard to determine. In an attempt to move the discipline forward, and after a thorough review of the literature and discussions with managers, (Darroch and McNaughton 2001) suggested that knowledge comprises data, information and tacit knowledge and that knowledge management is:

“The management function that creates or locates knowledge, manages the flow of knowledge within the organisation and ensures that the knowledge is used effectively and efficiently for the long-term benefit of the organisation.”
Furthermore, when knowledge is used, learning takes place, which, in turn, improves the stock of knowledge available to the firm. Therefore, a firm that effectively manages knowledge is also likely to be a learning organisation (Sinkula et al. 1997). Lastly, if a firm demonstrates competence in knowledge management, then one might consider it to have a knowledge management-orientation. This means that effective knowledge management becomes a guiding business philosophy that influences the strategies undertaken by managers within the firm.

Effective knowledge management has been presented in the literature as one method for improving innovation and performance. More specifically, knowledge dissemination and responsiveness to knowledge have been mooted as the two components that would have the most impact on the creation of a sustainable competitive advantage, because of their ambiguity and uniqueness to the firm (Day 1994).

While many studies have reported aspects of knowledge management as antecedents of innovation, none has explicitly examined the relationship between the two constructs. Following an extensive search of the innovation literature, there appears to be convincing empirical evidence that knowledge acquisition will positively affect innovation but mixed evidence of a link between knowledge dissemination or responsiveness to knowledge and innovation. Capon et al. (1992) found that spending money on research and development to generate new ideas would lead to innovation.

Studies linking aspects of knowledge dissemination and innovation have provided mixed results. For example, inter-functional coordination and human resource practices were found to positively affect innovation (Abbey 1983). However, encouraging work group behaviour that supports innovation and allowing people the time for innovation yielded mixed results (Abbey 1983). Lastly, codifying or making knowledge explicit in databases or organisational memories was generally found to not affect innovation (Abbey 1983). The last component of knowledge management, responding to knowledge, was found to positively affect innovation in one study (Kitchell 1995).
While the importance of knowledge assets has long been understood in the scholarly field, the literature on knowledge management and firm performance or innovation performance is scarce and ambiguous. Therefore, it is fair to conclude that the relationship between knowledge management and innovation is not well understood.

In spite of equivocal evidence from the extant literature, this research will analyse the effect that knowledge management practices have on the organisational innovativeness. Econet Wireless (Private) Limited, a subsidiary of Econet Wireless Zimbabwe Limited will be used in this investigation. Econet Wireless is the largest provider of telecommunications services, providing solutions in mobile and fixed wireless telephony, public payphones, internet access and payment solutions in Zimbabwe.

1.3 The research problem

It is commonly agreed that continuous knowledge creation/generation foster innovation which gives the most competitive advantage to today’s organizations (Nonaka and Takeuchi 1995). The past decades, the global business environment has experienced an influx of change and has become more dynamic. As more and more businesses enter their respective markets, the existing competition also increases and puts pressure on most organizations to combine their resources in a way that is most effective and efficient in order to gain a sharp competitive edge over its rivals. Thus, it is recognised that telecommunication companies need to take care of their most important assets which is the organisational knowledge. There is a plethora of research works highlighting the link between knowledge and innovation (Cormican and O’Sullivan 2000, Tomala and Senechal 2004 and Yang 2005), however, the need to understand better how knowledge management practices influence the innovation of a company still exists.

This research explores and brings out the effect of knowledge management practices on product innovation at Econet Wireless Zimbabwe, a leading telecommunications company. In the telecommunications industry, where there is fierce competition and all the players want to be ahead and stay ahead, and also where other competitive strategies can be copied, innovation is the way to go. Econet Wireless Zimbabwe, as evidenced in their integrated report of 2014 and also the report from the telecommunications regulator, as an organisation, is implementing
innovative strategies and is ahead of competition (Telecel and NetOne as rivalry). It is against this background that the following problem be investigated:

*How do knowledge management practices affect product innovation?*

### 1.4 Aim of the study

The aim of this research was to investigate the effect of knowledge management practices in the Telecommunications industry of Zimbabwe and using Econet Wireless (Private) Limited as a case study. The theoretical aspects of the subject will be used to build this research and investigate the variables identified in the literature to do with knowledge management practices. Primary data will be obtained by administering a written questionnaire among selected Econet employees who work at the head office of the company in Harare in Msasa area. Appropriate recommendations will then be made from the results on the effect of knowledge management practices on organisational innovation so as to gain a sustainable competitive advantage in the industry.

### 1.5 Research objectives

- To establish the level of support or encouragement from top management in knowledge management activities.
- To find out the knowledge management practices implemented at Econet Wireless (Private) Limited
- To evaluate the effect of knowledge acquisition on product innovation at Econet
- To examine the effect of knowledge sharing on product innovation at Econet

### 1.6 Research questions

- Is there support or encouragement from top management in knowledge management activities, and what are the levels?
- What are the knowledge management practices implemented at Econet Wireless?
- What is the effect of knowledge acquisition on product innovation?
- What is the effect of knowledge sharing on product innovation?
1.7 Significance of the study

This research is done for the benefit of the country of Zimbabwe and the telecommunications industry in particular. It can also be used by other sectors in search of the importance of implementing knowledge management processes at the workplace. Organisations that seek to be ahead of competition can also refer to this document when looking for areas to explore in terms of becoming innovative to push up their bottom lines. The research analyses the contribution or effect of knowledge management practices at Econet Wireless (Private) Limited head office on organisational innovation.

1.8 Research delimitation

This research was carried out in the Zimbabwean context and targeted at benefiting Econet Wireless (Private) Limited in particular and to an extent the Zimbabwean Telecommunications companies. A sample was drawn from the company’s head office staff situated at No. 1 Mutare Road Masasa in Harare capital. The research will analyse the period February 2009 to February 2014 with regard to Econet Wireless’ knowledge management practices and efforts to foster innovativeness. This is the period that has seen the sector growing rapidly and competition tightening (according to the POTRAZ report of 2011, mobile penetration rate increased to 104% and internet penetration rate increasing to over 40%). This is also the period in which the company’s mobile telephone subscribers has almost tripled, increased share price and maintained over the industrial index, seen the company launching 3G and 4G-LTE technologies, taking over Steward Bank, launching mobile money transfer (EcoCash), EcoFarmer and also Econet Solar among other ground breaking ideas in the Zimbabwean context.

The research focused on knowledge management practices in relation to innovation. Here and there issues related to this subject like organisational learning and culture will be discussed but not into detail as they are out of scope of this research.
1.9 Research design

Research design can be defined as an overall strategy that the researcher chooses to assimilate different components of a study in a comprehensible and rational manner so that a research problem is effectively addressed (Vaus 2001). As further argued by Vaus (2001), the research design constitutes the blueprint for the collection, measurement and analysis of data. Polit and Hungler (1999), postulates that this blueprint guides the research in such a way that supreme control will be applied over aspects that could impede the validity of the study findings.

These arguments indicates that the research problem determines the type of design that the researcher can use and not the other way round. This then ensures that the evidence obtained from the research carried out enables the researcher to meritoriously address the research problem logically and as explicitly as possible. The design for this research will be a case study. The case study method allows investigators to retain the holistic and meaningful characteristics of real-life events such as individual life cycles, organizational and managerial processes, neighbourhood change, international relations, and the maturation of industries (Yin 2003). This research will generate ideas for improvement and for this particular study, ideas for improvement towards attaining market leadership and sustainable competitive advantage leveraging on knowledge management and innovation.

1.10 Research Methodology

The methodology of a study is the general research strategy that outlines the way in which a research project is to be undertaken and also identifies the methods to be used in it (Howell 2013). From this notion, it can be noted that the importance of doing a research methodology cannot be over emphasised. It is a very important stage in carrying out a research study as it informs and guides the whole process. This is the area that explains how and where the data was generated from, for instance, the data gathering techniques used and also someone reading this section should have enough information to be able to come up with methods that are in congruent to the ones the researcher used to obtain data.
For this research project, a qualitative research methodology would be employed. This is because the question that the research seeks to answer requires words and descriptions to explain the outcomes as opposed to numerals.

### 1.11 Sampling Strategy

A sample of one hundred Econet wireless employees stationed at the head office was used. This sample will include employees, middle and senior level managers who have been with the organisation since February 2009 and prior. The sample size is large enough to get the insights into what is being investigated and the demography is because of the period under study in which these participants have knowledge of what transpired during that period in terms of knowledge management activities and product innovation.

### 1.12 Data Collection Instruments

A questionnaire was administered to the chosen sample in person by the researcher. The questionnaire will have a combination of semi structured, structured and unstructured questions and also a number or relevant items in which the responses will be on a four-point Likert scale with the items “In use before 2009”, “In use after 2009”, “Plan to use in the next 24 months” and “Not applicable / Don’t know”. This is to make sure enough data to draw meaningful conclusions is collected. The chosen instrument have already been validated and used for other studies on knowledge management and innovation. Thus, items for assessing the knowledge management focus (explicit-tacit-oriented) have already been validated and used by Choi and Lee (2003). Questionnaire items for the knowledge management source (external-internal-oriented) which will be used in this study had been validated and used by Lee et al. (1999).

### 1.13 Pilot Study

After a questionnaire was created, it was administered on about 6 randomly chosen employees which are part of the targeted sample. This was to test the feasibility of the chosen methodology and the method of this study. Results helped refine the data collection tool especially on which type of questions in terms of wording brings clear results and if the participants understood what was required.
1.14 Definition of terms

*Data:* Qualitative or quantitative and incomplete representations of events that people notice and bring to the attention of others in an organisation.

*Information:* Is the meaning attributed to some data by evaluating the data in an interpretive framework.

*Sensemaking:* A process of collecting and interpreting data to generate information that is used to frame a set of beliefs about significant causal associations in an organisation.

*Interpretive framework:* An existing set of beliefs about causal relationships, against which we compare current events in our sensemaking process.

*Knowledge:* Is the fact or condition of knowing something with familiarity gained through experience or association.

*Learning:* A process that results in any change in knowledge.

*Knowledge management:* A multi-disciplined approach employed in harnessing the intellectual and social capital of individuals in order to meet organisational objectives.

*Knowledge management practice:* Is any systematic activity related to the capture and sharing of knowledge by an organisation.

*Innovation:* Refers to the activities and processes of creation and execution of new knowledge in order to produce distinctive products, services and processes to meet the customers’ needs and preferences in idiosyncratic ways.

1.15 Chapter organisation

The research further examined the effect of knowledge management on organisational innovation within the following framework:
2.1.1 Chapter 1: Introduction

The researcher sets the groundwork for the study in this first section. During this setting the scene section, the problem is defined, clear description of the subject and the background are given. The objectives of the research, the research questions and the roadmap of the research is given here.

2.1.2 Chapter 2: Literature review

The researcher reviewed the relevant literature related to the area of study. This literature included knowledge management practices, theories, case studies and what has been said about the link between these and innovation. Current trends and the history of the area of study was also discussed including other concepts relating to the focus area and coming up with the research theoretical framework.

2.1.3 Chapter 3: Research methodology

In this chapter the researcher looked at the methodology that was used to carry out this research. Its weaknesses and strengths in relation to the work under study. The question that was being answered by this research asked for the effect of two variables (knowledge acquisition and knowledge sharing), which is a what question, on another variable (product innovation). It can be seen clearly that this question is asking for qualitative information which cannot be represented by numbers or percentages but rather describing words, phrases and sentences. These can only be answered through qualitative methods.

2.1.4 Chapter 4: Research Findings

The research findings were then represented in this chapter in a thematic way. Answers received from participants through the questionnaire administered were represented in themes so that a clear representation of the research objective and conclusions can be made from the information. The themes helped draw conclusions relating to a particular objective and question.
2.1.5 Chapter 5: Recommendations and conclusions

From the research findings in the preceding chapter, the researcher gives his recommendations and conclusions as informed by the research results. The recommendations can then help improve the situation at the company used in case and also as a take away for other companies wishing to archive competitiveness via innovation motivated by knowledge management practices.

1.16 Research time table

It is important that a research be time bound in order to have direction, manage and monitor progress. This helps keep on track and meet project deadlines. The table 1 below shows the research time-lines from August 2013 through February 2014. Research activities were covered on or before the corresponding due dates.

2.1.6 Time Table:

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**Table 1: Time Table**

**Source:** Adapted from Saunders, Lewis et al (2009)

### 1.17 Conclusion

This chapter introduced the research including the area of interest, problem statement, objectives, research questions the design and methodology employed by the researcher and also sampling strategies used for the research for data collection. The next chapter will be focusing on the literature related to the area of study.
CHAPTER 2

LITERATURE REVIEW

2.2 Introduction

This research was informed by previous studies in the area of knowledge management, organisational learning, creativity and innovation. This study will then narrow down and look at the effect of knowledge management practices in the telecommunications industry on organisational product innovation. Telecommunications firms putting knowledge management strategies into practice have realised enormous advantages in terms of adapting to new trends and coping with new challenges. It is against this background that this research will meet its objectives after review of literature in the knowledge management and innovation subject.

2.3 Concepts

Knowledge management is a key concept in today’s business world. Evidence of this fact is apparent if one only peruses the current business, management, and organization literature. On the surface, it looks as if knowledge management just appeared toward the end of the 1990’s. Some regard knowledge management as a business fad or craze as suggested by Swan et al. (1999), but a closer examination of the concept reveals that there has been considerable thought and research into it, and many of the world’s most successful corporations, businesses, and organizations are investing considerable resources in this enterprise (Alvesson and Karreman, 2001). Prusak (1999) estimates that approximately 80% of the Global 1000 businesses are conducting knowledge projects, and that “approximately 68% of the Fortune 1000 have defined knowledge projects which are already underway. Attendance at knowledge conferences has reached over 10,000 in the U.S. alone. There are at least six knowledge management newsletters, one fully developed knowledge management magazine”.

Many of the practices set up in organizations can be broadly construed as contributing to the knowledge agenda. These knowledge projects range from setting up of intranets, using Office suite or other team-oriented software, creating personal development plans, mentoring, or
sharing information on best practices. Increasingly, organizations are creating specific initiatives or programs with a knowledge focus. Knowledge teams and knowledge leaders are emerging, but very few organizations are applying knowledge management throughout their organizations (Skyrme 1999).

Why are businesses and organizations devoting considerable money, time, and effort into knowledge management projects? The answer is they want to survive. McCampbell et al. (1999) maintain that in an economy of uncertainty, the only sure source of lasting competitive advantage is knowledge. “Successful companies are those that consistently create new knowledge, disseminate it widely throughout the organization, and quickly embody it in new technologies and products”. They argue that the new business environment is characterized by radical and discontinuous change.

The environment requires organization members to anticipate changes and carry out a faster cycle of knowledge creation and action based on the new knowledge. Their characterization of the business world is also true for society at large. Operating any organization in the information age is a challenge made more difficult by the instantaneous nature of the flow of information. Drucker (1993) calls our world a post-capitalist society, and in his writing about the economic, political, and social transformation’s taking place, he identifies a primary characteristic and resource – knowledge. The post-capitalist society differs from past eras in how knowledge is applied. In the early part of the 20th Century, the industrial revolution applied knowledge to the use of tools, processes and products. The productivity revolution began when people applied knowledge to human behaviour. Post-capitalist society is characterized by the fact that knowledge is being applied to knowledge itself (Uit Beijerse 1999).

As Skyrme and Amidon (1999) wrote, “the knowledge agenda is new, yet not new”. Most organizations are already involved in managing knowledge and have been for a long time. Many of them, however, do not realize the full extent of what they are undertaking. The purpose of this paper is to provide an overview of the concept of knowledge management, identify key
terms and concepts related to knowledge management, trace the history of the study of knowledge management, and examine its effect on organisational innovation.

2.4 Knowledge Management Defined

While there are many organizations undertaking knowledge management projects, there is dispute over what exactly knowledge management is. Some in the field define knowledge management simply as information that has value for action, but others, like Snowden (1999), maintain that knowledge management is not that simple. He writes that it is the “identification, optimization, and active management of intellectual assets, either in the form of explicit knowledge held in artefacts or as tacit knowledge possessed by individuals or communities”. Swan et al. (1999) explain that knowledge management is about harnessing the “intellectual and social capital of individuals in order to improve organizational learning capabilities, recognizing that knowledge, and not simply information, is the primary source of an organization’s innovative potential”.

For the purposes of this research, the working definitions will be

*Knowledge is the fact or condition of knowing something with familiarity gained through experience or association.*

*Knowledge management practice is any systematic activity related to the capture and sharing of knowledge by the organisation.*

One cannot get a clear picture of knowledge management without studying the concepts of knowledge and information and other related terms. Much of the confusion that surrounds knowledge management is due to scholars’ varied opinions on distinguishing knowledge from information. The misconception that the two terms are interchangeable can have disastrous effects in the business world. “The confusion between knowledge and information has caused managers to sink billions of dollars in information technology ventures that have yielded marginal results” (McC Campbell et al. 1999). Snowden (1999) claims that it is not necessary to define knowledge, but points out that it is important to distinguish it from information. Other
researchers find it necessary to have a thorough understanding of all elements that make up knowledge management. Davenport, De Long, and Beers (1999) claim that knowledge “is information combined with experience, context, interpretation, and reflection”. Prusak (1999) describes knowledge as a human trait or attribute, distinguishing it from information in that only a human can obtain knowledge. For example, a bookshelf can contain many volumes of books on a particular subject and it can be said that the bookshelf contains a lot of information, but one cannot claim that the bookshelf is knowledgeable. Sveiby (1999) carries the definition a little farther by describing it as an activity and a “process of knowing”. The term activity brings up the notion of action, which Nurmi (1999) mentions in his definition of knowledge:

“Knowledge is something that is acted upon, that has an effect on the way things are. We are not interested in information that lies passive on shelves, in files, or in archives. A knowledge business is created when the know-how inside the firm and the needs of customers outside the firm meet”.

Nurmi’s definition brings up the notion of know-how, which is akin to the deeper type of knowledge characterized by Ikujiro Nonaka, a business management expert and scholar from Japan. Nonaka (1994) writes that information is a “flow of messages, while knowledge is created and organized by the very flow of information, anchored on the commitment and beliefs of its holder”. He also maintains the most important element in knowledge is action.

Nonaka and Konno (1999) categorize knowledge as either explicit or tacit. Explicit knowledge can be thought of as knowledge that can be expressed in terms of words and numbers. It can be shared in the form of data. Tacit knowledge, on the other hand, is highly personal, hard to formalize, and difficult to communicate. Much of Nonaka’s work is based upon the knowledge theories of Polyani (1966), who first came up with the idea of tacit knowledge. He declared that “we have examples of knowing, both of a more intellectual and more practical knowing”. One can also see the similarity between the intellectual knowing and Nurmi’s know-how mentioned in the paragraph above. Polyani further states that the two aspects of knowing have a similar structure, and that neither is present without the other. His explanation of tacit knowledge, “we can know more than we can tell”, is best illustrated by police identification techniques. If an individual is trying to identify a criminal but cannot fully describe him, the
police might use a data base of images of facial parts such as eyes, nose, and mouth. They will then show those to the individual, who will pick through the choices until he arrives at something similar to the features of the criminal he remembers. In other words, the individual knows the information; he just cannot relate it without that process. This illustration not only points out what tacit knowledge is, it also demonstrates that tacit knowledge can be conveyed through some type of process.

Nonaka (1994) expands on Polyani’s notion of tacit knowledge by asserting that tacit information has both cognitive and technical elements. Cognitive elements can be thought of as mental models in which people form models of the world. They can manipulate these models to help define their world. The technical element is know-how or skills that apply to a specific context. Snowden (1999) helps further clarify the concepts of tacit and explicit knowledge by relating how each particular type of knowledge is evoked. He writes that “the optimization of explicit knowledge is achieved by the consolidation and making available of artefacts. The optimization of tacit knowledge is achieved through the creation of communities to hold, share, and grow the tacit knowledge”.

While knowledge management scholars have spent considerable energy into debating and defining knowledge, much less is written on the term management. Alvesson and Karreman (2001) assert this is because most researchers believe that the idea of management is something that makes common sense. There seems to be a general consensus among scholars that management involves planning, organizing, coordinating, and controlling work.

2.5 Knowledge Management History

The study of knowledge dates back to ancient Greece. Even before that, knowledge was at least implicitly managed as people performed work. Early hunters, for example learned the best skills and practices for a successful hunt. These skills and techniques transferred from one generation to the next. This illustrates the transfer of knowledge, a knowledge management activity. The actual study of knowledge management is much more recent. Like the study of communication, it has roots in many other areas of study—business, management, sociology,
and economics to name just a few. Drucker (1999) argues that knowledge management is based largely on the work of Frederick Winslow Taylor, who studied manual workers.

During the 19th Century, economists argued about differences in the skill level of workers when considering productivity. They then categorized workers as either hard workers or lazy workers. Taylor did not agree with this line of thought and examined the inefficiencies in how workers performed their jobs. He did this by recording motions necessary to accomplish the task and then eliminating unnecessary steps and then designing or redesigning tools, if necessary, to assist the worker in accomplishing his task. Taylor found that the traditional tools were not always the best tools for the job, and he received input from the workers on what might work better. Taylor pointed out that very little skill is involved in production. He claimed that what makes workers productive is knowledge (Drucker 1999). While the names for this emerging discipline have changed and the concepts and theories have evolved over the years from Taylor-Task Analysis to Task Management to Scientific Management to Industrial Engineering, Drucker argues that Taylor’s work is the foundation of knowledge management.

2.6 Knowledge Conversion and Creation

As explained previously in this review, explicit knowledge can be shared through communication and media, but that is difficult in the case of tacit knowledge. Nevertheless, tacit knowledge can sometimes be communicated through shared understanding between individuals. In other cases, tacit knowledge must be converted into explicit knowledge before it can be shared (Becerra-Fernandez and Sabherwal 2001). In fact, Nonaka (1994) proposes that there are four modes of knowledge conversion: from tacit knowledge to tacit knowledge, from explicit knowledge to explicit knowledge, from tacit to explicit, and from explicit to tacit. In the first mode, tacit to tacit, knowledge can be converted through sharing and interaction between individuals. The key to acquiring tacit knowledge is experience, since it is difficult for humans to convey or explain tacit knowledge. An example of this, called socialization by Nonaka, is teaching a child to ride a bike. He argues that, while the adult can easily show the child how to ride, it is difficult for the adult to put the instructions into words.
The second mode of knowledge conversion, explicit knowledge to explicit knowledge, involves social interactions to reconfigure existing information through sorting, categorizing, adding and re-contextualizing explicit knowledge. Nonaka refers to this process as a combination. The third and fourth modes expand over time and through a process of mutual interaction between individuals. Conversion of tacit knowledge to explicit is called externalization, and explicit knowledge to tacit is called internalization. Nonaka refers to this as the SECI process, or Socialization, Externalization, Combination, Internalization process (Nonaka 1994).

Two main areas knowledge management practices focus on are the sharing of existing knowledge and the creation of new knowledge. The creation of new knowledge often proves to be the most valuable practice in the long run (Skyrme and Amidon 1999). The process of knowledge creation happens “with the transfer of what’s inside a person’s head (his or her tacit knowledge—thoughts, ideas, actions, and experiences melded with information) to another individual or group in such a way that the recipient’s future actions and decisions are influenced” (Bednar 1999). Nonaka and Konno (1999) describe knowledge creation as a “spiralling process of interactions between explicit and tacit knowledge”.

Figure 1: The SECI Process
Source: (Nonaka 1994)
Figure 1 above illustrates how the four nodes of knowledge form a continual cycle that is shaped by series of shifts between the different nodes. Nonaka and Konno (1999) maintain that there are various triggers that induce the shifts, such as interaction, dialogue, use of metaphors, or experimentation. It is important to note that the movement through the four modes is not a circle, but rather a spiral. This spiral becomes larger as it moves up the ontological levels from individual to group to organization through inter-organization.

Figure 2 below demonstrates the upward spiral of knowledge creation developed by Nonaka (1994). He developed this in response to a common knowledge management paradigm that provided a static and passive view of the organizational knowledge agenda. While it provided for knowledge processing, the model did not take into consideration what knowledge was created by the organization.

Figure 2: Nonaka’s Spiral of Science of Organizational Knowledge Creation

Source: (Nonaka 1994)
Nonaka (1994) has shown that the organization that deals with the changing environment not only processes information efficiently, it also creates new information. Nonaka’s contribution to the study of knowledge creation and management has served as a foundation for much of the research in this new discipline.

2.7 Other Related Concepts

2.7.1 Organisational Learning

Closely related to knowledge management is organisational learning. Levitt and March (1988) explain that experiential lessons in an organization are captured by routines in a way that makes the lessons, but not the history, accessible to organizations and organizational members who have not themselves experienced the history. Routines are transmitted through socialization, education, imitation, professionalization, personnel movement, mergers, and acquisitions. They are recorded in a collective memory that is often coherent but is sometimes jumbled, that often endures but is sometimes lost.

Organizational learning and knowledge management are heavily dependent on organizational memory, which emphasizes “the support of the human user by providing, maintaining, and distributing relevant information and knowledge” (Abecker et al. 1999). While organizational memory depends on the individual memories of organization members, the rules, procedures, beliefs, and cultures are preserved over time through socialization and control (Levitt and March 1988).

However, organizational memory should not be a passive information system, but must be an intelligent assistant to the user (Abecker et al. 1999). Abecker et al. (1999) created a model to show how organizational memory assists knowledge-management activities. Figure 3 illustrates that organizational memory is at the centre of all knowledge activities. Short term knowledge efforts should concentrate on short term knowledge preservation, which is based mostly on tacit knowledge. This can be facilitated through best practice data bases, lessons-learned archives, or expert systems. In long-term efforts, organizational memory should support knowledge creation and organizational learning.
Another term that is closely related to knowledge management is knowledge packaging. “Knowledge packaging translates and structures information into usable knowledge” (Myers and Swanborg 1999). This concept entails filtering, editing or organizing pieces of knowledge. Knowledge packaging is important, because if the knowledge is not packaged in a manner that promotes easy use, organization members will not use it, and knowledge is less likely to be shared.

Myers and Swanborg (1999) identified six steps to ensure packaging of knowledge will be successful. First is identifying knowledge. In this step, one identifies specific topics or general domains and then finds knowledge that addresses those subjects. The second step is to segment the audience. This entails identifying target recipients for the knowledge and sorting them in groups by their respective needs. The third step is to customize the content. In this step, one selects relevant information from the knowledge base and tailors it with the appropriate level of detail for each segment. Fourth is to choose the appropriate format, such as paper, electronic, video, or multimedia. In the fifth step, one organizes the content. In this step, one lays out the table of contents, index, or search engine. Finally, the last step is to market-test the format and content. In this step, one has a pilot group check the knowledge package for clarity, usability and overall value.

Figure 3: Model of Organisational Memory
Source: Abecker et al. 1999

2.7.2 Knowledge Packaging
2.8 Knowledge Management and Technology

Many organizations, as argued by Albert and Bradley (1997), rely heavily on computers, intranets, and the internet for knowledge packaging. In fact, much of the credit for the widespread use of knowledge management theories and practices must go to the development of the worldwide web because the internet has made the world increasingly smaller in its short history. The internet began in 1969 as a Pentagon-sponsored program called the Advanced Research Projects Agency (Albert and Bradley 1997). It began as a loose confederation of interconnected computer networks to help military contractors share large sets of data. By the early 1980’s, universities and research laboratories were using it as well. With the transition from mainframe computers to personal computers in the mid to late 1980’s, businesses began to use the internet too. By 1997, there were more than 35 million users (Albert and Bradley 1997). The surge in information flow and connectivity has allowed individuals and organizations to share a great volume of information and knowledge in a manner that had never been possible.

Information technology, has become a key in the implementation of knowledge management. Information technology’s role is emerging as an integrator of communications technology, rather than solely a keeper of information. The critical role for information technology lies in its ability to support communication, collaboration, and those searching for knowledge and information (McCampbell et al. 1999). Information technology and the advent of the personal computer have greatly enhanced organizational effectiveness, inter-organizational deployment, and cognitive advance (Grover and Davenport 2001). Another area of communication that information technology has drastically impacted is social activity. Computer networks provide a means to break down stovepipes, or hierarchical barriers, that often inhibit the flow of free thinking, knowledge, and innovation, or the creation of knowledge.

There are, however, some difficulties caused by the use of information technology in knowledge management practices. First of all, information technology leads to misconceptions about the differences between information and knowledge. Organizations often store heavy loads of information or data and mistakenly think they are fostering the flow of knowledge. “Quite a few of these projects include work focused on data warehousing, installation of Lotus
Notes, building intranets and developing document and intellectual capital applications—all of which bear a definite but somewhat distant relationship to knowledge” (Prusak 1999). A second challenge occurs when organizations view knowledge work as done once the information technology application becomes technologically operational. In reality, this is just the beginning of the knowledge project. Constructing an information technology infrastructure for knowledge does not, in itself, guarantee that organization members will use the system. Finally, some organizations rely too heavily on information technology and not enough on the social aspects of sharing knowledge.

Swan et al. (1999) illustrate this point with a study they performed on two business firms which were each making an effort to capitalize on its organization’s knowledge. Each firm had a central office with other offices spread out over a large geographic area. One firm relied solely on information technology in establishing an intranet. The company paid very little attention to the social networks of the organization and basically left it up to individual offices to create their own intranet and link to the others. As a result, the firm created an incompatible series of individual intranets, and there was no evidence that the intranet had promoted any sharing of knowledge. In contrast to the first firm, the second firm sought wide representation from the various sub-organizations and social networks in its organization. The organization members created a system that met their needs and was easy for them to use. Plus, the second firm’s intranet augmented already existing social networks. This effort did result in knowledge sharing. The mistake of the first firm was in not recognizing the need for creating shared understanding through networking and social coordination.

2.9 Knowledge Management and Social Dynamics

The example above leads to the importance of the social aspect of knowledge sharing to an organization’s knowledge management program. It is important to remember that ideas form in the minds of individuals, and the interaction between individuals is a key to developing further ideas or knowledge. “The tradition is that knowledge is transferred in a social context” (Sveiby 1999). Examples of this are the language people speak or the tone in which they speak to another individual. This social context often times dictates meaning. Without face-to-face, social contact, some knowledge might not be shared because it can only be conveyed in person.
Skyrme and Amidon (1999) shed more light on this notion by explaining that knowledge management is not a systematic discipline and takes into consideration “people, management, and organizational culture as well as technology infrastructure. Bahra (2001) argues that his research shows that it is the approach to the human and organizational factors that is the determining factor in achieving a successful outcome from a knowledge program”. Echeverri-Carroll (1999) found inter-organizational social networking to be particularly beneficial for organizations. Specifically, she discovered that “firms that establish partnership relationships involving frequent exchange of information tend to develop products and processes faster than their competitors who do not establish these types of relationships”. Weik and Roberts (1993) go to great lengths to point out that organizations are collections of individuals, and therefore socially oriented. In their study of flight deck operations, they use the term collective mind instead of the commonly-used term organizational mind to illustrate the point.

In the short tradition of knowledge management practice, organizations typically address knowledge management from a social or technological point of view. Managers tend to look at the management of knowledge from the point of view that employees are their best asset, whereas those who favour the technological approach deal with what information technology is needed to support knowledge management. Abecker et al. (1999) found that “effective knowledge management requires a hybrid solution, one that involves both people and technology, our long term vision is a corporate or organizational memory, at the core of a learning organization, supporting sharing and reuse of individual and corporate knowledge”.

### 2.10 Knowledge Management Practices

Knowledge management is a concept rooted in practicality and chiefly used in the business world. According to Wiig (1997), people and organizations practice knowledge management to achieve two main objectives. The first is to make the enterprise act as intelligently as possible to secure its viability and overall success. The second objective is to gain understanding of the best value of knowledge assets.

While the primary users of knowledge management reside in the corporate community, other organizations can benefit greatly from the practice. Davenport et al. (1999) identify four types
of knowledge management projects. Creating knowledge repositories focuses on establishing databases or files of external knowledge, structured internal knowledge such as research reports, and informal internal knowledge like lessons learned. The second type of project is improving knowledge access. The third is to enhance the knowledge environment. The final type of project is managing knowledge as an asset.

Skyrme and Amidon (1999) declare that any knowledge management project requires a systematic and holistic view of the knowledge agenda. This means the team undertaking the project must understand the strategic role of the knowledge they are managing, how that knowledge is linked to key management decisions and processes, and how to improve knowledge creation, sharing, and use.

These practices can also be seen as strategies to knowledge management in three dimensions:

### 2.10.1 The codification strategy

This attempts to codify explicit knowledge. Codification makes it easier to disseminate knowledge across individuals, departments, divisions or subsidiaries, which makes the transfer possibly less fortuitously, less time consuming and ultimately may yield economies of scope. Reusing and leveraging existing knowledge can also save time and costs relative to creating new knowledge from scratch (Watson et al. 2006). The rise of networked computers has made this codification, storage and sharing of knowledge easier and cheaper. When a firm wants to codify explicit information, information technology is an important factor, also referred to as knowledge management systems. However, it should be noted that the successful implementation of a codification strategy does not come at zero cost.

The relevant but not yet systematized knowledge has to be identified, codified, stored and, possibly most important, maintained and be kept up-to-date. This clearly requires time and effort in addition to the pure capital investment for an appropriate infrastructure, i.e. hardware and software. The latter argument relates to a theoretical model by Watson et al. (2006) who emphasize that a successful implementation of knowledge management systems requires the
willingness of individuals to contribute their knowledge to the system, and also that employees access and reuse the knowledge embedded in this system.

2.10.2 Knowledge Sharing Strategy

Not all knowledge embedded in a firm’s staff is codifiable a-priori. Knowledge is often closely tied to the persons who developed it, and therefore it is frequently referred to as tacit knowledge. Tacit knowledge is personal and deeply rooted in the actions, skills, experience, ideals, values and emotions of individuals (Sveiby 1997, Nonaka 1994). Tacit knowledge needs to be shared via interpersonal interaction. This is done in brainstorming sessions and face-to-face conversations. Therefore it is necessary to stimulate employees to cooperate with each other and share information within the company so that present tacit knowledge is distributed. When a firm has to deal with tacit knowledge, the role of information technology is subordinate.

Tacit knowledge is mostly transferred interpersonally since the analytic and creative skills are embedded in the person. One-on-one mentoring and informal training programs, which are costly and time consuming, are typically used to guide personnel (Choi et al. 2003). It is also of importance that an environment where communication and cooperation are highly valued is created. Soliman et al. (2000) indicate the value of the creation of a culture that encourages the meeting of organizational goals via the free flow of knowledge. Sharing of knowledge can also be stimulated through personal incentives such as a pecuniary reward system.

It is realistic, however, that firms cannot create all desirable knowledge internally. The firm is part of a larger, complex environment. For a firm to be able to cope with this environment it needs to be flexible, e.g. by acquiring and internalizing external knowledge (Gassmann 2006). With respect to knowledge management, Johannessen et al. (1999) developed a theoretical model that, among having relationships in teams and a performance culture as well as organizational learning systems, stresses the importance of external connections in addition to internal knowledge management.
2.10.3 External Knowledge Generation

This can be done via acquisition of external knowledge resources or through cooperation with external agents, such as consumers, suppliers, competitors, research institutions and consultants. In this context, it is important that the firm maintains the necessary absorptive capacity, according to Cohen and Levinthal (1990), in order to optimize the appreciation and utilization by the employees of newly gained knowledge. The Not-Invented-Here syndrome relates to the phenomenon that internal relative to external knowledge is highly valued, that is, a possible presence of internal resistance against external knowledge.

However, Menon and Pfeffer (2003) conducted case studies and used survey data for discussing the difference between the appreciations of managers towards the value of internal versus external resources. They find that organizational reality contradicts this Not-Invented-Here view frequently and that firms do not only acquire external knowledge on a regular basis, but that frequently a preference for outsiders’ knowledge exists. Besides potential drawbacks stemming from the Not-Invented-Here syndrome, transaction costs involved with the acquisition of external knowledge may be substantial.

Cooperation with external partners involves uncertainty, for example frequency of transaction recurrence and how parties deal with the idiosyncratic aspect of the investment in collaborative effort. Clearly, the involvement of external consultants also induces monetary cost. Moreover, contracts can never be designed optimally for both parties (Williamson 1979). Thus, good coordination is required to optimally benefit from external knowledge, and the acquisition of external knowledge may be costly.

2.11 Future Considerations for Knowledge Management

In spite of a number of people viewing knowledge management as a passing business fad, the concept is an emerging discipline, which arose from a need for businesses to stay competitive in an information age post-capitalist society. As the field matures, knowledge management compels one to examine all approaches to sharing information and knowledge, informal and formal, social and technological. It fosters creativity and innovation. As technology develops
even further, organizations will make new advances in transferring, sharing, and creating knowledge. Even today, businesses are improving artificial intelligence systems in order to capture and provide access to problem resolution, legal knowledge, and new concept development (Grover and Davenport 2001).

Nevertheless, knowledge management requires attention and discipline. It requires considerable effort on the part of workers and managers alike, but the positive effects of knowledge management are “evident by an internal and external awareness of collective strength and the ability to respond and instantly organize to meet demands and opportunities” (McCampbell et al. 1999).

2.12 The knowledge-based view and innovation outcomes

The essence of knowledge management with respect to innovation is that it provides a framework for management in their attempt to develop and enhance their organizational capability to innovate. Cohen and Levinthal (1990) label this as absorptive capacity. It defines the ability of an organization to recognize the value of new external information and knowledge, assimilate and apply them. This ability is critical in determining an innovative result. Extending this idea, Fiol (1996) argued that the potential of organizations to generate innovation outcomes is dependent on the previous accumulation of knowledge that they have absorbed.

According to the knowledge based view, a firm’s existing “knowledge base” set up its scope and ability to understand and apply new knowledge to decision-making, problem solving or innovations (Ahuja and Katila 2001). Knowledge breadth and depth are two distinct dimensions of a knowledge base that reveal both the structure and content of the knowledge a firm holds. Knowledge breadth refers to the extent to which the firm’s knowledge repository contains distinct and multiple domains. Knowledge depth refers to the level of sophistication and complexity of knowledge in key fields (Bierly and Chakrabarti 1996). “The breadth attribute captures the horizontal dimension of knowledge and heterogeneous knowledge content, whereas the depth attribute reflects a vertical dimension and unique, complex, within-field knowledge content” (Zhou and Li 2012).
2.13 Innovation

There are several definitions of innovation. Herkma (2003) stated that foremost and basic purpose of innovation is to produce new knowledge which can develop and find out the doable solutions for society. Innovation is a practice and process which captures, acquires, manages and diffuses knowledge with the aim of creating new knowledge which supports production and delivers distinctive and idiosyncratic kind of products and services (Gloat and Terzirovski 2004).

Plessis (2007) described innovation as a formation of new knowledge which helps the new business returns, which has a purpose to make organization internal business process and structure more sophisticated that produce the market acceptable products and services. He further proposed to define innovation as:

“Activities and processes of creation and implementation of new knowledge in order to produce distinctive products, services and processes to meet the customers’ needs and preferences in different ways as well as to make process, structure and technology more sophisticated that can bring prosperity among individuals, groups and into the entire society.”

2.13.1 Importance of Innovation

The basic objective of innovation is to create value for the business. In today’s competitive era innovation is a soul to the business, because through innovation, organizations produce unique products and services. Innovation is also important because of the rapid change in taste and preferences of the customer of emerging and developed markets. That is why according to a research report by the World Bank (2011), 75 percent of CEO’s of fastest growing organizations claim that their strongest weapon to compete in market is their innovative products and processes. The organizations which are not capable of producing innovative products and services will be wiped out from the industry by the competitors because innovation works as a fuel for the organization to grow in any type of environment.
2.13.2 Scope of Innovation

Innovation might be radical or incremental. A radical innovation is a product, service and process with entirely unique or significant improvements in existing features which improve the cost and performance (Leifer et al. 2007). Radical innovation is highly risky for the business because radical innovated products are more difficult to commercialize. But on the other hand, radical innovation in product, service or process is crucial for the business because it involves the development and application of new technology. An important aspect of radical innovation asks to what extent new technology is more sophisticated and advanced as compared to current technology (Govindarajan and Kopalle 2004, Christenson and Overdorf 2000).

Leifer et.al. (2007) also presented the idea of different hubs to bring radical innovation. Among these hubs, one important hub is of idea generators. Idea generators are responsible for generating distinctive ideas and there are people who exploit these distinctive ideas, idea hunters who actually exploit and execute these ideas. Idea gatherers basically are receivers of the ideas. They have skills, expertise, judgment and motivation to respond to these unique ideas. The combination of generators, hunters, and gatherers plays an important role of bringing radical innovation in large organizations. There are two causes that firms strive to bring radical innovation. First, these radical innovations create barriers for the potential competitors and ruin the market share of existing industry players (Christenson 1997, Christenson and Bower 1996). Second, competitors are much capable to develop or produce radical innovated products (Christenson 1997, Christenson and Bower 1996, Christenson and Overdorf 2000, Leifer et. al. 2000, Gopalkrishnan et. al. 2006).

Plessis (2007) went further to explain that incremental innovation is basically a modification in a product which also called line extension or market pull innovation. Incremental innovation does not need to significantly diversify from current business. That is why this type of innovation enhances the skills and competencies of the organizational employees. Incremental innovation is pivotal for the organization because it helps the organization to increase their market share to remain in industry for a long time (Banbury and Mitchell 1995).
2.14 Relationship between knowledge management and Innovation

Messa and Testa (2008) stated that organizations must develop the receptors that gain or absorb the external knowledge and this activity is strongly correlated to the innovation capability. Further, they said that through benchmarking, organizations can acquire explicit and tacit knowledge from external sources. These external sources of knowledge can be integrated with the organizational internal explicit and tacit knowledge and if knowledge gap prevails that can be filled through new knowledge acquisition which will helpful to bring innovation. Ju et al. (2006) argued that in order to get competitive advantage organizations should continuously learn from outside sources. Through the proper knowledge distribution and sharing, organizations can bring innovation. So, organizations must develop such channels within the organizations through which employees share their knowledge with one another. Plessis (2007) stated that innovation depends upon knowledge. This suggests that, to bring innovation, organizations have to identify knowledge capability, and richness.

Parlby and Taylor (2000) asserted that the foremost purpose of knowledge management is to bring innovation. Plessis (2007) stated that organizations can develop the collaborations across the organizational boundaries to bring the innovation and to get the sustainable competitive advantage. This collaboration helps the organization to approach the new knowledge that can be helpful to fill the knowledge gap within the organization. This collaboration ultimately brings the innovation into the organization and this collaboration can reduce the risk and cost to bring innovation.

Organizations that rapidly capture and implement new knowledge across the organization can be able to foster innovation as compared to those organizations that do not focus on this aspect (Cavusgil et al. 2003). Furthermore, they argued that first and most important aspect of innovation is to, increase innovation capability to identify and capture the tacit knowledge of the organization.

Tacit knowledge can be acquired from outside the organization like customers, suppliers and bankers etcetera. This acquisition of tacit knowledge plays significant role to foster the process of innovation. Tacit knowledge becomes more important in those particular industries where
explicit knowledge is scarce. Through knowledge management, organization can identify their tacit knowledge which they usually do not know before. Knowledge management also helps the organization to articulate tacit knowledge in the form of explicit knowledge and this is a strong base to bring innovation (Plessis 2007).

Knowledge management integrates different types of tacit and explicit knowledge. Through integration, organizations can discover what type of tacit and explicit knowledge subsists in the organization. Furthermore, knowledge activities like knowledge gathering, managing, sharing, learning, reuse and retrieval play important role in bringing innovation as shown in Figure 4 below. Through knowledge management activities, organizations find out the distance of knowledge from inside and outside the organization. Organizations manage this knowledge in the form of data base, so that, they can ensure the availability of right type knowledge to the right person at the right time.

![Figure 4: The Model of knowledge management and Innovation](image)

**Source:** Kashif et al. 2011

The basic aim of this research was to explore how knowledge management, among other factors, plays an important role in bringing innovation in any industry. There are several components involved in this model like knowledge management activities, knowledge
transformation, technology and culture and more importantly organizational knowledge assets which comprises of two things:

1) Human capital

2) Data Warehouses.

All organizations have both types of knowledge, Tacit and Explicit. Explicit knowledge is easy to disseminate and share amongst the people whereas tacit knowledge is very difficult to share, integrate and disseminate to the people (Kashif et al. 2011). The one tool to increase knowledge and enhance the innovation process is open communication within the organization because, open communication and flexible structures urge people to create new ideas and share their tacit knowledge.

2.15 Information Communication Technology Factors

As far as relationship of information technology and knowledge management is concerned, there are two schools of thought about it. MecDermott and O’Dell (2001) and Habbard and Carilo (1998) stated that knowledge management could be successful without information technology and information technology can be used when it is necessary. On the other hand, Duffy (2000) and Lang (2001) cited by Kashif et al. (2011), argued that information technology has become much more important because of globalization. It is true that technology alone cannot play any role to capture, manage and exploit the knowledge which exists inside and outside the organizations.

Rather, it is a combination of technology and human capital that leverages the knowledge management activities (Mecdermott 1999 cited by Kashif et al. 2011). Today, information technology supports the most important tasks of knowledge management. Information and communication technology identifies and gathers the knowledge through different tools like web portals, internet and intranet. Not only this, knowledge gathering modernize information technology tools and also help organizations diffuse the explicit and tacit knowledge.
Information and communication technology plays an important role in organizational communication. Baker et al. (2005) discovered that technology is a tool to support the communication. There must be a proper communication structure through which people can share knowledge and ideas. One of the major sources to gain new knowledge is through the internet (Terrett 1998 cited by Kashif et al. 2011). Mohammad, Stonkosky and Murray (2000) stated that the real face up to, for information technology experts is to revolutionize the objectives, to select, develop and implement better technology that could serve knowledge management in efficient and effective way.

2.16 Knowledge Management Activities:

Neilson (2006), cited by Kashif et al. (2011), made the connection between different knowledge management activities like knowledge creation, acquisition, capturing, assembling, sharing, integration, leverage and exploitation. He further divided these eight knowledge management activities into three dynamic capabilities like knowledge development, knowledge (re)combination and knowledge use. These eight knowledge management activities contain all important activities that start from acquiring new knowledge and ends at the exploitation of this new knowledge. Through these activities, organizations find out the new knowledge within the organizations as well as from outside the organization that enhances the knowledge capability of the organizations. These knowledge management activities enrich the organizational knowledge assets.

This consistent acquisition of new knowledge makes more sophisticated organization process and routines. And, by the application and use of this new knowledge, innovation can be brought into the organization.

2.17 Knowledge Assets

Organizational knowledge assets are the soul of innovation as knowledge assets increase the knowledge capability of the organization and knowledge capability leads to innovation. Knowledge assets include two factors: Human capital and Knowledge repositories.
2.17.1 Human Capital

The most important factor of the organizational knowledge is human capital. Knowledge and competencies of the workers have become the vital component of developed economies (Drucker 1993). Human capital is the most sustainable, inimitable source of competitive advantage. Human capital consists of competencies, skills, knowledge and information possessed by workers of the organization (Namasiviyam & Denizci 2006 cited by Kashif et al. 2011). Megregor et al. (2006), cited by Kashif et al. (2011), defined human capital as the size and quality of broader labour markets, but also as the sum of individual competencies in organizations. Human capital creates the ideas that are the strongest base of innovation.

The role of human capital is not only limited to the idea generation rather its role is also important during distinctive idea execution to deliver the innovative products and services to the customers. Kashif et al. (2011) vowed that customer value creation depends upon idea and information. Organizations must know the type and level of the organizational human capital. In highly dynamic and competitive environment, collective knowledge and expertise of employees must be utilized in the effective and efficient way so that they could create optimum economic benefits. It is not only important to discover competent human capital in the organization but the organization must create the environment to utilize the competent human capital. If organizations have that type of supportive culture and environment, that type of human capital will produce more economic value (Gold and Campbell 2002).

2.17.2 Knowledge Repositories

Organizational knowledge repositories consist of large databases, data warehouses, internet, intranet etc. Knowledge repositories having complete database of skills, expertise and knowledge of organizational employees due to knowledge repositories it becomes easy to access information and knowledge of the organization. Through knowledge repositories, we can accomplish important task which is managing the explicit knowledge of the organization. This explicit knowledge can be diffused to the person or area where it needed.
2.18 Knowledge Transformation Success and Innovation

In this paper we explore and discuss several factors that contribute in bringing innovation but these factors cannot bring innovation itself rather organizations have to make the knowledge transformation/conversion process successful so that these factors may effectively bring innovation. Cumming and Teng (2003) identified several factors that play an important role to transfer knowledge among individuals, groups and in entire organizations. They divided these key factors that make knowledge transfer successful into four broad contextual domains like knowledge context, relational context, recipient context and activity context.

2.18.1 Knowledge Embeddedness

Knowledge use has to be entrenched in individuals, tools, processes and in related activities and networks of the organizations (Argote and Ingram 2000). There is a way to transfer knowledge from one place or department to another place or department, and this is done through transferring knowledge individuals. The benefit of this is that, organization can transfer both types of knowledge, tacit and explicit at the same time (Allen 1977, Berry and Broadbent 1984, Starbuck 1992). Whenever there is a difference of knowledge and expertise between knowledge recipient and knowledge sender, the knowledge recipient fails to learn (Moreland et.al. 1996 cited by Kashif et al. 2011). Knowledge can be rooted in organizational activities and practices (Levitt and March 1998, Szulanski 1996 cited by Kashif et al. 2011). Finally, knowledge can also be embedded in multiple elements and sub networks (Cumming & Teng 2003). As Teece (2000) found out, it would be difficult to transfer knowledge within the organization without mobility of experts with recognized patterns of working mutually. Knowledge embeddedness is negatively and significantly affecting knowledge transfer success (Cumming & Teng 2003).

2.18.2 Knowledge Articulability

Knowledge articulability is an important factor that affects knowledge transfer success. Knowledge articulability refers to what extent knowledge is written down, verbalized and articulated (Bressman 1999). Polyani (1996) stated that people explain less than whatever they know, because individuals have tacit knowledge which is unarticulated, intuitive and can only be observed through application. Articulated knowledge can easily be captured, stored
and shared with other employees because it can easily be understood and observed as there is less ambiguity in articulated knowledge.

Knowledge tacitness is significantly and positively correlated with ambiguity (Simionon 1999 cited by Kashif et al. 2011). Transfer of knowledge success depends upon how much knowledge is tacit and explicit. If knowledge is more explicit and articulated the chances of transfer success will be more. Ambiguous and less articulated knowledge is difficult to share and poor articulated knowledge is difficult to diffuse among the organizational employees as well (Hakanson and Nobel 1998 cited by Kashif et al. 2011). There is a negative and significant relationship between knowledge articulability and knowledge transfer success.

Theoretical background does not support the findings of the report by Cumming and Teng (2003) because they did work on research and development projects which were considered more technical and having more tacit knowledge as compared to explicit knowledge. So, that is why, the findings of Cumming and Teng (2001) were not similar to previous studies.

2.18.3 Organizational Distance

The base of organizational distance is the means through which the source and receiver shares the knowledge. Organizations can get knowledge from within the organization as well as outside the organization. Knowledge transfer within the organization is easier as compared to outside the organization. Knowledge is easy to transfer from selected parties (Cumming and Teng 2003), like franchises (Darr et.al. 1995), chains (Baum and Ingram 1998 cited by Fshaif et al. 2011), networks (Uzzi 1996) can transfer knowledge more effectively and efficiently. Cumming and Teng (2003) found that transfer success will decrease with the increase in organizational distance between source and recipient of knowledge.

2.18.4 Knowledge Distance

Knowledge distance can be taken to refer to the extent of separation that exists between the source and the recipient of intended knowledge in terms of them having the same kind of knowledge. It is found that for organizational learning knowledge gap between source and
recipient should not be too much (Haml 1991). The reason behind this is, if knowledge gap is greater, the learning steps will also be more and knowledge transfer will be much intricate, grim and time consuming. As Haml (1991) said, if the knowledge and expertise gap among source and recipient is big, transfer of knowledge and learning will almost be impossible. To minimize these gaps, there must be some adjustments in knowledge and other factors in order to make knowledge transfer successful. Cumming and Teng (2003) discovered that there is significant and negative relationship between knowledge distance and success of knowledge transfer.

2.18.5 Physical Distance

Physical distance is the difficulty, type and expense to get face to face communication and for knowledge transfer. Athanassiou and Nigh (2000) maintained that face to face interactions are better as compared to all other modes to deliver strategically important matters. Cumming and Teng (2003) found that physical distance negatively affects the success of knowledge transfer.

2.18.6 Project Priority

Different projects take different degrees of attention, resources and time. When a recipient gives too much priority to the project, s/he will be much motivated to get new information and knowledge transfer success with rapidity and with much more intensity. Researchers identified different variables to make knowledge transfer successful as motivation and learning intent of the recipient of knowledge. These factors play a vital role in knowledge transfer success (Baughn et al. 1997, Haml 1991, Szulanski 1996). According to Cumming and Teng (2003), people will support the transfer of knowledge in highly prioritized projects than less ones.

2.18.7 Learning Culture

Learning culture is also an important factor for success of knowledge transfer. Knowledge transfer has two aspects; first is knowledge velocity and second is knowledge viscosity. Knowledge velocity is the speed of knowledge transfer and knowledge viscosity refers to the richness of the knowledge transferred (Davenport and Prusak 1998). When there are learning
routines in organizations, every employee starts to get new knowledge by interacting with other people and also by approaching learning by other means like books, journals and many others.

2.18.8 Determinants of Knowledge Transformation Process

Figure 5 below illustrates the knowledge transformation process.

![Figure 5: The SECI process](image)

Source: Nonaka et al. 1994

Modes of knowledge transformation as seen by Nonaka et al. (1994) are:

1. Socialization (Tacit to Tacit)
   - Wandering inside
   - Wandering outside
   - Tacit knowledge transfer
   - Tacit knowledge accumulation

2. Externalization (Tacit to Explicit)
   - Dialogue
   - Metaphor
3. Combination (Explicit to Explicit)
   - Collecting data and acquisition
   - Disseminating data and information
   - Editing and synthesizing data and information

4. Internalization (Explicit to Tacit)
   - Personal experience
   - Simulation

Organization’s top management must focus on this knowledge transformation process because this knowledge transformation process is the important source of diffusion of knowledge among individuals, groups and in entire organization from top level to the bottom level in hierarchy of the organization. This knowledge transformation process creates the leverage within the organizations regarding knowledge sharing, creation, dissemination and integration of the knowledge within the organization.

Important tools for knowledge transformation can be mentoring, coaching formal and informal meeting and seminars and it also includes learning by doing. Through these different activities, erudite persons share their knowledge and expertise with others which can boost the level of knowledge in persons lacking knowledge. It also urges people to gain new knowledge and ideas to produce something distinctive as compared to competitors. This is the soul of innovation and competitive advantage. The biggest achievement for any organization is when her employees start to think in different ways, when they are forever, devoted and motivated to push their organization to the height of success and excellence. The knowledge transformation process is affected by many factors as well.

2.19 Determinants of Innovation:

2.19.1 Knowledge Transformation, Collaboration & Integration and Innovation

Knowledge collaboration is very important for bringing innovation. Collaboration might be internal or external. Through internal collaboration, organizations come to know about diverse
knowledge which exists in the organization in the form of tacit and explicit knowledge. Through strong internal collaboration with the employees, organizations come to know what, where and how much knowledge exists in the organization. This internal collaboration can foster the innovation because when organizations collaborate and integrate with the internal employees this can lead the organization towards the generation of pool of expertise and creativity which are essentials for bringing innovation in the organization.

As far as the role of external collaboration to bring innovation is concerned, external organizations play important role to bring innovation like customers as indicated by Baker and Sinkula (2005), Gassman et al. (2006) and competitors (Hamel et al. 1989). Nowadays, to bring innovation, it is crucial to make linkages with external organizations to get the knowledge and capabilities which are necessary for innovation (Chesbrough 2003, Powell et al. 1996). To bring innovation, linking with external organization and partners is a core process. Chesbrough (2003) argued that if any firm wants to innovate successfully in a highly complex environment, the innovation process must be supported by the open and flexible structure. Organizations must integrate with external knowledge and capabilities. This integration and collaboration allows the organization to get more innovative ideas which is sole of innovation.

2.19.2 Organizational Learning and Innovation

To compete in highly dynamic environment each and every organization must focus continuous learning because customer’s needs and preferences are rapidly changing and to meet those requirements, organizations must seek and learn the new ways. These new ways and methods can only come into the organization through learning. Organizational learning enhances the organization knowledge capability and knowledge assets. Consequently organizational learning strengthens the knowledge transformation process because when employees learn they have to share their experiences and knowledge with others who really need current knowledge to fill the knowledge gap.

Wijenhoven (2001) states that organizational learning urges the people to enhance the organizational knowledge base. Organizational learning enhances the interaction among the employees so that knowledge sharing, integration and dissemination is achieved. Drucker
explained that organizational learning will boost the quality and quantity of the information and accumulation of knowledge in a dynamic environment. Organizational learning will enhance the ability to create new knowledge and its application.

2.19.3 Knowledge Transformation and Knowledge Characteristics

Knowledge characteristics also affect the knowledge transformation and innovation. There are two types of knowledge characteristics which are Knowledge tacitness and knowledge complexity. The most important characteristic of the knowledge is knowledge tacitness which is human expertise, capabilities and competencies which exist in the human mind. To pace up the innovation process, organizations must focus on the transformation of tacit knowledge into the explicit knowledge because tacit knowledge is difficult to share, capture and disseminate. It can only be observed through application. So, to get benefit and competitive advantage from tacit knowledge, organizations must transform tacit knowledge through mentoring, coaching, formal and informal meetings and seminars so that tacit knowledge can be diffused to the other members of the organization as well.

The other characteristic of knowledge is complexity. Knowledge complexity can be a hurdle in the knowledge transformation process and so to bring innovation. Complex knowledge is difficult to share with others and this factor can slow down the pace of knowledge transformation and innovation process. Meetu and Perez-cano (2004) cited by Kashif et al. (2011), believe that knowledge complexity will slow down the knowledge transformation and it is more difficult to apply in organizations and convert into other types of knowledge. Knowledge complexity will increase the cost of acquiring and exploitation of the knowledge and it will affect the learning efficiency of the organization because individuals cannot have easy access to such knowledge (McEvily and Chakarvarthy 2002).

2.19.4 Organizational Culture and Innovation

Culture is one of the most important factors to implement the knowledge management system. Delong and Fahey (2002) stated that knowledge management faces difficulties from corporate culture to be implemented that’s why normally organizations do not get maximum benefit from
knowledge management. In a study of 453 firms, more than half of them indicated organizational culture was the biggest hurdle to implement the knowledge management system in the organizations (Ruggles 1998 cited by Kashif et al. 2011). In order to implement the knowledge management system effectively, organizations must create the thirst for knowledge and achievement among the individuals of the organization. So, to implement knowledge management, organizations need to build the knowledge culture within the organization in which new knowledge acquisition and sharing will be the integral part of the organization strategy and culture. Gold et al. (2001) stated that encouraging and supportive culture will help to build the knowledge management system in the organizations.

2.20 The conceptual Framework

Following the literature reviewed above, the following conceptual framework was adopted for this research.

![Conceptual Framework](image)

**Figure 6: Conceptual Framework**

**Source:** Own Work

2.20.1 Employee collaboration

From the literature swotted above, there is evidence that employee collaboration, as shown by the framework in figure 6 above, is of great importance in knowledge creativity and sharing. When employees do not collaborate there would be little or no knowledge shared because of the social nature of knowledge. The process of knowledge transfer from explicit to tacit is much
easier because it can be achieved through document reading, audio listening, watching videos and other sources. Without socialisation among concerned parties, tacit to tacit knowledge transfer is next to impossible. Employee collaboration is also important when it comes to knowledge externalisation where the parties have to employ some form of dialogue.

### 2.20.2 Leadership and Management Support

It is imperative that top management provide sufficient resources in terms finance, space and time for knowledge management activities. They are the custodians of the organisation’s strategy and when they model what they want to see, it will be easy for the employees to emulate it and engage. When this role is not played well, the implementation of knowledge management practices will fail and hence a negative effect on product innovation.

### 2.20.3 Information and Communication Technology

Information and communication technologies provide a platform for creation and sharing of knowledge within and outside the organisation. Information and communication technologies play a supportive role in the processes of knowledge management practices to influence product innovation.

### 2.21 Conclusion

In this chapter, literature that informs knowledge management practices and their relationship to product innovation have been discussed. A theoretical framework which will guide the research was also proposed and explained. The next chapter will discuss the methodology that was adopted in conducting this study.
CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This research sought to understand “How knowledge management activities affect product innovation”. The study was carried out following a methodological framework which outlined how the whole study was conducted and paying particular attention to how the research questions raised in the initial stages of this study were answered. This topic outlined the research methodology that was used by the author.

3.2 Research Philosophy

Research philosophy depicts a thought process about knowledge development (Easterby-Smith et al. 1991 cited by Alavi and Tiwana). Saunders, Lewis and Thornhill (2009) also support this view and state that, a research philosophy relates to the development of knowledge and nature of knowledge. The research philosophy one adopts contains important assumptions about the way in which one views the world. These assumptions will underpin strategy and the methods that will be chosen to be part of that strategy.

According to Johnson and Clark (2006) cited by Saunders, Lewis and Thornhill (2009, there is need to be aware of the philosophical commitments that are made through choice of research strategy since this significantly impacts the way research is carried out as well as the understanding of the topic under research. They also argued that the important issue is not so much of whether the research is philosophically informed, but it is how well one is able to reflect upon one’s philosophical choices and defend them in relation to the alternatives that could have been adopted.

Research scientists and methodologists have argued for and against either of the following prominent schools of thought, phenomenology (interpretive) and positivism (deductive) and realism (Mertens 2010). Table 2 below shows the comparisons of these philosophies.
### Table 2: Comparison of Research Philosophies

**Source:** (Mertens 2010)

#### 3.2.1 Interpretivism

McNabb (2011) argues that the interpretivist philosophy is an inductive approach that is qualitative in nature and relies on the participant’s views on the situation under study. On the other hand, Giocomo and Patriz (2010) assert that the interpretative approach is an idealistic experimental methodology where expert knowledge and empirical research determine the formulation of plans. This methodology also requires the elements of phenomena to be tangible, real and observable (Zikmund 2010).

#### 3.2.2 Positivism (Deductive)

Positivistic paradigm is founded on the belief that the study of human behaviour should be conducted in the same way as studies conducted in the natural sciences (Saunders et al., 2009). This was supported by Fisher (2010) who says, “That positivism holds that an accurate and value-free knowledge of things is possible. The intention of positivism is to produce general (sometimes called ‘covering’) laws that can be used to predict behaviour, in terms of probability at least, if not with absolute certainty.”
Giocomo & Patriz (2010) cited by Saunders et al. (2003), also postulated that a positivist approach is derived from science that consists of instruments to read the ‘book of nature’. Positivist is a scientific method that is a rationalist, empiricist and reflects a deterministic philosophy (Creswell 2009). Fischer went on to say that a positivist research is mostly aligned with quantitative methods of data collection and analysis and is distinctly deductive in nature. Hussey and Hussey (1997), pointed out that under a positivist approach, the process is to study the literature to establish an appropriate theory and construct a hypothesis.

A key assumption of the positivism school of thought is that the researcher is independent of and is not affected by the subject being researched (Remenyi et al. 1998 in Saunders et al. 2003).

### 3.2.3 Realism

“Realist Research is an approach that retains many of the ambitions of positivism but recognises, and comes to terms with the subjective nature of research and the inevitable role of values in it. Realism still aims to be scientific but makes fewer claims to knowledge that perfectly mirrors the objects of study.” (Fisher 2010). “Realist research puts things into categories and labels them, although it is possible to argue about whether the right categories have been chosen and makes use of qualitative techniques.” (Fisher 2010).

It is “based on the belief that a reality exists that is independent of human thoughts and beliefs” (Saunders et al. 2003). They further placed a strong emphasis on the importance of understanding what they call “subjective reality”. These are socially constructed interpretations and meanings shared by people within a certain context.

### 3.3 Choice of Philosophy

The author made use of both positivism and interpretivist philosophies in the research with a bias to interpretivism. According to Saunders (2009), the best option is a combination of the positivist and interpretivist philosophies. Positivism is key in analysing product introduction frequency which involves quantitative data whilst interpretivism analyses knowledge
management practices which are qualitative in nature and is centred on the processes and procedures within Econet.

Gill and Johnson (1997) as cited in Saunders et al. (2003) stated that positivist approach is distinctly deductive, seeks to explain causal relationships between variables and usually uses quantitative data and structured methodology to facilitate replication.

3.4 Research Methodology

Irny and Rose (2005), defined a research methodology as the systematic theoretical analysis of the methods applied to a field of study. They further argued that it comprises of theoretical analysis of the body of methods and principles associated with a branch of knowledge. The methodology is the general research strategy that outlines the way in which a research project is to be undertaken and also identifies the methods to be used in it (Howell 2013).

From the above statement, it can be noted that the importance of coming up with a research methodology cannot be over emphasised. It is a very important stage in carrying out a research study as it informs and guides the whole process. This is the area that explains how and where the data was generated from, for instance, the data gathering techniques used and also someone reading this section should have enough information to be able to come up with methods that are in congruent to the ones the researcher used to obtain data.

For this research project, a qualitative research methodology have been chosen. This is because the question that the research sought to answer requires words and descriptions to explain the outcomes as opposed to numbers. The research was done to answer a “How” type of a question which is best answered by a qualitative research methodology. According to Creswell (2007), a qualitative research strategy is employed when an issue or problem needs to be employed. In this research, the researcher explored the issue of how knowledge management practices has influenced innovation at Econet Wireless Zimbabwe.
3.5 Research Design

The overall strategy that the researcher chooses to assimilate different components of a study in a comprehensible and rational manner so that a research problem is effectively addressed, is known as the research design (Vaus 2001). As further argued by Vaus (2001), the research design constitutes the blueprint for the collection, measurement and analysis of data. Polit and Hungler (1999), says that this blueprint guides the research in such a way that supreme control will be applied over aspects that could impede the validity of the study findings. These arguments indicate that the research problem determines the type of design that the researcher can use as opposed to the other way round. This then ensures that the evidence obtained from the research carried out enables the researcher to meritoriously address the research problem logically and as explicitly as possible.

As argued by Yount (2006), not all research is geared to sampling subjects out of a large populations. He further discuss the issue and points out that a case study is a kind of descriptive research in which an in-depth investigation is conducted. The design for this research will be a case study. A comprehensive study of a specific research problem, is basically what a case study is, as opposed to an extensive statistical survey (Anastas and Jeane 1999). Creswell (2007), views a case study research design as an enquiry of an issue explored through one or more cases within a constrained system over time. The case study method allows investigators to retain the holistic and meaningful characteristics of real-life events such as individual life cycles, organizational and managerial processes, neighbourhood change, international relations, and the maturation of industries (Yin 2003).

This research followed a single instrumental case study approach. As argued by Stake (1995), in a single instrumental cases study, the researcher focuses on an issue of concern and then selects one bounded case to illustrate that issue. This research focussed on the issue of knowledge management activities as they induce product innovation in a company thereby giving the organisation a competitive edge. The research generated ideas for improvement for this particular case, ideas for improvement towards attaining market leadership and sustainable competitive advantage leveraging on knowledge management, thereby influencing innovation.
The case study design approach has a limitation of requiring the researcher to carefully choosing a bounded system to study given all available possible candidates (Yin 2003). It has to be noted also that the case study approach has its strength in depth rather than breadth of the investigation (Yount 2006). The researcher chose to carry out the study and investigate the issue using the case of Econet Wireless Zimbabwe because it is a leading telecommunications company in the country. According to POTRAZ’s Sector Performance Report of the third quarter of 2014, Econet was commanding commanding 56.8% of mobile subscriber market share as compared to other players, NetOne and Telecel who had 23.7% and 19.5% respectively, and the company also posted huge operating profits of over 90million, as indicated in the Econet Audited Financial Results (2014).

### 3.6 Population

A population, as defined by Polit and Hungler (1999), is the whole of all subjects that conform to a set of conditions, encompassing the entire group of persons or entities that is of concern to the investigator and to whom the research findings can be generalised. The qualifying criteria, as argued by Polit and Hungler (1999), specify the characteristics that the organisations in the population must hold in order to be picked for the study. The research population for this research included the employees of Econet Wireless Zimbabwe. These employees were from six departments which includes Human Resources Management, Finance, Information Systems, Product Development, Customer Services and Marketing. Table 3 below shows how the three companies in the Telecommunications sector were ranked by active subscriber numbers.

<table>
<thead>
<tr>
<th></th>
<th>2nd Quarter 2014</th>
<th>3rd Quarter 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Econet</strong></td>
<td>6,339,945</td>
<td>6,472,382</td>
</tr>
<tr>
<td><strong>Telecel</strong></td>
<td>2,400,729</td>
<td>2,223,724</td>
</tr>
<tr>
<td><strong>NetOne</strong></td>
<td>2,379,285</td>
<td>2,707,682</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11,119,959</td>
<td>11,403,788</td>
</tr>
</tbody>
</table>

Table 3: Active subscriptions per operator

Source: POTRAZ 2014
3.7 Sampling Strategy

Sampling is defined by, Gay (1987) cited by Yount (2006), as a process of choosing a group of subjects or particular entity for the study in such a way that the individuals represent the larger group from which they were selected. They further argue that this representative portion of a population is called a sample. Fischler (2012) also defined a sample as a sub-group of the target population which is selected to represent the population.

Coyne (1997), suggests that sampling procedures in qualitative studies are not so rigidly prescribed as in quantitative researches. She further warns that the flexibility that is brought about by this idea may be confusing to some researchers and mistakes are bound to be evident. Morse (1991), was cited by Coyne (1997) suggesting that the lack of clear cut guidelines on principles for the selection of a sample has caused a lot of muddle in the qualitative research field. Sample selection in qualitative research has a deep effect on the ultimate quality of the study (Coyne 1997). Many researchers have been criticized for the lack of clear description of their sampling strategy in detail which then makes the interpretation of their results more difficult and then negatively affect the replicability of the study (Kitson et al. 1982 cited by Coyne 1997).

Schatzman and Strauss (1973) were cited by Coyne (1997) as suggesting that selective sampling is a practical inevitability that is designed by the factors such as the time the researcher has available to him/her, also by his/her framework, by his/her starting and developing interests and also by any restrictions placed upon his/her observations by his/her hosts. The same author further argues that after the researcher has made initial investigations and preliminary evaluations of the possible candidates for sampling, the researcher can then identify who or which organisation to sample for the study. Schatzman and Strauss (1973) as cited by Coyne (1997), further discusses the sampling of people according to the aims of the research in categories such as age, gender, status, role or function in the organisation, stated philosophy or ideology serving as departure points.

According to Patton (1990), the logic and power of purposeful sampling lies in the selection of information-rich cases for in-depth study. Based on the three mobile operators in Zimbabwe as
a starting point and the population of the study, the researcher then looked at the financials of the three organisations and also the number of products that they have released into the market together with the respective market positions. This was a process of trying to get to the point of choosing the organisation where the researcher can learn a great deal about issues of central importance to the purpose of the research. Econet was seen to have this information richness that was required for the research hence being chosen for the research. The above discussion shows that the sampling strategy employed by the researcher was purposeful sampling.

Curtis et al. (2000), puts forward an argument that, for some types of qualitative studies, case selection is not a matter for which ideologies can be laid down, since cases are purely ‘given’ facets of the research question. They went on to refer to Stake (1994), who distinguishes, in his discussion, between intrinsic case work (where the case is pre-specified, not chosen, because a particular case is the focus of the research question); and instrumental or collective casework, requiring one or more cases to be chosen from a number of possible alternatives in order to explore a research theme.

For the purposes of this research, the chosen company, according to the Zimbabwe Stock Exchange (2014), is the largest in terms of market capitalisation in its industry standing above USD454 million at the time the research was conducted. Econet Wireless Zimbabwe employs over 900 people who add value to the company through their activities and in offices situated all over the country.

Simple random sampling is faster and less expensive although it might not give results that represent the population. However, it gives every element in the population a chance to be selected. Using Econet Wireless Zimbabwe for the case study, Econet Wireless employees stationed at the head office and other offices in Harare were used in the data collection process. From the population, the researcher formed three strata, one being executive managers, another consisting of managerial staff and the last one non-managerial employees. The researcher used simple random sampling to select the respondents from each stratum. Three executive managers, twenty one managers and fifty nine non-managerial employees were chosen. In addition information was gathered from some of these employees through interviews and
policy documents provided. This helped to show whether the information obtained from the questionnaires is truly reflective of the knowledge management practices so as to reduce margin of bias.

The chosen sample included employees, middle and senior level managers who had been with the organisation since February 2009 and prior. The demography chosen is because of the period under study in which these participants have knowledge of what transpired in terms of product development and growth during that period.

### 3.8 Data Collection methods and instruments

Data can be defined as information obtained during the course of an investigation or enquiry (Polit and Hungler 1999). According to Sapford and Jupp (2006), data collection is the progression of gathering and measuring information on different variables that are of concern to the study, in an established systematic manner that allows the researcher to answer stated research questions, do hypothesis testing and also to evaluate the outcomes of the research. Sapford and Jupp (2006) also states that the data collection element of research is communal to all fields of study including physical and social sciences, humanities, business etcetera though the collection methods vary by discipline. He further argues that the emphasis on guaranteeing accurate and honest data collection remains the same, and also the objective of this is to capture high quality evidence that will translate to rich data analysis and allows the construction of conclusive and credible answers to research questions that are sat.

As poised by Marshall and Rossman (2006), qualitative research typically rely on four methods of data collection. These methods are participating in the setting, observing directly, interviewing in depth and also analysing documents and material culture. Gill et al. (2008) cited Silverman (2000) emphasising three methods used in qualitative research which are observations, textual or visual analysis (books and videos) and also interviews (Individuals and groups). Moriarty (2011) also adds another data collection method which she calls “Other data sources” and this category includes activities like documents and artefacts like clothing and text messages. She further argues that these materials complement the previously mentioned one, or the “primary” data collection methods.
3.8.1 Interviews

Interviews were also employed during data collection for this research. Interviews generally follow three formats i.e. structured, unstructured and semi-structured. There are three fundamental types of research interviews, according to Gill et al. (2008), which are structured interviews, semi-structured and unstructured interviews. Structured interviews are interviews in which all respondents are asked the same questions with the same wording and in the same sequence (Corbetta 2003). Semi-structured interviews are those that ask the same questions but not in the exact words and sequence. An unstructured interview is where questions are asked in a flexible manner and do not follow a guide.

For the purpose of the research the researcher made use of semi structured interviews so as to allow for clarity in cases where the questions were rigid. Interviews were done with Econet Wireless Zimbabwe executive management, management and non-managerial employees. Interviewing, as described by Kahn and Cannell (1957) cited by Marshall and Rossman (2006), is simply a conversation with a purpose. Moriarty (2011) argues that interviews remain the most common data collection method in qualitative studies and are also familiar and flexible way of getting opinions and experiences from people. She further hints that interviews take a very long time preparing, setting up and analysing as compared to the time it takes to actually carry it out or its execution.

Structured interviews can be described as verbally administered questionnaires whereby a list of encoded questions are asked, with slight or no disparity and with no scope allowing follow-up questions to responses that require further elaboration (Gill et al. 2008). This shows that structured interviews are relatively quick and easy to administer and Gill et al. (2008) argues that these kind of interviews may be of particular use if amplification of certain questions is required or if there are likely to be literacy or expertise problems with the participants. He further indicates that because of their nature, structured interviews only allow for limited responses and therefore becomes of little use where depth is required.

The second type of interview, the unstructured way, do not reflect any rigid philosophies or ideas and are executed with little or no organisation (Gill et al. 2008). They further explain that
these interviews normally starts with “triggering” questions like ‘Can you tell me about your university life?’ and then the interview proceeds based upon the response received from this primary question. Gill et al. (2008) also points out that these interviews are time consuming and difficult to manage and to participate in because the lack of predetermined questions gives little guidance on what to ask, and respondents may find it confusing and unhelpful. These interviews are mostly employed when little is known about the issues at hand or a different perspective is being sought.

Semi structured interviews have several significant questions that help in defining the areas to be discovered, but also permits the interviewee to deviate in order to pursue an idea or response in greater detail. As compared to structured interviews, this approach is flexible and also allows for the discovery or elaboration of information that is imperative to respondents but may not have previously been thought of as pertinent by the researchers.

3.8.2 Observation

Marshall and Rossman (2006) explains that observation involves the methodical noting and recording of actions, manners and artefacts in the social setting preferred for the research. They went on to suggest that these records are commonly referred to as ‘field notes’ which are detailed, non-judgemental, tangible descriptions of what has been observed. It has also been noted that in studies relying exclusively on observation, the researcher makes no special effort to take a specific role in the setting so that he/she can be accepted as an unobtrusive observer enough.

Observation can range from a highly structured, detailed notation of behaviour organised by checklists to a more holistic picture of actions and behaviour (Marshall and Rossman 2006). The observation method, as argued by Marshall and Rossman (2006), is used to discover complex interactions in natural social settings and can be used to further collect data during in-depth interviews when the researcher captures the participants’ body language and other visuals. Mostly observations are employed when the research present dangers, either physically or emotionally, such as working with police, drug users, cults and situations in which political or social tensions may erupt into violence (Weppner 1997 cited by Marshall and Rossman 2006).
3.8.3 *Focus groups*

Marshall and Rossman (2006) posit that the procedure of interviewing participants in focus groups largely has its roots in marketing research but has been adapted so well to be adopted in social science and applied research. They further argued that the makeup of these groups consists of people who are familiar with each other and are selected on the basis that they possess some common traits which are of great interest in answering the study questions. Gill et al. (2008), defines a focus group as a group discussion on a particular topic organised for research purposes and the process is guided, monitored and recorded by the researcher.

Under this method of data collection, the interviewer is responsible for creating a supportive environment, ask questions that are focussed and encourage discussion and expression of diverse opinions and viewpoints. Krueger (1998) cited by Marshall and Rossman (2006), argues that these interviews may be carried out numerous times with diverse respondents so that the investigator can identify patterns in the perceptions and views expressed, which are discovered through cautious and organised analysis.

Gill et al. (2008) posits that group composition has to be taken into consideration with due care when preparing for the process. They went on to discuss that things like profession, age, gender, sexual orientation, marital status etcetera has to be thought of in line of how these factors will affect the interaction of the group. As key as the interaction is in focus group success, the level of interaction required for a particular research may not be required for another and this difference has to be noted so that results are not distorted or cannot be generalised. When it comes to the focus group composition, Marshall and Rossman (2006), indicates that this is a disadvantage of focus groups as power dynamics needs to be managed well by the researcher and it requires critical skills to do this.

Focus groups are mainly used for spawning information on collective opinions and the connotations that lie behind those views, Gill et al. (2008). Morgan (1998), cited by Gill et al. (2008) adds further to the above opinion by saying that focus groups are useful in producing a rich understanding of participants’ experiences and beliefs. Bloor (2001) cited by Gill et al. (2008), suggested that a criteria for employing focus groups may include:
• As a standalone method, for research relating to group norms, meanings and processes
• In a multi-method design, to explore a topic or collect group language or narratives to be used in later stages
• To clarify, extend, qualify or challenge data collected through other methods
• To feedback results to research participants

On the other hand, Morgan (1998) cited by Gill et al. (2008) suggests that focus groups should not be used if:

• Listening to participants’ views generates expectations for the outcome of the research that cannot be fulfilled
• Participants are uneasy with each other, and will therefore not discuss their feelings and opinions openly
• The topic of interest to the researcher is not a topic the participants can or wish to discuss
• Statistical data is required (this is because focus groups gives a deeper insights into issues but cannot produce useful numerical results).

3.8.4 Questionnaires

The researcher chose to use questionnaires as an instrument in collecting data for the research. Brown (2001), defines a questionnaire as any written instrument that present participants with a sequence of questions or statements to which they are to respond to either by writing out their answers or selecting from among predefined responses. Questionnaires may be self-administered, posted or presented in an interview organisation and normally include check lists, attitude scales, projective techniques and rating scales (Oppenheim 1992).

Grey (2009) cited Black (1993), suggesting that there is a danger of respondents giving answers, through a survey, that are not reflective of their day to day practice and activities. The researcher of this study acknowledges the problem that comes with researchers controlling the responses from participants in a bid to make sure that they give answers which are reflective of their true life. A principal sustaining assumption was made for this research that the participants would be as honest as possible and objective enough to give answers that are a true
reflection of what is happening on the ground and on day to day business operations of Econet Wireless Zimbabwe.

A questionnaire that had both semi-structured and structured questions was administered by the researcher to all one hundred respondents. A brief explanation of what was required of the respondents was given and contact details provided so that any further clarification can be sort. The researcher gave respondents a one week period to answer the questions and then went back to collect the questionnaires.

Paper-pencil-questionnaires can be sent to a large number of people and saves the researcher time and money. People are more truthful while responding to the questionnaires regarding controversial issues in particular due to the fact that their responses are anonymous. But they also have drawbacks. The majority of the people who receive questionnaires don't return them and those who do might not be representative of the originally selected sample (Leedy and Ormrod 2001)

Questionnaires often make use of checklist and rating scales, as already cited in other authors’ works above. These devices help simplify and quantify people's behaviours and attitudes. A checklist is a list of behaviours, characteristics or other entities that the researcher is looking for. Either the researcher or survey participant simply checks whether each item on the list is observed, present or true or vice versa. A rating scale is more useful when a behaviour needs to be evaluated on a continuum. They are also known as Likert scales (Leedy and Ormrod 2001)

According to Brown (2001), questionnaires are highly versatile are cheap to undertake, both in terms of time and material resources as compared to other instruments like telephone and face-to-face interviews. Although questionnaires have a disadvantage that they are not suitable for illiterate respondents, this particular research was done at an organisation where all respondents were expected to be literate since they are dealing with knowledge management and innovation issues. The chosen instrument was already validated and used for other studies on knowledge
management and innovation. Thus, items for assessing the knowledge management focus (explicit-tacit-oriented) have already been validated and used by Choi and Lee (2003). Questionnaire items for the knowledge management source (external-internal-oriented) which will be used in this study had been validated and used by Lee et al. (1999). Table 4 below illustrates the advantages and disadvantages of using questionnaires in research studies.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The instrument is practical</td>
<td>1. Is argued to be inadequate to understand some forms of information</td>
</tr>
<tr>
<td>2. Cost effective in large number of respondents and data intensive studies</td>
<td>like changes of emotions, behaviour, feelings etcetera</td>
</tr>
<tr>
<td>3. Can be administered by the researcher or any number of people with minimum effect to its validity and reliability</td>
<td>2. Phenomenologists state that quantitative research is simply an artificial creation by the researcher, as it is asking only a limited amount of information without further probing</td>
</tr>
<tr>
<td>4. Results can be quickly and easily quantified by either a researcher or through the use of software package</td>
<td>3. Its validity is questionable</td>
</tr>
<tr>
<td>5. Questionnaires can be analysed more ‘scientifically’ and objectively than other data collection tools</td>
<td>4. Has no way to tell how truthful respondents are or how much thought they have put in the process</td>
</tr>
<tr>
<td>6. When quantified, the data can be used to compare and contrast other research and may be used to measure change</td>
<td>5. Respondents may be forgetful or not thinking within the full context of the situation</td>
</tr>
<tr>
<td>7. Quantitative data can be used to create new theories and or test existing propositions</td>
<td>6. Researchers may leave out questions that may bring out important information because the researcher makes their own assumptions and decisions during questionnaire design</td>
</tr>
</tbody>
</table>

**Table 4: Strengths and weaknesses of a questionnaire**

**Source:** Adopted from Popper (2004) and Ackroyd and Hughes (1981)
3.9 Validity and reliability of the research instrument

Validity of a research instrument, according to Uys and Basson (1991), “refers to the degree to which an instrument measures what it is supposed to be measuring”. On the other hand, Polit and Hungler (1997), defines reliability as the degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure. They further argue that if a study and its results are reliable, it means that the same results would be obtained if the study were to be replicated by other researchers using the same method.

The external validity then refers to the extent to which the research findings can be generalised beyond the sample used in the study. This generally depends on the degree to which the sample represents the population (Burns and Grove 1999). In this particular research, low external validity implies that the results can only apply to Econet wireless Zimbabwe. There is a possibility of this research having low external validity because a non-random, convenient sampling method was used in choosing the sample on which to collect data for the purposes of finding out the effects of knowledge management practices on product innovation. However, it has to be noted also that, the external validity of this study may not have been compromised as one company out of the three companies operating in the mobile network industry of Zimbabwe was used.

3.10 Data analysis

LeCompte and Schensul (1999) define data analysis as the process that is used by researchers to reduce data to a story and the interpretation thereof. In short, this is the process of sense-making out of large amounts of collected data. According to Patton (1987), there are three things that occur during analysis; data is organised, reduced through summarisation and categorisation then patterns and themes in the data are identified and linked. LeCompte and Schensul (1999), further suggests that data analysis be done during collection in the field, as soon as possible after collection and both while the researcher is still in the field and later when the researcher is out of the field. They also recommend that analysis be conducted in both top down and bottom up manner.
Merriam (1998) cited by Kawulich (2004), describes the process of data analysis as a complex action of moving back and forth between data and concepts, between description and interpretation using both inductive and deductive reasoning. As discussed by Kawulich (2004), constant comparative method is used to analyse data by assigning codes that reveal various sets and properties to units of data through categorising them into groups of like substance or meaning. Kawulich (2004) cited Merriam (1998) arguing that categories should:

- Reflect the purpose of the research.
- Be exhaustive,
- Be mutually exclusive,
- Be sensitive to category content and
- Be conceptually congruent

The number of categories used should be directed by the regularity of mention by participants, the audience for whom the research is conducted, and the exceptionality of the category (Guba and Lincoln 1981 cited by Kawulich 2004).

The coding process as argued by Kawulich (2004), produces categories that must be fleshed out by seeking relevant data bits that inform the category. Boyatzis (1998) cited by Kawulich (2004), stated that a good code has these five elements (i) a label (for instance a name), (ii) a definition of what the theme concerns (that which characterizes the name), (iii) a description of how to know when the theme occurs (those aspects that let you know to code a unit for that theme), (iv) a description of any qualifications or exclusions to the identification of the theme and (v) a listing of examples, positive and negative to eliminate confusion. He further points out that the label should be developed last and should be conceptually meaningful, clear and concise and close to the data.

Kawulich (2004), points out that the process of coding data includes looking for patterns and themes. He goes on to cite DeSantis and Ugarriza (2000) who defined a theme as “an abstract entity that brings meaning and identity to a recurrent experience and its variant manifestations. As such, a theme captures and unifies the nature or basis of the experience into a meaningful whole”. They then suggested five aspects that involves a theme:

1. The overall entity or experience;
2. The structure or the basis of the experience;
3. The function or the nature of the experience into a meaningful whole;
4. The form or the stability or variability of the various manifestations of the experience and
5. The mode or the recurrence of the experience.

They went on to elaborate on the four criteria they believed to be fundamental to defining themes which are; the theme’s emergence from data, abstract nature, iteration or recurrence of patterns of behaviour and levels of identification which also include categories, domains or taxonomies.

LeCompte and Schensul (1999) suggested strategies that can be used to analyse qualitative data which include:

- Looking at the theoretical framework which provides the lens through which the data are viewed and helps the researcher to situate the results in the theory which helps to facilitate the understanding of data within that theoretical perspective.
- Reviewing the research questions. The research questions in qualitative studies are used to guide the design and implementation of the study. They are the questions one wants answered by the study; hence, it is important to view the data in terms of ensuring that sufficient data were collected to enable the researcher to answer the questions posed within the study.
- Creating vignettes. These snapshots provide an overview or summary of data, encouraging the researcher to organise the data into smaller segments that help to develop understanding.
- Writing some history. The background and history of the topic under study is important in assisting the researcher to interpret the data. In many studies of culture, for example, it important to understand the past as a tool for understanding the present.
- Describing a social process. Watching how participants interact is sometimes an excellent tool for helping the researcher to understand data that have been collected through observation.
3.11 Pilot Study

According to Zailinawati (2006), a pilot study can be defined as a ‘small study to test research protocols, data collection instruments, sample recruitment strategies, and other research techniques in preparation for a larger study. After a questionnaire have been created for this research, it was then administered to 6 randomly chosen Econet Wireless Zimbabwe employees, who are part of the targeted sample. This was to test the feasibility of the chosen methodology, the data collection instrument and the method of the study. The piloting also helped the researcher to word the questions correctly and using the right phrases and constructs as to make the questions clearer to the respondents. Results helped the researcher to refine the data collection tool especially on which type of questions in terms of wording brought clear results and if the participants understood what was required of them.

3.12 Ethical considerations

Ethics, as defined by Trusted (1987) and Birch et al. (2002), can be taken to refer to the study of good conduct and of the grounds for making judgements about what is good conduct. Polit and Hungler (1999), advises that there is need for researchers to exercise care and see to it that the rights of participants (both persons and institutions) are safeguarded. During this research, the researcher sought authority from the concerned organisation (Econet Wireless Zimbabwe), to use them as a case in the study and also access to their employees. The employees were also asked for their consent before the questionnaire was administered to them. The researcher took it upon himself not to cause any disruption to the participants’ work related activities.

Polit and Hungler (1999), discusses the principle of beneficence as the one that encompasses freedom from harm and exploitation as a principle of research ethics. There was no physical harm that resulted from questionnaire completion by the participants. Although the researcher cannot rule out the possibility of some psychological discomfort that may have resulted from some of the questions, there were no reported cases indications to this effect. If any psychological damage would have been indicated or reported from the exercise, the researcher would have referred the affected participants to a professional counsellor. The researcher also provided cell phone number and an email address on the questionnaire in case any of the participants would have wanted to discuss any aspect of the research with the researcher.
When Polit and Hungler (1999), discussed research ethics issues in nursing research, they also indicated the need for researchers to take heed of the principle of respect for human dignity. They further described this research principle to include the right to self-determination and full disclosure. The researcher honoured the respondents’ rights to self-determination by indicating that it is their independent choice to answer or not answer the questions and also refrained himself from coercing participants into contributing to the research. Respondents were not asked to disclose their personal details and were asked to feel free to skip any questions that would cause them discomfort and also to contact the researcher would they require any clarification. The researcher explained the nature and the intentions of the study being carried out to the participants in order to ensure the respondents’ right to full disclosure. A letter with all the information pertaining to the research and request for them to participate was sent.

Any participant who wished to access the report of the research was informed to indicate such and the report would be made available to them. Questionnaires were not coded and no form of identification was put on questionnaires to link them to the participant. Participants were also not required to put their names on any part of the questionnaires. This was done to make sure confidentiality and anonymity was protected.

3.13 Chapter summary

This chapter explained the research methodology employed in carrying out this study and also discussed the research design, sampling strategy, data collection methods and the research instrument used. The chapter also pointed out issues to do with data analysis, how the questionnaire was tested using a pilot assessment and lastly how the researcher dealt with ethical issues inherent with the research. The succeeding chapter will discuss results obtained from the study.
CHAPTER 4
DATA PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter presents the research findings and an analysis of these results with regard to theory and some previous researches. The chapter will start by describing and giving characteristics of the respondents that took part in the research. It will go further and present the findings in a thematic approach and the findings will be related to the objectives that this research sort to achieve. The analysis will bring out the meaning behind the data presented and tell a story of how all the data answers the asked questions.

4.2 Findings

The research findings are a synthesis and analysis of literature, interviews, questionnaires and surveys. 100 questionnaires were distributed and 83 completed questionnaires were returned which represented 83% return rate. In addition to this, the response rate from interviews was close to 67% and the reason for this rate is because the other respondent who was supposed to be interviewed was not available to do the interview as planned. As a result the response rate for both interviews and questionnaires was 74.8%. According to Holbrook et al. (2007), a low response rate can give rise to sampling bias if the non-response is unequal among the participants regarding exposure and/or outcome. A survey's response rate is viewed as an important indicator of survey quality. Saunders et al. (2009) posits that a response rate of a minimum of 30% is considered representative. The survey had a high response rate which indicated that the results could be taken as accurate and could be considered as representative of the population.
Table 5 below shows a summary of the discussed response rate and how the questionnaires were distributed amongst different chosen departments of the organisation.

<table>
<thead>
<tr>
<th>Department</th>
<th>Questionnaires Distributed</th>
<th>Questionnaires Returned</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Development</td>
<td>22</td>
<td>19</td>
<td>86.4%</td>
</tr>
<tr>
<td>Information Systems</td>
<td>17</td>
<td>15</td>
<td>88.2%</td>
</tr>
<tr>
<td>Marketing</td>
<td>11</td>
<td>8</td>
<td>72.7%</td>
</tr>
<tr>
<td>Customer Services</td>
<td>12</td>
<td>9</td>
<td>75%</td>
</tr>
<tr>
<td>Finance</td>
<td>14</td>
<td>11</td>
<td>78.6%</td>
</tr>
<tr>
<td>Human Resources</td>
<td>24</td>
<td>21</td>
<td>87.5%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td>83</td>
<td>83%</td>
</tr>
</tbody>
</table>

Table 5: Response Rate by Department

4.3 Bio Data

The Bio Data section analysed the demographics of respondents. The key areas looked at were age distribution, functional department, staff category and duration at Econet Wireless Zimbabwe. This helped the researcher understand whether the respondents were knowledgeable about the area under research and also help with verifying the validity of their responses.

2.21.1 Age Distribution

The age distribution of the respondents from the various departments was as illustrated in figure 7 below. From the pie chart in figure 7, no respondent was in the age ranges of below 20 years and above 49 years. 49% were in the range 20-29 years, 36% were between 30 years and 39 years and 15% of the respondents were in the range 40-49 years. These age statistics, indicates that Econet has a young workforce (average age of 27.67 years), which is expected to be vibrant and are up to date with current technologies and environmental trends. However, there is a
notion that older employees are beneficial in organisations because they are deemed to possess skills that the younger generation may not have and do not fit one unique profile, Fyock (1993).

![Age Distribution](chart.png)

**Figure 7: Respondents’ Age Distribution**

### 2.21.2 Departmental Distribution

Figure 4.2 below shows the various functional departments that participated in the survey. A huge chunk, 66%, of the total number of respondents were from the three departments which include Human Resources Management, Product Development and Information Systems. This is largely because the researcher wanted to gain a deeper insight into current knowledge management practices that influence product innovation at Econet.

The mentioned three departments are the ones where issues to do with knowledge management and product development are housed. However, the researcher also approached other departments because knowledge management and innovation also involves all other functional departments in the organization.
2.21.3 Employment Period

Figure 8 shows the length of period that the recipient has served the organisation. From the responses received, 24% of the employees had been within Econet for 3 years and below, 21% for 4-5 years, 22% for 6-7 years and 29% for 8 years and above. The distribution here indicates that most of the employees (76%), who took part in the research had been with the organisation for 4 years and above. This gives confidence in the responses provided since the employees has a very high probability of being knowledgeable of the processes and systems in place and how they are being used at Econet. Gordon (1991), postulates that when an organization retains a good number of staff over a long term, these people would know their jobs well and can easily work autonomously. Goldberg (2001), also points out that when people know the ins and outs of their position, processes run smoothly and typically higher levels of productivity exist. Having a staff that has been on the payroll for longer periods of time will lead to efficiency, Sullivan et al. (1997). When people get the chance to learn their jobs intimately, tasks run smoother and more time can be dedicated to improving existing processes, Gordon (1991).
To improve and maintain good knowledge management practices, an organisation needs a low staff turnover so as to ensure the smooth running of the processes. Longer serving staff will have better knowledge of their jobs and are more likely to share their knowledge amongst themselves. This therefore means that, since Econet has managed to retain employees for long periods it has a high possibility of having good knowledge sharing practices and culture. This also indicates that there should be a lot of knowledge (tacit and explicit) that can be harnessed from these long serving employees.

Figure 9: Employee Service Period

2.21.4 Education

According to Thompson and Strickland (2003), an organisation’s core competency resides in its people and in its intellectual capital, not in its assets as may be indicated on the company's balance sheet. This indicates that companies with better educated and qualified people has a higher chance of competing well in its markets or industry. From the collected data, shown in figure 10 below, it indicates that Econet has about 85% of degreed people and just 2% of the employees are not holders of at least a certificate in a particular area. This already paints a picture that the employees have a very good intellectual power to articulate and run with organisational issues of knowledge management and innovation. It also mean that these people have a mind that can easily and quickly grasp concerts and ideas.
Since knowledge management is a multidisciplinary area, the researcher distributed his questionnaires across departments of the organisation and also across staff categories. This was in an effort to capture activities and practices at all level of the organisation in order to understand how the organisation is making use of these various categories in meeting its objectives. It also helps in understanding how intertwined the organisation is as can be drawn from the differences in how the respondents answered the posed questions. From the responses, the majority of the respondents were from the non-management level, a quarter from the management and just 4% from the executive management level. The distribution indicates a general distribution is large organisations, where a majority of the workers are at the shop floor level and just a few a found at the executive level. The distribution of the questionnaires also takes this into consideration as indicated in figure 11 below.
This section presents the findings drawn from the respondents with regards to knowledge management practices implemented at Econet. The section looked at issues to do with policies and strategies, how knowledge is being captured and acquired, how much effort and how organised and distributed is training and mentoring at the organisation and also how employees communicate both amongst themselves and with the outside stakeholders.

### 2.21.6 Polices and Strategies

The respondents indicated overwhelmingly that Econet has policies and strategies in place for knowledge management activities. These policies and strategies have been in place for almost five years now. The data collected, as illustrated in figure 12, confirmed this assertion from 71% saying that these policies and strategies have been in use since year 2009. Only 5% had an idea that the strategies and policies to management knowledge for product innovation have been in place since inception. It was also noted with concern though, that 21% of the
respondents did not know or did not understand whether the organisation has a written down knowledge management policies and strategies.

A majority of the respondents, (76%), have been with the organisation for more than four years and there is a possibility that they may have forgotten that they were introduced to such policies and may have even signed that they understood them. There was also an anomaly noted to responses given by both management employees and non-managerial employees. These two groups had conflicting views amongst themselves where 10% said the organisation is planning to use partnerships in the next 24 months to acquire knowledge, whereas a large number of respondents (43%) said the organisation has already engaged in such an activity. An interview follow up with management showed that some of these issues are not discussed or are very clear to everyone because of the nature of the processes and information involved. 47% actually did not know whether Econet has or even makes use of partnerships to acquire knowledge.

The majority of respondents, (91%), indicated that they are aware that the organisational culture at Econet promotes knowledge sharing and creation among employees. This culture is believed to have been in existence for almost five years. Since culture issues have a powerful role to play in knowledge sharing and knowledge creation activities, this finding should have positive impact on advantages harvested or brought about by knowledge initiatives. This assertion was confirmed by Soliman et al. (2000), who pointed out there is need to value the creation of a culture that encourages the meeting of organizational goals via the free flow of knowledge. Only 8% of the respondents did not know or thought that the issues of culture and knowledge sharing and knowledge creation are alien to Econet.
Figure 12: Polices and Strategies for knowledge management

2.21.7 Knowledge Capture and Acquisition Processes

This section sought to understand how the organisation acquires and captures knowledge both from within it and from the external environment. The responses obtained points out that Econet has made great strides in capturing and acquiring knowledge from various sources like customers, competitors, institutions of higher learning, government departments and from consultants. After or during the process of knowledge acquisition, the knowledge would then be circulated or shared by other employees in the organisation. About 83% of the respondents were sure that these activities are evident at Econet, 2% thought that the organisation would implement such strategies in the coming year and a total of 15% were either confused or suggested that the organisation had no such activities in place.
2.21.8 Training and Mentoring

This section sought to understand how the organisation conducts training and mentoring of its employees. There is a noted concern about how the exit interviews are conducted on the exiting employees. The majority of the respondents seems to have no idea if these are done or not except for just about 21 employees who said they are done or plans are in place to start doing them. This number coincides with the number of respondents from the Human Resources department which suggests that these might be the people who have information about the exit interviews. Another suggestion would be that these are management and executive management who are most likely to be people involved with exit interviews. Although a big number (73%) suggested that no exit interviews are done or they are not aware, we cannot conclude that this is the position since we have some respondents who confirmed knowledge of the exercise. It was further confirmed by the interview with Human Resources staff who said that exit interviews are part of the exit process for every leaving employee.
Results from the interview carried out shows that exit interviews are done but much room for improvement still exists. The major weakness was found to be in the way the interviews are done, people involved and also how the process feeds back into the organisation. The feedback would be used for better changes where weaknesses have been identified and also for reinforcement in areas of strength. However, a blind eye should not be turned to the 73% who might be sure that exit interviews are not applicable because there would be valuable knowledge leaking out of the organisation which would have been tapped and used to improve processes and product innovation and operations of the organisation.

Figure 14 below summarises the findings of the mentoring and training investigation. It is commendable that a lot of employees (93%), have agreed that the organisation carried out valuable induction workshops to equip new employees before they are deployed to their respective areas of work. It was also noted from the interviews that new employees are taken through knowledge management systems in place at the organisation and do some practical activities on these systems. They are also trained to interact and how to communicate with other people and the behaviour expected in open offices which are used at the organisation. These interactions help build social ties where knowledge can then be created, acquired and shared from.

The responses also showed that a lot of formal mentoring happens at the organisation through internships and understudy. The interviews with some managers revealed that new employees are given to a senior who will have the mandate to mentor the new comers and help them get up to speed. Small stand up meetings would be done as often as daily in some cases in order to get feedback from previous work given to the new employees and guidance in areas of need. The open plan office system at Econet also assists in encouraging informal brain storming sessions and sharing of ideas and resolving problems.
2.21.9 Important knowledge captured and shared at Econet

In the second chapter of this study, the researcher proffered definitions of both knowledge and knowledge management practices. Knowledge management practices, from those definitions, refers to any systematic activity related to the capture and sharing of facts or condition of knowing something, with familiarity gained through experience or association. Employees are expected to provide knowledge to do with projects, product performance appraisals, market trends, customer satisfaction and patterns, how previous problems have been resolved, policies and procedures and also supplier information.

The researcher have realised that at the executive level, the executives contribute strategic knowledge and knowledge that they acquire through industrial intelligence. They also acquire knowledge from international publishers to do with mobile phone businesses, GSM, wireless products and services, banking products and also insurance products. They also acquire and share knowledge from these publishers on international trends in mobile technologies so that
they direct the business in the right direction. After being knowledgeable about the future, they then influence product development in terms of innovation levels and quality. They make sure they use knowledge from international trends and local environment including customers and regulatory frameworks to align the new products. Executive management also engaged into social activities like golf, tennis and dinners where they meet with executives from other companies and use these opportunities to tap some knowledge beneficial to their operations. These alignments are strategic and not functional because functional issues are for middle to lower level management.

Middle management employees take seriously knowledge to do with customer tastes. Customer tastes are detected from market surveys which are carried out for each product launched into the market. The team responsible for managing this exercise is the Product Review team which often meet to review and realign their products with their new knowledge from the market. This team also capture knowledge on failed products and lessons learnt in order to be knowledgeable about the signs of product failure. They capture knowledge of products from business case proposals, product design, cash flow forecasts, product uptake, actual product performance and also return on investment. With all this knowledge, the managers will then design new products which have a very low probability of failure in their chosen markets. They believe that “it’s all about the market intelligence that will then inform innovative product development”.

The Middle management also forms part of the projects that run with product development and reviews. These project teams capture and share knowledge like project charters, project plans, project initiation documents, project tracking documents, project processes and policies and also project closure documents. Besides the explicit knowledge which is documented, management also share tacit knowledge amongst themselves when doing project meetings, scrum meetings knowledge beneficial social activities like team building and company social day.

Non managerial employees are concerned with knowledge that helps them resolve day to day operational issues. These issues include system challenges, customer complaints, user
problems, setup requests and order processing. The users need to know how problem related to systems were resolved before so that they can check for relevance in current situations and then apply that knowledge. They can only check this if employees who have resolved those historical issues have captured and well document how they have solved the related problem. It has been noted however that many employees are very reluctant and not motivated enough to share their knowledge related to these tasks.

When users are asked by customers to help them set up their phones (especially data configurations), they normally ask their colleagues if they cannot find such knowledge in the provided knowledge base. When customers call in for complaints, the employees also check for answers in knowledge bases and if they cannot find them they escalate. The escalation process includes capturing all details of the complaint and when resolving the complaint or addressing it, all the information and facts are captured in the knowledge base with the same key related to the reported problem.

All of the above processes and activities of knowledge creation and sharing contribute to a better product at the end of the day. The whole organisation have their part to play in contributing to the knowledge that will inform the process of product development that will be considered innovative to the market.

2.21.10 Communications

The communications heading was used to cover the investigation on how knowledge management is shared within and outside the organisation. The results points out that the concerned activities mainly hinged on the communications and knowledge sharing via emails and telephone. There is also use of web-based document management systems and facilitation of collaborative work by project teams that are physically separated, generally known as virtual teams. A majority of the respondents, 99%, concurred that emails and telephones have been used for relaying information for more than five years now. It is expected that many employees be aware of these communication channels that are basic when it comes to the telecommunications industry in which the organisation under study operates.
It was found out that many of the respondents (83%) do not know or are oblivious of the fact that there are some people in the organisation who use online file hosting and sharing services like Dropbox, Google Drive and SkyDrive to share and acquire knowledge.

Employees from Information Systems department, who made up 18% of the sample are believed to have contributed much to the 14% of the respondents who confirmed that these online file hosting services have been in use before 2009. The reason being that employees from this department, in their nature, are mostly the first people in many organisations who are early adopters when it comes to new technology. These services are relatively new and many people might not be aware of how they operate or their advantages. Another point to note that was raised during interviews is that many people are very sceptical about cloud services in terms of their security and availability. Cloud services are simply any resources availed to users over the internet.

Almost half of the respondents (49%) showed that they are ignorant of the company directory with details of who does what and where they are situated. The investigations in interviews revealed that most people are not aware of the directory because not enough information is communicated or manuals provided which describes how the directory can be accessed. The assumption here was found to be that almost everyone who joins Econet knows how emails operate since the directory is hosted on the mail server and accessed via email. Figure 15 below summarises these findings in a graph.
4.5 Executive management supporting knowledge management activities

This segment sought to understand the extent to which the executive management at Econet support knowledge management activities at the workplace. This is important as it informs how serious the issues to do with knowledge management are. If there is no buy in from the top, then the activities will not yield much and may die a natural death because they will not be taken as strategic issues which will push the organisation in the right direction and fight competition.
2.21.11  Expenditure and commitment

How ready the executive management is in terms of spending, both financially and space and time, indicates how committed they are in the issues of knowledge management. Figure 16 below summarises the findings of this research with regards to this area.

![Executive Support](image)

**Figure 16: Executive Support**

The overall picture given by this investigation is that the executive management strongly supports knowledge management activities. This is drawn from the total of 70% of the responses who indicated that this has been the norm for more than five years now. A total of just 1% have an idea that management would start implementing these actions in a year’s time, and on the other side is a perturbing group (29%) who are either unaware of this support or thinks this particular area is not applicable in the case of Econet.

The greatest contributor to the 29% downside is the fact that a lot of employees, about 59% are not aware or insinuates that top management do not encourage idea generation and
implementation. Also almost 34% do not know if knowledge management activities have a dedicated budget, thinks top management do not encourage knowledge creation and sharing activities. The researcher came to a conclusion that some of these employees do not understand what these knowledge creation and sharing activities are. This notion came from the fact that a larger group of employees than this thinks directly the opposite, and also that 64% of the respondents agree that top management always encourage social interactions. Those who are not sure if executive management support knowledge creation and sharing activities lack knowledge to inform them that it is these social interactions that make knowledge (especially tacit) creation and sharing possible amongst themselves.

It is also encouraging to note that the executive management at Econet balance out their sense of urgency when it comes to new product implementation with the inspiration they give to employees by allowing them to learn from mistakes during their innovation processes. It has always been a bold note in the Econet CEO’s presentations, both at the organisation level and at national level, to challenge everyone to be innovative in every way and solve the challenges the country is facing. The confirmation received from interviewed management indicated that the company is serious in terms of investing in knowledge management activities and have a budget item for this in their planning. Those who indicated their ignorance to the existence of this budget is because not everyone in the organisation is privy to it or are just reluctant to find out if there is any. The author found out that most employees have an idea that budget issues are only for the top management.

4.6 Research and innovation at Econet

This section focussed on the issues to do with research innovation at Econet. It was noted that the organisation has its own research department and many employees believe that the research and innovation of products channelled out to the market by the organisation is based on knowledge. It was also noted that at least half of the employees thought that the product development team checks for possibility of product duplication before building a new one. This indicates that there is cohesion in this team and the organisation as a whole, in terms of rolling out innovative and unique products to the market.
It has also been noted from the results in figure 17, that employees have a strong feeling that there is still room for doing more in terms of harnessing knowledge resources for the benefit of the company. This is shown by the relatively large number of employees (59%), who think that the organisation is not doing enough to make use of knowledge. Interviews conducted to bring more light to this issue have shown that many employees are eager to donate their knowledge but as much as executives encourage social interactions, there are no platforms to formally do these exercises. Employees also felt that there was need to make available more white boards in departments to allow these things to happen. This notion links to the result which suggested that the organisation needs to invest more in knowledge management activities so that it benefits from its outcomes like product innovation and effectiveness in the company.

There is however a great concern among employees as they have no idea as to whether the organisation has contacts to public research institutions. Having contacts and relations with these institutions will make research and product development easier and faster because of the interfacing among expects and more information availability. Employees who did not know about contacts to public institutions were 61% and just 29% knew they were there. The 29% responses were from product development and marketing teams who have greater contact and interfacing to the outside environment of the company than other departments.
From the other unstructured questions posed to the respondents, it was revealed that the organisation often reviewed and re-engineered their products. They do this by carrying out market surveys and product performance appraisals. The organisation also continuously carry out environmental scanning and align their products accordingly. It was also found that the organisation releases about four products per year to the market at an average. Some of the major products that the organisation had released into the market includes Ecocash, Econet Solar, EcoFarmer, Connected Car, Dial a Doc, EcoSchool, 3G and 4G, Econet Premium and EcoSure among others.
4.7 Conclusion

This chapter concentrated on the findings from the research. The presentation, analysis and interpretation of the collected data was done using graphs, pie charts and tables. The results were clearly depicted and matched against literature discussed. The following chapter will discuss recommendations, further research areas and conclusions drawn from this study.
CHAPTER 5

RESEARCH SUMMARY, RECOMMENDATIONS AND AREAS FOR FURTHER STUDIES

5.1 Introduction

The objectives of this study were to establish the level of support from executive management in knowledge management activities, to find out knowledge management practices implemented at Econet and also to evaluate the effect of knowledge creation and sharing on product innovation. This chapter will discuss the conclusions to be drawn from the results presented, the summary of the research as presented in the preceding chapters, suggest areas for further study and also put forward recommendations to Econet Wireless Zimbabwe Limited and to all companies who want to explore implementing knowledge management practices for product innovation as a prudent idea. The findings will be as practical as possible and also connect them to theory that links knowledge management practices and product innovation for the purposes of attaining competitive advantage.

5.2 Summary of Findings

From the results presented in the preceding chapter, it has been noted that as much as the executive management would want to think that they support knowledge management activities that informs the process of innovative product development, there is still much that needs to be done. A lot of employees are not aware of how the executive team is working in encouraging knowledge creation and sharing, encouraging social interactions and evidence to confirm that there exists a budget dedicated for these activities. Employees were found to be ignorant of certain information like contacts to research institutions, how they can take part in idea generation and development at the work place.

The researcher found out that most of the employees are aware of certain documents that advises or brings out the strategies and policies for knowledge management activities to effect product innovation at the company. The employees are aware of these policies because the
company carries out induction workshops to new employees before they engage in their jobs. These induction workshops would be rich with know how packages, presentations from various departmental representatives and also involved participants working in teams so as to encourage teamwork and socialisation.

Workers at Econet use telephones and emails as primary methods of communication. It is a company policy to give every joining employee a phone and a line in order to make sure communication is easy wherever and whenever used. These staff lines are credited with airtime every week and there is a different rate which makes it next to calling for free among staff. This is a commendable support by executive to encourage communication which facilitates knowledge creation and sharing. Every employee is also given policies and documents to equip themselves with how things are done at the organisation then sign that they have understood.

After short meetings that are conducted by different team members in different departments working on a single project, the minutes and updates are circulated via emails and clarification further sort through the same channel and over conference calls. This process encourages and enforces knowledge creation and sharing which leads to better innovative product offerings. The project team working towards offering a product have other methods of acquiring and sharing knowledge besides email and telephones. The organisation has an intranet where a lot of data is deposited and updated continuously by members working on these projects. These teams normally include members from consulting companies in India, Dubai and America and also employees from other Econet group companies in South Africa, Lesotho, Swaziland, London and Burundi, to name but just a few. People from all over these places may also make use of video conferencing and web chats which provides real time updates and problem solving during these collaborative projects.

The findings revealed that Econet has a research and innovation centre and also has a Product Development Department which is responsible for making ideas processed from this centre a reality. Product innovation and the supporting activities by employees do not go unnoticed but a dynamic reward system is in place to make sure such behaviours are reinforced. Almost all the departments at Econet have an open plan office system which encourages knowledge
creation and sharing activities among the employees. The social connections and interdependences amongst employees make knowledge sharing and acquisition easier. These various knowledge management activities promote product innovation. This was confirmed by the processes that are involved in the product life cycle at Econet. All these processes are knowledge driven and these products keep on being perfected and reengineered as customer tastes and needs changes.

The knowledge that is captured and shared at Econet is to do with projects, product performance appraisals, market trends, customer satisfaction and patterns, how previous problems have been resolved, policies and procedures and also supplier information. All levels at the organisation represented on the organogram have their areas of knowledge management contribution and the specific knowledge that is considered important at that level. The executive management are concerned with strategic knowledge like the direction of business as informed by knowledge captured from international publishers and news. They also engage into social activities like playing golf and dinners where they acquire knowledge relevant to the business.

The Middle management captured and shared knowledge like project management documents, policy documents, product development and performance documents, customer satisfaction surveys, meeting minutes and employee records. Besides this explicit knowledge, they also share and acquire tacit knowledge through social activities and formal meetings which they attend regularly. The non-managerial employees capture and share knowledge to do with their day to day operations. These operations require knowledge like customer complains handling, data network setup, reporting and resolving system challenges, capturing and editing customer information and other activities related to customer services. The non-managerial employees also do team building exercises and attending sporting and health days where they exchange their tacit knowledge.

From what the researcher extracted, there is an existence of knowledge management activities support from executive management, both financially and morally, though at minimum levels. There are various knowledge management activities in place at Econet Wireless Zimbabwe
which perpetuate product innovation. These activities include social interactions among employees, collaborative activities by project teams which includes consultants, employees and other third party partners, use of intranet and internet for knowledge creation, acquisition and sharing, emails and telephones for communications, budgetary allocations of knowledge management activities, implementation of induction workshops and exit interviews, product performance appraisals and also training and mentoring activities.

5.3 Recommendations

In order for Econet to reap maximum benefits from knowledge management activities for the purposes of product innovation, the researcher puts forward some recommendations informed by the analysis from the previous chapters. The recommendations are derived from the findings and linked to research objectives.

5.3.1 Improve executive management support to knowledge management activities

Executive management should be clear and bring out their intentions to every employee as far as knowledge management activities are concerned. There is need for frequent communication and clear key performance indicators set for each department on knowledge management activities. Executive management is considered an important influence on organisational knowledge creating and sharing among others (Connelly and Kelloway 2003). They are responsible for providing sufficient resources and creating a supportive climate. Lin and Lee (2004) further asserted that the sensitivity of top management encouragement of knowledge sharing objectives is necessary for generating and preserving a positive knowledge sharing culture in an organisation.

If executives do more, especially in motivating employees to share their knowledge, their efforts impact positively on the outcomes. This was confirmed by Wasko Faraj (2005) who suggested that motivated employees enable willingness to share knowledge and this happens when these employees think that their sharing behaviours will be worth the effort. Executive management can achieve this by putting in place reward systems linked to knowledge sharing (Bartol and Srivastava 2002).
5.3.2 **Frequent update of knowledge management policies and procedures**

Knowledge management activities have a technological aspect in them. Technology in its form is highly dynamic and very contextual. This therefore calls for policies and procedures surrounding these activities to be dynamic as well. They have to be frequently checked and realigned with emerging technologies so as to keep up with trends. Econet also operates in a highly technological industry which also calls for its processes to be always up to date with current trends in that field.

Technology can help improve the culture of knowledge sharing within Econet by creating a comprehensive knowledge base to capture job knowledge, experiences, and how certain challenges were resolved. The knowledge base should also contain information about products and should be able to be updated real time to allow for easy access of information regarding new product offerings. Currently the intranet in use has no areas for capturing expert knowledge on how issues were resolves in the past so as to inform current problems and suggest solutions. It is very noble that these knowledge management policies and strategies do not operate in silos. There is need to embed them with existing processes in order for them to be effective and efficient in terms of serving time to the employee and to the organisation at large.

5.3.3 **Launch Communities of practice**

Econet should launch communities of practice in which professionals in certain areas meet and discuss current issues in their areas of operation. Areas of interest with regards to knowledge management activities would be Human Resources Management, Product Development, Research and Innovation, Marketing and also Information Systems department. These communities will then come up with a main strategy in which all of their unit strategies will feed into. Each unit will have to identify their role and allocate appropriate resources to run with that vision. They then have to regularly conduct workshops with all employees including management to make knowledge creation and sharing culture stick and be embedded in the fabric of each and every one in their day to day operations. These communities of practise will also have a mandate of proposing mechanisms to recognise, reward and reinforce knowledge creation processes to the executives.
5.3.4 Improve communication

There is need for improvement on inter-departmental communication and ensure uniformity through the organization by using groupware technology and using existing web portals to make knowledge management a success. Building trust among employees and their top management is also a crucial factor as was coined in by Johnson and Scholes (2004), who argue that trust is “probably the most important ingredient for success or failure if it is absent”. From the results analysed, there are visible traits to confirm that there is little or no trust among employees and top management. Communication must be honest, open and consistent. Promises to staff must be diligently met. When it becomes impossible to meet them, clear and authentic communication must be tendered.

5.3.5 Improve training and mentoring

It has been noted in the research that knowledge creation and sharing activities are being hampered by lack of training and mentoring. There is need for the organisation to invest in the training of its employees particularly in the area of information technology use as an enabler of knowledge creation and sharing. Knowledge management is empowered by adequate technology and people who know how to use it. Best-practice examples reveal that the central knowledge management team should spend most of its time (after deployment) teaching, guiding, and coaching users how to use new systems to interact, communicate, and share information and knowledge with each another.

5.4 Areas for further study

This research looked at how knowledge management practices especially with regards to technologies and organisational processes. There is however the need to do further research on the same area that would include markets which the company serves in order to get more insights into knowledge creation and sharing for the purposes of product innovation. Specific emphasis must be put in looking at knowledge acquisition from customers and other regional players.
5.5 Research Summary

The research found out how knowledge creation and sharing as it relates to knowledge management, affects product innovation at an organisation level. The research started by outlining clearly the objectives and the questions that should be answered by the study at the end. Four objectives and four questions were set and then the researcher interrogated available literature in the field of knowledge management and product innovation. At the end of the conducted literature review, a theoretical framework that guided the whole research was given.

The question that this research answered required words and descriptions to explain the outcomes as opposed to numbers, hence for this research project, a qualitative research methodology was chosen. The research made use of the case study approach and used Econet Wireless Zimbabwe as the case to be studied. Econet was chosen because it is a leading company in the telecommunications sector of Zimbabwe, both by customer base and in terms of market capitalisation, as at the time this research was conducted. A survey method was employed by the researcher and one hundred questionnaires were distributed (with an overwhelming 83% response rate) to Econet employees from various departments at the company’s head office in Msasa, Livingstone, Borrowdale, Arundel and Graniteside offices. Because of time and availability constraints, only two operational employees, two managers and one executive were interviewed to gather further information and clarify certain issues from questionnaire results.

All the findings from the respondents were discussed and analysed. Since the research was of a qualitative nature, no statistical calculations were made other than percentages and graphs which were employed to summarise and give a pictorial view of these results. Conclusion and recommendations were then made from the research findings. Areas for further study were also proposed to whoever would want to engage into research in the area of knowledge management and innovation.
5.6 Conclusion

This chapter sought to provide recommendations to the challenges brought out by the study. The shortcomings noted in the findings informed these recommendations and these recommendations are thought to have a great effect on the existing knowledge management practices at Econet and would argument them and produce maximum benefit to the organisation.


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APPENDIX 1: QUESTIONNAIRE

BINDURA UNIVERSITY OF SCIENCE EDUCATION

DISSERTATION RESEARCH QUESTIONNAIRE

Purpose

The researcher, Patson Mutsvandiani, is carrying out a survey to find out the effect of knowledge management practices on product innovation at Econet Wireless Zimbabwe. The stiff competition and the ever changing customer tastes and preferences of mobile network users has increased the need for companies to be more innovative than ever before. Data collected in this survey will result in a greater understanding of knowledge management practices to support product innovation by mobile network operators. Please try and answer all questions putting check marks in circles or boxes and very short descriptions where required.

Confidentiality

You are not required to write your name or any contact details which may relate you to the responses you will provide. This research will be used for academic purposes only and no other.

Questions?

If you require any clarification and or assistance in the completion of this questionnaire or anything regarding this survey, please contact the researcher on +263 771 222 224 or send an email to mutsvas@gmail.com.
SECTION A: Demographic Information

1. Age group (in years):
   - Under 20
   - 20-29
   - 30-39
   - 40-49
   - 50 and over

2. Gender
   - Male
   - Female

3. For how long have you been working for Econet Wireless Zimbabwe?
   - Less than 2 years
   - 3 – 4 years
   - 5 – 6 years
   - 7 – 8 years
   - More than 9 years

4. Which of the following best describe your staff category?
   - Non Managerial
   - Management
   - Executive Management

5. What is the highest level of education you have attained?
   - High School
   - Certificate
   - Diploma
   - Bachelor’s Degree
   - Master’s Degree
6. Which department do you work in?

   - Information Systems
   - Human resources
   - Finance & Administration
   - Product Development
   - Other

SECTION B: Knowledge Management Practices

B1: Polices and Strategies

Does Econet have Polices and strategies in place for knowledge management?

<table>
<thead>
<tr>
<th></th>
<th>In use before 2009</th>
<th>In use after 2009</th>
<th>Plan to use in the next 24 months</th>
<th>Don’t Know / Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1.1</td>
<td>Econet has a written knowledge management policy or strategy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1.2</td>
<td>Econet has a culture intended to promote knowledge creation</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>B1.3</td>
<td>Econet has a culture intended to promote knowledge sharing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1.4</td>
<td>Econet uses partnerships or strategic alliances to acquire knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1.5</td>
<td>We have a structure that discourages resource competition by departments</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**B2: Knowledge Capture and acquisition**

How does your organisation capture knowledge?

<table>
<thead>
<tr>
<th></th>
<th>In use before 2009</th>
<th>In use after 2009</th>
<th>Plan to use in the next 24 months</th>
<th>Don’t Know / Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2.1</td>
<td>The organisation regularly captures and uses knowledge obtained from other industry sources such as industrial associations, competitors, clients and suppliers</td>
<td></td>
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<tr>
<td>B2.2</td>
<td>The organisation captures and uses knowledge obtained from research institutions (universities and government institutions)</td>
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<tr>
<td>B2.3</td>
<td>The organisation dedicates resources to detecting and obtaining external knowledge and communicating it within.</td>
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<tr>
<td>B2.4</td>
<td>The organisation encourages workers to participate in project teams with external experts</td>
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</tbody>
</table>

**B2.5** What knowledge do you capture and share, that is important to the organisation?

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**B3: Training and Mentoring**

How is training and mentoring done in your organisation?

<table>
<thead>
<tr>
<th></th>
<th>In use before 2009</th>
<th>In use after 2009</th>
<th>Plan to use in the next 24 months</th>
<th>Don’t Know / Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>B3.1</td>
<td>The organisation provides formal training related to knowledge management practices</td>
<td></td>
<td></td>
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<tr>
<td>B3.2</td>
<td>The organisation provides informal training related to knowledge management</td>
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<tr>
<td>B3.3</td>
<td>The organisation uses formal mentoring practices, including apprenticeships</td>
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<tr>
<td>B3.4</td>
<td>The organisation encourages experienced workers to transfer their knowledge to new or less experienced workers</td>
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<tr>
<td>B3.5</td>
<td>The organisation encourages workers to continue their education by reimbursing tuition fees for successfully completed work-related courses</td>
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<tr>
<td>B3.6</td>
<td>The organisation offers off-site training to workers in order to keep skills current</td>
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<tr>
<td>B3.7</td>
<td>The organisation provide induction packs equipped with “know hows” necessary for new staff</td>
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<tr>
<td>B3.8</td>
<td>The company conducts exit interviews in order to capture knowledge</td>
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<tr>
<td>B3.9</td>
<td>We have an open plan office system</td>
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</tbody>
</table>
**B4: Communications**

At Econet, workers share knowledge or information by:

<table>
<thead>
<tr>
<th>Activity</th>
<th>In use before 2009</th>
<th>In use after 2009</th>
<th>Plan to use in the next 24 months</th>
<th>Don’t Know / Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4.1 Regularly updating databases of good work practices, lessons learned or listings of experts</td>
<td></td>
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<tr>
<td>B4.2 Preparing written documentation such as lessons learned, training manuals, good work practices, articles for publication etcetera</td>
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<td>B4.3 Facilitating collaborative work by projects teams that are physically separated (Virtual teams)</td>
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<td>B4.4 Web-based document management systems (SharePoint, CRM, Oracle etcetera)</td>
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<td>B4.5 Emails and Telephone</td>
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<td>B4.6 Online file hosting services (Dropbox, Google Drive, SkyDrive etcetera)</td>
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<td>B4.7 We have a staff directory informing who does what and where they are situated</td>
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</table>

**B5** If there are any other knowledge management activities that you are implementing and have been omitted please list them here.

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**SECTION C: Executive Support**
**C1: Expenditure and commitment**

How is the executive management supporting knowledge management activities?

<table>
<thead>
<tr>
<th></th>
<th>In use before 2009</th>
<th>In use after 2009</th>
<th>Plan to use in the next 24 months</th>
<th>Don’t Know / Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1.1 Knowledge management activities have a dedicated budget</td>
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<tr>
<td>C1.2 Top management always encourage knowledge creation activities</td>
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<td></td>
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<tr>
<td>C1.3 Top management always encourage knowledge sharing activities</td>
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<tr>
<td>C1.4 Top management always encourage social interactions</td>
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<td>C1.5 Top management encourages idea generation and implementation</td>
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<tr>
<td>C1.6 There is a sense of urgency from top management in implementing new products</td>
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<tr>
<td>C1.7 Executive management always emphasise the need to do things in a new way</td>
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<tr>
<td>C1.8 Executive management inspire staff to innovate and learn from mistakes</td>
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</tbody>
</table>

**SECTION D: Research and Innovation**

**D1.1** Does the organisation have its own research department?

- YES [ ]
- NO [ ]

**D1.2** Does the firm have contacts to public research institutions?

- YES [ ]
- NO [ ]
D1.3 What products have the organisation introduced into the market in the years 2009 to 2014?

D1.4 How does the organisation review and re-engineer their products using new and existing knowledge?

D1.5 How many new products does the organisation introduce in a year (on average since 2009) ?

D1.6 Do you think the research and innovation of the company is knowledge driven?

\[ \text{YES} \quad \text{NO} \]

D1.7 How is new knowledge harvested from new products launched?

D1.8 Do you think the product development team (or whoever have this responsibility), looks for similarities of what they want to do in what is already there before they start developing new products?

\[ \text{YES} \quad \text{NO} \]

--------------------------------------END OF QUESTIONNAIRE--------------------------------------

Thank you very much for your time and effort in completing this questionnaire.

APPENDIX 2: INTERVIEW GUIDE

1. How do you understand the terms knowledge, knowledge management, knowledge management practices?
2. Do you have any strategies in place at Econet for knowledge management?
3. Who are the custodians of KM at Econet?
4. Do you think the company is benefiting from these strategies, and how?
5. Can you explain how your organisation is facilitating knowledge creation within and outside the organisation?
6. Can you also explain how your organisation is facilitating knowledge sharing within the organisation?
7. Are there any budget allocations (% value against the whole budget) for KM activities and does it spell out how it is spent (i.e. ICT infrastructure, training and development, R&D related to KM)
8. What levels of support do KM activities have from top management?
9. How do you explain the relationship between your KM strategy and the org structure?
10. Where are these strategies falling short?
11. What are you doing to address these challenges?
12. What products do Econet have that are currently in use in the market?
13. Are there any products that the company have since discontinued or abandoned, and for what reasons?
14. What do you know about product innovation?
15. What are the products that the company have released into the market that you think qualify to be of innovative nature?
16. How far do you think the knowledge management practices in place are contributing to the product innovativeness of the organisation?
17. Do you have any R&D department and Product development dpt at Econet?
18. How do these departments relate to other research institutions like universities, colleges, and government institutions of research (like SIRDC)?
19. How does your product development process makes use of KM activities?
20. How do you acquire new knowledge from products launched into the market?
21. How does this new knowledge contribute to future product development?
APPENDIX 3: DOCUMENT ANALYSIS AND OBSERVATION GUIDE

A. Management support
   1. Is there a deliberate move or action by top management to support KM practices
   2. How do management interact with their subordinate employees
   3. Is the management open to new ideas and criticism?
   4. Is there an open door policy at the organisation
   5. Are there any observable artefacts that support KM creation and sharing around the org?

B. Knowledge creation
   1. Are there any social activities that employees engage in
   2. How are the group dynamics at Econet
   3. Are there any communities of practice at Econet
   4. Are there any technological infrastructure in place to support KM activities (how many have access to the intranet and internet, what is the internet usage policy, email policy, ICT policy etc)
   5. Does the company have active twitter, facebook, whatsapp accounts where they interact with customers for new knowledge acquisition?

C. Knowledge sharing
   1. Does the org have an open plan office arrangement?
   2. Are employees interacting freely in those offices?
   3. Are there any visible actions to show that employees are not happy with the open plan office arrangement?
   4. Are there any technological infrastructure in place to support KM activities (how many have access to the intranet and internet, what is the internet usage policy, email policy, ICT policy etc).