A Study of Knowledge Creation within Kimberly-Clark South Africa

A Research Report

presented to the

Graduate School of Business Leadership

University of South Africa

In partial fulfilment of the

requirements for the

MASTERS DEGREE IN BUSINESS ADMINISTRATION,

UNIVERSITY OF SOUTH AFRICA

by

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April 2010

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Declaration

I declare that the work submitted in this dissertation *A Study of Knowledge Creation within Kimberly-Clark South Africa* to the School of Business Leadership, University of South Africa is my own work. All sources in this work have been referenced and appear in the comprehensive list of references.

Errol Ernest Campling
28 April 2010

Acknowledgements

I would like to express my thanks and appreciation to the following parties who assisted and supported me during my MBA studies.

- My tutor Professor Kethamonie Naidoo.

- Kimberly-Clark South Africa (K-CSA) for their support and for financing my MBA studies.

- The individuals at K-CSA who assisted me with my research interviews.

- Alan Visser for his guidance and advice.

- Professor Estelle Shipham for editing this dissertation.

- My family and friends for their patience and understanding.

- A special thanks and appreciation to my wife Wendy and my son John for their love, patience and understanding.

Errol Campling

April 2010

Executive summary

The environment in which K-CSA competes is characterised by being highly competitive, fast paced and ever changing. To survive in such an environment it is essential that K-CSA develops and implements an organisational strategy that will enable it to build a sustainable competitive advantage. Grant (2008) offers a broad definition of organisational strategy as being the means an organisation employs to meet its objectives. Grant (2008) asserts that successful strategies have four common elements, namely, simple consistent long term goals; a profound understanding of the competitive environment; an objective appraisal of resources and effective implementation. Similarly, the strategy process offered by Boojihawon and Segal-Horn (2006) highlights the importance of analysis, choice and implementation in strategy. In order to meet the requirements of a successful strategy as discussed above K-CSA needs to ensure that they are able to apply cutting edge knowledge to their strategy to build a meaningful competitive advantage. Knowledge that is outdated, flawed or unavailable will negatively affect K-CSA's ability to produce a successful strategy.

Strategy is an iterative process and in order to ensure that the process has a continual feed of quality knowledge it requires a process for knowledge creation that will provide quality knowledge on a constant basis in-line with K-CSA's strategic needs. Nonaka, Toyama & Konno (2008) assert that organisations are entities that continually create knowledge, it is important that K-CSA creates knowledge that is focused on achieving its strategic goals and objectives.

This research aims to gain an understanding of K-CSA's current knowledge creation processes to identify whether improvements are required. To do this effectively three research objective were set as follows:

Objective 1: To investigate K-CSA's current knowledge creation processes.

Objective 2: To compare K-CSA's current knowledge creation processes with the knowledge creation process devised by Nonaka *et al.* (2008).

Objective 3: To critically analyse K-CSA's current knowledge creation processes against the knowledge creation model devised by Nonaka *et al.* (2008) for the

purpose of understanding the viability of implementing the Nonaka *et al.* (2008) model within K-CSA.

The knowledge creation model devised by Nonaka *et al.* (2008) was chosen as it factors in both tacit and explicit knowledge and acknowledges that knowledge needs a context in which to be created. The model also provides guidelines for the leadership of the knowledge creation process.

This research process sought to gain an understanding of the current knowledge creation processes that take place within K-CSA. The phenomenological paradigm as suggested by Hussey and Hussey (1997) was chosen to research K-CSA's knowledge creation processes as it permits in depth analysis of the situation. The research collected primary data through standardised, open ended and face to face interviews based on a sample of senior managers from each functional area within K-CSA, namely, marketing, production, finance and human resources. The interview data was then analysed by using the general analytical procedure to analyse K-CSA's position with regard to knowledge creation.

The research results revealed that K-CSA uses various formal and informal processes to create knowledge and possesses the elements of the knowledge creation process as devised by Nonaka *et al.* (2008) but the elements do not form a part of a formalised knowledge creation process lead by a common knowledge vision that synergises the knowledge creation efforts of the functional areas within K-CSA.

Five recommendations concluded this research study, namely:

- The formalisation K-CSA's knowledge creation processes using the Nonaka *et al.* (2008) model.

- Ensuring that the knowledge conversion process is fully exploited.

- Development of a system to store and retrieve K-CSA's tacit knowledge.

- Further study should be conducted to explore implementing the Nonaka *et al.* (2008) model at a global/ regional level.

- Formalising knowledge creation with outside constituents.

List of abbreviations used regularly in this document

Kimberly-Clark South Africa   K-CSA

Kimberly-Clark Corporation   K-CC

Table of Contents

List of figures

Chapter 1   Background and problem statement

1.1 Introduction to study

K-CSA forms part of the Kimberly-Clark Corporation (K-CC) which is a 137 year old global Health and Hygiene Company. K-CSA manufactures and markets personal hygiene products such as toilet paper, disposable nappies, tissues and feminine care products to fast moving consumer goods (FMCG) retailers such as Pick and Pay, Shoprite, Checkers, Spar, and Woolworths.

K-CSA's strategic objectives and goals are set in line with the global strategy of K-CC. In order for K-CSA to devise strategies that will be successful it needs to base the strategies on sound knowledge. The aim of this study is to evaluate the role that knowledge creation plays within K-CSA from a strategic management perspective. In order to successfully evaluate the knowledge creation process from a strategic perspective it will need to be considered within the broader context of strategic management. Thus the knowledge creation process will be explored by considering the role it plays in the strategy process.

1.2 Background and problem in context

According to Grant (2008) a broad definition of strategy is the means an organisation employs to meet its objectives. K-CSA develops and implements strategies in order to compete effectively within its environment and with a view of developing a sustainable advantage over its competitors. Strategy within K-CSA is not a one-off event but rather an ongoing process that once implemented is constantly managed, measured and refined to ensure that it returns optimal results that work toward or maintain competitive advantage for the organisation.

K-CSA's environment in which it exists is characterised by being highly competitive, fast paced and ever changing. K-CSA has constant interaction at all levels of the environment. There is daily interaction between K-CSA and it consumers, customers, competitors and its macro environment. Examples of this are meetings held with customers, the consumer help line, being proactive or reactive to

competitors and K-CSA's need to react to the likes of economic and sociological changes taking place.

To develop and implement optimal strategies K-CSA needs to have a deep and broad understanding of its internal and external environment as well as an understanding of how it can deploy most effectively its limited resources. Thus the quality of the content of the strategy is of the utmost importance. It is risky to base strategic choices and decisions on information and data that could be outdated, assumed or not fully understood within a specific context. Furthermore information and data on their own are not adequate for strategic purposes. The data and information need to be processed in order to create knowledge.

Strategy is an iterative process and so is the concept of knowledge creation. If K-CSA does not constantly create new knowledge it will not be able to remain competitive within the highly competitive, fast paced and ever changing environment in which it exists; and strategy that is developed could turn out to be ineffectual due to the lack of quality and relevant knowledge.

1.3 Problem review

Section 1.2 highlighted the importance of the concept of knowledge creation within the context of strategic management. The importance of resources and the macro and micro environment in which K-CSA exists were highlighted in the context of knowledge creation. The importance of the knowledge creation process within K-CSA will be highlighted against the strategic pitfalls that prevail if the process is not carried out by way of a proven process in a continual manner.

Strategic management is employed by K-CSA with a view of meeting objectives that will ultimately build or maintain a competitive advantage. Strategic management employs frameworks, procedures and policies in order to avoid achieving objectives in a haphazard manner. K-CSA frameworks, procedures and policies employed in the strategic management process need to be built around knowledge pertaining to its macro and micro environment and the resources that it has at its disposal. K-

CSA's resources need to be structured in a manner that efficiently provides the optimal return for the outlay of resources. In this context the word efficiently refers to the avoidance of duplication of tasks. Similarly, interactions between K-CSA and its environment provide knowledge that is of critical importance in enabling K-CSA to compete effectively at a strategic level.

1.4 Need for research

The knowledge creation process is an integral part of the strategic process of an organisation such as K-CSA. If organisations create reliable quality knowledge then this will lead to a quality strategy. K-CSA does not have a formalised knowledge creation process and the purpose of this study is to gain an understanding of how K-CSA creates knowledge and if there is a strategic opportunity for K-CSA to improve its knowledge creation by adopting a recognised knowledge creation model. If K-CSA becomes an organisation focused on creating knowledge, this can lead to the realisation of creating a sustainable competitive advantage.

1.5 Limitations

The scope of this study will include the four main areas of the K-CSA business, namely sales and marketing, finance, human resources and production. Information will be collected at an executive level from the heads of each area of the business. This study seeks to understand the concept of knowledge creation at a strategic level.

1.6 Problem statement

This research aims to gain an understanding of K-CSA's current knowledge creation processes to identify whether improvements are required.

1.7 Objectives

Objective 1: To investigate K-CSA's current knowledge creation processes.

Objective 2: To compare K-CSA's current knowledge creation processes with the knowledge creation process devised by Nonaka *et al.* (2008).

Objective 3: To critically analyse K-CSA's current knowledge creation processes against the knowledge creation model devised by Nonaka *et al.* (2008) for the purpose of understanding the viability of implementing the Nonaka *et al.* (2008) model within K-CSA.

The knowledge creation model devised by Nonaka *et al.* (2008) was chosen because it factors in both tacit and explicit knowledge and acknowledges that knowledge needs a context in which to be created. The model also provides guidelines for the leadership of the knowledge creation process.

1.8 Method

This study has adopted the phenomenological research paradigm which will be used to gain an understanding of the knowledge creation process within K-CSA. Qualitative data will be collected through face to face standardised and open ended interviews.

1.9 Outline of chapters

Chapter one introduces K-CSA and highlights that there is a potential problem within K-CSA regarding the process of knowledge creation. This problem is developed by way of placing the problem in context, further reflecting on the problem in the problem review and then highlighting the need for the research and what the limitations of the research are. The research problem is then stated as are the objectives of the research; and finally the method of the research is summarised.

Chapter two uses various strategic models in order to gain a deeper understanding of the importance of the knowledge creation process within K-CSA. Chapter three is the literature review where peer reviewed literature has been used to understand the experts' views on the importance of the knowledge creation process. Chapter four is concerned with the research methodology that will be used to carry out this study and considers factors such as the sample and population and the reliability, validity, limitations and generalisability of the research results. This chapter also recognises the challenges that are associated with analysing qualitative data and discusses the method that will be used to analyse the research data. Chapter five discusses the results that were obtained through the interview process regarding knowledge creation within K-CSA. In this chapter the three research objectives that were stated in chapter one are met. Chapter six then draws conclusions from the research and offers recommendations as to how K-CSA can improve its current knowledge creation process. Finally chapter seven reflects on the learning that has been gained as an MBA student through completing this dissertation.

1.10   Conclusion

This chapter highlighted the strategic importance of knowledge creation within K-CSA. In a world that is characterised by continual change an organisation such as K-CSA can obtain a sustainable competitive advantage by ensuring that it has a sound knowledge creation process in place in order to ensure that it has the best possible quality knowledge available to fuel the strategies that it will employ in order to meet its goals and objectives.

Chapter 2   Problem analysis and theoretical considerations

2.1 Introduction

Chapter one highlighted the importance of knowledge creation from a strategic management perspective. The conclusion was that knowledge creation and the strategy process are inextricably linked and that knowledge creation complements the strategy process. The importance of knowledge creation with regards to K-CSA's macro and micro environment and its resources was also highlighted.

This chapter will build on the concepts raised in chapter one by using strategic models to gain a better understanding of the process that creates knowledge within K-CSA from a strategic perspective.

2.2 Exploring the knowledge creation process from a strategic perspective

2.2.1   The strategy process, knowledge and K-CSA

Strategy can be defined as the plans, policies and principles that guide and unify the specific actions that an organisation employs to achieve its objectives. (Grant, 2008)

Grant (2008) asserts that the four elements that are common to successful strategies are:

- Simple, consistent, long-term goals

- A profound understanding of the competitive environment

- An objective appraisal of resources

- Effective implementation

According to Grant (2008) knowledge management are the practices and processes that generate value from knowledge and as such organisations are a collection of knowledge assets that are deployed in order to create value. Grant (2008) asserts

that there is growing evidence that the management of knowledge can lead to substantial improvements in performance.

In considering the four elements of a successful strategy, the magnitude of the knowledge that is required in order to develop a successful strategy becomes apparent. Knowledge and the creation thereof are required by all areas and affect all aspects of an organisation.

The above assertions by Grant (2008) confirm the importance of knowledge creation for strategy as was highlighted in chapter 1. An understanding of the environment and resources, the importance of effective implementation and the need for simple long term and consistent goals are highlighted.

K-CSA devises and implements strategy on an ongoing basis in accordance with the requirements set out by K-CC, K-CSA's parent company. For an organisation to satisfy the four elements required for a successful strategy it is necessary to follow a process as suggested by Boojihawon and Segal-Horn (2006). Figure 2.1 offers a graphical representation of the strategy process. To carry out the strategy process successfully K-CSA will need to follow a process for creating the required knowledge to satisfy the strategy process. The strategy process consists of three interlinking processes, which are analysing, choosing and the implanting the chosen strategy. Strategy is driven by process, requires content and takes place within a particular context.

If one reflects on the role that knowledge creation plays within the strategy process it can be deducted that the strategy process would be incomplete without content, a context and processes. Similarly it would be difficult to analyse, choose and implement a strategy in the absence of these elements. K-CSA as an organisation develops strategies according to corporate processes, the strategies are developed within the context of K-CSA's internal and external environment and the strategies possess content that has been developed by K-CSA and K-CC. In order to develop successful strategies K-CSA will need to be in a position where they are continually creating knowledge according to a replicable process in order to satisfy the requirements of the strategy process in an ever changing environment. Knowledge needs to be created in order to ensure K-CSA is developing the correct content

required for its strategy. Knowledge is required for K-CSA to develop its strategy within the correct context and knowledge is required for K-CSA to develop the correct processes needed to drive the strategy process. Reliable and up to date knowledge is crucial in analysing, choosing and implementing a strategy. Thus the knowledge creation process is an integral factor in the strategy process.

Figure 2.1   The strategy process incorporating knowledge creation
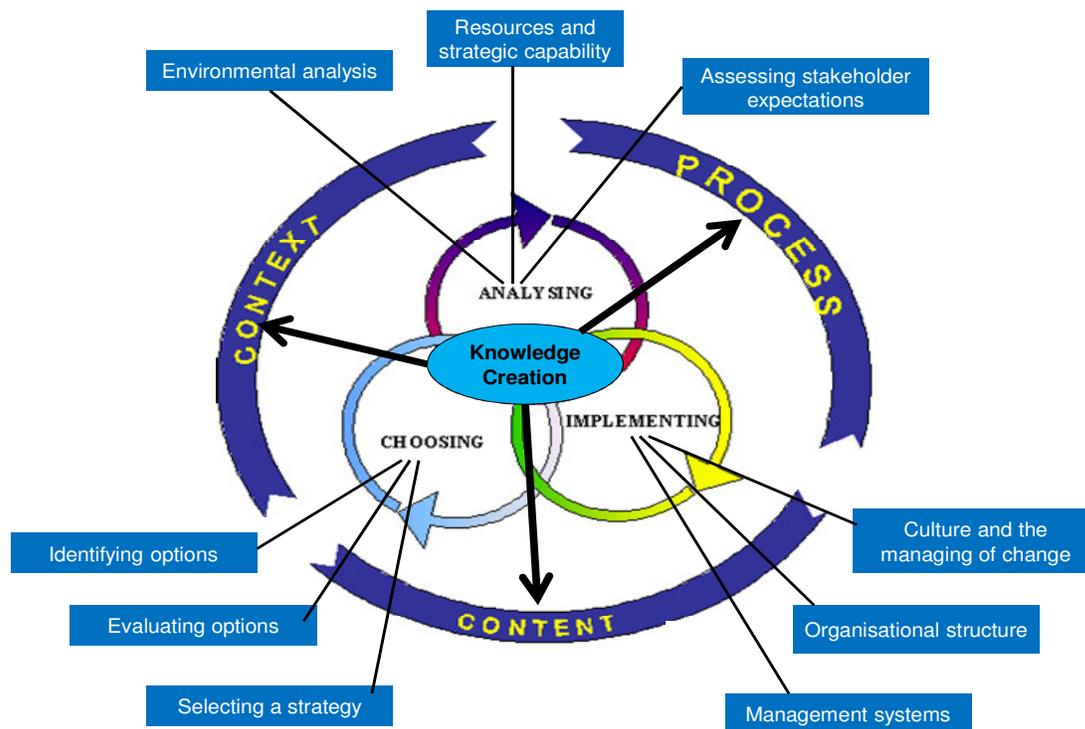
Adapted from Boojihawon and Segal-Horn (2006)

In analysing the different areas of the strategy process it becomes apparent that a significant amount of content is required in order to fulfil the elements of the process, which in turn highlights the necessity for knowledge and hence the need for a reliable knowledge creation process.

As asserted by Boojihawon and Segal-Horn (2006) the process of analysing requires K-CSA to have a profound knowledge of its internal and external environment, its resources and capabilities and the expectations of it stakeholders.

The decision process requires knowledge in order to identify the available options for K-CSA, to evaluate the options and finally to select a strategy. The implementing process requires knowledge regarding organisational culture, structure and management systems. The environment in which K-CSA exists is dynamic because it is ever changing at a rapid pace. In order for K-CSA to gain a competitive advantage through realising a successful strategy it needs to create knowledge on an ongoing basis following a process.

Grant (2008) suggests that knowledge is an integral extension of an organisations resources and capabilities and that an organisation's capabilities are driven by knowledge.

2.2.2 An overview of knowledge and knowledge creation

"Knowledge is a flux mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. Knowledge originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices and norms". (Tsoukas and Vladimirou, 2008: 86)

According to Nonaka *et al.* (2008) there are two types of knowledge, namely, explicit and tacit. Explicit knowledge is knowledge that can be documented and articulated and usually exists in the form of manuals, data and scientific formulae. Tacit knowledge is personal and difficult to formalise as it is subjective and intuitive and based on 'gut feel'. Tacit knowledge is characterised by being based on action, procedures, routines, values and emotions.

2.2.3 The link between the strategy process and knowledge creation

To set meaningful goals and objectives K-CSA will need to contextualise the environment in which it exists. Plans, policies and procedures need to be based on

sound knowledge and thus it is crucial that K-CSA has the ability to create knowledge to solve problems when developing plans, policies and procedures with a view of gaining a competitive advantage.

Nonaka *et al.* (2008) suggest that organisations create knowledge through actions and interactions within their environment and that the knowledge creating organisation creates knowledge on a continual basis from existing capabilities. K-CSA's internal environment and external environment in which it exists and competes is shown in Figure 2.2 which demonstrates the system and the areas between which interactions take place. Mintzberg (2007) defines the strategic apex as the where the general management of the organisation takes place i.e. the residence of top management.

Figure 2.2   A view of K-CSA's external and internal environment

Adapted from Markus (2009)

K-CSA's marketing, finance, production and human resources departments interact with suppliers, customers and competition and in the process create and swap data and information that can be used to create knowledge. K-CSA's different departments interact with each other and the strategic apex. K-CSA's strategic apex leads the business and creates the strategies that will ultimately be the rules of engagement for interactions between K-CSA and its environment.

A common thread shared between knowledge and strategy is that of human action and interaction with the environment while both concepts seek to act as a means of gaining a competitive advantage for organisations that apply them. This common thread reaffirms the conclusion made in chapter one that knowledge creation compliments the strategy process.

2.3 Deliberate and emergent strategy and the role of knowledge

Mintzberg and Waters (2007) assert that strategies can be realised in two ways, namely the deliberate strategy which is realised as intended or the emergent strategy that is realised regardless of or in the absence of intentions.

In order for a strategy to be purely deliberate it must satisfy three conditions, namely:

- It must be documented in detail in order to verify that the exact intended strategy was in fact realised.

- The strategy must have been known and accepted by all the players within the organisation and must be collectively representative.

- The strategy must realise exactly as intended. In order for this to occur the environment needs to be completely predictable and static in nature.

These requirements are very difficult to satisfy and as such it is unlikely that any organisations will be able to produce a purely deliberate strategy but could come close to doing so.

According to Mintzberg and Waters (2007) a purely emergent strategy requires order and consistency over time with the absence of intent. Similar to the purely deliberate strategy a purely emergent strategy would be rare. A real world situation would be that most realised strategies exist between the two extremes of purely deliberate and purely emergent strategy.

Figure 2.3   Deliberate and emergent strategy
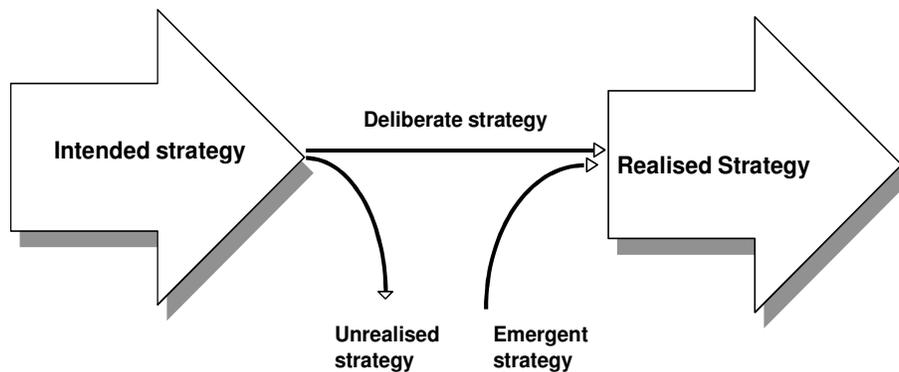
For a strategy to be as deliberate as possible K-CSA needs to be able formulate plans that are as precise and detailed as possible and this would require the creation of knowledge regarding K-CSA's macro, competitive and internal environment in order to predict any anomalies that could cause the strategy to deviate. A knowledge creation process would guide the creation of knowledge that would enable the strategy to be as precise and as detailed as possible based on sound knowledge.

2.4 The knowledge creation process

According to Nonaka *et al* (2008) organisations are entities that create knowledge on a continual basis. Knowledge is created through interactions between individuals and their environment. K-CSA continually interacts with its environment through contact with its customers, consumers, competitors, suppliers and the macro environment. Interaction also takes place within K-CSA between organisational members. This interaction between K-CSA and its environment implies that K-CSA is creating knowledge, it is however not clear if this is being done optimally.

Figure 2.4   The knowledge creation process

Ba: Context-knowledge place

- Platform for knowledge conversion
- Space for self-transcendence
- Multi-context place

Quality & Energy

SECI: Knowledge conversion process

Conversion between tacit and explicit knowledge

Moderator

Input

Output

- Grow and shift through the continuous knowledge conversion process.
- Moderate how ba performs as a platform for SECI
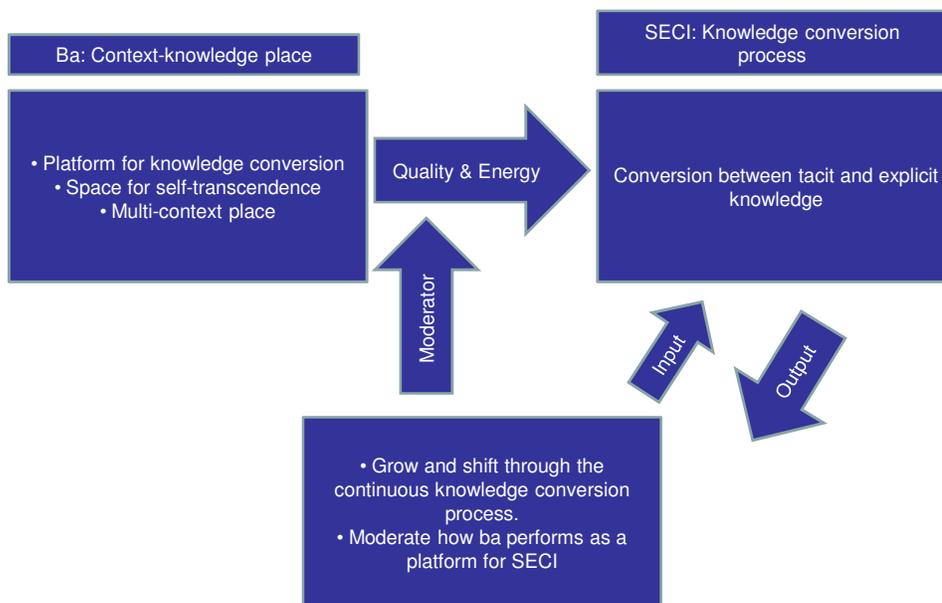
Source: Nonaka et al. (2008)

Nonaka *et al.* (2008) propose a process for the creation of knowledge as shown in Figure 2.4. This model considers the conversion between tacit and explicit knowledge through the elements of socialisation, externalisation, combination and internalisation (SECI). The SECI model proposes that there needs to be a shared context for the creation of knowledge and this is represented by the Japanese word Ba which roughly translates into place or context. Finally the model considers the leadership of knowledge assets which are the inputs, outputs and the moderation of the knowledge creation process. The three elements in the knowledge creation process need to interact with each other to create knowledge.

2.4.1 The SECI process

Nonaka *et al.* (2008) assert that organisations create knowledge through interaction between tacit and explicit knowledge and this interaction is known as knowledge conversion. As the conversion takes place the quantity and quality of knowledge increase. (Figure: 2.5).

According to Nonaka *et al.* (2008) socialisation is the conversion of tacit knowledge to new tacit knowledge through shared experiences. Within K-CSA this process would be evident when new employees are orientated or though coaching and mentorship. Similarly K-CSA interacting with its customers is a form of socialisation. Socialisation involves the collection of information from both internal and external data sources that will be used in the knowledge conversion process. Tacit knowledge is in most cases context specific to time and space and as a result can only be created through shared experience.

Figure 2.5   The SECI process
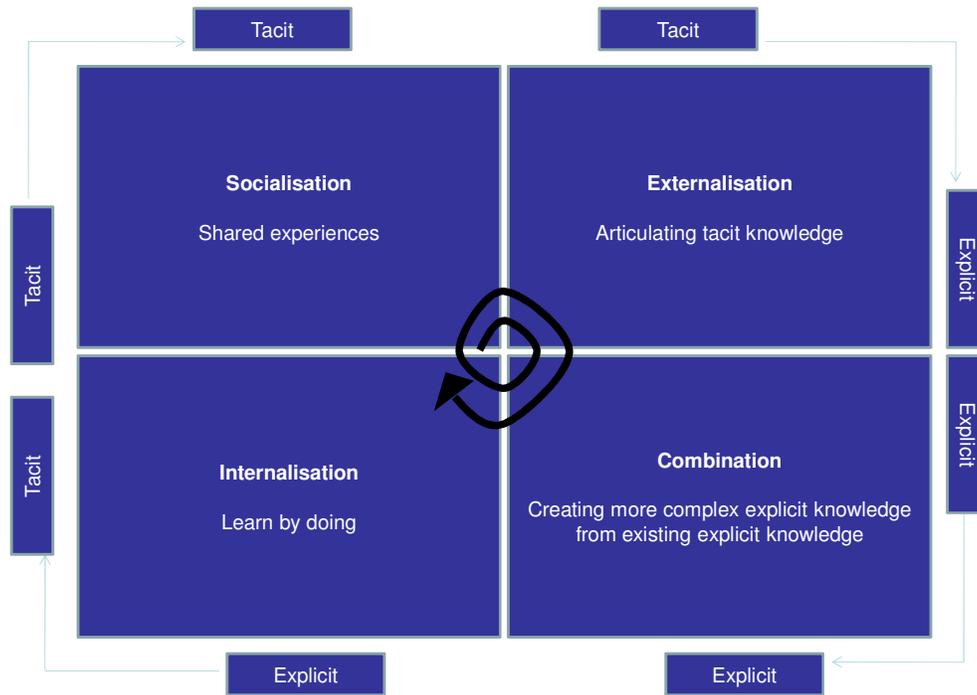
Adapted from: Nonaka et al. (2008)

Externalisation is the conversion of tacit knowledge into explicit knowledge thus allowing tacit knowledge to be shared and used in order to create new explicit knowledge. An example of this process taking place within K-CSA would be the formalisation of a new concept. Methodical use of models, analogies and metaphors assist in converting tacit knowledge into explicit knowledge.

Combination is the conversion of explicit knowledge into more complex explicit knowledge through processing explicit knowledge and placing it in a new context. An example of this process taking place within K-CSA would be interpreting market sales data and producing a market share analysis. This process involves combining internal and external data to formulate strategies and other operating plans. An important part of combination involves the dissemination of the newly created data for use within the organisation. Combination enables the breakdown of concepts in a

systematic manner which allows for concepts to be used operationally, an example of which is making an organisations vision explicit to the employees of an organisation.

The final step in the Nonaka *et al. (2008)* model is internalisation which is the conversion of explicit knowledge into tacit knowledge. An example of this occurring within K-CSA would be when K-CSA articulates a new work process and trains employees on the job in order to carry out the new process, thus the employee is learning by doing. This process relies on acquiring real world knowledge and the use of cross-functional development teams as well as learning acquired through simulation and experimentation. The explicit knowledge that is learned by the individual is internalised and improves the individual's tacit knowledge base.

The spiral in the SECI process demonstrates that knowledge creation is an ongoing process and builds on and amplifies previous knowledge created in order to create more new knowledge in an ongoing process. Nonaka *et al.* (2008) suggest that organisational knowledge creation is an ongoing and dynamic process that starts at the individual level and transcends all levels of the organisation and even the organisational boundaries and continually upgrades itself.

2.4.2 Creating knowledge with outside constituents

Nonaka *et al.* (2008) suggest that the process of knowledge creation takes place both within an organisation and outside the organisation. Knowledge moves across organisation boundaries in the same way that knowledge comes into the organisation from outside constituents in order to create new knowledge. This process is depicted in Figure 2.6.

K-CSA regularly engages with outside constituents such as machine suppliers, logistics companies and with customers with a view of collaborating to realise benefits. This needs to be done according to an effective process in order to ensure that pertinent knowledge is created that will be mutually beneficial as opposed to K-CSA not gaining benefit because it does not apply a proper knowledge creation

process. This aspect of knowledge creation relates to section 2.2.1 where one of the four elements required for a successful strategy is highlighted as the need to have a profound understanding of the competitive environment.

Figure 2.6   Creating knowledge with outside constituents
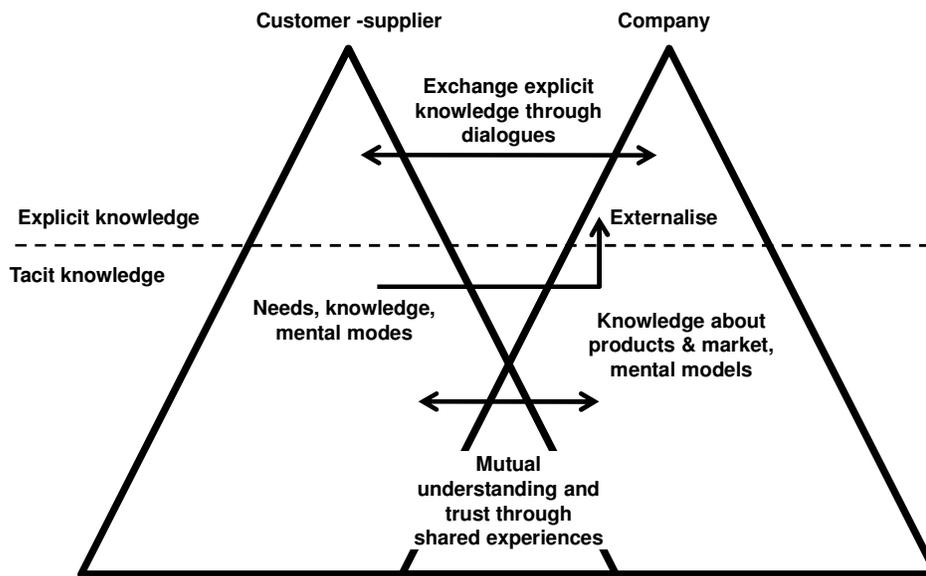
2.4.3 Ba: A shared context in motion for knowledge creation

Ba in the knowledge creation process proposed by Nonaka *et al.* (2008) represents the shared context in which knowledge is shared, created and utilised through the interpretation of information within a context. Ba does not only mean physical space but also represents space and time. Examples of K-CSA's Ba would be the workplace where interactions by way of meetings and discussions are taking place and the virtual environment such as e-mail and the web.

Figure 2.7   The four types of Ba

According to Nonaka *et al.* (2008) there are four different types of Ba which are defined by the following characteristics.

- Originating Ba is defined by individual face to face interaction. Experiences, emotions, feelings and mental models are shared in a context of socialisation where all the human senses can be recognised, such as emotion and body language.

- Dialoguing Ba is defined by collective face to face interaction where skills and mental models are shared and articulated and thus dialoguing Ba offers a context for externalisation.

- Systemising Ba is defined by collective and virtual interactions. This Ba relates to the combination process and is concerned with the transmission of

explicit knowledge to a wide audience in written form such as through a manual, e-mail or the internet.

• Exercising Ba is defined by virtual and individual interactions. Here explicit knowledge shared through virtual media is brought to action.

2.4.4 The four categories of knowledge asset

Figure 2.8   The four categories of knowledge assets

Experiential knowledge assets	Conceptual knowledge assets
Tacit knowledge shared through common experience. • Skills and know-how of individuals • Care, love, trust and security • Energy, passion and tension	Explicit knowledge articulated through images, symbols and language. • Product concepts • Design • Brand equity
Routine knowledge assets	Systemic knowledge assets
Tacit knowledge routinised and embedded in actions and practices. • Know-how in daily operations • Organisational routines • Organisational cultures	Systemised and packaged explicit knowledge. • Documents, specifications, manuals. • Database • Patents and licenses

Source: Nonaka et al. (2008)

According to Nonaka *et al.* (2008) knowledge assets form the foundation of knowledge creation and are described as indispensible resources that are specific to the organisation that are the inputs, outputs and moderating factors of the knowledge creation process. Knowledge assets cannot be valued effectively as current accounting systems are not capable of doing this. Knowledge assets need to be developed and utilised by an organisation in order to realise their value. Knowledge assets are also unlike other assets that can be bought and sold as and when needed due to their dynamic nature.

In order to gain a better understanding of how knowledge assets are created, acquired and exploited Nonaka *et al.* (2008) suggest that they can be placed into four different categories as defined below, namely experiential, conceptual, systematic and routine.

- Experiential knowledge assets are the tacit knowledge that is built up through shared experiences between organisational members and the organisation and the shared experiences that an organisation has with the likes of its customers. Experiential knowledge assets are built up through practical experience in the work environment. Due to their tacit nature these assets are difficult to define, evaluate and buy or sell. These resources are the source of a competitive advantage as they are difficult to copy. Within K-CSA examples of experiential knowledge assets are skills and know-how built up through experienced employees such as sales team members or machine operators and cultural aspects such as passion, trust and security.

- Conceptual knowledge assets are expressed through images, symbols and language and based on explicit knowledge. These knowledge assets are conceptual in nature and consist of tangible assets such as K-CSA's brands, concepts and designs.

- Systemic knowledge assets are explicit in nature and intellectual property such as licences and patents fall into this category. These assets are easily transferable and are embodied in the likes of K-CSA's technologies, product specifications, database and manuals.

- Routine knowledge assets are manifested in the routines that run the organisation and are tacit in nature and as such they are practical in nature. The assets are embodied in K-CSA through cultural aspects such as organisational stories and routines.

In order to effectively manage knowledge creation K-CSA needs to map its knowledge assets and not just take stock of the knowledge assets that it possesses. This relates back to section 2.2.1 that highlights the four elements of a successful strategy as having made an objective appraisal of organisational resources.

2.4.5 Leading the knowledge-creating process

According to Nonaka *et al.* (2008) organisations create knowledge through existing assets by way of the SECI process and this knowledge creation occurs in Ba. This new knowledge then forms a part of the organisation's knowledge asset base. The knowledge creation process cannot be lead and managed by way of conventional management methods. The knowledge leadership process is depicted in Figure 2.9. Although both top and middle management have leadership roles in the knowledge creation process the process cannot be lead using the traditional top down management approach. The process relies on the middle up management philosophy as the middle manager is the conduit between the vertical and horizontal flow of information within the organisation. The middle manager interacts with organisational members in creating knowledge and actively leads, creates and manages Ba in a manner that is conducive to knowledge creation. Management needs to provide leadership regarding the following aspects of knowledge creation:

2.4.5.1 Providing the knowledge vision

The top management of K-CSA needs to formulate and communicate a knowledge vision throughout the organisation. The knowledge vision will provide guidance and answers to organisational knowledge questions such as what knowledge the organisation should create, where does it plan to go to and how to create the

knowledge. The vision will provide long term direction regarding knowledge for the organisation and should go beyond managing knowledge for the organisation's current position by taking into account future possibilities outside of the organisation's current realm. The knowledge vision governs the quality and evaluates the information created by the organisation. It is the role of the middle manager to enable the creation of knowledge that will realise the knowledge vision as devised by top management.

2.4.5.2   Developing and promoting the sharing of knowledge assets

According to Nonaka *et al.* (2008) top management needs to facilitate the knowledge creation process by managing the three elements of the knowledge creation process. This entails that top management actively manages and develops the organisation's knowledge assets to create knowledge.

Management needs to redefine the organisation according to the knowledge vision it has developed and according to the knowledge resources that the organisation has and does not have as opposed to its products, markets and technology. It is the task of top management to create a strategy that will make effective and efficient use of the organisation's knowledge assets through building them up, maintaining them and utilising the assets. This management role will enable K-CSA to understand the knowledge capabilities it has and requires in order to compete on a sustainable basis and ensure its future.

Nonaka *et al.* (2008) warn that an organisation should not get into a position where its core capabilities become its core rigidities. This occurs when there is over reliance on the successes achieved from a specific knowledge and new knowledge is not created due to this situation. In the case of K-CSA it would be necessary to continually create new knowledge that can open up new innovative avenues of business.

Figure 2.9   Leading the knowledge creation process
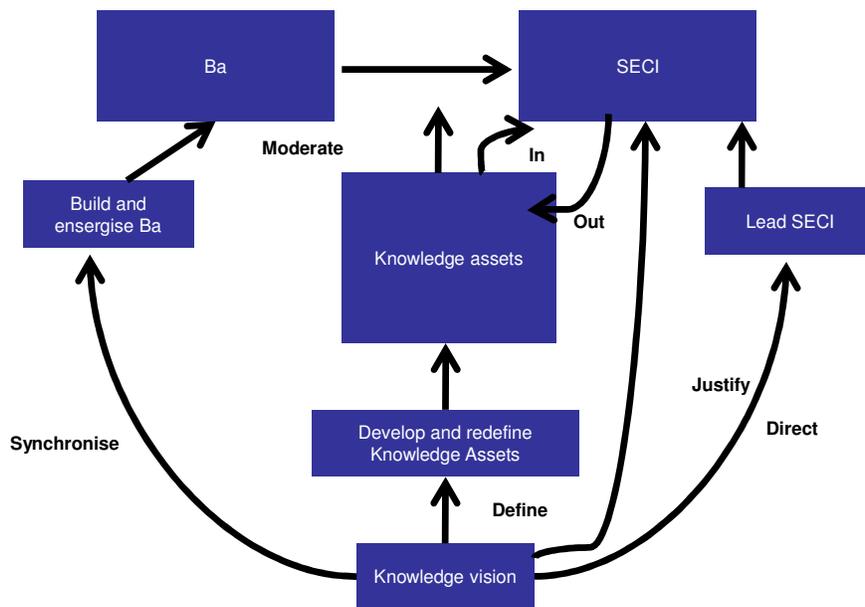
Source: Nonaka et al. (2008)

2.4.5.3   Building, connecting and energising Ba

Nonaka *et al.* (2008) assert that Ba can be built intentionally or spontaneously. Ba is built up through managers providing a physical environment in which to build Ba. In the case of K-CSA Ba is built in a predominantly open plan office environment with meeting rooms to facilitate more privacy. Within K-CSA one meeting room in particular emulates a retail environment and has couches and bean bags as opposed to desks and chairs. The canteen and coffee areas are other physical areas where Ba is created.

The different forms of Ba do not connect to each other in any preconceived way. It is the role of the manager to read the situation and then to facilitate the connection of the different Ba. In K-CSA this would be done by management facilitating the mix between one on one interactions, group interactions and the use of technology, to interact. Connecting the various Ba's forms a greater Ba.

The final ingredient that completes the effective leadership of Ba is the energising of Ba. According to Nonaka *et al.* (2008) this is achieved through management creating the required conditions to energise Ba which is autonomy, creative chaos, redundancy, requisite variety and love, care trust and commitment.

Allowing for autonomy amongst employees can bring about sources of new knowledge e.g. by allowing employees to organise themselves and to set the limits of their task boundaries. This autonomy can create conditions that allow organisations better access to the knowledge that their employees possess. This is characterised within K-CSA by the use of project and cross functional teams.

Creative chaos within the organisation is an organised chaos induced by management. The effect of creating a controlled feeling of crisis amongst employees forces employees to find new ways to overcome the new complexity the chaos has brought to their environment. This challenges the usual ways of employees conducting themselves and sets new limits for their levels of performance. The introduction of creative chaos to the environment needs to be timed and managed so as to have a positive and not a negative effect on the Ba and as such energise the Ba. An example of creative chaos within K-CSA is the use of stretched sales and production targets.

Redundancy is characterised by the sharing of information that extends beyond departmental boundaries. This allows for tacit knowledge to be shared and potentially for new knowledge to be created as other employees offer constructive advice on how their colleagues can achieve their goals. Leadership redundancy can also enable employees to transcend boundaries. An example of this within K-CSA is when cross functional project teams are used to achieve a goal. A junior manager can be in a situation where s/he leads a team that includes senior managers. This allows him/her to obtain management experience and to demonstrate his/her areas of strength to the broader team.

Requisite variety is what balances an organisations internal diversity to the variety and complexity of its environment. Requisite variety can be enhanced by allowing for equal access to knowledge across the organisation. This can be achieved through

allowing employees to develop cross functional capabilities or to develop a flat structure within the organisation.

Love, care trust an commitment are the basis for the creation of knowledge. Employees need to operate in an environment where they can create and share knowledge without feeling threatened. This type of environment will ensure that knowledge does not become a source of power that is kept secret due to a lack of trust amongst colleagues.

2.4.5.4   Promoting the SECI process

According to Nonaka *et al.* (2008) the final task of leading the knowledge creation process is to promote the SECI process. Managers facilitate the flow of tacit knowledge between frontline and top management in order to convert this tacit knowledge into explicit knowledge that can be integrated into new concepts and technologies. Leadership of the knowledge creation process also requires the control of the knowledge creation spiral to ensure that the correct knowledge is being created. Leaders also need to be articulate in communicating in all four areas of the SECI process by making use of verbal and non verbal communication.

2.5 Conclusion

This chapter explored the knowledge creation process from a strategic perspective. The four elements common to a successful strategy and their requirements regarding knowledge were highlighted and considered against the context of knowledge creation. The complementary nature of the knowledge creation was explored in relation to the strategy process with regards to analysing, choosing and implementing strategy and from the perspective of providing content, context and supporting these strategic processes. It was concluded that the knowledge creation process could be integrated into the strategy process. Additionally, managing the knowledge creation process effectively could assist in making K-CSA's strategy more deliberate as opposed to emergent in nature.

Finally the knowledge creation process as devised by Nonaka *et al.* (2008) was considered in detail. The concepts of SECI, Ba and leadership of the process of knowledge creation were discussed as were knowledge assets and the process of creating knowledge with constituents outside of the organisation.

Chapter 3   Literature review

3.1 Introduction

In the previous chapter the knowledge creation process was considered from a strategic perspective by linking it to the strategy process and considering its ability to make organisational strategy more deliberate. It was concluded that the knowledge creation process could indeed be integrated into the strategy process as it is a process that provides the content and context that are necessary for a successful strategy.

The knowledge creation process according to Nonaka *et al.* (2008) was then considered in detail as this is the process that was chosen as a benchmark for K-CSA. This chapter will now review the literature compiled by experts in the field of knowledge creation in order to understand their view on the knowledge creation in general and the knowledge creation models devised by Nonaka *et al.* (2008).

3.2 Reviewing the literature

3.2.1   Views on the strategic importance of knowledge

Roth (2003) asserts that knowledge is an organisation's most strategic resource and source for a competitive advantage and thus understanding how knowledge is created is of the utmost importance to managers. The effectiveness of the way knowledge is managed and created and the quality of the knowledge created has a direct bearing on the performance of an organisation. Chen (2008) suggests that in the knowledge age organisations need to build their core capabilities and knowledge in order to overcome challenges facing them.

Heinrichs and Lim (2005) suggest that organisations should not only concentrate on managing uncertainty within its competitive environment in order to decrease turmoil, but the organisation needs to devise strategies that will allow it to compete more effectively at higher levels of turbulence.

3.2.2 The building blocks of knowledge

According to Bajaria (2000) the building blocks of knowledge are data, information, knowledge and wisdom. Raw data is an essential factor in the knowledge creation process. In the context of knowledge creation the trustworthiness of data is called into question and can be considered trustworthy if it is suitable to the situation, unbiased and complete. Knowledge is created from the combining of insights achieved through the summarising of information and not through a single summary of particular information. The summarisation of information needs to be done on demand. Knowledge that was created to solve a past problem can be useful in solving a current or future problem. By devising probabilistic and deterministic questions a better understanding of what knowledge to create can be achieved. Wisdom is achieved through achieving permanency of newly discovered actions.

3.2.3 Further analysis of tacit and explicit knowledge

Chen (2008) classes knowledge into four types based on its tacit/ explicit dimension and individual/ group dimension.

- Concepts are explicit in nature and exist in the form of formulae, rules and principles and can be grasped by individuals.

- Stories are explicit in nature and affects groups within the organisation.

- Skills are tacit and personal in nature.

- Genres are structures for interpreting messages.

3.2.4 Theoretical views on knowledge creation

According to Chen (2008) knowledge is created through the interaction between the two dimensions of objectivity and subjectivity. The objective dimension is represented by explicit knowledge which is knowledge that can be easily articulated

and documented. The subjective dimension is represented by tacit knowledge which is knowledge that exists in individuals' heads and is difficult to articulate and document. When the objective knowledge is processed through subjective thought knowledge is created. Roth (2003) asserts that knowledge is created through human experience and reflection on the experience and needs a context in which to be applied.

Chen (2008) asserts that knowledge creation occurs when there is interaction between the following activities:

- Problem solving: This occurs when individuals gain and improve tacit knowledge.

- Implementing and integrating: This refers to the implementation and integration of new techniques and subsequent adjustments between the environment and new methodologies introduced

- Experimentation: This builds up data generated from experiences. This collection of data will be a source of knowledge for solving future problems.

- Importing knowledge: Knowledge is created through knowledge networks.

According to Roth (2003) knowledge creation occurs through interactions between tacit and explicit knowledge and through the understanding of synergistic relationships between tacit and explicit knowledge. According to Chen (2008) knowing in itself is inadequate in knowledge creation and the key that unlocks the process is action. Interaction between knowing and knowledge allows for the creation and expansion of knowledge to take place by way of bridging the epistemologies.

Chen (2008) suggests a scenario process as a means of creating dynamic knowledge. The process consists of defining scope, building a data base, constructing scenarios and choosing between strategic options. This process includes four stages. The first stage is characterised by identifying a knowledge gap through the interaction of individuals from different organisations. Stage two requires more rigorous interaction to convert tacit knowledge to a more explicit state. The

third stage involves the creation of a scenario and the fourth stage is characterised by implementing a scenario where individuals learn through experience and gain new tacit knowledge.

Sarabia (2007) refers to a five step model of organisational knowledge creation in Figure: 3.1. The steps in the models are:

- Sharing tacit knowledge between individuals

- Creation of concepts by converting tacit knowledge to explicit knowledge

- Justifying concepts by proving their viability

- Creating an archetype from a prototype

- Knowledge expansion by distributing interactively and use of hairspring

According to Sarabia (2007) tacit knowledge has two dimensions, one being technical and the other cognitive. The technical aspect is embodied in know-how that cannot be bought and enables the holder to gain an advantage over competitors. The cognitive dimension is characterised by beliefs and perceptions that shapes the particular environment. Sarabia (2007) also points out that in the 1990's the Western knowledge philosophy was based on explicit knowledge and Japanese knowledge was based on tacit knowledge. The SECI model takes both forms of knowledge into account in the process of creating knowledge.

Figure 3. 1   Five-step model for organisational knowledge creation.

Initial prototype	Prototype	New concept stretch fit diaper avoids leakage	**Building an archetype**
Good fit and absorbency	Good fit and absorbency	Quality and cost	**Justifying the concepts**
Product characteristics for premium diaper	Stretch fit waistband	Stretchy waist band concept trade marked	**Knowledge creation**
New product development team	New product team and mothers	Put into production	**Sharing knowledge**

Source: Sarabia (2007)

Li and Gao (2003) highlight the difference between knowledge creation and knowledge transfer. Knowledge transfer takes place when knowledge of a competitor is copied or when knowledge is used by way of license from its creator. Benchmarking is utilised to identify trends within the market through systems set up to collect intelligence and information. This intelligence and information collected fuels the process of continuous learning. Organisations that are not sophisticated and complex may not need to create knowledge as they may not derive benefits from this process and they may run effectively by using applying the explicit knowledge that they possess. A competitive advantage thus can be derived from knowledge transfer that enables continuous learning which leads to the competitive advantage as opposed to creating knowledge in order to continually innovate in order to gain a competitive advantage.

Un and Cuervo-Cazurra (2004) suggest that organisations are knowledge systems where knowledge exists in individuals and is created through social interactions. A view is offered that there are two strategies that can be employed to enable knowledge creation. The two strategies are the organisational level strategy and the project team strategy. Knowledge creation at an organisational level encourages the creation of knowledge independently of whether a knowledge creation task has been established and the capability to create knowledge arises from individuals' understanding of other knowledge sets that exist within the system. The project team view encourages the creation of knowledge only once the knowledge creation task has been established and the capability to create knowledge arises from individuals' ability within the project team to willingly share their knowledge with others.

According to Un and Cuervo-Cazurra (2004) a knowledge system comes into being through interactions between the different elements that make up the system which are the individuals who possess knowledge. Knowledge is created through multidirectional interactions between individuals that possess both tacit and explicit knowledge. Knowledge created through the interaction of individuals that possess diverse knowledge sets better facilitates the creation of knowledge as it combines knowledge from different areas of the organisation to ensure the knowledge created meets the demands of the markets in which it is created with a view of gaining a competitive advantage for the organisation.

According to Un and Cuervo-Cazurra (2004) both strategies have merit and as such one is not dominant over the other. The organisational strategy is costly and time consuming to implement. There are risks e.g. that if there is a high employee turnover rate the organisation will spend time and incur costs on a continuous flow of new employees that have not created knowledge within the system and thus assisted in creating a competitive advantage. The benefits of the organisational strategy are that knowledge creation is taking place regardless of the identification of a knowledge task and thus makes it more difficult for competitors to pinpoint the source of the knowledge in order to try and imitate the knowledge creation. This method is suited to organisations that seek to be leaders in the field of knowledge creation.

The project team strategy for knowledge creation is the less costly model to apply as it concentrates on specific individuals and does not need to be applied to all individuals within the organisation. This strategy is not as time consuming as the organisation strategy and offers flexibility in that it can be directed toward the immediate knowledge creation task at a point in time. This method is more easily imitated as it is not as systematic as the organisational strategy and is able to be applied over a shorter period of time. This method is suited to an organisation that follows other organisations or that have specific goals that are appropriately met through project based methods

According to Choo (2001) gaps in knowledge that prevent organisations from problem solving or taking advantage of an opportunity need to be identified prior to creating new knowledge. Choo (2001) asserts that organisations possess three types of knowledge, namely tacit, explicit and cultural. Tacit knowledge is described as embedded expertise and experience of individuals and groups. Explicit knowledge is knowledge that is articulated and documented in rules, routines and procedures. Cultural knowledge is assumptions beliefs and norms used to evaluate the worth of new knowledge and how it fits in with organisational objectives.

Choo (2001) identifies the following knowledge building activities:

- Problem solving which takes place between individuals with different knowledge sets.

- Experimentation and prototyping that improves current and builds future capabilities.

- Implementation and integration of new processes and tools allow for the mutual adaption between user and technology and for user and technology to take on complimentary roles toward each other.

- Importation of knowledge occurs when knowledge regarding technology and the market is imported in the organisation and absorbed with a view of gaining a competitive advantage.

3.2.5 Views on the SECI model

Chen (2008) considers the four phase SECI model devised by Nonaka *et al.* (2008) and as discussed in chapter two to be the cornerstone model in representing the knowledge creating process.

Chen (2008) further clarifies the SECI model by defining the different participants between which interaction takes place during the knowledge conversion process. Socialisation takes place between individuals; externalisation takes place at an individual and group level; combination takes place at an organisation and group level and internalisation takes place at an individual, group and organisational level.

Chen (2008) proposes a revision of the SECI model proposed by Nonaka *et al.* (2008) when it is considered in the context of multidisciplinary project teams. Three modes of knowledge creation are suggested, namely knowledge sharing, knowledge integration and collective project learning. Knowledge sharing is compared to externalisation in the SECI model when knowledge is shared by way of language and socialisation when language is not used as the sharing medium. Knowledge integration takes place through collaborative interaction between project team members and stakeholders and differs from combination in the SECI model, by bringing in a social dimension. The generation of knowledge occurs through the interaction brought about from the sharing and integration of knowledge. Collective learning also occurs along with the sharing and integration when highly experienced self managing team members acquire knowledge from the projects they are involved in.

Li and Gao (2003) assert that the SECI model highlights the importance of the tacit dimension of knowledge and makes note of the differences between the concepts of tacit and implicit. The key motive for considering tacit and implicit independently is based on the premise that knowledge has different audiences who, from a tacit perspective, have different levels of knowledge. From the implicit perspective it would be useful to incentivise making the implicitness within one group explicit so that it can be shared with other groups across the organisation in order to reapply this knowledge across other organisational activities.

According to Li and Gao (2003) the middle-up-down management style is most effective for managing the creation of knowledge. In this management approach middle managers act as the conduit between top management and frontline managers through interactively coordinating the human activities taking place at the two different levels.

Aramburu, Sáenz & Rivera (2006) highlight that the crucial aspects of the middle up down model are:

- A knowledge vision

- The building of dynamic Ba

- The exchange of knowledge assets

3.2.6 The concept of Ba

Fayard (2003) asserts that Ba can be described as a mutual place for building relationships. Ba can be mental in nature and exists in the form of ideas, ideals and shared experiences or physical in nature in the form of offices that accommodate interaction between individuals. Ba is considered to be the basis for knowledge creation. Ba cannot be ordered into existence by managers, it needs to be brought into being on a voluntary membership basis where care and mutual respect energise and stimulate the environment. Ba is characterised by common interest among individuals where there is not conflict between relationships.

3.2.7 Knowledge, learning, culture and leadership

Sarabia (2007) suggest that the only way that an organisation can gain a competitive advantage in an uncertain environment is through knowledge that has been created and which is now deemed to be the most important factor of production.

Sarabia (2007) suggests that knowledge forms the basis of the relationships between itself, learning, culture and leadership and the synergies that exist between these relationships are derived from knowledge.

An organisation is deemed to be learning when it is able to adapt to the fast changing environment in which it exists by responding in a fast and flexible manner to environmental changes and thus managing the effects of external changes within the organisation. According to Sarabia (2007) a learning organisation is skilled in the areas of resolving problems in a systematic manner, able to experiment in new areas, learns from past experiences and industry benchmarking and is able to disseminate knowledge through the organisation fast and efficiently.

Figure 3. 2   The relationship between knowledge, learning, culture and leadership
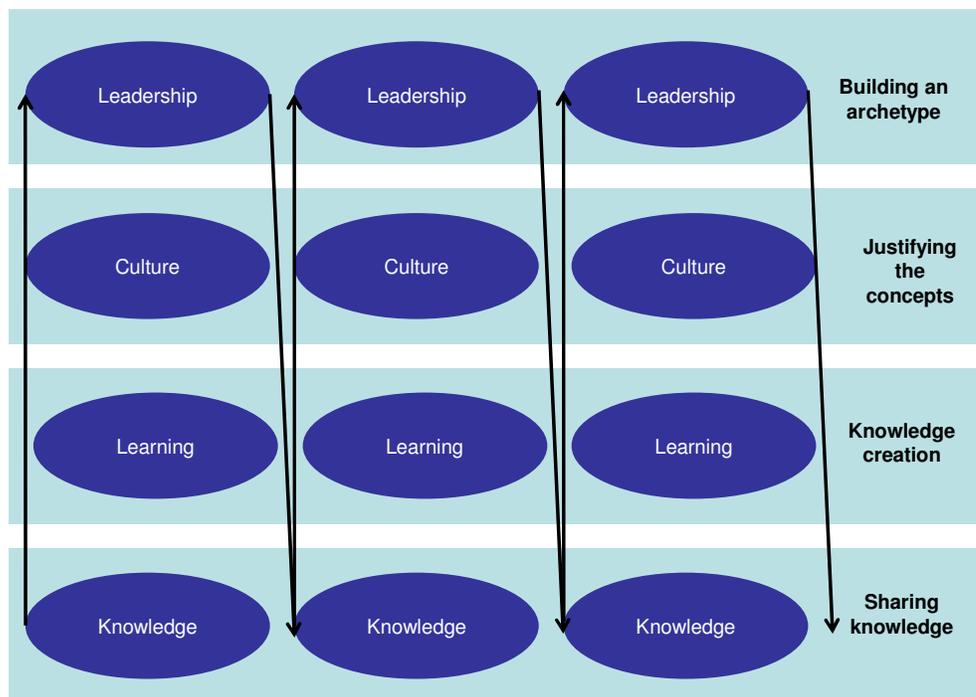
Source: Sarabia (2007)

In considering the role of culture and learning Sarabia (2007) suggests that culture defines what knowledge is not present. Culture acts as the catalyst between individual and organisational knowledge provides the context for social interaction that is required for learning to take place. Finally culture may impede learning due to the behaviour it has created within the organisation.

Figure 3.2 graphically demonstrates the relationship between knowledge, learning, culture and leadership. Sharing knowledge highlights that knowledge is created by the individuals within the organisation in an environment that is conducive to knowledge creation. Creating concepts is where learning takes place though interaction. Justifying concepts is where the learning generated is evaluated by the culture and the feasibility of the learning is determined. Building an archetype is where the feasible concept generated from learning is realised through leadership arising from the effects of knowledge, learning and culture.

3.3 Conclusion

This chapter reviewed literature on knowledge creation from various journals in order to obtain a broad view on the subject. The purpose of gaining a broader perspective on the subject was to verify suitability of the knowledge creation model proposed by Nonaka *et al.* (2008) and to ensure that it is a practical model based on sound theory.

Roth (2003) confirmed that knowledge is of strategic importance and a source for a competitive advantage to organisations. Chen (2008) asserted that knowledge was created through interaction between subjectivity and objectivity which can be related back to the interaction between tacit and explicit knowledge that takes place within the SECI model. Sarabia (2007) offered views that showed similar underpinnings to the SECI model and that portrayed knowledge creation as a process. Li and Gao (2003) provided guidance on the differences between knowledge creation as opposed to knowledge transfer. Un and Cuervo-Cazurra (2004) offered a view that organisations are knowledge systems and also highlighted the importance of the role of social interaction in creation of knowledge. Strategies for creating knowledge at

either an organisational or project team level were offered. Choo (2001) highlighted knowledge building activities which were based on social interaction as well as the use of technology and process to build organisational knowledge. Certain common threads were found in the literature mentioned above such as the importance of the need to create knowledge through process, the importance of social interaction in knowledge creation and the recognition of the knowledge dichotomy of tacit/ explicit subjective/ objective. The models and process for knowledge creation discussed above included basic elements and thought processes that are apparent in the SECI model.

Chen (2008) described the SECI model as the *cornerstone* model representing the knowledge creation process. This assertion highlights that the knowledge creation process devised by Nonaka *et al.* (2008) of which the SECI model forms a part and which will be an effective tool against which to benchmark K-CSA's knowledge creation. Li and Gao (2003) highlighted the importance of the tacit dimension of knowledge and confirmed that the middle-up-down management process suggested by Nonaka *et al.* (2008) as effective. Aramburu, Sáenz & Rivera (2006) highlighted that the crucial aspects of the middle-up-down model are a knowledge vision, the building of dynamic and the exchange of knowledge assets. Fayard (2003) confirmed the role of Ba in the knowledge creation process of Nonaka *et al.* (2008) and Sarabia (2007) provided a view of the relationships between knowledge, learning, culture and leadership. This provided an alternate perspective on leadership which along with SECI and Ba complete the knowledge creation process devised by Nonaka *et al.* (2008)

Chapter 4   Research methodology

4.1 Introduction

Chapter one facilitated the reflective process of placing K-CSA's knowledge creation process in context, reviewing the problem and defining the objectives to research the problem. Chapter two considered the knowledge creation process in a strategic context and chapter three reviewed a broad selection of literature on knowledge creation from various journals in order to gain a broader understanding on the subject from an academic perspective. Chapter four will consider the research design and methodology that will best meet the purposes of the research objectives.

4.2 Research paradigms

Hussey and Hussey (1997) assert that there are two main paradigms that can be followed when conducting research, namely the positivistic paradigm and the phenomenological paradigm. It is suggested that the main paradigms should be viewed as two opposing sides of a continuum as one moves away from the one extreme towards the other the characteristics of one paradigm decrease and the other increases.

4.2.1   The positivistic paradigm

According to Hussey and Hussey (1997) the positivistic paradigm approach is concerned with the uncovering of facts and finding causal relationships to explain social phenomena. Precision, an objective approach and rigidity along with logical reasoning guide this paradigm's research. Hussey and Hussey (1997) assert that the positivistic paradigm tends to produce quantitative data which Coldwell and Herbst (2004) define as data where the findings can be analysed and quantified by way of mathematical methods. The intention of this paradigm is to collect data from a representative sample and then to project the findings onto a wider population. The

positivistic paradigm thus uses numbers to describe, draw conclusions from and to solve problems.

An advantage of utilising the positivist paradigm when conducting research is that the use of numbers provides a universal platform of common understanding. The process of conducting positivistic research involves the collection of data that can be measured numerically, the analysis of the data and the drawing of conclusions from the data.

This paradigm is not suitable for this research project because the aim of this study is to gain deep insights into the phenomenon of knowledge creation within K-CSA. As this paradigm produces mainly quantitative data it will not serve the purpose of gaining the required insights that can be obtained from obtaining qualitative data.

4.2.2 The phenomenological paradigm

Hussey and Hussey (1997) assert that phenomenology is the science of phenomena. A phenomenon is described as the appearance or perception of a fact or occurrence and thus the phenomenological paradigm endeavours to understand human behaviour from a subjective frame of reference of the participant.

Hussey and Hussey (1997) suggest that the phenomenological paradigm tends to generate qualitative data. Coldwell and Herbst (2004) suggest that qualitative techniques for data collection and analysis are used effectively when phenomena cannot be analysed by way of mathematical methods. Such phenomena are feelings, beliefs and values. Some of the qualitative methods utilised when collecting data for phenomenological research are focus groups and interviews.

The advantages of utilising the phenomenological paradigm for research are that it permits in depth analysis of problems, opportunities and situations within the organisations environment. In some cases the collection of qualitative data may be more cost effective than collecting quantitative data.

The potential pitfall to using the phenomenological approach is that respondents may be unwilling or embarrassed when answering questions due to factors such as a the seniority of the interviewer and thus may not give reliable data.

Figure 4. 1   Features of the positivistic and phenomenological paradigms

Positivistic paradigm	Phenomenological paradigm
Tends to produce quantitative data	Tends to produce qualitative data
Large samples	Small samples
Concerned with hypothesis testing	Concerned with generation of theories
Data highly specific and precise	Rich and subjective data
Artificial location	Natural location
High reliability	Low reliability
Low validity	High validity
Generalises from sample to population	Generalises from one setting to another

Source: Hussey and Hussey (1997)

4.3 Choice of research paradigm

According to Hofstee (2006) a survey based research design allows for the gathering of information from a small group of individuals that are presumed to possess information that will assist in a specific research project. The small group is representative of a larger population and the participants are willing and qualified to dispense the required data. This method is useful in eliciting factual data as well as factors such as opinions and attitudes through methods such as interviews.

51

The phenomenological paradigm proposed by Hussey and Hussey (1997) has been chosen for the purposes of this research project as it best serves the needs required to conduct survey based research. Using Figure 4.1 as a check list verifies this choice based on the suitability of conducting an interview which will produce qualitative data that is rich and subjective through a small sample size within a natural setting of an office. The research that will be conducted is concerned with the generation of data regarding the phenomenon of knowledge creation and by its nature will have a low reliability but high validity.

4.4 Research design

According Coldwell and Herbst (2004) a research design is a strategy and plan for the collection, measurement and analysis of data that is required to carry out a study. The research design of this study is defined by the following characteristics suggested by Coldwell and Herbst (2004):

- This is an interrogation/ communication study which will entail the researcher questioning subjects by way of face to face interviews.

- This study is descriptive in nature as it aims to describe the current state of knowledge creation within K-CSA.

- This study is *ex post facto* as the researcher will report on what is happening with the variables in the study but cannot manipulate them.

- This study is cross-sectional in nature as it will reveal a snapshot of the knowledge creation process within K-CSA at a particular point in time.

- This is a field study as it will take place within the actual work environment of K-CSA and the sample is made up of K-CSA employees.

- By the definition offered by Coldwell and Herbst (2004) this is a non-experimental study as it will not make use of random assignment or control groups.

4.5 Methodology

The research will collect primary qualitative data by way of standardised, open ended and face to face interviews with the heads of K-CSA's sales and marketing, finance, manufacturing and human resources departments, (Coldwell and Herbst, 2004). This interview method asks the same open-ended questions of all interviewees. (See addendum A for interview questions). Divisional directors or senior departmental managers will be interviewed as they will have strategic insights into the area of the organisation for which they are responsible.

Coldwell and Herbst (2004) suggest that interviews are effective when a full understanding is required regarding the interviewee's experiences and impressions. The advantages of conducting an interview are that it provides answers with a full range and depth and allows for building relationships with the subject. This method also allows for flexibility and the opportunity to read such factors as body language, expression and tone of the respondent. Challenges that arise from interviews are that they require time to conduct properly, they may include bias and they may be difficult to analyse and compare.

The following preparations for the interview will be made as suggested by Coldwell and Herbst (2004).

- The interviews will be diarised and confirmed. They will be conducted in a meeting room to avoid distractions that may occur in the interviewee's office environment.

- The purpose of the interview will be explained and prior to the interview taking place and executive study of the research project will be sent to the parties that will be interviewed.

- Confidentiality issues will be discussed and observed in line with K-CSA's policies regarding confidentiality.

- The format of the interview will be explained. Questions can be asked during the interview.

- The length of the interview will be indicated and clarification on any extra time required will be negotiated.

- Any questions from the interviewee before the interview starts will be given clarification.

- Permission to record the interview will be requested.

4.6 Analysing the research data

As discussed previously, the phenomenological approach to this research project will yield qualitative data. Hussey and Hussey (1997) assert that analysing qualitative data is a difficult task in that there are no obvious and accepted principles for data analysis as is the case with quantitative data.

According to Hussey and Hussey (1997) the main challenges of analysing qualitative data are:

- Reducing the data: A systematic method of summarising the data can be used to sort out the data obtained from the interviewing process to render the data to be manageable in order to draw final conclusions that are verifiable.

- Structuring the data: This allows for data that may have been collected at different times to be to be structured in a manner that allows for sensible analysis to take place.

- Detextualising the data: This involves converting text into diagrams or illustrations that allow for easier presentation of the data.

For the purpose of this research project, analysis of the interview data will take place by way of the general analytical procedure which is a non-quantifying data analysis method for qualitative data as suggested by Hussey and Hussey (1997).

4.6.1 The general analytical procedure

Hussey and Hussey (1997) assert that although there are various means to analyse qualitative data the quality of the data analysis will ultimately depend on the researcher's interpretation of the data. The general analytical procedure will be used to analyse the data collected for this research project as it offers a seven point framework that allows for a practical manner in which to manage and analyse data that has been collected. Each step in the procedure and the way it benefits this study are discussed below.

- The field notes collected from the interviews will be systematically transcribed in a manner that will allow for future use. Field notes will be taken in a way that differentiates actual feedback from the interviewer's personal reflections and interpretations.

- The interview data will be referenced in order to show who was involved, the context of the interview and the time and date.

- Interview data will be coded by the different concepts that make up the knowledge creation model as suggested by Nonaka *et al.* (2008).

- Once the data has been coded it will be grouped by the different categories proposed in the knowledge creation model as proposed by Nonaka *et al.* (2008). This will allow for effective analysis of the data in a way that will enable a holistic view of K-CSA's knowledge creation process by comparing the data collected from the different businesses and comparing it against the benchmark model as suggested by Nonaka *et al.* (2008). The grouping of the data by code will also allow for the identification of emerging patterns and themes.

- Summaries on the data will be written on an ongoing basis so as not to lose the essence of the data and to avoid losing possible insights that may be forgotten if these summaries are not made on an ongoing basis.

- The summaries will be used as a check and balance against the benchmark theory of Nonaka *et al.* (2008).

- This process will be carried out until the generalisations arising from the analysis of the interview data can sufficiently display K-CSA's position with regard to the knowledge creation process in relation to the model suggested by Nonaka *et al.* (2008).

4.7 Reliability

According to Hussey and hussy (1997) reliability is an indication of the credibility of the research findings by enquiring whether the findings will stand up to a thorough study. Due to this study being carried out by way of the phenomenological paradigm factors such as the collection of data by way of interview could yield different results from the same participants where the same interview is carried out by a different interviewer or by the same interviewer on a different day, for instance.

4.8 Validity

Hussey and Hussey (1997) define validity as the degree to which the findings of research correctly represent what is actually happening in the phenomenon being researched, thus if the research shows or measures what the researcher deems that it should then it is said to be valid. In the case of phenomenological research where the intention is to extract rich data, the validity is high.

Hussey and Hussey (1997) also highlight the importance of the different levels of validity. Face validity makes sure that what is intended to be measured is actually measured. Construct validity is concerned with factors that are not measurable such as satisfaction, motivation and anxiety - also known as hypothetical constructs.

4.9 Generalisability

The results of this research will be specific to K-CSA. According to Hussey and Hussey (1997) results of research may be able to be generalised from one setting to

another. As this research is specific and the phenomenon of the knowledge creation process is dynamic the results of this research will not be generalised and may only be used as a guide in similar situations.

4.10   Population and Sample

According to Coldwell and Herbst (2004) a sample is a part of a population that is studied and the results acquired from the sample are projected onto the entire population, thus the sample is representative of the population from which it is taken. Figure 4.2 depicts K-CSA as a population by dividing the organisation up into five distinct areas, namely marketing, finance, production, human resources and the strategic apex. The sample that will be used to gain an understanding of K-CSA's knowledge creation processes will be taken from the strategic apex.

4.10.1 Sampling technique

The directors and senior managers of each business area will be the sample used to understand the status of K-CSA's knowledge creation process. The leaders of each of the business areas within K-CSA have been chosen based on their responsibility for developing strategies that will align their business area to the corporate strategy of K-CSA and K-CC and the associated strategic insights that they have regarding the area of business that they are responsible for. Senior leaders of a particular business area have a general overview of how that part of the organisation operates and the policies and procedures that govern the operation of that area of the organisation. If there is a formalised process for creating knowledge they should know about it and understand it. The knowledge creation process as suggested by Nonaka *et al.* (2008) calls for leadership of the knowledge creation process and this is why the departmental leaders will make suitable research candidates as they lead their specific departments.

Figure 4. 2   K-CSA's interview sample for knowledge creation

Adapted from Markus (2009)

Middle managers play a pivotal role in this leadership process and this sample will include candidates at this level which is a senior management level within K-CSA as well as at director level, where possible. The Nonaka *et al.* (2008) knowledge creation model also highlights the importance of Ba and the responsibility of the leader to create Ba that is conducive to energising the knowledge creation process. The final justification in choosing the departmental leaders as the sample for this research is that Nonaka *et al.* (2008) suggest that knowledge assets form the basis of the knowledge creation process. Building the knowledge asset base will ultimately fall under the leader of the respective departments in conjunction with human resources.

As suggested by Coldwell and Herbst (2004) the sampling technique for this research project will be purposive in nature. A purposive sample is a non probability sample and it is suitable for choosing respondents that will best serve the purpose of the research as opposed to selecting respondents that are irrelevant to the research

and thus wasting time and resources. In describing the purposive sampling technique further Coldwell and Herbst (2004) assert that judgement sampling can be used which occurs when the researcher who is familiar with the characteristics of the population uses their judgement to select a sample based on certain criteria required by the research.

Thus for this research project a non probability judgement sample has been chosen. This type of sample is deemed to be appropriate and representative based on the leader of a business area being familiar with the policies and procedures that exist within the organisation and in particular the area of the business for which they are responsible. Knowledge creation processes may exist within K-CSA but this study seeks to understand if K-CSA as an organisation abides by a corporate knowledge creation process by way of interrogating the heads of the departments that make up K-CSA as a whole.

4.11   Limitations

Knowledge creation processes are not formalised practices within K-CSA and as a result the interviewees will be providing subjective opinions on the subject according to their interpretations of the subject. These subjective views cannot be verified against an objective company policy or procedure as these types of policies and procedures regarding the creation of knowledge have not been formally created.

4.12   Ethical considerations

This study will be carried out within K-CSA in accordance with company confidentiality policies which will be verified in each interview that takes place with the four nominated senior leaders of K-CSA.

4.13   Conclusion

This chapter considered the different research paradigms that were available. The phenomenological paradigm provided a sound basis for the research that was required to meet the objectives for this study. The collection of primary qualitative data will be achieved through conducting standardised open ended interviews in order to obtain an overview of the knowledge creation processes within the different departments within K-CSA.

This section identified this research project as being descriptive and ex post facto in nature and that the study is cross sectional in that it will reveal a snapshot of the knowledge creation process within K-CSA at a given point in time.

The challenges of analysing qualitative data were discussed and the general analytical procedure for analysing qualitative data was identified and chosen as an effective means to analyse the data to be collected in this research project. Issues around the reliability, validity and generalisability of the data were also discussed.

The population from which the research sample was to be drawn was identified and K-CSA's departmental leaders were chosen as interview participants based on their intimate knowledge of the departments that they head. These participants also met the criteria of certain aspects of the Nonaka *et al.* (2008) knowledge creation model which forms the basis of this study. Finally the limitations and ethical considerations of the study were discussed. In the next chapter the research data will be presented and analysed.

Chapter 5   Research results and discussion

5.1.   Introduction

Chapter four explained in detail the research design and methodology that would be used in order to research the stated objectives. To collect the research data five interviews were conducted according to the predefined research sample. On completion of the research the data collected was reduced, structured and detextualised. The general analytical procedure was the method used to analyse the data by way of coding, categorising and summarising.

This research project stated three research objectives in chapter one. The first objective sought to gain an understanding of the current knowledge creation process that takes place within K-CSA through investigation. The interview used to collect the data was designed using the Nonaka *et al.* (2008) knowledge creation model that was introduced in chapter two and depicted in Figure 2.4. The research data that was collected is analysed and discussed in this chapter and forms the foundation for meeting the objectives set for this research study. The research data will be used in conjunction with the theoretical knowledge creation process devised by Nonaka *et al.* (2008) as a comparative basis against K-CSA's knowledge creation process and to critically analyse K-CSA's knowledge creation process.

The interview consisted of 13 questions. Question one sought to gain an understanding of the knowledge creation processes that currently exist within K-CSA. Questions two to five gathered data on K-CSA's knowledge conversion processes and question six attempted to understand if the knowledge creation processes take place on an ongoing basis. Question seven considered the different contexts that K-CSA creates for knowledge creation. Finally question eight to thirteen questioned the interviewees regarding the leadership of knowledge creation within K-CSA.

5.2 An overview of K-CSA's knowledge creation processes

The interviews conducted highlighted that various processes for knowledge creation exist within the functional areas of K-CSA but there is no formalised process and this was corroborated by all the interviewees.

In areas of finance and production the processes are rigid and formalised and there are processes that are internal and processes that are developed by external institutions. An example of this is K-CSA's production department where the ISO 9001 (quality) and ISO 14001 (environmental) external accreditations form a part of the basis of knowledge creation requirements in conjunction with the internal processes. The finance department is governed by predefined accounting standards and practices as stipulated by external accounting bodies and there are also internal corporate financial instructions that need to be adhered to in this area of the organisation.

In the areas of marketing and customer management the knowledge creation process is driven by calendar business requirements such as departmental strategy creation. Departmental strategies are formalised through short, medium and long term departmental strategies that are characterised by, for example customer plans and brand plans. Department specific strategy is aligned to the overall K-CSA strategy which in turn is aligned to the regional strategic requirements of K-CC.

HR follows structured processes for measuring employee performance and for recruitment. The interview results showed that external benchmarking exercises which compare factors such as reward and remuneration are carried out and used in conjunction with internal data sources which align the HR strategy to the overall K-CSA strategy. In particular HR plays a central role in ensuring K-CSA attracts and retains the skills that are required to meet its strategic goals in the short and long term.

An observation arising from the interviews was that the knowledge creation processes within K-CSA were as a result of specific knowledge requirements of the business strategies as opposed to being a process that created a repository of knowledge from which knowledge can be selected according to strategic needs.

5.3 Interactions that create knowledge within K-CSA

The interview yielded near identical answers regarding the social interactions that create knowledge. Common to all functional areas is interaction through formal and informal meetings. Meetings take place for day to day operational purposes, tactical purposes and finally for strategic purposes. Formal meetings take place on a weekly, monthly, quarterly and annual basis with informal meetings taking place as and when required. These meetings involve all departmental staff and can take place on a vertical basis for management and staff or horizontally between the different departments.

The interviewees also identified that interactions take place with external constituents. External interactions take place with institutions such as banks, professional bodies such as the South African Institute of Chartered Accountants, certification bodies such as ISO, research organisations such as AC Nielsen, customers and service providers.

Interview feedback highlighted that the purpose of social interactions were identified as opportunities to share knowledge and experience to create knowledge. An example of such an interaction is the K-CSA production staff meeting which shares experiences regarding a production process in order to identify possible efficiencies. Another example is K-CSA's customer management team meeting with a customer to discuss how the economy is affecting the buying patterns of consumers with a view of maintaining or growing market shares. The interview with the HR director elicited the following statement, "the role of the HR employee is to unpack the pockets of knowledge that exist within the HR department and to share experiences that will lead to the creation of new knowledge".

Figure 5. 1   Socialisation in K-CSA compared to Nonaka *et al.* (2008)

Socialisation – Converting tacit knowledge into new tacit knowledge	
Nonaka *et al.* (2008)	K-CSA
- Conversion of tacit knowledge to tacit knowledge by way of shared experiences. - Uses social information collection from external and internal sources.	- K-CSA transfers tacit knowledge through shared experiences. This occurs during various formal and informal meetings that take place. - Information is collected through social means from both internal and external data sources.

Adapted from: Nonaka et al. (2008)

5.3.1   Critical analysis of socialisation within K-CSA

The interview data demonstrated that socialisation that takes place within K-CSA compares favourably with that suggested by Nonaka *et al.* (2008).

Although all of the elements of the Nonaka *et al.* (2008) for socialisation are present in and practiced at K-CSA there is no system for recording the new tacit knowledge that is being created. The tacit knowledge exists in the minds of the employees who conduct the interactions or to whom the knowledge has been disseminated. When these employees leave K-CSA the knowledge is lost and will need to be recreated which will require resources. Another risk is that the opportunity may not exist to recreate lost tacit knowledge due to the knowledge having been created in a specific context. Because K-CSA does not record the creation of new tacit knowledge it will be almost impossible to identify the tacit knowledge that has been lost when an employee departs.

5.4 Formalising new concepts within K-CSA

All the interview participants described the processes that are employed to formalise new concepts within K-CSA, as being generic across all functional areas.

The interviewees asserted that formalised processes for managing new strategic concepts are controlled through the project management office. New concepts need to gain approval from the strategic project activation team which is a cross-functional committee represented by the different functional areas of K-CSA. The structured project management process ensures that new concepts are aligned to K-CSA's strategic goals. The process controls the allocation of resources to ensure there is not an over allocation of resources and that the correct resources are allocated to a project. Factors such as the scope of the project and return on investment are also governed by the process.

Concepts that do not require additional resources are managed on an informal basis. This process considers the expected outcomes of the project that will manage the formalisation of the concept and manages the timelines of the project. Slight variations may take place depending on the functional area within K-CSA.

The cross-functional management of bringing new concepts to fruition makes use of the tacit knowledge from the different cross functional sources and articulates this knowledge to assist in formalising the new concept. No material variations on this process were observed during the interview process.

Figure 5. 2   Externalisation in K-CSA compared to Nonaka *et al.* (2008)

Externalisation – Converting tacit knowledge into explicit knowledge	
Nonaka *et al.* (2008)	K-CSA
- Use of tacit knowledge to formalise a concept by articulating tacit knowledge into explicit knowledge.	- This practice occurs within K-CSA when new concepts are brought to fruition through cross-functional team work.

Adapted from: Nonaka et al. (2008)

5.4.1   Critical analysis of externalisation within K-CSA

K-CSA follows a very structured process for managing externalisation through a cross-functional committee that can articulate its varied tacit knowledge into explicit

knowledge that is used to formalise and create new concepts. An advantage of the structured processes that K-CSA employ to manage externalisation is that they give all new concepts an equal opportunity at being realised and it effectively manages the commitment of scarce resources to the realisation of new concepts.

5.5 K-CSA's sources of data for knowledge creation

The interviewees from all the functional areas within K-CSA highlighted that interaction with external and internal data sources provide a platform for knowledge creation.

All interviewees mentioned that from an internal perspective all the functions will interact during the normal course of business and when working together in cross-function project teams. From a functional perspective interactions take place though both formal and informal meetings as per business requirements or when necessary. The total strategy of K-CC is guided through the Global Business Plan which is a source for strategic direction for K-CSA as it needs to conform to global strategic requirements of the organisation.

The interview determined that K-CSA operates on SAP which records various aspects relating to K-CSA including sales, service levels and other statistical data pertaining to sales, which are utilised in conjunction with internal financial and business analyst's reports. Performance management of employees is measured through the K-CC performance management system. This system measures and shows trends in performance and is used to identify skills gaps that need to be rectified.

External interactions were highlighted by all interviewees, e.g. meetings with third party service providers such as market research companies, employment agencies, suppliers, customers, conventions, consultants and other functional specialists. An example given by the Customer Management Director is the customer management teams' use of market share data provided by the AC Nielsen Company in order to gain insights and trends within customer and specific product categories.

Figure 5. 3   Combination in K-CSA compared to Nonaka *et al.* (2008)

Combination – Converting explicit knowledge into more explicit knowledge	
Nonaka *et al.* (2008)	K-CSA
- Use of internal and external data sources for planning strategies and operations.	- K-CSA use internal and external data sources in creating the strategic knowledge that it required.
- Creation of manuals, documents and databases by gathering technical information within the organisation.	- Manuals, documents and data bases do exist in the form of ISO documents, corporate financial instructions and knowledge repositories that exist in electronic form.
- Dissemination of newly created knowledge through concepts presentations.	- Knowledge shared through formal and informal interactions.

Adapted from: Nonaka et al. (2008)

5.5.1   Critical analysis of combination within K-CSA

K-CSA satisfies this area of knowledge conversion when compared to the Nonaka *et al.* (2008) model. A formalised knowledge repository that allows all employees' access would complement the combination process.

5.6 Knowledge creation within K-CSA through learning

The interviews highlighted varied processes that are function specific that allow K-CSA employees to learn through simulation training. Function specific manuals allow employees to improve their understanding of their functions in order to improve their performance.

The HR Director pointed out that HR is a policy driven function and is governed by specific behavioural policies. As such all HR employees have access to these policy documents as is required by their role. An example of simulated learning takes place

when junior HR employees participate in panel interviews as part of a training process that will equip them to lead panel interviews in future.

Within the customer management department, it was confirmed through the interview, that skills gaps that have been identified, are closed through generic training programs according to the skills required. Simulation training takes place through coaching and mentoring where junior employees accompany senior staff members to high profile meetings such as trading negotiations.

The production department utilises ISO training manuals that specify exact procedures and specifications according to which work must be carried out. Training is carried out according to an ISO training matrix. Various on the job training takes place within the production environment.

Within the marketing function the interview identified that there are multiple training manuals available, namely the marketer's online toolkit and the marketing Share-Point intranet site. The marketer's toolkit details a step by step approach to all marketing functions and the Share-Point intranet site is a repository of marketing knowledge shared throughout K-CC. Simulation training take place through war games which simulates certain scenarios and possible solutions to the problems identified in the different scenarios. K-CC also operates the Global Marketing University which is an internal marketing training program for all levels of marketers within the organisation.

The Finance Director described the financial department use of training manuals and simulated training in order to ensure that its employees follow the corporate financial instructions that the organisation needs to adhere to.

Figure 5. 4   Internalisation in K-CSA compared to Nonaka *et al.* (2008)

Internalisation – converting explicit knowledge into tacit knowledge	
Nonaka *et al.* (2008)	K-CSA
- Acquiring knowledge by way of personal experience through methods such as cross-functional interactions.	- Knowledge is created within K-CSA through cross-functional team work.
- Sharing of explicit knowledge throughout the organisation which individuals reflect on. The explicit knowledge is then internalised into the individual tacit knowledge repertoire.	- Learn by doing through training. An example of this is the ISO training specifications
- Manuals	- Manuals in the form of the marketer's toolkit, ISO documents, financial instructions and HR documents.

Adapted from: Nonaka et al. (2008)

5.6.1   Critical analysis of internalisation within K-CSA

K-CSA practise internalisation according to the elements of the Nonaka *et al.* (2008). This is an area within the organisation that is characterised by being highly structured. All the functional areas have detailed manuals and training programs that enable internalisation to take place within the organisation. Extensive mentoring and coaching takes place within K-CSA as well as cross-functional collaboration through project work.

5.7 Is knowledge creation an ongoing process within K-CSA?

The interview process showed that all functional areas of K-CSA conduct training on a continual basis by way of coaching, mentoring and by using training manuals. When skills gaps are identified intervention will take place on an ad hoc basis and a solution will be formulated to meet the specific needs required at a specific point in time.

Figure 5. 5   K-CSA and the Nonaka *et al.* (2008) knowledge creation spiral

The knowledge spiral	
Nonaka *et al.* (2008)	K-CSA
- Knowledge creation is a continuous and dynamic process of interactions between tacit and explicit knowledge.	- Knowledge creation through interaction within K-CSA takes place on a continual basis.

Adapted from: Nonaka et al. (2008)

5.7.1   A critical analysis of the continuity of knowledge creation within K-CSA

Knowledge creation takes place on an ongoing basis within K-CSA but this is not as part of a K-CSA specific and holistic knowledge creation process. Continual knowledge creation would be more effective as part of a formalised and guiding knowledge creation process that will concentrate K-CSA and its functional areas efforts in a cohesive manner.

5.8 The environment for knowledge creation within K-CSA

The interviewees across all the functions confirmed that there are physical, mental and virtual context for knowledge creation. Examples of these given in the interviews are the open plan office environment within K-CSA and through shared systems such as SAP, the K-CC intranet and shared knowledge repositories. Mental means for knowledge creation are created through facilitating meetings at off-site locations that remove participants from their usual operating environments and the constraints

that these environments may create. The production department facilitates training through on-site training centres.

Figure 5. 6   K-CSA's knowledge creation environment vs. Nonaka *et al.* (2008)

Ba – The context for knowledge creation	
Nonaka *et al.* (2008)	K-CSA
- Originating Ba: Individual face to face interaction.	- Originating Ba takes place through individual face to face meetings on a formal and informal basis through social interactions in the work place or with customers and suppliers.
- Dialoguing Ba: Collective face to face interaction.	- Dialoguing Ba takes place through departmental and cross functional meetings where new knowledge is shared. An example is K-CSA's strategic project activation committee
- Systemising Ba: Collective virtual interaction.	- Systemising Ba takes place through intranet, e-mail and shared repositories. An example of this is K-CSA's marketing share-point site.
- Exercising Ba: Individual virtual interaction.	- Exercising Ba takes place through embodying knowledge through means such as simulation training and manuals. An example of this is the ISO work manuals and training matrix and the finance department's use of corporate financial instructions.

Adapted from: Nonaka et al. (2008)

5.8.1 A critical analysis of K-CSA's knowledge creation environment

The four elements as suggested by Nonaka *et al.* (2008) for creating an environment and context for knowledge creation are present and well executed within K-CSA. Although K-CSA has the ability to store and retrieve explicit knowledge there is not a central knowledge repository. Much of what was perceived as being knowledge was by definition actually data and information.

5.9 Leading the knowledge creation process within K-CSA

5.9.1 K-CSA's knowledge assets

The knowledge assets that were identified across all functional areas of K-CSA were as follows:

- Human capital.

- K-CSA's culture.

- Systems, processes and work routines that are specific to the functional area of K-CSA, an example of which is the ISO accreditations.

- Product specifications.

- K-CSA best practices and those adopted from K-CC.

- Cross-functional project teams.

- Tacit knowledge that exists within K-CSA.

Knowledge assets are exploited through ensuring that the environment and means for knowledge creation is conducive to knowledge creation.

Figure 5. 7   K-CSA's knowledge assets compared to Nonaka *et al.* (2008)

Knowledge assets	
- Experiential knowledge assets: sharing of tacit knowledge through shared experiences. Examples are skills, know-how of individuals, trust and passion.	- These assets occur throughout K-CSA. These are embodied by functional experts and an example of this would be an experienced production engineer.
- Conceptual knowledge assets: articulating explicit knowledge through images, symbols and brand equity. Examples are product concepts and brand equity.	- This is embodied within K-CSA through its brands, new concepts and cultural symbols.
- Routine knowledge assets: making tacit knowledge a part of the work actions and practice. Examples are operational know-how, organisational routines and culture.	- This occurs in K-CSA through its operational know-how which is embodied in its ISO accreditations, marketing systems and employee development programs.
- Systematic knowledge assets: systemised and packaged explicit knowledge. Examples are documents specifications, manuals and databases.	- This occurs within K-CSA through its product specifications and manuals developed through its ISO accreditations, sales databases and corporate financial instructions.

Adapted from: Nonaka et al. (2008)

5.9.2 The concept of a knowledge vision

With the exception of HR whose knowledge vision is "Everybody knowing the same thing about the same topic" the interviews revealed that no other functional area within K-CSA has a formalised knowledge vision.

5.9.3   Identifying what knowledge needs to be created

Interviewees were unanimous that knowledge required within their functional areas is determined by the strategies that need to be formulated for those areas of the business. Other means of identifying what knowledge is needed takes place through a gap analysis and through areas of knowledge identified by means of cross-functional teams and experiential and intuitive understanding of the relative business functions. Factors such as ISO and corporate financial instruction requirements and processes were also identified as indicators of what knowledge is required in the different functional areas

5.9.4   Autonomous self managing teams

The general interview feedback received regarding self managing autonomous teams was that it would be only viable if it was done according to predetermined rules and structures. Teams would need to be highly capable and need to be fully accountable for their actions and outputs.

Areas of the business that did not view autonomous self managing teams as viable was the production and finance function. This was based on the process driven nature of these parts of the organisation.

5.9.5   Motivating for results within K-CSA

The motivation of employees to achieve results was generic to all functional areas of K-CSA. The main method of motivation is to set and agree objectives with individuals in a way that offers the individual a clear understanding of what is required from them. Objectives must offer a positive challenge and have challenging but realistic timelines. Tracking of individual's objectives takes place throughout the year through quarterly reviews and finally through the individual's performance appraisal.

5.9.6 Crossing functional boundaries within K-CSA

All the functional departments within K-CSA promote the crossing of functional boundaries. There are two reasons for this, firstly it facilitates the achievement of business goals and objectives through functional collaboration on a day to day basis and through cross-functional project work and secondly it is driven through career building opportunities identified though the K-CC career development program which forms part of the performance management program that K-CSA follows.

Other specific examples of cross-functional boundary crossing are found in the HR area of K-CSA where HR employees are assigned to a set of functional areas and need to have a good understanding of how the function works in order to perform their role properly. K-CSA operates a graduate program that allows graduates to work in various departments over set times for a two year duration thus giving the graduate a sound cross functional grounding.

Figure 5. 8   Leading the process in K-CSA compared to Nonaka *et al.* (2008)

Leading the knowledge creation process	
- Providing a knowledge vision which synchronises the knowledge creation effort.	- K-CSA as an organisation does not have a formalised knowledge vision. The HR department is the only functional area that has a formalised knowledge vision.
- Managing the organisations knowledge assets to achieve the knowledge vision.	- K-CSA continually manages employee performance and career development through the performance management system which analyses gaps with regards to human assets. Systems are also used as knowledge creating assets e.g. K-CSA's SAP system.
- Building, connecting and energising Ba through providing physical, virtual and mental environments for knowledge creation. The knowledge that is being created in the different environments needs to be connected to form one environment. Finally these environments need to be energised through autonomy, creative chaos, redundancy and requisite variety as well as the concepts of love, care, trust and commitment.	- Within K-CSA Ba is created through physical (e.g. open plan offices), mental (e.g. joint objective setting) and virtual (e.g. SAP system) environments. K-CSA does not allow for concepts such as self managing teams. Creative chaos through managing timelines and redundancy through cross-functional team work are techniques that are used to energise the environment. Requisite variety occurs through K-CSA employees having equal access to information through shared systems. Trust and commitment are built through joint objective setting and love and care is fostered through K-CSA's cultural values.

Adapted from: Nonaka et al. (2008)

5.9.7 A critical analysis of K-CSA's leadership of the knowledge creation process

The interviews revealed that K-CSA does not have a documented knowledge vision that can be adopted by the functional areas of the business that can act as a guiding vision for a knowledge creation effort within these functional areas. Although a knowledge vision is not present within K-CSA there are clear guidelines within the functional areas with regards to what knowledge needs to be created in order to meet the strategic goals of K-CSA.

Knowledge assets as described by Nonaka *et al.* (2008) need to be lead and managed effectively in order to gain a strategic benefit from them. The one area of knowledge asset that is a potential area of risk within K-CSA is its management of experiential assets where tacit knowledge is shared in order to create new knowledge within the organisation. An example of an experiential asset within K-CSA is found in a functional expert that shares their tacit knowledge through socialisation. There are many social interactions that take place that are not systematically articulated and documented in a knowledge repository that allows this knowledge to be recalled for future use as the documentation and articulation of tacit knowledge is not as easy to do as in the case of explicit knowledge.

The concept of autonomous self managing teams within K-CSA is not a reality due to the operational nature of the organisation but the top management of the organisation operates as self managing teams driven by achieving organisational goals and objectives. The advantage of not operating with self-managing autonomous teams at an operational level within K-CSA provides a structured environment that allows work objectives to be met in a structured manner where there can be no deviations from the work specification. Examples of this being effective are evident within the finance function where K-CSA's corporate financial instructions guide the finance team and in the production department where there are ISO work specifications. A disadvantage of autonomous self managing teams which are not viable is that there is limited room for creativity.

Leading the knowledge creation process within K-CSA from the perspective of creating, connecting and energising the knowledge creation environment takes place in an effective manner. The components that Nonaka *et al.* (2008) suggest are evident within K-CSA.

5.10 Conclusion

Chapter five presented and discussed the research data that was collected. This chapter was structured around addressing the research objectives by way of findings from the research data. Each section of this chapter was firstly discussed from the perspective of the first objective that sought to investigate K-CSA's current knowledge creation processes. K-CSA's current knowledge creation processes were then compared to the knowledge creation process as proposed by Nonaka *et al.* (2008) in order to satisfy the second objective. Finally K-CSA's knowledge creation processes were critically analysed using the process devised by Nonaka *et al.* (2008) as a benchmark in order to meet the third objective.

The discussion revealed many similarities between K-CSA's knowledge creation processes and the process devised by Nonaka *et al.* (2008). The main difference is that K-CSA does not have a documented process for knowledge creation that synergises the efforts of all the functional areas lead by a common vision. Chapter six will provide the final conclusions to the study and provide recommendations for improvements to K-CSA's current knowledge creation processes.

Chapter 6   Conclusions and recommendations

6.1 Introduction

Chapter six offers a conclusion and recommendations to the problem statement that was formulated in chapter one which sought to gain an understanding of the current knowledge creation processes within K-CSA in order to understand if improvements could be made in order to enhance the current processes. As highlighted in the opening statement K-CSA forms a part of K-CC which is a 137 year old organisation. By virtue of the fact that K-CC has survived as a competitive force in the global market for almost a century and a half demonstrates that as an organisation K-CC has been creating knowledge and building on the knowledge created on an ongoing basis. If knowledge creation was not being implemented on an ongoing basis in order to gain a competitive advantage K-CC would not have been able to evolve and manage change in order to survive. As determined in chapter five K-CSA is guided by K-CC's strategic goals and operates under the Global Business Plan that synchronises and synergises K-CC's global operations and as such is required to create knowledge according to the strategies and standards set out by K-CC.

6.2 Conclusions to the research of K-CSA's knowledge creation processes

The knowledge creation model as proposed by Nonaka *et al.* (2008) formed the basis for the study of the knowledge creation processes within K-CSA. The research results demonstrated that K-CSA possesses all the elements that occur in the Nonaka *et al.* (2008) model. The main critique of the knowledge creation processes within K-CSA is that they do not follow a formalised and documented knowledge creation model. This was a critique based on the reasoning that Nonaka *et al.* (2008) provide a model that is process based and driven by continual knowledge creation and due to being process based it does not allow for important steps to be omitted when knowledge is being created. In the case of K-CSA the lack of a formalised model could allow for important opportunities to be missed as those leading and participating in the knowledge creation process may not realise an opportunity existed due to the lack of a formalised knowledge creation process. It must however be highlighted that even though K-CSA does not have a formalised knowledge

creation process it does have effective and robust processes for the creation of knowledge in all the functional areas of the organisation and there are effective cross-functional interactions that take place in a formalised and structured manner.

Socialisation, externalisation, combination and internalisation take place within K-CSA as suggested by the Nonaka *et al.* (2008) model but there is a major business risk in that the tacit knowledge that is created is not effectively documented and stored in a knowledge repository linked to K-CSA's IT system so that it can be retrieved for future use. This type of knowledge repository can assist in avoiding duplicating tasks over time. Currently K-CSA will lose tacit knowledge when any key staff members leave the organisation. The explicit knowledge that K-CSA possesses is effectively documented and stored in K-CSA's systems.

Chapter two highlighted the importance of the role that knowledge creation plays in the strategy process. The achievement of K-CSA's strategic goals through the strategy process forms the backbone of building and maintaining a competitive advantage and realising a more deliberate as opposed to emergent strategy. The fast paced and ever changing environment that characterises today's world further highlights the necessity to formalise the creation of knowledge through a recognised process.

6.3 Recommendations

The following recommendations are based on the research results of this specific study on the knowledge creation processes within K-CSA. The benchmark knowledge creation process of Nonaka *et al.* (2008) forms the basis of the recommendations. These recommendations address the broad knowledge creation issues that exist within K-CSA and would require further recommendation specific research within K-CSA to ensure that the recommendations are implemented effectively.

6.3.1 Leading the knowledge creation process

Recommendation:

It is recommended that K-CSA's senior management formalise the knowledge creation process within the organisation by way of the Nonaka *et al.* (2008) knowledge creation model. This will allow the organisation to have a clear and unambiguous process that can guide the knowledge creation efforts of K-CSA by synchronising the knowledge creation efforts of all the functional areas within the organisation.

This will enable K-CSA's leadership to address factors such as:

- Creating a K-CSA knowledge vision to guide the knowledge creation efforts of the organisation.

- To enable K-CSA's management to recognise knowledge assets in order to develop and exploit these assets in order to build and maintain a competitive advantage.

- To enable K-CSA's management to have a complete understanding of exactly what knowledge needs to be created.

6.3.2 The knowledge conversion process

Recommendation:

It is recommended that K-CSA's senior management ensure that the knowledge conversion process as part of the Nonaka *et al.* (2008) model through socialisation, externalisation, combination and internalisation is fully exploited and documents all of K-CSA's tacit and explicit knowledge. This should form the basis for the following:

- Keeping K-CSA's knowledge up to date in context to the fast paced and ever changing world in which it exists.

- Taking advantage of all internal and external sources of data for strategic purposes.

- The development of a tacit knowledge repository to avoid losing tacit knowledge that has not been articulated and documented when employees leave the organisation.

- This will allow K-CSA to remain cognisant of the knowledge required for its long term goals.

6.3.3 Ba: the context for knowledge creation
Recommendation:

It is recommended that K-CSA's management team implement a system to facilitate the storage and retrieval of tacit knowledge that has been articulated and documented through the knowledge conversion process. The system should possess the following qualities:

- It should be accessible to all pertinent K-CSA and K-CC employees.

- The system should store K-CSA's tacit knowledge and the feasibility of creating a regional/ global K-CC knowledge repository should be further investigated.

- Easy access to knowledge will allow for effective strategy implementation by ensuring the right knowledge is available when needed.

6.3.4 Further study of knowledge creation within K-CC
Recommendation:

If K-CSA chooses to adopt the Nonaka *et al.* (2008) model it is recommended that a further study should take place to investigate the possibility of rolling this model out on a regional or even global level. The advantages of adopting a single process will enable the following:

- Synergy between global/ regional knowledge creation efforts.

- An accessible shared knowledge repository that can unlock savings to K-CC through shared knowledge resources and assets and allowing for an objective appraisal of resources.

6.3.5 Knowledge creation with outside constituents

Recommendation:

It is recommended that K-CSA investigates the feasibility of formalising the knowledge creation process through collaboration with specific outside constituents, namely key strategic customers and suppliers through a shared knowledge portal. Chapter two explored knowledge creation from a strategic perspective and highlighted the various areas of external interaction that take place between K-CSA and its environment. This will benefit K-CSA in the following ways:

- Keeping the knowledge it created strategic by always having a profound understanding of its environment.

6.4 Conclusion

Chapter six offered conclusions and recommendations in line with the problem statement that was articulated in chapter one. The conclusion summarised the theme that emerged from the research data which highlighted that K-CSA would benefit from formalising their knowledge creation processes into one cohesive knowledge creation process. The recommendations offered possible solutions to K-CSA's management that would enable K-CSA to change from its current knowledge creation processes to the recommended model by Nonaka *et al.* (2008). Elements of the recommendations also complemented the elements of a successful strategy as suggested by Grant (2008) in chapter two.

The results of this research are specific to K-CSA and cannot be generalised within other businesses within K-CC because the phenomenological paradigm chosen supported the gaining of rich in depth data pertaining to K-CSA through interviews

that are subjective. The interviews highlighted that although the interviewees provided in-depth data on knowledge creation based on their personal experience within K-CSA they did not have a classical theoretical background on the subject. The research results are deemed to be valid as the research was based on specific interview questions that investigated K-CSA's knowledge creation processes using the Nonaka *et al.* (2008) model as a benchmark.

Chapter 7   Learning and reflection

From a general perspective the MBA course has taught me to consider problems from a strategic perspective i.e. to consider all factors from both an internal and external environmental view point. This new way of thinking that I have learned is not specific to business problems but to most situations encountered in daily living. From a business perspective I have also started to apply the strategic models learned on this course to my work environment. I have come to the conclusion that there is a theoretical model that can be applied to most situations that offers the opportunity to analyse the problem from various perspectives and to formulate different solutions. There were many occasions when I found myself searching for a journal that would assist in solving a current problem. This course has taught me to be concise and to the point by cutting out content that is not pertinent to solving a problem. I have also learned that an opinion is not worth much in the business environment but being able to analyse a problem based on sound theory is much more effective and then a subjective opinion based on the theoretical solution is much more credible.

The writing of a dissertation was not viewed as the final requirement for the completion of the MBA but rather as the opportunity to put into practice the strategic skills that have been learned over the last three years. The chosen topic proved to be very interesting but also very challenging. Knowledge management and more specifically knowledge creation is a relatively new business subject. Furthermore, the concept of knowledge has been acknowledged for thousands of years already. It was challenging in conducting interviews on a subject that does not have a strong theoretical foundation within many organisations including K-CSA. It was also challenging to conduct the research according to the phenomenological paradigm which relied on the general analytical procedure. This research route proved to tempt subjective opinions in analysis and bias in collecting the data. These factors needed to be taken into account at all times. Another challenging area was to consistently be aware of the "Golden Thread" that holds the dissertation together but this forced the process to be iterative which enables the dissertation to be consistent.

I believe that the objectives of this dissertation were met and that the Nonaka *et al.* (2008) model was the best model to use for managing a knowledge creation process. The literature review confirmed that the chosen model was highly rated by the peers of Nonaka *et al.* (2008) but in reflecting I feel that I may have benefitted from seeking more critique on the model and less reassurance on the efficacy of the model.

The research process is challenging especially when dealing with individuals on a more senior level. I was fortunate that I had a working relationship with my interview candidates and reflected on the difficulties of conducting research in an unknown environment.

I am grateful to have had the opportunity to have studied an MBA which culminated in the writing of a dissertation and I believe that it is an experience that will benefit me throughout life. The hard work and sacrifice are a small price to pay for the reward.

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Addendum A

Interview questions

The knowledge creation process within K-CSA

Checklist:

- Thank you for your time.

- As you know I am completing an MBA degree and as such I am conducting a research project which forms a part of the course requirements.

- The purpose of this interview is for me to obtain insights into the processes that K-CSA use in order to create the knowledge that is used in the organisations strategy process. The data will be used in my research project.

- The data you provide in this interview will be kept anonymous and in line with K-CSA confidentiality policy the data will be used for no other purposes than for the completion of this degree.

- This is a standard open ended interview and I will be seeking in depth answers in order to gain a broad and deep understanding on this subject within K-CSA. The questions asked in this interview are the same that will be asked of all participants. Please feel free to ask for clarity on any issues as we proceed with this interview.

- This interview will require an hour to complete.

- Would you object to me recording this interview?

- Are there any questions that you would like to ask before we begin?

- May we begin?

1. Do you follow any procedure for the creation of knowledge within your department?
    a. If yes, please provide an overview of this process.
   (The knowledge creation process: SECI, Ba and leadership)
   (Before proceeding with question 2 provide a brief definition of tacit and explicit knowledge)

2. Please describe the different types of social interactions that take place both within and outside of your department where experiences are shared with a view of creating new knowledge.

    a. How often does this happen?

    b. Who participates?

(Tacit to tacit)

(Socialisation: Shared experience with customers, suppliers and competitiors)

(Extra-firm social information collecting to identify opportunities)

(Intra-firm social information collecting to identify opportunities)

3. Please could you describe the process that is followed in your department when new concepts need to be formalised.

(Tacit to explicit)

(Externalisation)

4. Can you provide examples of how your department make use of both internal and external data sources to create knowledge for strategic purposes?

    a. Is this data stored for later use?

    b. How is this shared with the broader team?

(Explicit to explicit)

(Combination)

(Combining, editing and processing of data)

(Use of computerised communication systems. Combining information from various sources to form a report)

5. Are there processes in place within you department that allow team members to learn through simulated situations and by way of training manuals regarding their jobs and the organisation?

(Explicit to tacit)

(Internalisation)

6. Do the above activities take place on an ongoing basis or only as required? (Knowledge as a process represented by the knowledge spiral.)

7. What measures do you take to ensure that the environment and means your department use to interact are conducive to knowledge creation?
   (Knowledge needs a context to be created in)
   Physical space, virtual space (computer network), mental space (common goals)
   Spontaneous Ba through task teams
   Connecting Ba to form a greater Ba

   Prompt

   - Originating Ba: Individual face to face, provides a context for socialisation by sharing experiences, mental models and emotions.
     - Care, love, trust and commitment, the basis for knowledge creation.

     E.g. on the job training to gain different experience, socialising
   - Dialoguing Ba: Collective and face to face interaction where individuals skills and mental models are converted into common terms and then into concepts. Context for externalisation.
   - Systemising Ba: Collective and virtual interaction. Context for combination. Written form through IT
   - Exercising Ba: Individual and virtual interaction. Context for internalisation. Individual embody explicit knowledge communicated through virtual media.
8. What knowledge assets in your area of the business and how do ensure that they are effectively exploited in order to create knowledge?
   - Experiential: Shared tacit knowledge built through shared hands on experience from an internal and external experience.
   - Conceptual: explicit knowledge articulated through images, symbols and language. Concepts, brand equity

- Systematic: Systemised and packaged explicit knowledge
- Routine: Tacit knowledge, know how, organisational culture, routines for carrying out day to day business.

9. What is the knowledge vision of your department?
This synchronises the knowledge creation effort of entire organisation.

10. How do you know what inventory of knowledge your department needs?

11. How do you view the concept of autonomous, self managing teams? Autonomy.

12. How do you motivate you team members to achieve results? Creative chaos.

13. How do you promote your team members to cross their functional boundaries? Redundancy.