

CRANFIELD UNIVERSITY

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KNOWLEDGE SHARING: IMPROVING THE
CENTRAL COMPONENT OF KNOWLEDGE
MANAGEMENT

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MANUFACTURING SCIENCE

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Knowledge Sharing: Improving the Central
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Abstract

This thesis project has sought to investigate the major factors affecting knowledge sharing in organisations. Research into existing studies and findings from an industrial survey highlighted that there are major areas of concern, these were:

- The lack of management emphasis;
- The challenge of culture; and
- Determining what knowledge should be shared.

Investigations into four case studies and discussions with their knowledge managers identified that different approaches and activities were been employed; these ranged from those that focused on technology to those that focused on people.

To help organisations develop a holistic approach and in turn increase their chances of improving knowledge sharing the author has developed a set of guidelines directing organisation to focus their efforts on four key areas; strategy, people, process and technology.

Each focus area proposes a range of guidelines; where within each are directions detailing what's involved, why it is important, how it is carried out and when. The guidelines were packaged onto an internet based framework and were evaluated by a range of industrial practitioners, of which the results are discussed.

The theory and main themes of the project have been outlined and the results from the industrial survey and case study investigations have been analysed.

Acknowledgements

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Glossary of Terms

IBF	Internet Based Framework
KS	Knowledge Sharing
KM	Knowledge Management
KFAs	Key Focus Areas
GUI	Graphical User Interface
IA	Intellectual Assets
IAM	Intellectual Asset Management
SNA	Social Network Analysis

Introduction

But man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and show them that it is for their own advantage to do for him what he requires of them.

- Adam Smith, 1723-1790

People from the dawn of time have had to establish relationships in order to achieve interests. The relationships they formed or were required to form were at their most secure when they were founded on common interests. The challenge for those who wanted to establish relationships, to achieve particular interests, was to show others that it was in their interest to do what was required of them.

This thesis aims to address one of the most tangible manifestations and aims of knowledge management, namely improving knowledge sharing. It is essentially to do with people and the relationships between them. An often too familiar predicament in organisations is people working on a problem that others have addressed or are working on while not knowing of it. It has been termed the re-inventing of the wheel.

In view of problems like this, organisations have looked to processes like knowledge sharing to address it. However, firms have found encouraging knowledge sharing, as this thesis will highlight, very challenging. The author, in this thesis, aims to understand the factors and the issues that impede it, with the view of identifying ways to address them.

This chapter aims to provide a theoretical background to the research, define the aim of the study and to outline the content of the following chapters.

1.1 Background

The economic landscape that human beings have experienced over the last two hundred years has gone through significant transitions; the most recent being the transition from the industrial economy to what is commonly known as the knowledge economy. In each respective economic landscape, the ability to develop means of attaining competitive advantage, ultimately dictated whether organisations had economic reason to exist.

What enabled organisations to strengthen their competitive position, in the industrial economy, was the ability to automate and increase the speed of machine processes. The emergence of the knowledge economy, powered by the convergence of technology and forces like globalisation, have reshaped the drivers that dictate competitive positioning.

Nonaka in his paper, the knowledge creating company (1991) argues that *“In an economy where the only certainty is uncertainty the one sure lasting competitive advantage is knowledge.”* Organisations are only beginning to realise that knowledge is a critical force for competitive positioning.

Hildreth and Kimble (2004) highlight that organisations initially responded, to the change in the economy, by changing the way they were structured. They state that many organisations responded *“by restructuring through outsourcing and downsizing”*.

Edwards and Peppard (1997) explain that this response lead to a major endeavour within organisations of all types and in all industries. The observations that were made regarding it were labelled business process re-engineering (BPR).

David Snowden (2002) called this period, prior to 1995, the *“first age”*. He argued, however, that by the mid to late nineties, disillusionment in BPR started to creep in within organisations. A major reason was that the

downsizing and outsourcing led to people being laid off and hence the loss of vital knowledge of operations.

The quest for efficiency paradoxically resulted in the compromising of effectiveness. The problem with BPR was characterised by Hammer and Champy (1993) who said *“how people and companies did things yesterday doesn’t matter to the business engineer”*. This marked, according to Snowden, the transition to the *“second age”*.

The disillusionment in BPR drove organisations to focus on mechanisms to capture knowledge. O Dell et al (1999) argues that this period of the nineties marked a shift in the basis of competition, towards how well knowledge assets were leveraged for a competitive advantage.

This shift, or transition as Snowden called it, laid the foundations for the emergence of knowledge management. Davenport and Volpel (2001) explain that knowledge management principally developed in industries that considered knowledge as a product. These, they explain, included organisations *“like professional services, pharmaceuticals and research and development functions”*.

Early efforts were often seen as one of capturing, storing and retrieving knowledge. There was a strong technological bias, often evoking the notion that knowledge management is no more than information management re-badged. More recently, as argued by Hildreth and Kimble (2004), there has been greater emphasis on the importance of communities and networks.

This emphasis of communities and networks has resulted due to the realisation that people are the custodians of knowledge. In fact, Sveiby (1997) argues that it is *“intangible and only in the minds of people”*; suggesting that a condition for knowledge to be managed is for people to share it.

However, Davenport and Volpel (2001) in a study of knowledge management at HP found that getting knowledge to be shared across the entire organisation was the *"biggest challenge"*. As knowledge is in the minds of the people, if organisations can not improve the sharing of it, the success that can be achieved from knowledge management will be limited.

Knowledge sharing being a central component for knowledge management inspired the author to study how it can be improved in organisations. Various challenges and factors that influenced knowledge sharing were established through the conducting of an industrial survey and an extensive literature review.

To nurture further understanding, the author adopted a qualitative strategy that entailed the conducting of a number of case studies and the use of instruments like interviews. The understanding gained, facilitated the author to induce a structure as to how the challenge of knowledge sharing could be identified and addressed.

The product that resulted was a knowledge sharing guidelines. It embodied the synthesis of the findings from the literature review, questionnaire and the case studies.

1.2 Aim

The aim of this research is to develop a pragmatic guideline that synthesises existing research, in order to help organisations improve knowledge sharing within their firms.

As it is not within the scope and timescale of the research, to empirically test the level of which the guidelines can improve knowledge sharing within organisations, it will be designed as a concept and viewed as potential solution.

1.3 Objectives

- To investigate the range of elements that impact knowledge sharing, through a literature review;
- To collect primary data of current underlying issues that exist with knowledge sharing, in the way of a questionnaire;
- To conduct a number of case studies to investigate the practices and views of knowledge managers in industry;
- To develop a guideline for knowledge sharing improvement that outlines areas and practices firms need to focus on to improve knowledge sharing;
- To design and package the guidelines in an internet based framework;
- To seek user evaluation of the guidelines.

1.4 Research Contribution

A significant amount of research has been done in specific areas that influence knowledge sharing like the influence of culture, technology and strategy. This research contributes to the existing mass of knowledge by developing a guideline that synthesises and exploits the findings from these various research areas.

Moreover, as the guidelines will be principally based on primary data from industry. It can help practitioners in planning, evaluating and benchmarking their knowledge endeavours against current practices.

The author conceives that practitioners by using the guidelines may not only potentially identify opportunities that could unravel promising insights for how they can improve knowledge sharing, but also use it to explain and win over weary sponsors to knowledge sharing.

1.5 Thesis Structure

The thesis consists of nine chapters. Chapters 1, 2 and 3 outline the focus and the range of elements in this research. These chapters provide insight into the industrial context, which establishes some of the main challenges in industry, and provides a review of the literature.

Chapter 4 presents the methodology and the research design that the author has adopted to develop the guidelines. Chapter 5 gives insight to four case studies and presents the topical areas that were inductively reasoned from them.

Chapter 6 and 7 consist of the development of the guideline and the internet based framework. The different areas that the guideline will focus on are discussed along with the approach that organisations should have in using them. Additionally, it discusses the need for an internet-based framework and the graphical user interface (GUI) considerations the author took into account during its development.

Chapter 8 presents the user evaluation and discussion. It provides detail of the criteria users were asked to evaluate the internet based-framework. Moreover, the findings of the responses are discussed and used to construct recommendation for improvement.

Chapter 9 concludes the research. It discusses the implications of the research, limitations and recommendations for future work.

1.6 Research Outline

The outline gives a brief overview of the features of this study. It highlights the activities in this research, their purpose and it gives insight into the approach the author took in analysing the outcomes of the activity.

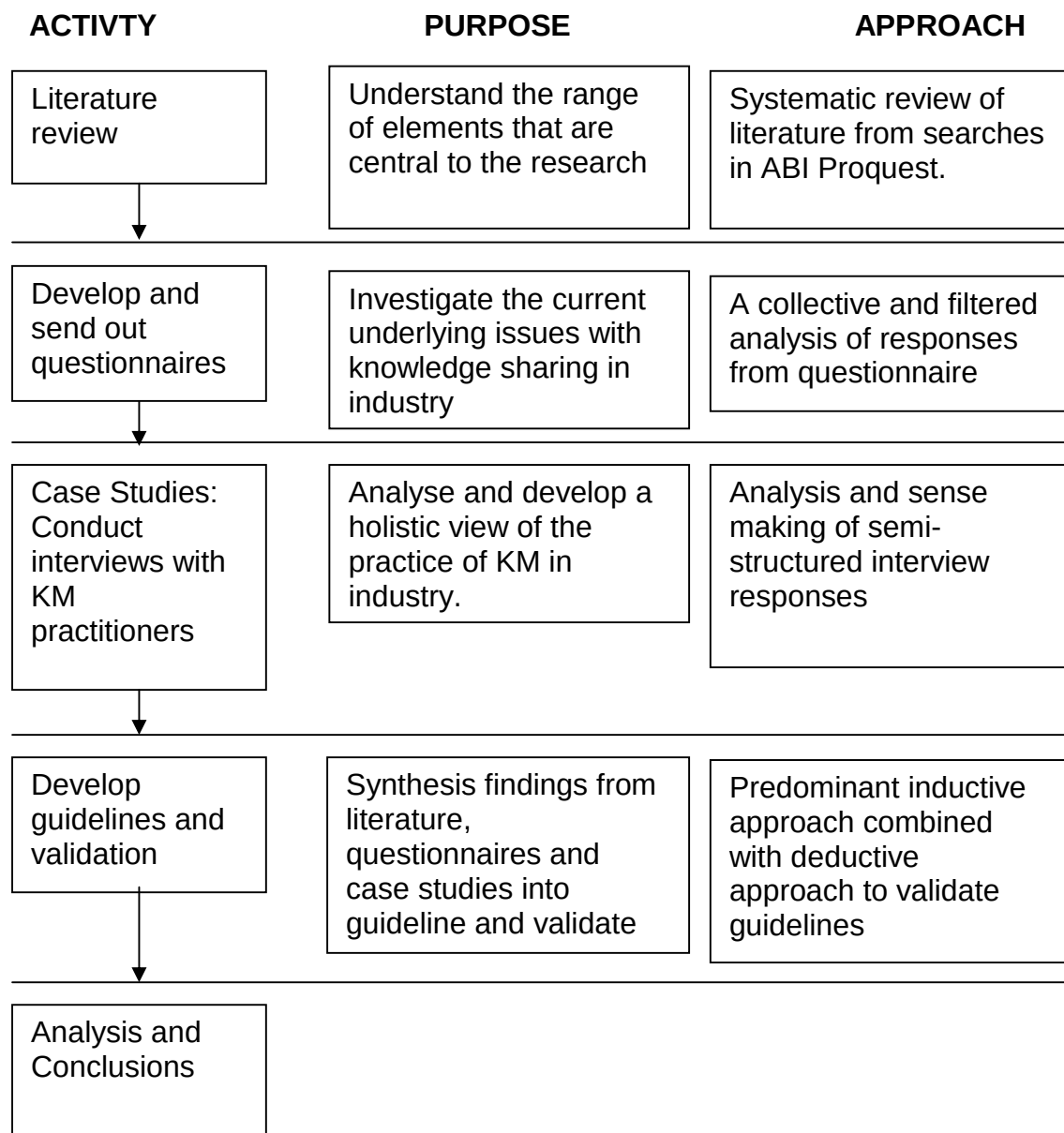


Figure 1.1 Research outline

1.7 Summary

The improvement of knowledge sharing in organisations is the central focus of this research. This chapter has highlighted the aim, the contribution this research is making and the research outline.

Investigating the Industrial Context

Man's mind, once stretched by a new idea, never regains its original dimensions.

- Oliver Wendell Holmes (1809 - 1894)

The purpose of this chapter is to provide an industrial context to this research. It starts by reviewing industrial studies carried out by KPMG and Ernst and Young that present some of the main challenges that industry face in managing and, more specifically, sharing knowledge.

To specifically identify what industry, currently, perceive of the process of knowledge sharing, the author sent out a number of questionnaires to industrial practitioners. This chapter provides the detail of this work and presents the analysis of the findings.

2.1 Overview of the Challenges

It is often said that a challenge in knowledge sharing is shifting the mindset of employees from 'knowledge is power' towards the idea of 'knowledge sharing is power'. Although this may be a factor, a recent research conducted by KPMG (2000) identified that the main factor was time. Sixty two percent of the respondents complained of the lack of time to share knowledge.

Further insights into the factors that impede knowledge transfer were provided by a research carried out by Ernst and Young centre for business innovation (Ruggles, 1998). They identified the following as the impediments:

N ^o	Impediments	%
I1.	Culture	54%
I2.	Top management failure to signal importance	32%
I3.	Lack of shared understanding of strategy and business mode	30%
I4.	Organisational structure	28%
I5.	Lack of ownership of the problem	28%
I6.	Non-standardized processes	27%
I7.	Information/communication technology restraints	22%
I8.	Incentive system	19%
I9.	Staff turnover	8%
I10.	Configuration/physical features of workspace	5%

Table 2.1 Impediments to Knowledge Transfer, Ruggles (1998)

The biggest impediment was identified as culture. Broadly, it is the values, beliefs, and assumptions held by the members of the organisation. If culture is a major factor that impedes the transfer of knowledge and time, as identified by KMPG (2000) is a key constraint; it would seem that nurturing behaviours conducive to knowledge sharing would be inherently challenging.

There is some indication, in the form of further research carried out by Ernst and Young (Ruggles, 1998), to suggest that this is the case. They found that out of all the difficulties organisations faced in managing knowledge changing people behaviours was the greatest, as shown in Table 2.2.

N ^o	Difficulties	%
D1.	Changing peoples behaviours	56 %
D2.	Measuring the value and performance of knowledge assets	43 %
D3.	Determining what knowledge should be managed	40 %
D4.	Justifying the use of scarce resources for knowledge initiatives	34 %

D5.	Mapping the organisations existing knowledge	28 %
D6.	Setting the appropriate scope for knowledge initiatives	24 %
D7.	Defining standard processes for knowledge work	24 %
D8.	Overcoming technological limitations	13 %
D9.	Identifying the right team/leader for knowledge initiatives	12 %

Table 2.2 Difficulties in managing knowledge, Ruggles (1998)

According to Senge (1990) effective change in organisations requires effective leadership. If changing people behaviours, as it appears, is a key difficulty in managing knowledge this suggests that leaders may not effectively be rallying their staff around it.

According to KPMG (2000) this maybe the case; of the organisations who said that the benefits of KM failed to meet expectations (153 out of 423 – 36%), the most often cited reasons were:

- Lack of user uptake owing to insufficient communication 20%
- Failure to integrate KM into everyday working practices 19%
- Lack of time to learn how to use the system or a sense that the system was too complicated 18%
- A lack of training 15%
- A sense that there was little personal benefit in it for the user 13%

These reasons, particularly the lack of user uptake, suggest that leaders of knowledge initiatives within organisations need to improve how they communicate knowledge management to their staff. Peter Senge (1990) argues that people are motivated to change, only when they receive a communication of a *“picture of what might be - (i.e. what KM can do for staff) - that is more important to people than what is”*.

The challenges, identified thus far, of culture, time and leadership support, provide early evidence that organisation need to improve how they approach

knowledge management and more specifically how they promote knowledge sharing.

The above industrial studies surveyed, have given insight to the difficulties in managing knowledge and some of the factors that impede the sharing and transfer of knowledge. The studies in the case of Ernst and Young is dated 1998 and for KPMG 2000. To acquire primary, current, data on how industry perceives knowledge sharing in their organisations, the author sent out a number of questionnaires.

2.2 The Knowledge Questionnaire

This section will review the work related to the questionnaire and provide the analysis of the findings. The purpose of the questionnaire was to enable the author to gain a first hand appreciation of how industry currently perceived knowledge sharing in their organisations.

2.2.1 Introduction to the Questionnaire

The questionnaire was electronically sent to a number of firms, the target was knowledge managers, chief information officers, operation managers and directors. For the reason of practicality and time the author piloted the questionnaire amongst postgraduate researchers prior to sending out them out.

Of the questionnaires sent out, there were 54 that were received back. The respondents came from industries that included consultancies, pharmaceuticals, professional services and manufacturing.

2.2.2 Design of the Questionnaire

The questionnaire was designed with six sections;

- Organisation;
- Learning and motivation;
- Technology;
- Overall impression of knowledge sharing;
- Business landscape; and
- And demographics.

Sections 1- 4 consisted of questions that were specific to knowledge sharing. The last two sections business landscape and demographics were qualifying sections that were used to differentiate the respondents.

The questionnaire consisted of 21 questions. The style of the questions included single choice, multiple choice and scaled based matrix questions. A sample of the questionnaire is in Appendix A.

2.2.3 Questionnaire Findings

This section will aim to provide some key findings from the first four sections in the questionnaire. Only key findings, from these sections, have been presented so as to make this chapter as concise as possible. Detailed results and findings of the questions in these sections can be found in the Appendix B.

Section 1: Organisation

The purpose of this section was to identify how knowledge sharing was emphasised and facilitated on an organisational level. It consisted of three questions, that gauged the need for a knowledge officer, management emphasis on knowledge sharing and cultural emphasis on knowledge sharing.

Q1. Do you see any value in having a knowledge officer (someone responsible for identifying and distributing knowledge) in the organisation?

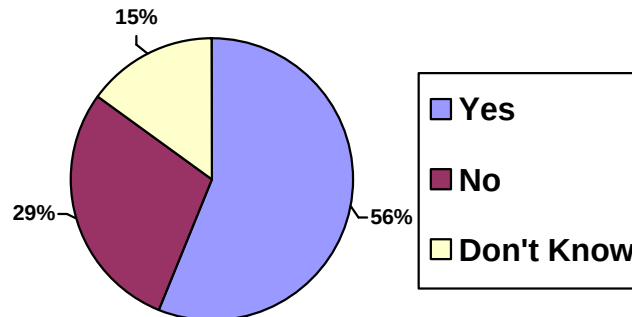


Figure 2.1 Response to value of knowledge officer

Of the 48 that responded to this question over half (56%) said yes there was a need for a knowledge officer in the organisation. 29% said no and 15% said they did not know.

Finding: There is a need for organisations to assign knowledge officers

Q2. Do you believe that managers in the organisation put: a strong, modest or weak emphasis on knowledge sharing?

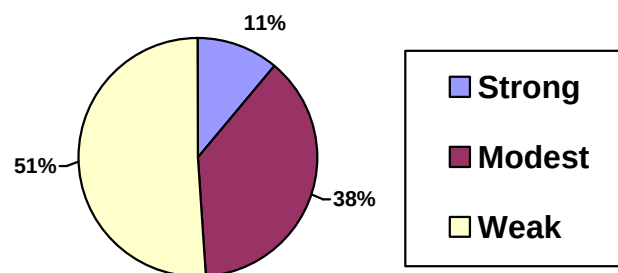


Figure 2.2 Response to management emphasis on knowledge sharing

Of the 47 that responded to this question just over half (51%) said that managers put a weak emphasis on knowledge sharing. 38% said that managers placed a modest emphasis on knowledge sharing, while 11% said there was a strong emphasis.

Finding: Managers need to place greater emphasis on knowledge sharing

Section 2: Learning and Motivation

This section consisted of six questions. It aimed to identify three things; firstly whether organisations provided opportunities for knowledge sharing, secondly the factors that most influenced knowledge sharing and finally what most affected the accessibility to knowledge.

Q5. How often do employees have the opportunity to rotate around projects?

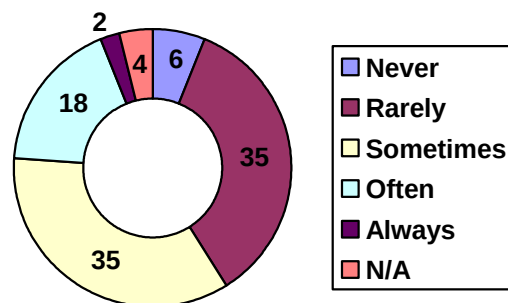


Figure 2.3 Response to employee rotation around projects

Of the 49 that responded to this question 6% said employees never rotated, while 70% said employees either rarely or sometimes rotated around projects.

Finding: Employees don't often rotate around projects

Q6. Which one statement best describes how trust effects the level of knowledge sharing between co-workers? Trust has a strong, modest or weak effect on the level of knowledge sharing.

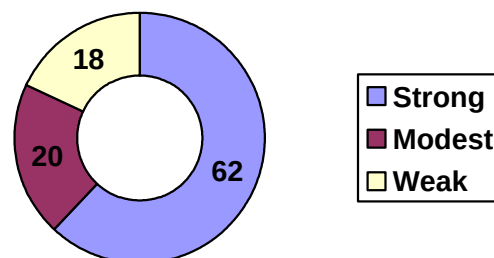


Figure 2.4 Response to effect of trust on knowledge sharing

Trust is an integral part of knowledge sharing. Of the 49 that responded to this question just over 62% said that trust has a strong effect on the level of knowledge sharing. 20% said it has a modest effect, while 18% said it has a weak effect.

Finding: Trust has a strong affect on the level of knowledge sharing

Q7. Do you see any value in rewarding staff to share what they know with co-workers?

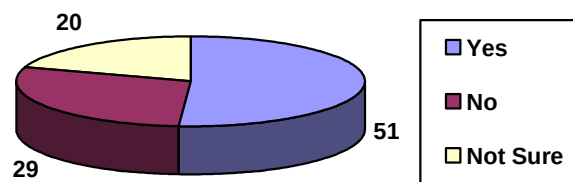


Figure 2.5 Response to value of rewarding staff for knowledge sharing

Roughly half (51%) of the 49 that responded to this question said that they see value in rewarding staff to share knowledge with co-workers. Interestingly, 29% said no, while 20% said they were not sure.

Finding: Organisations may need to consider incentives for knowledge sharing

Section 3: Technology

This section consisted of two questions. Its purpose was to identify the type of technology available to employees in the organisations and their effectiveness in facilitating knowledge sharing.

Q10. How good is the technology in your organisation in facilitating knowledge sharing?

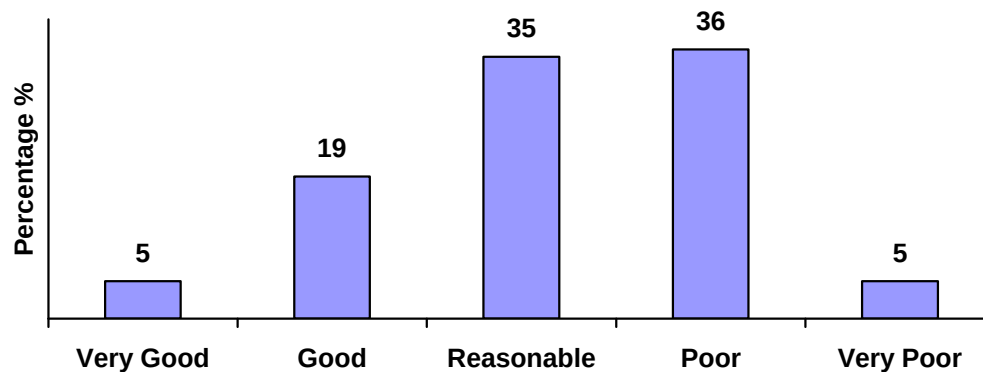


Figure 2.6 Response to how good technology facilitated knowledge sharing

Of the 42 that answered this question 24% said technology was either good or very good in facilitating knowledge sharing. While 41% said it was poor or very poor in facilitating knowledge sharing

Finding: Organisations may need to invest in collaborative technology

Section 4: Overall Impression of Knowledge sharing

The purpose of this section was to identify how the respondents rated knowledge sharing between co-workers and their attitudes to a range of statements specific to knowledge sharing. It consisted of three questions that were all scale based matrix questions.

Q13. Please check the box that reflects your feeling to the following statements. 1 = strongly agree

Of the 42 that responded to the statement - *The culture in our organisation promotes collaboration and knowledge sharing*; 52% selected either 4 or 5 indicating disagreement or strong disagreement.

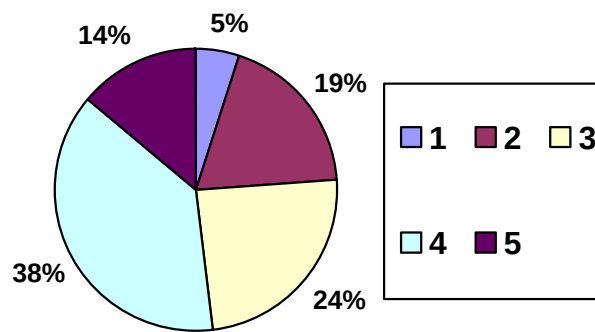


Figure 2.7 Response to cultural statement

Finding: Most organisations culture impedes collaboration and knowledge sharing

2.2.4 Analysis of Findings

The questionnaire highlighted that organisations recognise the importance of knowledge, and the identifying and distributing of it within their firms. The need to assign knowledge officer was indicative of that.

Findings like the lack of management emphasis on knowledge sharing suggest that managers, however, do not see how plans for knowledge sharing fit in with the current business model. This was supported by Ernst and Young (Ruggles, 1998) who found that an impediment to knowledge transfer was the lack of shared understanding between strategy and business models.

Surprisingly, a number of the other findings were supported by past research. This suggests that some of the problems that were identified in the late nineties are still current challenges that require overcoming.

What this questionnaire provides, in addition to past research, is primary data for current attitudes to knowledge sharing. It provides insight to some key issues that underpin the field and its findings are used by the author as guideposts over the course of the research; in order to ensure the guidelines address current issues.

2.3 Summary: A Picture of the Current State

This investigation of the industrial context, has involved studying research carried out by KPMG as well as Ernst and Young and surveying knowledge sharing in industry in the form of a questionnaire.

It has highlighted amongst other things, three main factors about the current state of this field. Firstly, knowledge sharing is influenced by a wide range of organisational factors like culture, technology and leadership support.

Secondly, that knowledge sharing is seen as important but was not effectively being nurtured by the strategy and married effectively into the business model of organisations.

Finally, that knowledge sharing is not an end in it self, but rather a means to getting organisations to leverage knowledge for competitive advantage. This means knowledge sharing has to viewed within the wider context of the goals of knowledge management.

Literature Review

Knowledge is not what is memorised. Knowledge is what benefits.

- Imam Shafi (767 – 820)

The purpose of the literature review is to understand the range of elements that are central to this research. The chapter starts by investigating the wider of area of knowledge management, it then focuses on the role of knowledge sharing and then finally looks into the influence of culture.

3.1 Investigating Knowledge Management

This section provides an understanding of the nature of knowledge, the challenges in managing it and how organisation can deliver knowledge management strategies in their organisation.

3.1.1 Defining Knowledge

The definition of knowledge is one that is elusive and a source of much debate. Philosophers for over a millennia have debated the meaning of knowledge, resulting in a whole branch of philosophy known as epistemology being dedicated solely to its study. In the context of knowledge management, as argued by Spender (1996), the point *“is not to try and resolve these debates, but to observe that knowledge is a highly contentious concept”*.

The definition of knowledge in Webster's dictionary (1913) is that which is gained and preserved by knowing, instruction, acquaintance, enlightenment and learning. This definition explains what knowledge is, by focusing on the operations through which knowledge is gained and preserved i.e. learning.

A pragmatic approach of understanding knowledge is to look at where it resides and what is used for. In regards to where knowledge resides, Davenport and Prusak, (1998) argue that it resides in humans.

This view is also accepted by Karl Wiig (2004), in addition, he highlights that it is used by humans for the purpose of action. He argues that it is knowledge that allows humans to *“assess, decide, problem-solve, plan, act, and monitor”*. It is a view that is echoed by Nonaka and Takeuchi (1995) as well as Drucker (1993). They suggest that knowledge is about action, which is always focused on some end.

This view is interesting particularly for industry. This is because in industry people can not just do actions they, at times, need to justify it. To take into account the need for justification, Nonaka and Takeuchi (1995) consider knowledge as *“a dynamic human process of justifying personal belief toward the ‘truth’”*.

Essentially, they argue that knowledge constitutes a personal belief, whose validity or truth is strengthened by a process of justification or according to Popper (1969) falsification tests. It is based on the predominant platonic western definition of knowledge; that is *“justified true belief”* (Nonaka and Takeuchi, 1995).

On this basis it can be concluded that knowledge is justified true belief whose purpose is for action.

3.1.2 Distinguishing Knowledge from Information

Information is, principally, structured data. According to Wiig (2004) the essential difference between knowledge and information is that *“knowledge is for action and information is for description”*.

A lot of time is devoted to defining knowledge in industry. According to Snowden (1999) it would not be necessary or sensible to devote time to defining knowledge. Rather he suggests that what's important is to realise an understanding of what it means to use knowledge in contrast to information.

Any organisation pursuing knowledge management must distinguish upfront the difference between knowledge and information. Failure to do so may lead people confusing knowledge with information. Brown and Duguid (1998) stressed that it would be a *"mistake"* to equate the two, as this posits that you can manage knowledge in the same way you manage information.

According to Nonaka and Takeuchi (1995) the difference between knowledge and information is that *"information is a flow of messages, while knowledge is created by that very flow of information, anchored in the beliefs and commitments of its holder"*.

This view suggests two things; firstly that knowledge is inextricably linked to the individual holder and that secondly it results from a human act of 'anchoring' that can be considered as sense making. The implication of this view is that knowledge management is as much to do with managing people as it is with managing information.

3.1.3 Types of Knowledge

It is important to know whether by knowledge we are referring to something homogenous or something that can be categorised into different types. If knowledge can be categorised into different types, then the way you manage it becomes not only a more pertinent but rather complicated subject of study.

Studying the literature relating to knowledge, makes clear that knowledge is categorised into different types, as suggested by Fernandez (2004) or dimensions as suggested by Brown and Duguid (2001). The two types or dimensions that have been given some emphasis are knowledge as:

- Explicit or Tacit; or
- Procedural or Declarative

This section will give insight into these types of knowledge:

Explicit and Tacit knowledge

The terms explicit and tacit knowledge are based on Michal Polyani (1962) famous phrase "*we know more than we can tell*". Explicit knowledge refers to the knowledge that can be expressed into words and numbers, whereas tacit knowledge embodies intuitions, insights and gut feelings that are difficult to express and formalise (Fernandez, 2004).

Reports, presentations and manuals are examples of explicit knowledge. This type of knowledge can quite easily be managed and shared formally. From a technological perspective, the current solutions to managing knowledge largely deal "*with explicit knowledge.*" (Marwick, 2001).

Examples of tacit knowledge, is when a mechanic can tell the health of an engine from the sound it generates, or a when a bank manager develops a hunch that a client would be a bad credit risk after a short conversation with the customer (Choo, 2000). Polyani (1962) suggests that it is harder to share this type of knowledge with people, thus leading people to know more than they can tell.

As explicit knowledge and tacit knowledge is ultimately sourced to individuals (Fahey and Prusak, 1998; Nonaka and Takeuchi 1995); in the context of knowledge management it is important for organisations to understand how the nature of these types of knowledge and their relationships affect the approach for which knowledge is required to be managed.

Procedural or Declarative Knowledge

The terms declarative and procedural knowledge are used in the artificial intelligence community. According to Kogut and Zander (1992) declarative knowledge is descriptive in its nature, whereas procedural knowledge is the knowledge of the how.

These categorisations of knowledge are strikingly similar to those suggested by Gilbert Ryle in his book 'the concept of the mind' (1949); namely 'know that' and 'know how'. Were 'know that' is akin to abstract information and 'know how' is akin to experience (Brown and Duguid, 2000).

According to Ryle (1949) these types of knowledge should not be considered independent but rather interdependent. He supports this argument by highlighting, in his well used example, that knowing the rules of chess (i.e. know that) does not necessarily mean you know how to effectively play chess (i.e. know how). Essentially, to make 'know that' useful it must be linked with the relevant 'know how'.

3.1.4 Managing Knowledge

There is no generally accepted definition of knowledge management; partly because of the different ways that people define knowledge. A term with relatively less ambiguity is management. Broadly, It involves the organising, controlling and co-ordinating of resources (human, financial, equipment) to maximise an organisations output.

In the case of knowledge management the resource being managed is knowledge. As previously discussed, if knowledge is that which gives people the capacity to act; and action, in industry, is done to improve organisational performance, then a pragmatic definition for knowledge management that we can come to is:

The process of systematically organising, controlling and co-ordinating that which gives people or organisations the capacity to enhance organisational performance

Knowledge, as identified earlier is categorised into different types i.e. procedural (know how) and declarative (know-that), as a result the subject of how it is managed is a rather more complicated.

According to O'Dell and Grayson (1998), the managing of 'know that' is simpler than the managing of 'know how'. They argue that the latter type of knowledge is to do with processes and "*important information about a process is too complex*" to be managed using conventional tools and technology.

Essentially, the challenge for knowledge management is transposing know-how, which is mostly tacit, into explicit know-that. Once the knowledge is explicit, it can then quite easily be managed using current tools and technology. In fact Marwick (2001) highlights that most of the current tools in industry have been able to provide solutions largely to manage explicit knowledge.

If Ryle was right and both know-how and know-that are interdependent, then using conventional technology solutions alone to manage know-that i.e. explicit knowledge may curtail the potential benefits that business can realise. Hansen et al (1999) found that, as a matter of fact, organisations use a combination of approaches.

They discuss two approaches in detail; codification which is a person to document approach and personalisation which is a person to person approach. Codification is where knowledge that people can declare and make explicit is documented and made available for others. While, personalisation focuses on connecting people and promoting dialogue between them.

Personalisation is needed as people may not necessarily be able to make sense and thus act on explicit knowledge. This is because as Ryle suggested by his analogy with chess, know-how i.e. tacit knowledge embraces the ability to put know-that i.e. explicit knowledge into practice.

To maximise the benefits realised from knowledge management, Hansen et al (1999) found that it was common for organisation to combine the use of both approaches.

3.1.5 Knowledge Management Strategies

To ensure that knowledge management delivers business value, strategies for it need to be developed at a strategic level in organisations. Earl (2001) argues that the types of questions that organisations need to ask are:

- How can knowledge make a difference to the business?
- Are their performance gaps in the business that knowledge management can address?
- Which factors critical to the business can knowledge management make a difference?
- Which knowledge management initiative adds the most value, and what resources need to be allocated to realize this value?

Strategic questions help the organisation focus on what's important for the business. It helps them identify what knowledge management needs the organisation has and what action plan they need to put in place to deliver real business value.

O'Dell et al (1999) highlight that organisations have different strategies in place to address their knowledge management needs. They elaborate on six specific strategies (Refer to Appendix C for details). What's important to note

is that a firm's understanding of their needs directly correlates with the type of knowledge management strategy they employ.

3.1.6 Operationalising Knowledge Management

The knowledge management strategic intent, as argued by Earl (2001), is to deliver business value. The challenge for organisations after adopting a knowledge strategy is to translate it into processes and activities. APQC and Arthur Anderson (O'Dell et al, 1999) co-developed the following knowledge management framework.

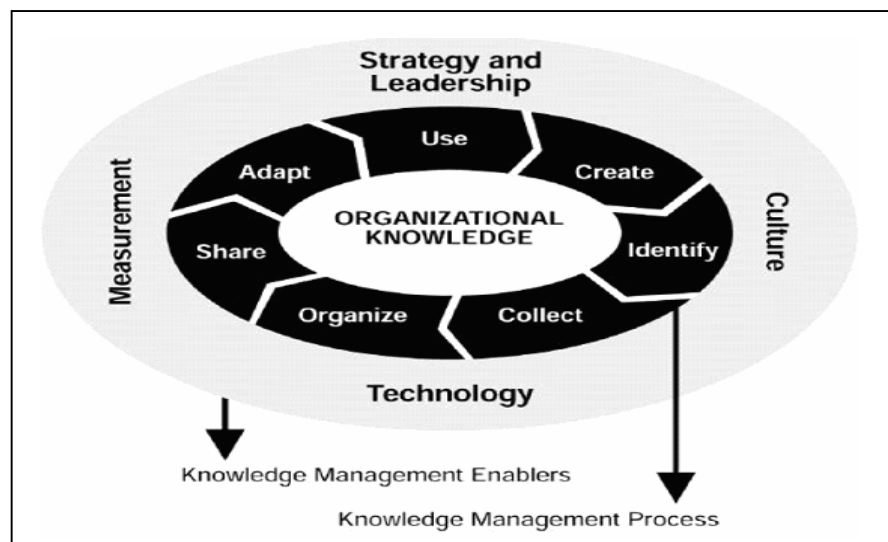


Figure 3.1 Framework for operationalising knowledge management, O'Dell et al (1999)

The framework highlights the key processes and enablers that were found to be central in delivering knowledge management strategies. It identifies seven sequential processes. It begins with the creation, identification and collection of knowledge. It continues with the organisation and sharing of knowledge and finally the adapting and application of knowledge.

Surrounding the process are the four enablers; culture, technology, measurement and strategy and leadership. These enablers can either help or hinder the knowledge management processes.

The processes in Figure 3.1 are very similar to those presented by other practitioners in this area i.e. Davenport and Volpel (2001) who presented the following:

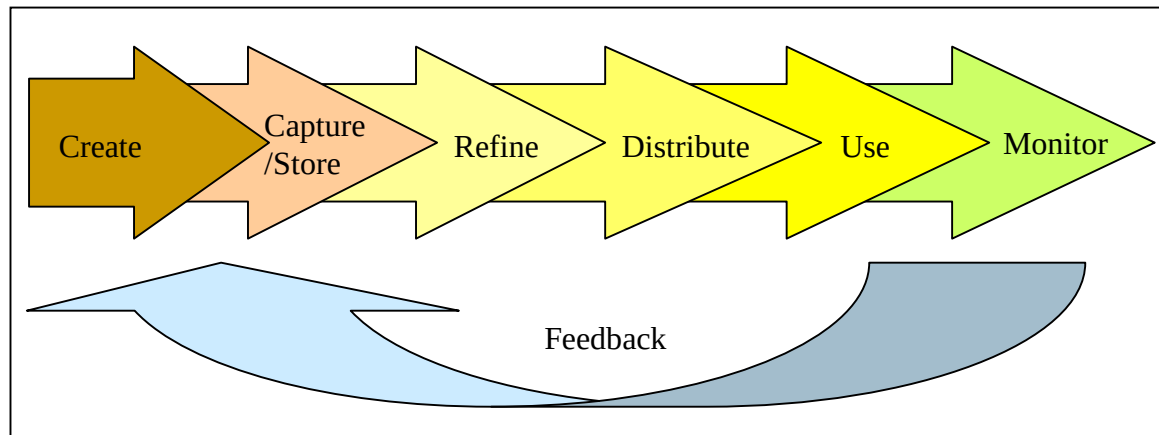


Figure 3.2 Knowledge management processes, Davenport and Volpel (2001)

It highlights that knowledge management, holistically, consists of a range of processes. Each one of these processes can be a subject of research in themselves. The author in this research is focusing on the sharing (distribution) of knowledge.

This is because this process has been found to be central to knowledge management and can be a key enabler for knowledge creation. In fact, Ikijuro Nonaka (1991) in his work the knowledge creating company said that:

“Making personal knowledge available to others is the central activity of the knowledge-creating company.” He continues by stating *“It takes place continuously and at all levels of the organisation.”*

3.2 The Role of Knowledge Sharing

This section explores the role of knowledge sharing. It starts by providing an understanding of what knowledge sharing is. It continues by looking at the role of

context and finally ends by presenting the social and technological enablers.

3.2.1 What is Knowledge Sharing?

As knowledge, is what gives people the capacity to act; knowledge sharing logically following is the process where people develop in one another new capacities for action. Senge (1997) highlights that *“sharing knowledge occurs when people are genuinely interested in helping one another to develop new capacities for action”*. To understand the nature of how knowledge is shared, it is important to understand the term sharing.

Broadly, sharing is the process where a resource is given by a source to a recipient. This understanding of the term ‘sharing’ has lead, as Berends (2005) highlights, people to interpret knowledge sharing to be the *“transfer of knowledge from a source to a recipient”*. This definition can be construed in way were knowledge sharing is viewed as a one way process that leads to the benefit of one person.

According to Chow et al (2006) it is quite the opposite. They argue that knowledge *“appreciates in value when shared with others”* leading to both parties benefiting. The more people involved in this process the greater the value. To understand why this is one needs to understand how the process of knowledge sharing takes place.

As identified by Sveiby (1997) knowledge is an intangible resource, it resides in the minds of people. As previously discussed knowledge is that which gives people the capacity to act. On that basis, knowledge has not effectively been shared unless it develops a capacity for action in the recipient.

The process of knowledge sharing as highlighted by Sharratt (2003) involves a source framing their knowledge in a way that can be received by a recipient. The recipient does not receive it as knowledge, as that is in the mind of the source, but receives it as information which he/she frames according to their

knowledge. As detailed by Van Beveren (2002) the end result is new knowledge being created in the mind of the recipient.

Miller (2002) argues that the knowledge of the recipient cannot be identical to that of the source, as the process of sense-making is framed by the recipients existing knowledge and insights. For this reason, it is possible for not only new knowledge to be created in the recipient but for new knowledge, as a result of this additional insight of the recipient, to be created altogether. Potentially, leading to virtuous cycle were knowledge is not only shared but created.

Such a process requires more than co-operation it requires collaboration. As argued by Bob Buckman the difference is *“co-operation means to pleasantly work together; collaboration means to emphatically work together”*. Knowledge sharing as argued by Senge (1997) requires people to genuinely have interest to *“develop new capacities for action”* for their colleagues.

3.2.2 The Role of Context

Snowden (2002) argues that *“what we know is contextual: we only know what we know when we need to know it”*. In addition to this, sharing ‘what we know’ is also subject to context.

Context, in regards to knowledge sharing, can broadly be considered the conditions or circumstance through which knowledge is shared. Cummings (2003) highlights that, principally, there are five contexts that influence knowledge sharing:

- Relational context;
- Knowledge context;
- Recipient Context;
- Source Context; and
- Environmental Context.

He developed a framework of which the determinants of each context are explained. The relevant points as presented by Cummings (2003) are shown below.

Relational Context

Relational context takes into account the 'distance' factors between the two parties in knowledge sharing; the source and the recipient. In organisations it is determined by the following:

- *Organisational distance*: where parties are in organisation structure;
- *Physical distance*: where parties are physically located;
- *Knowledge distance*: knowledge gap between parties;
- *Relationship distance*: duration and quality of relationships between parties.

Knowledge Context

This context is regarding the knowledge being transferred; it is determined by:

- *Knowledge Explicitness*: extent to which knowledge can be made explicit;
- *Knowledge Embeddedness*: extent which knowledge is embedded in people, process and technology.

Recipient Context

The recipient context in organisations it is determined by:

- *Motivation*: extent to which recipient is motivated to receive knowledge;
- *Absorptive capacity*: capacity of recipient to understand;
- *Collaborative experience*: the collaborative skill level of the recipient;

- *Retentive capacity*: extent to which the recipient can remember;
- *Learning culture*: how much recipient values learning.

Source Context

The source context in organisations is determined by:

- *Learning culture*: how much source values learning;
- *Source Intent*: the objective of the source in sharing knowledge;
- *Credibility of source to recipient*: how much confidence recipient has of the source.

Environmental Context

The environmental context through which knowledge sharing occurs is principally determined by the political, cultural and institutional set-up. Although these factors are separate areas of study they are intertwined with the other contexts discussed.

For organisation to effectively facilitate knowledge sharing they need to provide the favourable contexts within which it would occur. There are various social and technological enablers that can aide organisations in this endeavour. The next sections will give insight into each of these enablers and how they facilitate knowledge sharing.

3.2.3 Social Enablers

Davenport and Volpel (2001) in a study of knowledge management at HP found that getting knowledge to be shared across the entire organisation was the “*biggest challenge*”.

This is because knowledge sharing, as argued by Allee (2000), is a social process. That is to say that unlike information, which can seamlessly flow within organisations, knowledge is dependent on suitable social contexts. For it to become common place, organisations, as suggested by Lang (2004), need to pay attention to the *“multiple, overlapping and ongoing social relationships”*.

The review of the existing literature highlights two key areas of research: communities of practice and social capital. This section will provide insight into these areas and how they enable knowledge sharing.

Communities of Practice (CoP)

There has been a growing focus, in the literature, on the role of communities of practice in facilitating knowledge sharing. Wenger and Snyder (2000) consider them a new *“organisational form”* that can *“radically galvanize knowledge sharing”*. They broadly describe them as *“groups of people informally bound together by shared expertise”*.

The term CoPs was coined by Etienne Wenger and Jean Lave (1991). They identified that within organisations existed groups, which formed outside the formal structures, around shared practice and interest. In some cases these groups were not within the management ‘radar’, they existed invisibly.

Cross et al (2002), in their study making invisible work visible, argue that these informal networks are *“increasingly important for organisations competing on knowledge.”* This is because the informal relationship between the individuals driven by their common interest nurtures an environment that is conducive, as suggested by Lesser and Storck (2001), to knowledge sharing.

A question that one may ask is what makes CoPs different from other organisational forms, according to Wenger and Snyder (2000) several things. They contrasted CoPs with formal work groups, project teams and informal networks and tabulated the findings, as shown below.

	What's the purpose?	Who belongs?	What holds it together?	How long does it last?
Community of practice	To develop members' capabilities; to build and exchange knowledge	Members who select themselves	Passion, commitment, and identification with the group's expertise	As long as there is interest in maintaining the group
Formal work group	To deliver a product or service	Everyone who reports to the group's manager	Job requirements and common goals	Until the next reorganization
Project team	To accomplish a specified task	Employees assigned by senior management	The project's milestones and goals	Until the project has been completed
Informal network	To collect and pass on business information	Friends and business acquaintances	Mutual needs	As long as people have a reason to connect

Figure 3.3 Comparison of CoPs with other organisational forms, Wenger and Snyder (2000)

According to Wenger (1998) CoPs, principally, define themselves along three dimensions:

- **“What it is about:** its joint enterprise as understood and continually renegotiated by its members
- **How it functions:** the relationships of mutual engagement that bind members together into a social entity

- ***What capability it has produced:*** *the shared repertoire of communal resources (routines, sensibilities, artifacts, vocabulary, styles, etc.) that members have developed over time."*

Collectively these three dimensions create a social environment, in which a shared perspective is nurtured. Brown and Duguid (2001) argue that it is precisely this shared perspective that allows knowledge to be "*readily shared*".

The research into CoPs has been extended into the area of organisational learning. It is concept that has emerged as powerful metaphor to drive knowledge sharing. Ray Stata (1989) argues that it occurs "*through shared insight, knowledge and mental models*". As CoPs nurture shared insight Wenger (1996) considers them as the "*social fabric of learning organisations*".

The nature of learning is somewhat embodied in the well known Chinese proverb 'Tell me and I will forget; show me and I may remember; involve me and I will understand'. It highlights that learning is best done through participation. This strikes accord with the research of Teece et al (1994) who found "*What individual's learn always reflects the social context in which they learn it and in which they put it into practice*".

As CoPs are created as result of practice, not only have they potential of being a social enabler for knowledge sharing but a mechanism that drives organisational learning.

Social Capital

Social capital, as highlighted by Inkpen and Tsang (2005), describes and characterizes "*a firms set of relationships*". It has been given widespread attention in recent literature. Its central assertion is that networks of relationships amongst individuals or within an organisation can be a source of value (i.e. capital).

The logic of this view can be understood by considering an individual's network of relationships. If an individual requires to solve a problem, that they for any given reason can't immediately solve, they can gain value i.e. capital by having a network of relationships that they can tap into for help and support.

According to Cohen and Prusak (2001), social capital is what makes organisations work. Essentially, they argue that all the real work in organisations is done through people tapping into networks of relationships and personal contacts.

Hoffman et al (2005) identified in their study of social capital that it can be separated into five distinct dimensions. The author will elaborate on four of the dimensions as they frequently feature in management literature.

- Information channels;
- Social norms;
- Obligations and expectations; and
- Identity.

1. Information channels, as suggested by the name, are the mechanisms through which information flows. In organisations, they are one of the most tangible manifestation of social capital. Hoffman et al (2005) highlight that they represent the *“personal relationships that people develop with each other through a history of interaction”*.

2. Social norms represent what is commonly considered accepted behaviour. Nahapiet and Ghoshal (1998), explain that a norm represents a *“degree of consensus in a social system”*. If social norms like cooperation exist they can manifest as powerful forms of social capital.

3. Obligations and expectations, as highlighted by Nahapiet and Ghoshal (1998), can be embodied in the notion 'there is no such thing as a free lunch'. That is to say that when a colleague shares knowledge, it brings about the expectation for reciprocity. Should expectations be met consistently it can manifest as reputation and hence nurture mutual confidence.

4. Identity is described by Nahapiet and Ghoshal (1998) as the *"process whereby individuals see themselves as one with another person or group of people"*. This identity is something, as argued by Brown and Duguid (2001), *"that participation helps to create"*.

While all these dimensions of social capital are separate, as highlighted by Hoffman et al (2005), *"they are mutually dependent on each other for their development"*.

Without information channels which reflects the personal relationship that people develop, there is no opportunity for the development of social norms and for the creation of identity. Additionally, *"without strong social norms there is no opportunity to develop a system of obligations and expectations"* (Hoffman et al, 2005).

Social capital can have significant implications for knowledge sharing, as knowledge sharing has been found to be a social process. Hoffman et al (2005) in summary of their study, on social capital, explore its relevance on managing knowledge. They found that:

"Social capital can enhance the entire knowledge management process because it makes collective action more efficient, because it becomes a substitute for formal contracts, incentives, and monitoring mechanisms that are necessary in systems with little or no social capital among organisational members"

3.2.3 Technological Enablers

Technology is an important enabler of knowledge sharing. Dyer (2001) highlights that there is indication that the demand for knowledge technologies will grow 41% annually from \$2.3 billion in 2000 to \$12.7 billion in 2005.

Although technology plays an important part in knowledge sharing it will not in and of itself deliver it. Ruggles (1998) argues that “*if technology solves your problem, yours was not a knowledge problem*”. Essentially technology needs to be viewed as a necessary condition for successful knowledge sharing but not a sufficient condition.

The literature refers to three main knowledge technologies that enable knowledge sharing; corporate intranets, data-warehousing/knowledge repositories and groupware. The nature of each of these technologies and how they can aid knowledge sharing is discussed.

Corporate Intranets

Most organisations have corporate intranets, which act as information resources for staff. They are intra-organisational web technologies that are relatively simple and cheap to implement. When implemented properly they have the potential of being valuable tools for knowledge sharing.

Stenmark (2005) identified that intranets in many organisations are under-utilised. He argues that for the “*intranet to serve as a knowledge sharing environment, high participation is required*”. The challenge lies in giving people the confidence of the content of the intranet and simplifying the process of publishing and accessing information.

The literature makes reference to the emergence of new tools like Wikis, which are being developed to overcome these challenges. They offer a new

approach to content management and are now being introduced into intranets to encourage greater participation. Wikis have made the editing of content in intranets, which traditionally were read-only, a lot simpler.

The defining feature of Wikis is their lack of restrictions on who can edit and update content. In regards to CoPs this uncontrolled environment can lead to the emergence of shared language and perspective. Moreover, it ensures that the content reflects the most current views of the members.

Combining intranets with collaborative tools, like Wikis, can emerge them from being platforms that, at best, facilitate the flow of information to one that encourages greater participation. They can lead not only to the creation of knowledge but to an environment that is conducive for the sharing of knowledge.

Databases/ knowledge repositories

During the early stages of KM efforts, organisations as a first step of trying to 'know what they know', have been found to develop knowledge databases. These, as described by Gammelgaard and Ritter (2005) are *"platforms that provide a repository of codified knowledge"*.

These databases enable information to be stored and disseminated amongst employees. However, as the volume of information increases, as argued by Sure et al (2003) *"the task of turning them into useful knowledge"* becomes a significant problem. The literature, in this area, focus on codification strategies along with search and retrieval technologies.

Organisations that adopt a low codification strategy focus on people-to-people interaction. To facilitate this organisation have developed databases called yellow pages, which record information about people and their work. Those

that have a high codification strategy focus on knowledge reuse, by encouraging people-to-document interaction.

One of the main challenges with databases is realised with those that adopt a people-to-document approach, namely the optimising of the user's ability to locate and retrieve relevant content. To facilitate this, information needs to be well organised and indexed.

Zhang and Zhao (2006) suggest that the next generation of technologies to overcome this challenge will utilise *"intelligent agents"* and *"knowledge resources represented with semantic-rich metadata"*. That is to say technologies that will have the ability to learn ontology's (classifications of knowledge) and extract metadata like the author, subject matter and date of entry.

Sure et al (2003) argue that technologies that employ this *"ontological approach"* to managing knowledge will enable users to *"access company-wide information repositories in an efficient, natural and intuitive way"*.

Groupware

Groupware is a term that embodies a number of technologies that support people-to-people collaboration. These include technologies like e-mail, instant messenger, video conferencing and most famously lotus notes. Ruggles (1998) describes it as a tool that *"encourages the sharing of ideas in a much more free-flowing manner than repositories"*.

The development of groupware, as argued by Shani et al (2000) reflects a change in emphasis towards using computers *"to facilitate human interaction"*. Its value for organisations increases with the increase of people using it. Therefore a critical condition for its success is organisations convincing their people to use it.

Essentially, this means getting people to incorporate the use of groupware into their working patterns. Ruggles (1998) highlights that many groupware implementations efforts *“fall victim to a build it and they will come approach”*. For groupware tools to become drivers for knowledge sharing organisations have to focus on the people, their needs and their issues.

3.3 Investigating the influence of Culture

The author from the investigation of the industrial context and from the review of literature thus far has realised that culture influences knowledge sharing significantly. This section will look into what culture is, the challenge of language and finally the dynamics of politics.

3.3.1 What is Culture?

Balthazard and Cooke (2004) consider knowledge as *“the glue that holds organisations together”*. They argue that it is not *“just one aspect of the game – it is the game”*.

Although the deep-reaching influence of culture on organisations is unquestioned, its definition is harder to pin down. This is partly because it manifests within humans and therefore becomes subject to human complexity. Essentially, it is a concept linked to the people and the structure of an organisation.

According to Schein (1996) culture *“is a set of basic tacit assumptions about how the world is and ought to be that a group of people share and that determines their perceptions, thoughts, feelings, and, to some degree their overt behavior”*. He argues that it manifests in three levels; the level of deep tacit assumption, the level of espoused values and day to day behaviour.

These levels provide a framework through which culture can be studied. The first level of tacit assumptions are built over time and as highlighted by Alavi et

al (2006) individuals use them to *“make sense of ongoing events, activities and human relationships”*.

The second level of espoused values is more of a tangible manifestation of culture; in the context of knowledge sharing these would include values like collaboration and teamwork. Alavi et al (2006) suggest that these values *“can be seen as a set of social norms”* that define what is acceptable behaviour of individuals within organisations.

The final level of day-to-day behaviour refers to the way people act. Schien (1996) argues that behaviours should not, in and of themselves, be used as the criterion to judge an organisations culture. He explains that this is because *“situational contingencies often make us behave in a manner that is inconsistent with our deeper values and assumptions”*.

The three levels of culture in Schein's (1996) framework allude to the importance of three factors: individual paradigms, social norms and situational contingencies. As culture is seen as a critical factor to the success of knowledge initiatives, influencing these factors in order to make culture more favourable for knowledge initiatives is paramount.

Although the need to change culture is recognised, Laycock (2005) highlights, organisations often underestimate the size and scale of cultural change required for knowledge initiatives. He argues that this is because organisations take *“a far too simplistic view of their structure, culture and overall their readiness for change”*.

According to Senge (1990) effective leadership is central to overcoming this problem. He argues that successful change can only be achieved when leaders convincingly communicate a *“picture of what might be - (i.e. what KM can do for staff) - that is more important to people than what is”*.

3.3.2 The challenge of language

The understanding of Knowledge, as that which give people the capacity for action, is built on the understanding that it is sourced to a 'justified true belief'. In the context of knowledge sharing, the importance of language arises from the need to 'justify' ones belief. Language is the instrument that individuals employ to communicate what they know. It enables other parties to not only understand what's being communicated but develop the confidence to act on it.

Culture has a significant influence on how people are required to use language in order to construct their justifications. Goddard and Wierzbicka (1997) argue that the influence of culture is that it stipulates "*conventions of how people are expected to participate in conversations*". This suggests that the way you construct language is subject to the context - that is to say the particular conditions or circumstances through which it is deployed.

Nancy Dixon (2002) argues that successful knowledge sharing organisations need to understand what the party on the other side of the conversation, namely the receiver, experiences. She explains that organisations "*need to develop thoughtful ways to support the receiver*".

While developing ways to support the receiver, Dixon (2002) emphasises the importance of understanding three elements:

- Related knowledge;
- The assumptions behind questions; and
- The relationship between knowing and identity.

1. Related knowledge refers to knowledge that the receiver can associate information or ideas to. Dixon (2002) explains that people who are "*skilled in knowledge sharing often spend a considerable time at the beginning of the*

conversation trying to establish what the potential receiver already knows” in order to help them find connections.

2. During the process of knowledge sharing, questions will be asked. Questions in themselves are not bad, however if not effectively addressed can foster skepticism in the knowledge trying to be communicated. Dixon (2002) argues that the unasked need to be understood as well as the asked. She explains that the sharer of knowledge needs to gauge *“why the question is being asked as well as the context in which the question is embedded”*.

3. Brown and Duguid (2001) suggest that *“learning is inevitably implicated in the acquisition of knowledge, but it is also implicated in the acquisition of identity”*. On a similar basis, Dixon argues that knowledge is *“integrated with the sense of self”*; sharing it not only involves sharing a resource but a sense of identity.

The literature refers to emergence of story-telling and narratives as a vehicle for knowledge sharers to enhance the experience of the recipient. Srinivasan (2004) argues that stories and narratives can be critically important in creating shared knowledge and values. He highlights that they allow people to record their memories and lessons and can *“enhance the process of communication”*.

Effectively communicating stories and narratives requires the effective exploitation of language. As argued by the Cambridge philosopher Ludwig Wittgenstein (1961) the limits of language means the limits of my world.

3.3.3 Politics: Is Knowledge Power?

Politics is a concept that is strongly related to the notion of power in organisations. In the context of knowledge sharing it has manifested in behaviours that correspond to the cliché knowledge is power. Organisations

that have tried to encourage knowledge sharing have often encountered behaviours that stem from this cliché.

The issue, principally, stems from culture; if knowledge is viewed as a possession, then it may lead people considering it as a source of power. However, if knowledge is viewed as that which gives people the capacity to act, then fundamentally like any action it is something that is learnt. This view is interesting because as argued by Senge (1997) *“most capacities for action that are important for organisations are collective”*.

As a result, for people to have their knowledge appreciate in value - that is for them to learn how to do things better, they need to think collectively. As people have strengths in different areas, knowledge sharing leads to the improvement of people as a whole.

If the individuals in the organisations have a culture, which espouse values like learning, then the chances are that rather than viewing knowledge as power, knowledge sharing will be viewed as power.

This mindset places emphasis on social capital. That is to say the accruing of value from the network of relationships and personal contacts that individuals have.

3.4 Summary

The literature review has covered three main themes KM, the role of knowledge sharing and the influence of culture. The purpose of the chapter was to provide an understanding of the main issues that revolve around these themes.

The findings from the investigation of the industrial context flagged up a number of issues and challenges. The author throughout the process of the literature review was identifying some the key factors that contributed to these

challenges. In order to create guidelines that could help organisations overcome them.

In the context of KM, the author looked into the problem of distinguishing knowledge from information, the challenge of managing knowledge and the multiplicity of issues that arise in adapting strategies and then operationalising them.

In regards to knowledge sharing, the author looked into the role of context and the social and technological enablers that facilitated this. Finally, in the context of culture and its influence the author gave insight to the nature of culture, the importance of language and whether knowledge is power.

Using the understanding gained from the literature review and from the investigation of the industrial context the author is in a position to develop a guideline that can help organisations improve the central component of knowledge management, namely knowledge sharing.

Research Methodology and Design

Research is to see what everybody else has seen, and to think what nobody else has thought

Albert Szent-Gyorgyi (1893-1986)

The central focus of this research is how organisations can improve knowledge sharing in their organisations. As identified in the literature review knowledge sharing is influenced by a range of elements that include, amongst others, the problematic nature of knowledge, the role of context and the challenge of language.

The author will seek to help organisations improve knowledge sharing, by developing a guideline, which exploits the expertise of researchers in this area and practitioners in industry.

This chapter will present the methodical approach that the author adopted in developing the guidelines. It describes what a research methodology is and outlines the design for this research.

4.1 Methodology

Research is a process of inquiry; its scope is to contribute to existing knowledge. Principally there are three main purposes of research; explaining how a new problem can be structured and identified, describing how a solution to a problem can be developed or assessing how feasible a solution is to a given problem by providing empirical evidence. These three purposes are called exploratory, descriptive and explanatory (or empirical) research (Robson, 1993).

A research methodology broadly outlines how the research is realised. It should consist of a strategy of analysing data, an approach for the gathering

of data and a method through which theory or findings are derived. The next sections will break the methodology into its components; strategy, approach and method.

4.2.1 Research strategy

The research strategy reflects the general orientation through which the research is conducted. Researchers have a tendency for two types of orientations: quantitative and qualitative.

In broad terms, as argued by Bryman (2004), the difference between these two orientations is that quantitative strategy emphasises on quantification in the gathering and analysis of data, whereas a qualitative strategy emphasises on words.

This research is exploratory in nature. It will be based on both primary and secondary sources in the form of case studies and the literature review. The principal strategy that is employed is a qualitative research strategy.

4.2.2 Research approach

The approach that a researcher takes in designing a study is called epistemology. An epistemological issue is concerned with what is regarded as acceptable knowledge in a given discipline (Bryman, 2004). Two major approaches are used in the study of social research; Positivism and Interpretivism.

A central issue differentiating the two approaches is the question of whether it is appropriate to study the social world - that is the study of people and their institutions, using the instruments from the natural sciences – that is the study of natural phenomenon.

Positivists represent those who advocate the application of instruments from the natural sciences, like experiments, surveys, and field studies, to the study of the social sciences (Blaikie, 1993). The approach is explanatory and quantitative in nature; it enables researchers to uncover findings that allow for predictions or causal explanations (Glesne and Peshkin, 1992).

In contrast, those who subscribe to interpretivism hold the view that the social sciences are fundamentally different to that of natural sciences. Therefore they argue it requires the use of instruments, like interviews, that reflects the distinctness of humans against natural order (Bryman, 2004).

The interpretivist approach is suited for this research as it is exploratory and qualitative in nature; it enables researchers to reveal interpretations or gain understanding of the perspectives of people. (Glesne and Peshkin, 1992).

4.2.3 Research method

The approach discussed above revolves around how data is gathered; in contrast, the method deals with how theory is generated or tested. Research can be conducted using two methods: deductive and inductive.

The inductive method relies on instruments like interviews. It is used in research where theories and hypothesis occur after the gathering and analysis of some or all of the data (Robson, 1993).

The deductive method, on the other hand, relies on instruments like surveys and experiment. It is used in research where questions raised by a hypothesis, that is deduced from theory, need to be tested. Robson (1993) describes the process of deduction as consisting of five sequential stages:

1. *Deduce hypothesis from theory*
2. *Data collection* - Occurs after hypothesis is expressed in operational terms

3. *Findings* - Results from the testing of the hypothesis
4. *Hypothesis confirmed or rejected* - based on analysis of findings
5. *Revision of theory* – if necessary

The essential distinction between the two methods is that the deductive method tests theory and the inductive method generates theory.

The author in this research will use a mainly inductive approach, that is to say constructing meaning and relationships from interview responses in case studies combined with a deductive approach to validate the guidelines.

4.3 Research Design

Robson (1993) and Yin (1994) argue that the research question being studied is important to keep in mind during the design of a research, so as to ensure that it is appropriate and relevant. This research will focus on how knowledge sharing can be improved in organisations.

4.3.1 Introduction

The author in this research adopted a qualitative strategy that entailed the use of case studies and interviews. It enabled the author to gain insight to how participants interpreted the terms 'sharing' and 'knowledge' and additionally how the former influences the exchange of the latter.

The use of interpretivist instruments like interviews, have the potential of introducing the author to the perspective, assumptions and constructs of the interviewees. Hence facilitating the uncovering of new insights and underlying issues.

4.3.2 Overview of Phases

The author conducted the research over three phases.

1. Investigation of knowledge sharing and the wider area of knowledge management
2. Review of case studies and the development of the guidelines
3. User Evaluation of guidelines

Table 4.1 below shows the phases, their duration, how the data was gathered and analysed.

	1. Investigate KS and wider area of KM	2. Conduct case studies and develop guideline	3 User Evaluation
Date and Duration	Jan – July 2006	July – Aug 2006	Aug – Sept 2006
Data gathering method	Systematic review of literature and questionnaire	Semi-structured Interviews	Surveys
Analysis method	Content analysis and unit analysis	Analysis of quotes	Unit analysis

Table 4.1 Phases, Duration and Analysis Method

The nature of the research was such, that the author over each phase was developing understanding in the field, which in turn was nurturing the development of theory regarding the guidelines. An overview of all the phases is shown in figure 4.1.

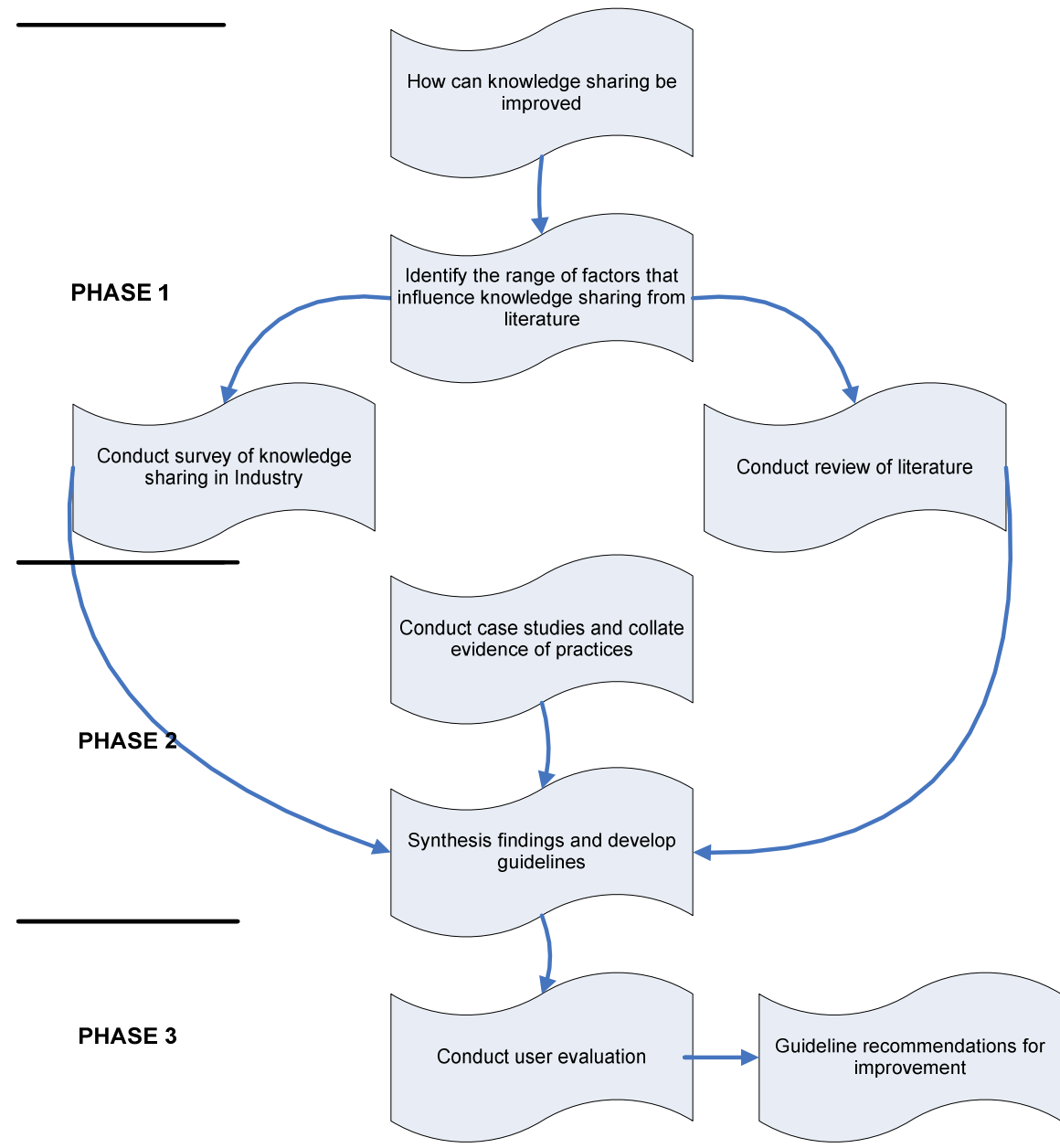


Figure 4.1 Overview of the phases

4.3.3 Phase 1

Two key activities took place in this phase; the review of literature and the questionnaire based investigation of knowledge sharing in industry. The purpose of this phase was to:

- To understand the range of elements that influenced knowledge sharing
- To investigate the current underlying issues with knowledge sharing in industry.

This phase was important as it provided the context behind the study. In regards to the literature review the main source of information was the ABI Proquest database. It was selected as it provided access to a comprehensive range of articles and sources that covered both knowledge sharing and the wider area of knowledge management.

In regards to the questionnaire, the author sent a number of questionnaires of which 54 were returned. The industries included consultancies, pharmaceuticals, professional services and manufacturing.

The questionnaires enabled the author to identify what industry perceived of knowledge sharing, the level of knowledge sharing in their organisations and the factors that influenced it. It was done electronically as it enabled the author to instantaneously get the results once questions were completed, thus crucially saving time.

4.3.4 Phase 2

This phase consisted of two parts; the conducting of case studies and the synthesising of findings for the development of the guidelines.

Part 1 Conducting of case studies:

The author reviewed knowledge management in four organisations. The industries that the organisations operated in were engineering, professional services, business consulting and voluntary public sector.

The criterion for selecting the case study organisations were, firstly that the individual from the organisation was a knowledge manager i.e. a subject

expert and that the organisations has been working with knowledge management for over six months - that is to say there was a basic degree of maturity.

The author in each organisation conducted semi-structured interviews with the knowledge managers. It provided the author with valuable understanding into what it meant to be a knowledge manager in industry. It highlighted some of the practices, further challenges and areas of current focus.

The author used a dictaphone to record the responses from the knowledge managers. The purpose of this was to enable the author to focus on the words that were used by the interviewees. The responses gave insight to a range of topics that shape knowledge management.

To induce meaning and new understanding from the responses they were coded into a database and clustered around their associated topics. This allowed the author, for instance, to query a particular topic and gain access to all the quotes that related to it. Refer to Appendix E for sample entry.

The case studies were important as it enabled the author to analyse and develop a holistic view of the practice of KM in industry. Moreover, it enabled the author to identify a possible frame to structure the guidelines.

Part 2: Developing Guidelines

The guideline embodies the synthesis of the findings from the literature review, questionnaire and the case studies. It aims to address the number of challenges of knowledge sharing identified over the course of the research. In order to help organisations improve the levels of which knowledge is shared it within their firms.

The factors that influence knowledge sharing have been found to be wide ranging, as such, the author has drawn from range of academic and industrial practices that aim to address them. The structuring of the guideline gained inspiration, primarily, from the topical areas that were identified from the case studies.

The case studies enabled the author to develop a holistic view of not only the process of knowledge sharing but the wider practice of knowledge management. This holistic view is inculcated in the structure of guidelines; it covers the areas of strategy, process, people and technology.

In addition to the findings identified in the literature review, questionnaire and case studies; where necessary, the author sought understanding of practices from literature gained using the Scopus database.

The Scopus database provided broader coverage, than ABI Proquest used for the literature review. It gave the author access to both journals and web resources that provided insight to various levels of detail.

4.3.5 Phase 3

The user evaluation was designed to take place electronically; the author embodied the guidelines into an internet based framework. Thereafter a link of the internet based framework, along with instructions of how to review it was sent to industrial practitioners. Once reviewed, the practitioners were requesting to complete an evaluation questionnaire.

The evaluation questionnaire was structured with four sections:

- Ease of Use
- Usefulness
- Benefits
- Background

The responses from each of these sections were analysed and used to understand how industry perceived the guidelines.

4.4 Summary

This chapter has provided insight into three areas of the research; the strategy of analysing data, the approach for the gathering of data and the method through which findings are derived. It highlighted that the principal strategy being employed is qualitative; this was explained to entail using Interpretivist instruments like interviews within four case study organisations. Additionally, the method employed to derive findings was explained as being principally inductive.

The research design was explained to consist of three phases, the work related to the first phase; investigation of knowledge sharing and the wider area of knowledge management, is detailed in chapters 2 and 3. The next two chapters, 5 and 6, present the work related to the second phase; review of case studies and the development of the guidelines. Work related to the completion of the final phase; user evaluation of the guidelines is presented in chapters 7 and 8.

Case Studies

Learning without thought is labour lost; thought without learning is perilous.

Confucius (551 BC - 479 BC)

This section reviews the interviews conducted by the author, in each of the four case studies. The purpose of the case studies was to enable the author to develop a holistic view of the practice of KM in industry. As knowledge sharing is central part of knowledge management, understanding the whole practice enabled the author to realise where knowledge sharing fitted in.

According to Yin (1994) cases studies are preferred strategies when *“the focus is on a contemporary phenomenon within some real life context.”* As knowledge is a contemporary phenomenon it was important for this research to understand how it was managed and shared within real life contexts.

Semi-structured interviews were conducted with knowledge managers in each of the case studies. Anonymity was assured to all the participants so as to enable an open discussion. As such, in this section each case study is referred to as company (A....D).

5.1 Overview of Case Studies

The industries of each company, being used as a case study, are shown below:

Company A – Voluntary Public Sector

Company B – Professional Services

Company C – Engineering

Company D – Business Consulting

All of the companies have or are in the process of undertaking knowledge management initiatives. Knowledge management functions, of varied structural sizes, existed in all of the companies studied.

It was identified that Company B has been working with KM the most, for approximately 17 years. Company C and D have been working with KM both for approximately six years. While, Company A has recently launched KM and have been working with it for the last eight months.

5.2 Review of Case Study Questions

The semi-structured interviews in each of the case study companies were directed by a pre-prepared set of questions. The nature of the interviews was such that the author was able to explore new concepts and jargon once introduced. The questionnaire was designed with four sections;

- Background;
- KM Projects;
- KM and Staff; and
- KM and strategy.

A sample of the questionnaire with detailed responses is provided in the Appendix D.

5.3 Case Study Findings

This section will provide some key findings that the author had determined from the case studies. The findings stem from specific questions and explain some of the trends and common approaches to knowledge management in the case studies. Detailed responses to the interview questions for each case study have been reserved for the appendix, to enable this section to be concise.

Section 1: Background

The objective of the questions in this section was to identify the role of the KM function and its level of maturity within the organisation. It consisted of three questions.

Q. Briefly describe the activities of the knowledge management services?

All the knowledge managers interviewed were managing and nurturing what are called communities of practice (CoPs). Broadly, these are groups of people with similar interests that have been brought together to share and generate value from each others ideas. The author found that KM functions are shifting from providing technological services to a more people centred service.

Section 2: KM projects

This section consisted of five questions. The purpose, principally, was to identify three things; what the practitioners considered KM problems, the type of projects that they were working on and the challenges and overall benefits that have been realised.

Q. Can you give me an idea of some of the knowledge management projects you are currently working on?

It was found that organisations with aim of 'knowing what they know', as a first step, tend to seek to develop skills and lessons learnt databases. For example, the first project that Company A carried out was a knowledge audit. It recently launched KM and this project resulted in the development of a skills database.

It was identified that, as databases increased with content the, technology projects starting to focus on content management and search and retrieval techniques. Company C is carrying out extensive research on semantic web technology. Whereas Company B has recently rolled out a global intranet, of which content management demands an important role.

Q. What would you say are the main benefits Company (A...D) have realised from KM?

It was found that companies which had business leaders more involved in KM projects experienced an increase in collaboration and a greater sense of business synergy. It seemed that companies B and D had been making headway in actively involving the business leaders in KM. In company B business leaders were incorporated into CoPs, whereas in company D a steering board with business leaders was set up.

The author identified that all the KM projects resulted or were projected to result in an increase in cross divisional knowledge exchange.

Q. What do you think are the key challenges for KM in your organisation?

The author identified a number of challenges that KM face in organisations, these include:

Company A - Overcoming resistance to change

Company B - Providing knowledge 'just in time' rather than 'just in case' basis

Company C - Persuading senior management to invest scarce resources in KM

Company D - Operating amongst different work ethics/cultures

Section 3: KM and Staff

The purpose of this section was to identify the impact of knowledge management on the employees within the company. It consisted of four questions. The questions asked, aimed to identify the type of KM tools available to employees in the organisation, how they were introduced, how employees felt about KM and the challenges in getting employees to share knowledge.

Q. What are the key challenges in getting staff to share knowledge?

On individual level the author found that the following challenges inhibited knowledge sharing:

Company A - Eliciting knowledge from others: Some people may be unable to express in words or documents the wisdom or knowledge they have.

Company B - Encouraging motivation: contributing to KM is not part of the job description so getting people to invest time, outside their job roles, is a big challenge.

Company C - Experts feeling a loss of control: this is a manifestation of the notion that knowledge is power

Company D - Developing trust

Section 4: KM and Strategy

This section consisted of three questions. The purpose was to identify the relationship between KM and the business strategy, its success factors and the challenges in getting senior management to buy into KM.

Q. What are the key issues in successful implementation of KM strategy?

KM was found in most of the organisations to have a link with the business strategy. Factors that organisations felt were critical in the implementation of KM include:

Company A - Expectation Management: Meeting everybody's need, obviously is impossible, it is important that expectations are managed

Company B - Business buy-in and top down and bottom up support

Company C - Ensure that KM has direction. Beyond that it is important to show management that KM is alleviating their problems

Company D - Develop guidelines and continually engage stakeholders

5.4 Emerging Topics

The responses of the knowledge managers in each of the case studies led to the emergence of a number of topics. The author has created a database of the responses, cross referencing each response with its associated topic.

This enabled the author to query particular topics and gain access to all of that topics associated responses. This facilitated the unravelling of deeper meaning from the responses. Appendix E shows a sample query in the database.

The database was constructed as shown in the table below:

No#	Section	Topic	Case Study Co	Response

Table 5.1 Database Structure

The columns, starting from the top left, refer to; the response number, the section that the response was recorded in, the topic that was inductively

reasoned from the response, the case study company that the response came from and the actual response.

In total there were 132 responses coded into the database. The emerging topics are listed below:

- Business Mapping
- Buy-In
- Collaborative Environment
- Communities
- Competency
- Culture
- Demonstrating Value
- Expectation Management
- Implementation
- KM history
- Language
- Leadership
- Lessons Learnt
- Motivation
- Politics
- Process
- Relationships
- Strategy
- Structure
- Technology
- Training
- Trust

The wide range of topics that have emerged highlight that there are multiplicity of issues that have to be addressed when organisations adopt knowledge initiatives. The guideline that the author has developed aims to

embody these ranges of issues in order to help organisations develop a holistic view of the endeavour.

5.5 Summary

This chapter has presented key findings from interviews conducted with knowledge managers in four case studies. The outcome of the case studies has been an understanding of how practitioners approach knowledge management, challenges that they have faced and the development of a potential structure for the guidelines.

The completion of the case studies marked the stage where the author, as indicated in the methodology in chapter 4, was in the position to construct the guidelines.

Developing the Guidelines

Without knowledge action is useless and knowledge without action is futile.

Abu Bakr (573 – 624)

The findings from the literature review and the industrial survey identified a range of factors that influence knowledge sharing. These findings were combined with the insight gained from the knowledge management case studies. This enabled the author to develop a guideline that could not only help organisations improve the central component of knowledge management, namely knowledge sharing, but also how to approach the endeavour holistically.

The objective of this chapter is:

- To provide the aim of the guideline;
- To present the design of the guidelines;
- To elaborate on the key areas that the guidelines focus on; and
- To present the approach organisations should take in applying them.

6.1 Aim of Guideline

The guideline aims to provide a set of pragmatic and practical actions that can help practitioners improve knowledge sharing in their organisations. It seeks to provide a holistic approach that embodies the understanding gained from the wider area of knowledge management.

An important goal of the guidelines is for it to become a tool that practitioners, could use in the planning, evaluating and benchmarking of their knowledge endeavours. In addition, the author conceives that it can be used as tool to

explain to sponsors and senior managers some of the key factors that need to be taken into account in appraising knowledge initiatives.

6.2 Design of the Guidelines

The guidelines have been designed in a way to maximize its usability. It follows a format, which identifies:

- The goals, in the form of what needs to be done;
- The reason, in the form of why it needs to be done;
- The activities required to achieve the goal, in the form of how it is done; and
- The instance, in the form of when it needs to be done.

This design is encapsulated in the following figure.

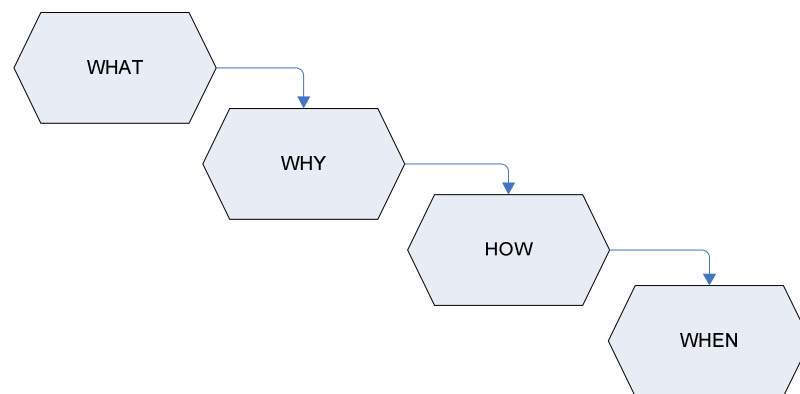


Figure 6.1 Design of guidelines

It is a comprehensive, yet simple, design that suits the pragmatic ethos behind the guidelines.

6.3 Key Focus Areas (KFAs)

The author has identified, that for organisations to improve knowledge sharing they need to focus their efforts on four key areas; strategy, people, process and technology, as shown in the figure below:

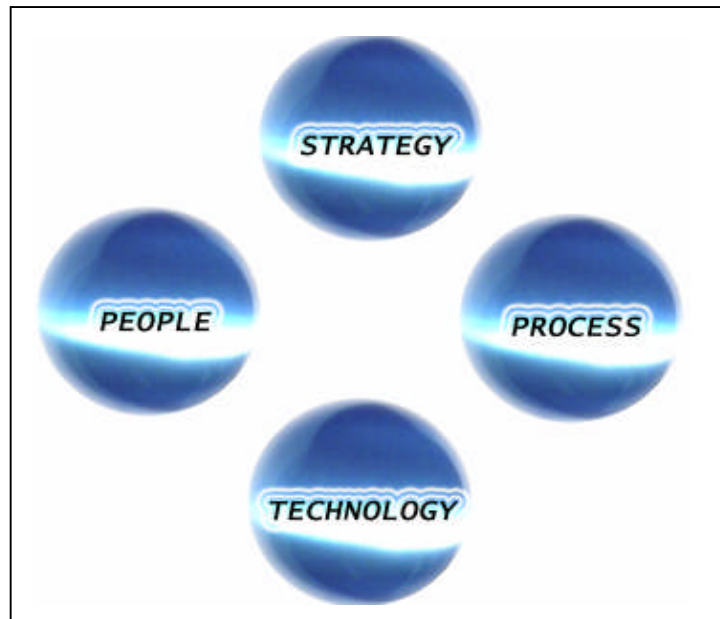


Figure 6.2 Key focus areas

These four KFAs as described in the methodology have derived mainly through a process of inductive reasoning. It was found that by in large the issues from the case studies and literature were able to be clustered around these KFAs.

In account of this, the guidelines that the author has developed revolve around these KFAs. It starts with strategy and ends with technology, as highlighted below:

1. Start with the strategy

- a. Clarify business needs
- b. Identify where knowledge can make a difference
- c. Create steering group
- d. Define KM vision
- e. Develop standards of measurement

2. Develop the People

- a. Identify and nurture communities
- b. Focus on social capital
- c. Map communities to business needs

3. Understand Processes

- a. Create process analysis
- b. Do a knowledge audit
- c. Strengthen identified networks

4. Exploit technology

- a. Build on existing technology
- b. Focus on collaborative technologies
- c. Develop yellow pages
- d. Develop knowledge repositories
- e. Invest in search and retrieval tools

Figure 6.3 below encapsulates these guidelines:

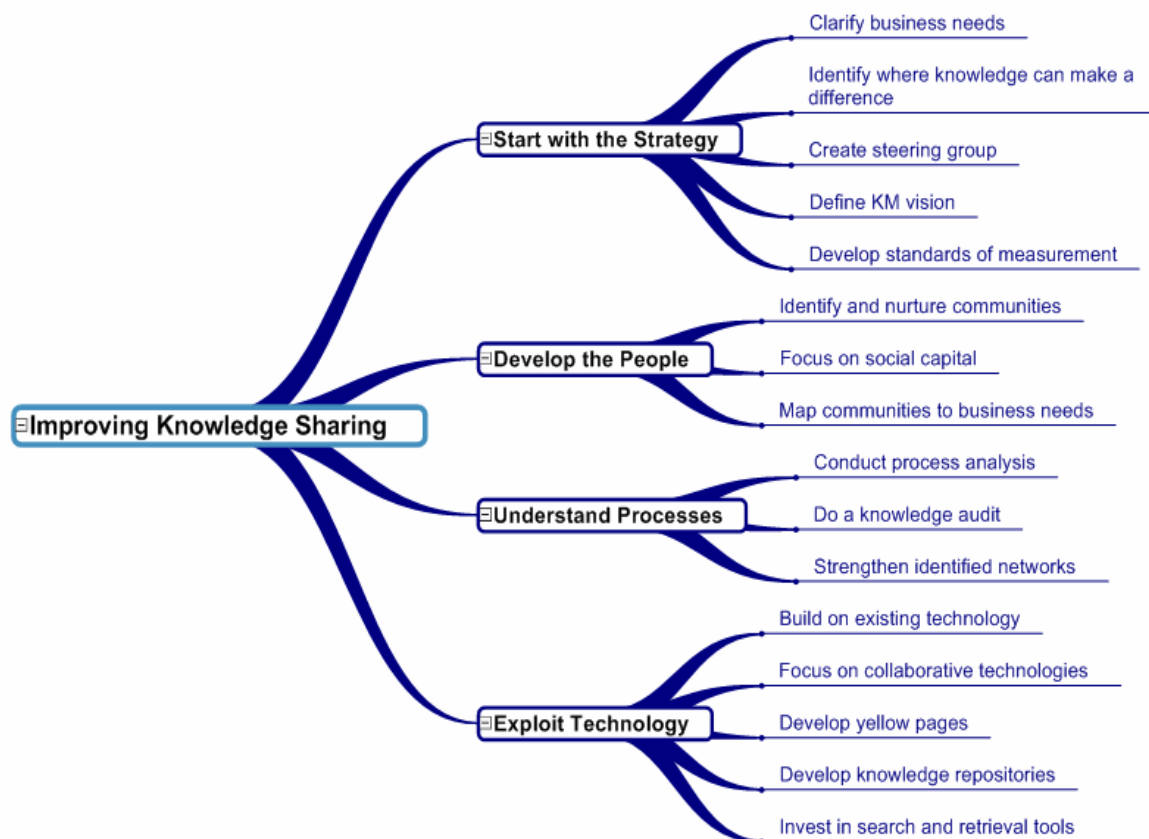


Figure 6.3 Overview of the guidelines

The following sections will address each KFA in detail.

6.4 Strategic Focus

Focusing on strategy entails organisations assessing their objectives, their plans for achieving those objectives and the resources that are used to implement those plans. It is the central KFA, which influences with increasing definition the areas of people, process and technology.

The intent of the strategy is to deliver business value. To ensure that the knowledge sharing initiatives in organisations deliver value, firms need to ensure it is strategy driven. The figure below summarises the developed strategic focused guidelines:

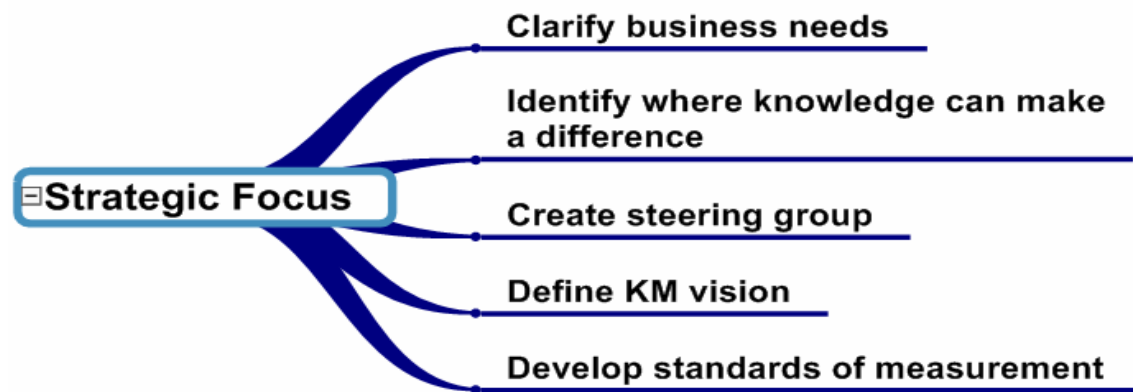


Figure 6.4 Strategic focus

6.4.1 Clarify Business Needs

What:

Organisations as a first step of aligning their knowledge initiatives to the business needs, must clarify on a strategic level what their needs are now and what they maybe in the future.

Why:

Only after organisations clarify their business needs can knowledge initiatives be developed to act like a proactive force, which support these needs.

How:

Strategic thinking about needs is far from easy; there are various different ways of thinking about it. Treacy and Wiersema (1997) present a useful framework; they argue that organisations achieve success by being leaders in one of three value disciplines: operational excellence, product leadership and customer intimacy.

Operational Excellence: organisations that focus on this discipline aim to have leadership in price and customer convenience, which results from their efficient low cost processes. Examples are Dell and Tesco.

Product Leadership: organisations that focus on this discipline aim to have novel, premium priced products, which result from their drive to innovate and develop new solutions. Examples are Sony and Intel.

Customer Intimacy: organisations that focus on this discipline aim to best meet customer needs; they are those that go the extra mile to personalise solutions for customer. Examples are Management Consultants.

Organisations by identifying which of these value disciplines they are leaders in now or aim to be in the future can then identify what they need to do, in order to lead in that discipline.

When:

Organisations should make clarifying their business needs their first step. This helps them set up knowledge sharing initiatives that are tailored to their business needs.

6.4.2 Identify where knowledge can make a difference

What:

This activity has two parts;

- Developing an understanding of knowledge;

-Identifying how knowledge can facilitate organisations in improving their performance.

Why:

The way that organisations understand knowledge, influences how they manage and promote the sharing of it. Thinking about how knowledge can make a difference, forces organisations to view knowledge from a business needs perspective

How:

Understanding knowledge

Knowledge is term whose definition has remained elusive for over a millennia. In industry what's important, as argued by Snowden (1999), is to understand what it means to use knowledge in contrast to information.

Wiig (2004) presents a good way of thinking about the difference, he argues that *"knowledge is for action and information is for description"*. Information only becomes knowledge when it generates in the user a capacity for action. As a side note, therefore, knowledge sharing is about people supporting each other to develop capacities for action.

The special element of knowledge that is most important for organisations is the tacit element. It is the element that Polyani (1962) referred to when he stated *"we know more than we can tell"*. This element of knowledge manifest in all people; It is what helps the boxer know when to slip a punch from the movement of his counterpart; it is what helps the mechanic know the problem of engine from the sound it generates and it is what helps a credit advisor generate a hunch that a client will be risk from a short conversation.

This element of knowledge develops over time; organisations can only get this to become shared by fostering greater interaction. The other element of

knowledge is the explicit knowledge, the existence of this element of knowledge is argued as dubious by some. However, it is a useful concept for organisations as it refers to what people can document and express of their knowledge. Examples are lessons learnt and documentation that result from project debriefs.

Identifying how knowledge can facilitate performance improvements

Once an organisation has developed an understanding of knowledge, they can then start to think about how it can make a difference. This thinking process should be initiated after organisations understand their business needs. Here's how knowledge can make a difference for each Treacy and Wiersema (1997) value disciplines:

Operational Excellence: knowledge about process is the most important for this discipline. It is about identifying best practices and standardising processes relative to them. Focus should be on:

- Transfer of knowledge and best practice
- Embedding knowledge sharing in peoples behaviours

Transferring and communicating best practices can be done through codifying them into knowledge repositories, which can then be made accessible to staff in the organisation. Embedding the sharing of culture in behaviours is about nurturing a culture of process excellence.

Product Leadership: knowledge about innovation is the most important in this discipline. It is about identifying and nurturing skills, along with developing an environment that encourages learning and collaboration. The focus should be on:

- Intellectual Asset (IA) Management: Generate market value from IA
- Innovation and knowledge Creation: Promote Learning

Managing IA is about identifying patents and intellectual capital that generates market value for the organisation. Promoting knowledge creation and

innovation depends on the creativity of people. It is about encouraging interaction between them. This can be done by developing guides to in-house knowledge in the way of Yellow pages.

Customer Intimacy: knowledge about the market, trends and customers needs are the most important in this discipline. It is about understanding the needs of customers. The focus should be on:

- Customer focused knowledge: obtain deep understanding from customers.

Different people within the organisations may have elements of understanding that collectively result in a bigger picture. Organisations should promote developing communities of practice that become specialists in the needs of customers.

When:

Thinking about where knowledge can make difference should occur after organisations clarify their business needs.

6.4.3 Create a steering group

What:

The steering group should consist of key people from all the echelons of the organisation. Their role is to:

- Create shared understanding between strategy and business model;
- Define what knowledge should be managed;
- Identify resources required;
- Set the scope for knowledge endeavours;
- Manage expectations; and
- Manage lateral tensions across divisions.

Why:

The steering group is needed as they are the body that translate strategic aims to operational objectives. Essentially, they ensure that knowledge endeavours generate value.

How:

As the steering group requires people from all echelons of the organisation, creating it requires the support of the highest authorities in the firm, like the CEO and senior executives. It is important that they are bought in first. One way of doing so is highlighting the importance of knowledge for the firm's future performance.

The author in a survey conducted in this research found, for instance, that 88% out of 49 industrial respondents considered the movement of an expert from their department to another organisation, as something that would strongly effect or effect the knowledge available for co-workers in that department. Moreover, 79% considered the retirement of an expert having the same effect.

As the movement of people, with expertise, between organisations is a common occurrence and the retirement of them is an unavoidable reality; the importance of getting that knowledge (or as much of it as possible) to be encapsulated in others is paramount. This is particularly the case is the United States, with the baby boomer retirements is becoming an ever closer reality.

Once the staff driving this project have bought in the most senior executives; they need to, through them, communicate the importance of this steering group to key people that need to be part of this group. Upon the steering group being created, senior executives should maintain continuous and open support for it.

When:

This should be done during the early phases of an organisations journey of focusing on knowledge to deliver value.

6.4.4 Define KM Vision

What:

The KM vision is an inspiring account of where the organisation will be in the future, as a result of effectively managing knowledge.

Why:

The vision sets the wheels of change moving, when done right it can become a powerful driver and catalyst for action.

How:

The KM vision should be defined in conjunction with the steering group. This is because it should be question driven and would be more rigorous with the participation of key people. The type of questions that need to be addressed are:

- Where are we now?
- Where do we want to be?
- How do we get there?

The purpose of asking these types of questions is to enable organisations to develop a vision that generates what Peter Senge (1990) calls creative tension.

Senge (1990) highlights that creative tension is the generating in peoples mind a *“picture of what might be - (i.e. what KM can do for me) - that is more important to people than what is”*. He argues that the gap between the two, creates a natural tension that energises change.

Ernst & Young (Ruggles, 1998), in an industrial research, found that the greatest difficulty in managing knowledge was changing peoples behaviours. In this regard, developing a KM vision which is inspirational and that generates creative tension, through its communication, is paramount.

When:

It should be developed after the steering group are created and before the organisations starts to operationally launch knowledge management.

6.4.5 Develop Standards of Measurement

What:

Measurement standards are used to assess how organisations are benefiting or going to benefit from a particular endeavour.

Why:

Traditionally, managers measure Returns on Investment (ROI), however in the case of knowledge management the resource, namely knowledge, is not easy to measure. As a result, it is important for organisations to develop non-traditional standards of measurement.

How:

Developing standards of measurements for KM requires organisations to, as argued by Miles et al (1998), to shift their economic perspective towards one that caters for a system of collaboration. The challenge is that in collaboration individuals voluntarily combine efforts to produce outcomes, which increasingly are non-economic forms of capital like social capital. Traditional standards of measurement find it difficult to measure such forms of capital.

Although, organisations like Skandia are wrestling with this issue, the author suggests organisations to consider fact-based stories that are linked to business objectives i.e. faster time to market as a standard of measure.

Stories can be considered a non-traditional way of measuring success. People identify well with stories, particularly if they are fact driven. If done well it can become a vehicle that helps illustrate the value that the organisation is gaining from knowledge sharing.

To demonstrate value, as argued by Collison and Parcell (2001), those involved in the project should collate from senior executives and directors stories with \$ value attached to them. These stories not only are credible, as result of whom it sourced to, but also can be used to inspire further knowledge sharing initiatives.

Wenger and Snyder (2000), highlight that at Shell interviews were conducted to collect stories and then were published in newsletters and reports. Other organisations like AMS organised yearly competitions to collect the best stories.

When:

The organisations should be made aware of the standards of measurements that will be adopted at the beginning of a knowledge sharing initiative.

6.5 People Focus

As knowledge sharing, essentially, is a people to people process its success is inextricable linked to people. Focusing on people entails understanding how people relate with one another and how organisations can cultivate relationships that generate value for not only the firm but the individuals themselves.

Culture is known to be one of the greatest impediments to knowledge sharing. Essentially it is about people; making culture more conducive for knowledge sharing requires people to endorse it.

The figure below summarises the people focused guidelines developed:

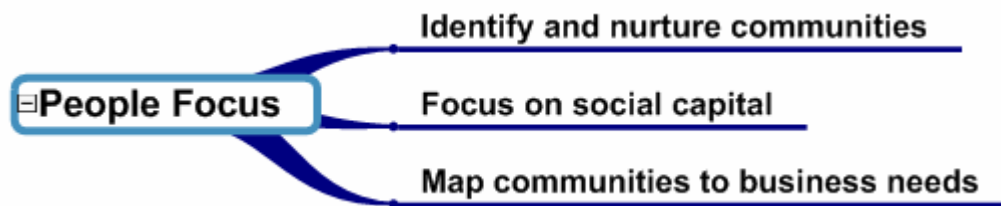


Figure 6.5 People focus

6.5.1 Identify and Nurture Communities

What:

The existence of communities, in organisations, was identified in a research by Etienne Wenger and Jean Lave (1991). They are groups, which form outside the formal structures in a firm, around shared practice and interest. To gain value from these communities, organisations must identify and then nurture them.

Why:

Its important to identify and nurture them because, as identified by Lesser and Storck (2001), the informal relationships between the individuals driven by their common interest develops an environment that is conducive for knowledge sharing.

How:

Identifying communities

To identify communities it is important to study existing relationships between people. Cross et al (2002) argue that the “boxes and lines” in an organisational chart “only partially reflects the way work gets done” in a firm. Identifying the existence of communities is an outcome of analysing processes (refer to determining how knowledge flows, pg 85).

Nurturing communities

Nurturing communities and brokering relationship is essential for knowledge sharing. Five key activities need to be carried out:

- Support existing relationships;
- Identify the right leader;
- Focus on language;
- Change individual paradigms; and
- Build trust.

Support existing relationships

Existing informal relationships should be supported. Wenger and Snyder (2000) highlight that communities are vulnerable because they lack legitimacy, they argue that one way of strengthening them is *“to provide them with official sponsors and support teams”*.

Identify the right leader

Communities to facilitate the coordination and managing of knowledge require the right leader. 12% of the respondents in a research conducted by Ernst & Young (Ruggles, 1998) found that identifying the right leader for knowledge initiatives was a difficulty. Leaders should have the following qualities; enthusiastic about their practice, inspirational and good networkers.

Focus on language

Focusing on language is essential for nurturing a community. The members should be encouraged to develop skills like story-telling, in order to communicate their view of the world to others. Moreover, as many scholars subscribe to the view that knowledge is justified true belief, language can be a vehicle that members of communities can use to propel and justify their ideas and beliefs.

Change individual paradigms

Individual paradigms, is an important factor that Edgar Schein (1996) argued contributed to the culture in an organisation. It refers to the framework that individuals use to make sense of on-going events around them. Communities

can be used to change individual paradigms and hence culture; according to McDermott (1999) culture change should be considered a community issue.

Build trust

Trust is essential if people are to share knowledge. The author in a survey conducted in this research found that out of 49 respondents 61% said that trust had a strong effect on the levels of knowledge sharing. It can be developed in communities by encouraging participation and respect.

When:

Communities should be identified after analysis of the organisational processes. The nurturing of them should be a continuous activity from the point that they are identified.

6.5.2 Focus on Social Capital

What:

Social capital characterises a firm's set of relationships. Its central concept is that networks of relationships amongst individuals or within an organisation can be a source of value (i.e. capital).

Why:

It's common place for people to tap into relationships in organisations to deliver targets or objectives. Focusing on social capital is important as it can help people expand and accrue more value from their networks of relationships and personal contacts.

How:

Focusing on social capital entails organisation to work in four key areas:

- Information channels;
- Social norms;
- Obligations and expectations; and
- Identity.

Informational channels

Information channels are the mechanisms through which information flows. Organisations can help strengthen social capital by investing in mechanisms that can help people develop a history of interaction. In many cases these are facilitated by collaborative technologies (refer to pg 88 for more detail). In other cases firms capitalise on existing communal spaces to encourage interaction.

Social norms

Social norms refer to what is considered commonly accepted behaviour. Knowledge sharing can be supported by firms focusing on developing norms like cooperation. Edgar Shein (1996) identified that a factor that influenced culture stemmed from norms nurtured by the organisation, which he termed situational contingencies. It essentially refers to the norms that arise by how people are measured and rewarded. To facilitate norms like cooperation firms must have rewarding structures that promote a culture where cooperation is a norm.

Obligations and expectations

Obligations and expectations, essentially focuses on the idea of reciprocity. Firms should inculcate a culture where expectations of sharing knowledge are cultured. Some firms have policies where individuals are expected to return the call of colleagues within 24 hours. This is an example of strengthening social capital by developing expectations of interaction.

Identity

Identity in organisations is developed, as argued by Brown and Duguid (2001), through participation. Involving people particularly within communities can help organisations create a sense of identity that can facilitate knowledge sharing.

When:

Social capital should be focused on as soon as communities are identified.

6.5.3 Map communities to business needs

What:

Mapping communities to business needs involves identifying how they can support existing working practices.

Why:

Research by Ernst & Young (Ruggles, 1998) found that lack of shared understanding between the strategy and the business model was a major factor that impeded knowledge sharing. Likewise not developing a shared understanding of how communities can support the existing working model can inhibit their fruition.

How:

As communities are groups of people that bond around a similar interest and practice, firms must assess how these interests can support existing business needs. To do this they should develop community coordinators. The coordinators task would be to act as go between community leaders and the steering group, which consists of business leaders. They would have to continually ensure that communities tailor their efforts towards delivering business objectives defined by the steering group.

When:

The business needs may change with time, as such the mapping to business needs should be initiated once communities are identified but reviewed with time.

6.6 Process Focus

The process focus entails organisations identifying how they operate and deliver their services and goods to their customers. Knowledge sharing can be inhibited by processes if they do not support the sharing and the application of knowledge to delivering business value. In fact Ernst & Young (Ruggles, 1998) found that non-standard processes was one of the factors that impeded knowledge sharing.

The figure below summarises the process focus guidelines developed:

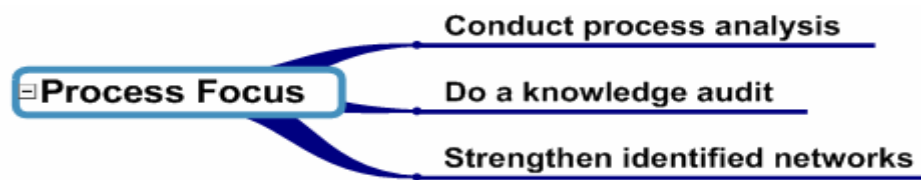


Figure 6.6 Process focus

6.6.1 Conduct Process Analysis

What:

Process analysis is about examining how the organisation currently operates, methodologies like IDEF0 are used to identify a series of inputs, actions and outputs.

Why:

As knowledge sharing leads to people developing new capacities for action, it may influence processes i.e. how things are done. As a result, it is essential that organisations develop a process competence.

How:

Those conducting the process analysis should plan a number of modelling workshops with key experts of the organisation. The workshops should be facilitated and consist of more than one expert for each given process being

studied. Methodologies like IDEF0 can be used to graphically present the understanding gained of processes.

The nature of process analysis is that it is iterative. It should be taken through a cycle of review until accurate and detail process descriptions are developed. It is important to note that, those carrying out the project, should collate process metrics during process analysis, that can be used to assess impact of knowledge sharing.

Organisations should conduct process analysis with a view towards potentially improving it and homogenising non-standard processes. This is important as research has found (Ruggles, 1998) that a factor that impeded knowledge sharing was non-standard processes.

When:

This should be conducted prior to organisations launching a knowledge sharing initiative.

6.6.2 Do a Knowledge Audit

What:

A knowledge audit aims to uncover the knowledge that exists within the organisation. Burnett et al (2004) explain that a knowledge audit should be able to *“describe what knowledge an organisation has, who has it and how it flows (or doesn’t) through the enterprise”*.

Why:

Knowledge audits enable organisations to judge as to whether they are maximising the potential of their knowledge. Wiig (1993) argues that signs that point to the need of a knowledge audit in organisations are:

- Information overload or scarcity
- Lack of awareness of knowledge and information available in the organisation.

- Knowledge duplication i.e. re-inventing of the wheel
- Common use of out of date information
- Not knowing where to find relevant expertise in a given area

How:

Conducting a knowledge audit, as suggested by Liebowitz et al (2000), requires organisations to carry out the following four activities:

- Identify knowledge that is currently used in the organisation
- Develop a knowledge inventory
- Determine how knowledge flows
- Identify any missing knowledge

Identify knowledge that is currently used in the organisation

Identifying knowledge that is currently used by people, essentially, requires firms to understand what people need to in order to carry out their jobs. This requires firms to conduct facilitated group sessions with people in the organisation.

Thomas Tong (2005) advises that organisations should be “*smart about how they introduce knowledge audits*”. In fact he suggests it should be called an inventory analysis as the idea of people being audited of what they know (or don’t know) is threatening.

So where do you start? as people essentially have to deliver outcomes, the best place to start is to ask people to identify these. Thereafter ask them to think about how they deliver these outcomes i.e. processes. Once this is identified, establish what they need to know in order to carry out a particular process. These inputs essentially are the knowledge that they use.

Developing a knowledge inventory

Developing a knowledge inventory is about identifying and documenting both tacit and explicit sources of knowledge. Not all of these sources of knowledge

maybe used, but it is about identifying what's available. Explicit knowledge refers to documentation/manuals and their location. As part of developing the inventory, firms should assess the quality of these documents, their timeliness and their relevance i.e. are they used. Tacit knowledge refers to identifying people, their competencies and their location.

Determining how knowledge flows

Determining how knowledge flows is about identifying the path from where knowledge is needed to where it is located. Various instruments like interviews or questionnaires can be used. It helps to identify where the knowledge that is used comes from and if there might be duplication. It is useful in this stage for firms to look for organisational controls in the way of policies, regulation or structure that enable or inhibit knowledge flow.

Identifying missing knowledge

Missing knowledge can be identified by establishing what knowledge organisations will need to deliver future processes that are required to drive the company forward. Missing knowledge is important, in order to help the organisation systematically plan to develop competencies over time.

When:

The knowledge audit should be conducted during the early phases of developing strategy for knowledge sharing.

6.6.3 Strengthen identified networks

What:

Strengthening networks is about using techniques like social networks analysis (SNA) to identify how knowledge and information flow between people can be improved.

Why:

As identified by Cross et al (2002) networks are *“reflective of the way work gets done in organisations”*. Techniques like SNA can help important groupings of people in the organisation better leverage their abilities.

How:

Organisations upon conducting the knowledge audit should identify groupings of people that are strategically and operationally important to the firm.

SNA can be used to identify how the organisation can help such groupings of people to better leverage their capabilities. Instruments that can be used include surveys; the aim would be to identify all the members in a group and then establish how knowledge and information flows among them.

Cross et al (2002) suggest organisation should do the following with the results of SNA:

- *“Identify people that are highly central in networks (and so disproportionately impact a group by controlling information or decision making)” once identified “managers should consider how to reallocate informational domains or decision-making rights so that the group as a whole is more effective”.*
- *“Identify who is peripheral in a network” once identified “crafting ways to engage these people is also an important means of ensuring that expertise resident in a given network is being effectively utilized.”*

It is important to note that too much formal intervention in networks, particularly informal ones, can lead to unfavourable results. Wenger and Snyder (2000) suggest that once networks are identified organisations should provide infrastructure that would support them, but essentially let them apply their expertise in a self organising manner (refer to nurturing communities, pg 77) for details as to how to cultivate informal networks.

When:

SNA should be a study that goes hand in hand with the knowledge audit and thus should occur during or just after it.

6.7 Technology Focus

Technology is an important enabler for knowledge sharing. Although it plays an important part in knowledge sharing it will not in and of itself deliver it. Ruggles (1998) argues that *“if technology solves your problem, yours was not a knowledge problem”*. Essentially technology needs to be viewed as a necessary condition for successful knowledge sharing but not a sufficient condition.

The figure below summarises the technology focus guidelines developed:

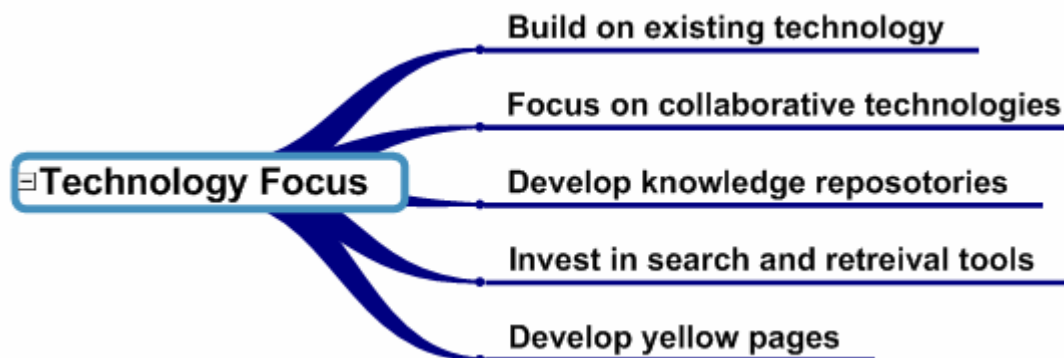


Figure 6.7 Technology focus

6.7.1 Build on existing technology

What:

Building on existing technology involves organisations taking Stock of existing information systems and other technologies like telephone and video conferencing; with the aim of addressing whether they are effectively utilizing them.

Why:

Organisations should be sure that they are fully capitalising on existing systems.

How:

Once organisations take stock of the current technologies that they have they should, using findings from the process focus (pg 82), identify what additional infrastructure is required to help the organisation enable better knowledge sharing. The additional infrastructure should then be phased into the existing infrastructure as best as possible.

When:

Prior to investing in new technologies

6.7.2 Focus on collaborative technologies

What:

Collaborative technologies embody a range of technologies that facilitate people to people collaboration.

Why:

Organisations should focus on collaborative technologies, as knowledge sharing essentially is a people to people process.

How:

Different collaborative technologies exist. These include technologies like e-mail, instant messenger, video conferencing and most famously lotus notes. The extent that organisations focus on collaborative technology depends upon their strategy for knowledge sharing.

If the organisation has a strategy inclined towards codification, that is people-to-document approach its focus on collaborative technologies may not be as much as those who have a personalisation approach, that is people to people.

Focusing on collaborative technologies requires a change on emphasis towards using computers to facilitate human interaction.

Its value for organisations increases with the increase of people using it. Therefore organisations who aim to emphasise collaborative technologies have to convince their people to use it. This requires organisations to focus on developing their people first (refer to people focus, pg 76).

When:

Organisations should focus on investing in collaborative technologies once they gain confidence that their people will use it, many companies fall victim to the notion build it and they will come.

6.7.3 Develop Yellow Pages

What:

Yellow pages are directories that aim to present, as highlighted by Iske and Boersma (2005) *“the organisation, the various teams and department and people working in those teams”*.

Why:

It is important, particularly for organisations who adopt a personalisation approach to knowledge sharing, as it helps link people with people.

How:

To develop yellow pages organisation must gather information, of varied scope, about people it normally includes; Curriculum Vitaes (CVs), research interests and profiles of competencies. It is important that organisations get people to review and up-date their sections in the yellow pages.

Iske and Boersma (2005) highlight that these *“curriculum vitae-oriented”* tools, however do not always give people full awareness of the expertise of their

colleagues. They suggest that a question and answer system should be used to address this issue.

Essentially it is a system where people raise questions on particular subjects and wait for responses. Like yellow pages people have to register as experts in a subject to receive questions on them. However, Iske and Boersma (2005) highlight that the difference is that peoples develop profiles, which build over time by *“means of the questions they have answered”*. This can act as means of generating awareness of an individual’s expertise.

When:

Yellow pages are best created after a knowledge audit has been completed and organisations have decided as to whether they will to adopt a personalisation approach to knowledge sharing.

6.7.4 Develop Knowledge Repositories

What:

Knowledge repositories are, as described by Gammelgaard and Ritter (2005), *“platforms that provide a repository of codified knowledge”*.

Why:

These databases enable information to be stored and disseminated amongst employees by way of information retrieval technologies.

How:

Knowledge repositories can store a wide range of information these include lessons learnt, best practice documents and operational manuals. To develop them, those in charge of the project need to collate them and codify them.

This involves categorising and inputting them, into a technological package. There are various packages available in the market place; selecting one is subject to specific factors for each organisation.

What's important is that documents are categorised in way that facilitates their easy retrieval. In the case of lessons learnt, people need to be encouraged to keep the repositories up to date. To ensure that this task does not become too burdensome on people, it must be simple to use and also be seen as valuable for the source.

When:

Knowledge repositories are an outcome of the knowledge audit and should be put together during or just after it.

6.7.5 Invest in Search and Retrieval Tools

What:

Search and retrieval tools are technologies that optimise a user's ability to locate and retrieve relevant content.

Why:

As the volume of information increases the ability to turn it into knowledge, that is to develop a capacity for action from it, becomes challenging. This is mainly because of the time it takes to identify relevant information. Search and retrieval tools can help address this.

How:

Search and retrieval tools allow users to query repositories for particular documents. Organisations can invest in models similar to that of internet search engines. Although current search engine models are useful they tend to be incapable of discerning the essence of a query. The return, at times, of a range of documents is indicative of that.

Zhang and Zhao (2006) suggest that the next generation of technologies to overcome this challenge will utilise "*intelligent agents*" and "*knowledge resources represented with semantic-rich metadata*". These technologies will

have the ability to learn ontology's (classifications of knowledge) and extract metadata like the author, subject matter and date of entry.

Such technologies will not only enable users to identify relevant information from large volumes of data efficiently and intuitively but also enable people to identify experts in the organisation.

When:

The level to which organisations invest in search and retrieval technologies depends on whether they aim to adopt a codification strategy. Investment in search and retrieval tools, particularly semantic based one, should wait until organisations create repositories and focus on codification.

6.8 Summary

This chapter has presented the guidelines developed for knowledge sharing improvement. It highlights that organisations need to focus their efforts on four key areas; strategy, people, process and technology. For each area this chapter has presented a range of guidelines, within which are details of what's involved, why it's important, how it is carried out and when organisations should carry it out.

Constructing the Internet Based Framework

*"True genius resides in the capacity for **evaluation** of uncertain, hazardous, and conflicting information*

Winston Churchill 1874-1965

One of the objectives of the author, which was determined in the early phases of this research, was to subject the guidelines to user evaluation. To enable this, the author developed the internet based framework (IBF). This chapter will present the aims of the IBF, the design considerations and a guide, which highlights how the IBF should be used.

7.1 Aim of the Framework

The internet based framework was designed to be the vehicle through which the guidelines could be presented to industrial practitioners.

To ensure that the practitioners were able to appreciate the comprehensiveness of the guidelines, the ability to seamlessly navigate through the content was paramount. This requirement was facilitated through functionality like links that were integral to the html pages that were used to design the internet based framework.

7.2 Design Considerations

The design of the framework aimed to take into account technological perspectives in the way of graphical user interface considerations. To enable the user to know which KFA and what activity they were viewing the author developed a matrix structure, where the KFAs were presented horizontally and the guidelines within that KFA presented vertically as shown in figure 7.1.

Moreover, in regards to the colour scheme of the interface, these were selected to improve readability of text.

The design for each KFA was structured as discussed previously; in the form of what needed to be done, why, how and when, as shown in figure 7.2.

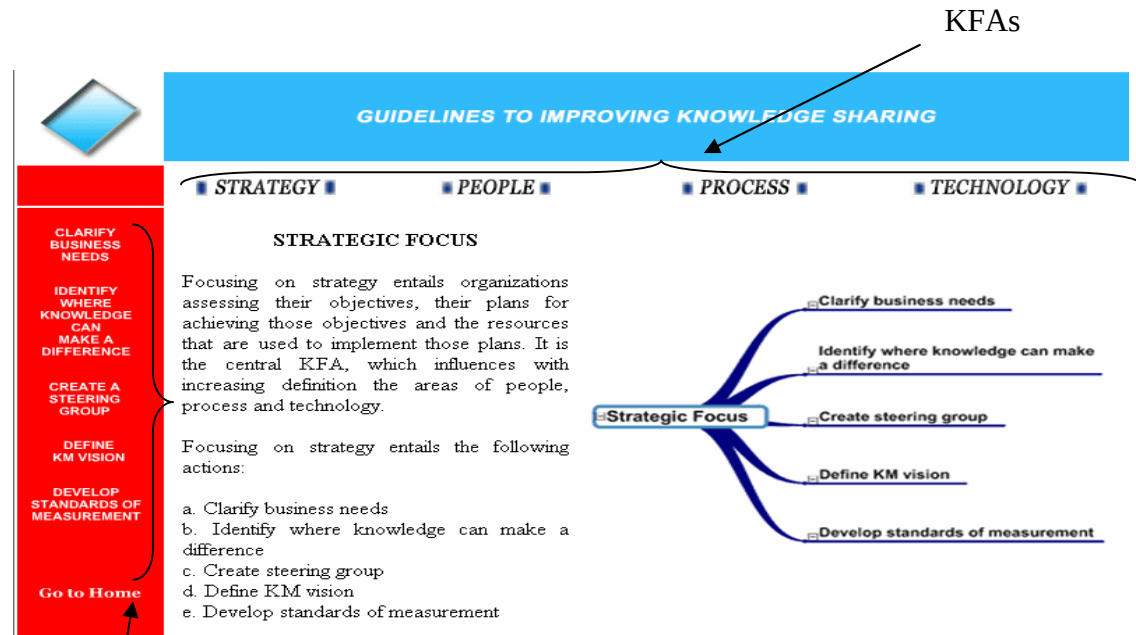


Figure 7.1 KFAs and associated guidelines

Guidelines

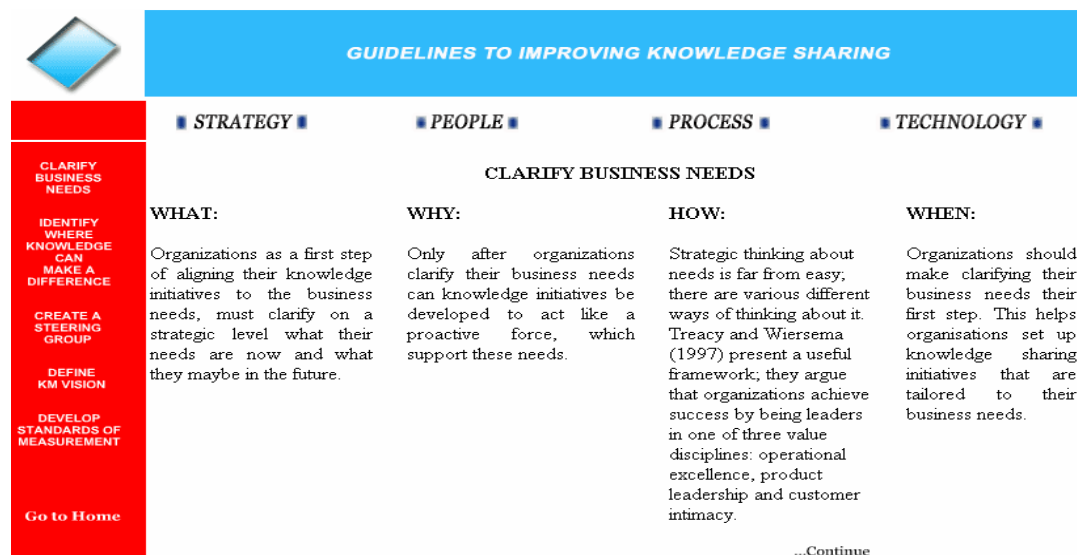


Figure 7.2 The what, why, how and when design of the guidelines

7.3 Framework Usage Guide

To enable knowledge managers and practitioners to identify how to use the IBF to help them improve knowledge sharing within their firms, the author has developed a procedural guide, as shown in figure 7.3, for which they can follow.

It is broken down into three phases; conceptualisation, reflection and action.

Phase 1 Conceptualisation: This phase is based on the understanding that the guidelines presented by the IBF have to be conceptualised within the context of the users firm. To help them do this a decision tree, as shown in figure 7.3, which navigates them through four decision points has been created.

The questions that the user needs to contemplate about in each decision point are as follows:

- Strategic decision point: *Does knowledge sharing have strategic direction and support?*
- People decision point: *Is their awareness of how to develop knowledge sharing behaviours amongst the people?*
- Process decision point: *Is knowledge sharing embedded and supported by the firms' processes?*
- Technology decision point: *Is the organisation effectively exploiting technology to support knowledge sharing?*

Based on the answers to these questions the user would navigate through each respective key focus area in the IBF.

Phase 2 Reflections: In this phase, upon users establishing some area to improve in their firms, they need to reflect and plan an implementation process, which takes into account local factors.

Phase 3 Action: This phase consists of the actual implementation. Each implementation is a project in it own right. Once complete, users can return back to the IBF to conceptualise new areas to focus on. These three phases represent a virtuous cycle for knowledge sharing improvement.

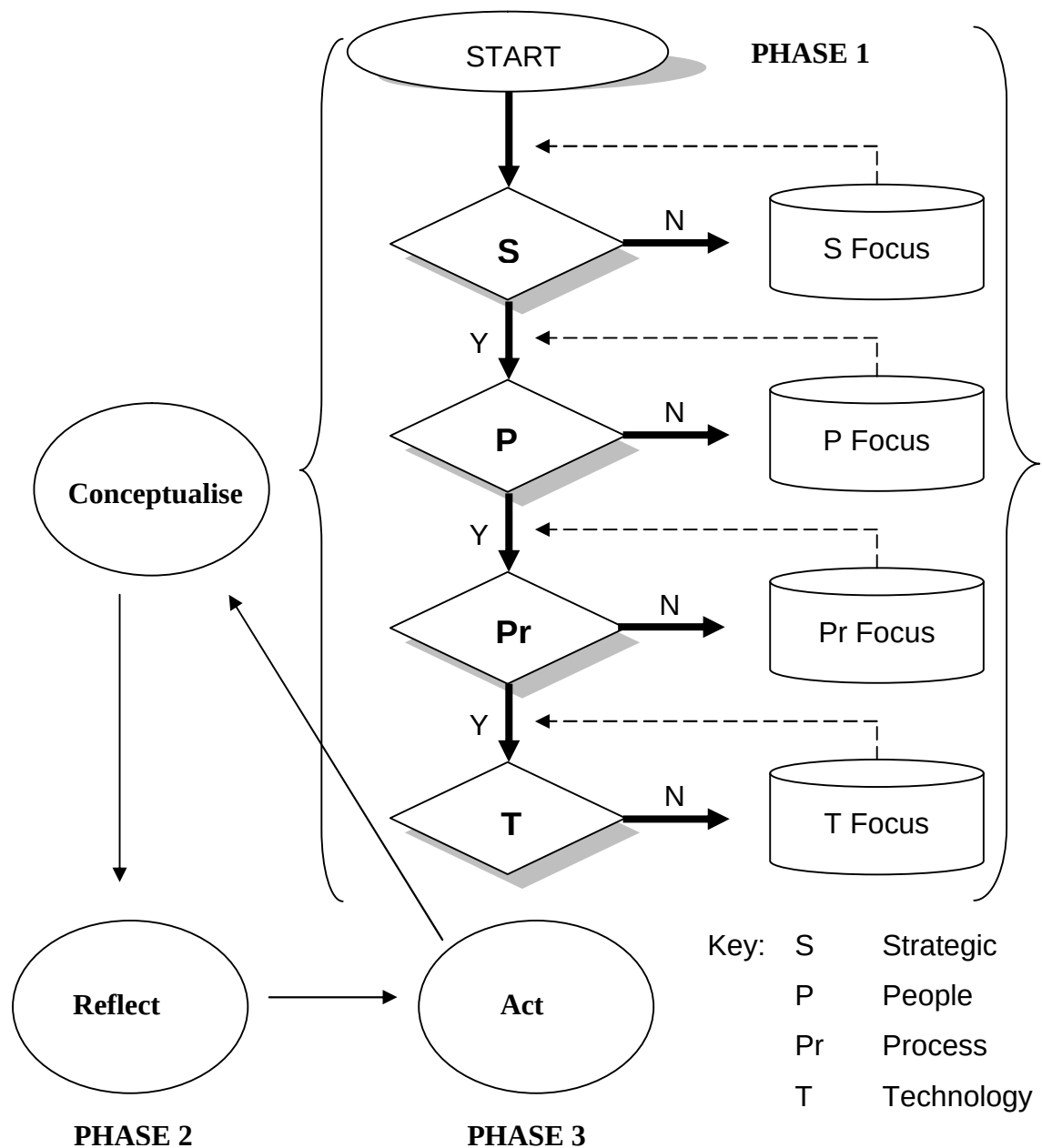


Figure 7.3 Procedural guide

7.4 Summary

The operationalising of the IBF, involved uploading it onto the internet. Once uploaded, the author created a link which was then sent to practitioners, along with the procedural guide (Figure 7.3), in order for them to evaluate it.

The purpose behind the evaluation was to gauge; the level of which the guidelines addressed current issues in industry, its usefulness and areas of improvement.

User Evaluation

No great improvements in the lot of mankind are possible until a great change takes place in the fundamental constitution of their modes of thought.

John Stuart Mill (1806 - 1873)

The user evaluation was an activity that was conducted in the final phase of this research. The purpose of it was to gain an assessment of the guidelines from practitioners in industry. As discussed in the previous chapter, the guidelines were packaged onto an internet based framework and sent out electronically.

This chapter provides details of four areas:

- The evaluation questionnaire
- The criteria users were asked to evaluate the internet based-framework (IBF)
- The discussion of the findings
- Recommendation for improvement.

8.1 Introduction to the Evaluation Questionnaire

The approach used to gain evaluation of the IBF was a questionnaire that was electronically sent to practitioners in industry along with a link to the IBF. This approach was favoured as it enabled the author to gain evaluation from practitioners in the most time effective way.

The scope of the evaluation questionnaire was to identify not so much to what extent the IBF improved knowledge sharing in organisations but to identify the existence of a need for the IBF and the usefulness of the one developed in this research.

Establishing the extent to which the IBF improved knowledge sharing in industry not only requires a greater amount of time and physical resources but also a time-intensive empirical study within a case study organisation.

8.2 Design of the Questionnaire

The questionnaire was designed with four sections:

- Ease of use;
- Usefulness;
- Benefits; and
- Background.

Sections 1-3 constitute the three criteria used to evaluate the IBF. A number of questions were used in each of those sections to gauge how practitioners assessed the IBF on each of the criteria's. The last section, background, was used to gain local information about each respondent and their organisation.

The questionnaire consisted of 11 questions that consisted of single choice and scaled based matrix questions. A sample of the questionnaire is in appendix F.

8.2.1 Evaluation Criteria

The three criteria used to evaluate the IBF, as highlighted above, were:

- Ease of use;
- Usefulness; and
- Benefits.

The ease of use criterion aimed to measure how easy users perceived the use of the IBF.

The usefulness criterion aimed to evaluate how useful users found the content of the IBF, whether they disagreed with any of the content and factors that, perhaps, would have made it more useful for them.

The final criterion was benefits. It aimed to measure how valuable the IBF was to the users. It intended to gauge how practical the users felt the content within the IBF were and whether they would consider using the IBF in their organisations or recommending it to colleagues.

8.2.2 Target Audience

The target audience for the evaluation questionnaire were those who responded and provided details from the knowledge sharing questionnaire, discussed in chapter 2, along with the practitioners from the four case study organisations. The response rate for the evaluation questionnaire due to its release coinciding with factors like annual leave was less than expected. A total of five responses were received. The respondents' roles included knowledge managers, operations managers and management consultants.

Like the previous questionnaire for reasons of practicality and time the author piloted the questionnaire and the IBF amongst postgraduate researchers prior to sending them out to industry. The feedback was used to improve the graphical user interface of the IBF and the presentation of the content.

The practitioners, who had the evaluation questionnaire and the link to the IBF sent to them, were also given instructions to review the IBF. These were based on the framework usage guide developed in the previous chapter.

Once the practitioners reviewed the IBF, which was found during piloting to take approximately 30 minutes, they were requested to complete the evaluation questionnaire.

8.3 Findings of the Evaluation Questionnaire

This section will provide details to responses of questions in each of the four sections of the questionnaire. The way the author is reading the likert scale is as following: 1 = strongly agree, 2 = agree, 3 = fairly agree, 4 = disagree, 5 = strongly disagree.

8.3.1 Ease of Use

Q1. Please indicate your views to the following statements; where 1=strongly agree

	1	2	3	4	5
The site was easy to navigate	20 %	60 %	-	-	20%
The site was well designed	-	60 %	20 %	-	20 %
The content was easy to understand	-	50 %	50%	-	-

Table 8.1 Responses to ease of use statements

The IBF, referred to as the 'site', was considered to be by-in large very easy to navigate through; however, there were concerns from some quarters which are addressed in recommendations for improvement (pg 107). Sixty percent of the respondents agreed that the site was well designed, with twenty percent fairly agreeing and strongly disagreeing respectively. While fifty percent of the respondents considered the content easy or fairly easy to understand respectively.

By-in large the findings suggest that the IBF faired well in regards to the easy to use criteria.

8.3.2 Usefulness

Q2. How do you rate the overall usefulness of the guidelines? Where 1=very useful

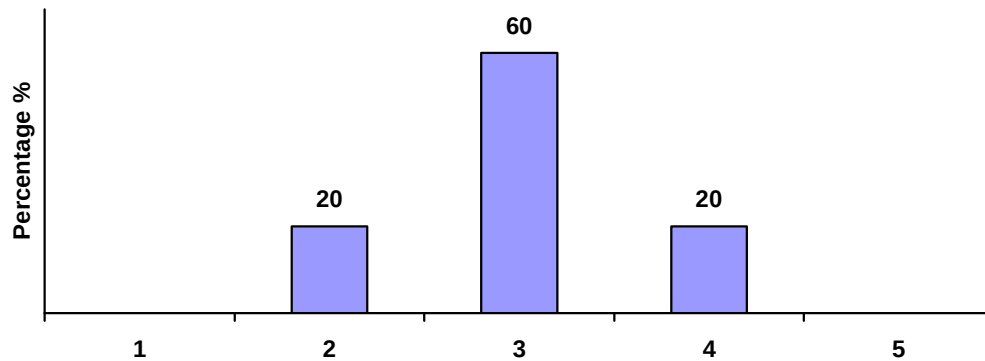


Figure 8.1 Responses to overall usefulness

Sixty percent of the respondents rated the overall usefulness as three, which roughly corresponds to fairly useful. Twenty percent considered it useful and an equal proportion rated it as four, which suggests that they did not consider it as being completely of no use but equally they did not consider it fairly useful either.

Q3. How useful did you find the following Key Focus Areas: where 1=very useful

	1	2	3	4	5
Strategic Focus	-	80 %	20 %	-	-
People Focus	-	60 %	20 %	20 %	-
Process Focus	-	80 %	-	20 %	-
Technology Focus	-	20 %	-	80 %	-

Table 8.2 Responses to usefulness of KFAs

The findings highlight that some key focus areas were more useful to the respondents than others. It seemed that the most useful was the guidelines

related to the strategic focus area followed by the process, people and technological focus areas respectively.

These findings could be indicative of the needs of industry. The strategic focus, in the guidelines, entailed organisations focusing on their business needs, identifying how and what type of knowledge can make a difference and developing the necessary means and infrastructure to encourage people to share it i.e. steering group and KM vision.

The finding that the strategic focus was the most useful, suggests that strategic issues and guidance in how to address them have the most currency for practitioners in industry.

Q4. Was there any guideline you disagreed with?

The answers received by all of the respondents bar two were 'No'. One of the respondents had the following disagreement:

The rush to technology when there needs to be more about what information is where, what type, who owns it and a meta model developed that may be added into a technical solution.

This comment is valid, however the author does state in the first activity within the technological focus area, i.e. build on existing technology; that organisations decisions regarding technological infrastructure should be based on the findings from the process focus.

One of the activities within the process focus was the conducting of the knowledge audit; the aim of this activity, explained within the guidelines, is for the organisation to develop an understanding on what knowledge the organisation has, who has it and how it flows. Here knowledge, as mentioned in the guidelines, refers to 'what people need in order to carry out their jobs'.

This constitutes information as well competencies that people need, to carry out their jobs.

It is based on the findings gained from the knowledge audit and the other process activities, detailed in the guidelines, that the author then proposes for firms to 'identify what additional infrastructure' – to their existing technology – 'is required to help the organisation enable better knowledge sharing'.

In regards to building a meta model, although not mentioned in the guidelines, it is a by-product of the knowledge audit; as the findings from it would have been the raw materials for the meta model. The author accepts, perhaps, more emphasis is required on this point.

The other disagreement was not much of a disagreement but rather an array of interesting points.

The respondent comment is long and has been broken down into their respective points:

1. *I think you have made good progress, however I believe you have covered only elements of knowledge sharing activities. In terms of content steering group to me should form governance and direction. Steering groups require visionary leaders not necessarily experts.*
2. *Would argue against trying to hard measure but focus on competency development and improved employee culture and behaviours expressed through accountability to learn and develop.*
3. *Process development should include user acceptance testing and inputs. Struggling a bit with the breakdown, to me people process and technology collectively where they interact provide knowledge and information - putting knowledge evaluations under process implies that its tangible when it isn't and links it too hard to technology.*

4. *And what constitutes a knowledge audit?? Evaluating a piece of information or the competencies that exist?? Is it not really information flows you refer to not knowledge they are distinctly different.*
5. *Equality of access to technology is essential and tools should be intuitive to use. Would suggest focus on demand for tools rather than implementing what you think is wanted - wait for a pull!*

The author addresses each point in detail and can be found in Appendix G. What is important to note is that a number of the points were found to actually largely be addressed by the guidelines but in different areas. This highlighted the need for more effective cross referencing within the guidelines.

Overall, apart from some valid concerns raised, the findings from questions 2, 3 and 4 suggest by-in large that the respondents found the guidelines useful. Some areas like strategy were found to be more useful than others, which as explained may be indicative of the needs of industry.

8.3.3 Benefits

Q6. Please indicate your views to the following statements; where 1=strongly agree

	1	2	3	4	5
The content was thorough and practical	-	20 %	60 %	20 %	-
I would consider using some or all of the guidelines in my organisation	-	60 %	20 %	20%	-
I would recommend these guidelines to colleagues	20%	40%	-	40%	-

Table 8.3 Responses to benefit statements

The contents of the guidelines was agreed or fairly agreed, to be thorough and practical by most of the respondents, that is eighty percent. Sixty percent agreed that they would consider using some or all of the guidelines in their organisation, with an equal sixty percent suggesting that they strongly agree or agree to recommend the guidelines to their colleagues.

There were some quarters that felt that the guidelines could have been more beneficial, it is important to note that those who did, had raised what appeared to be not so much disagreements but concerns with the guidelines, of which the author has discussed.

By-in large the findings suggest that the guidelines are beneficial and the mere fact that sixty percent of the respondents would consider using it is suggestive of that.

8.4.4 Background

This section principally wanted to qualify some of the answers gained by the respondents. This was done by establishing how important the issue of knowledge sharing was to the organisation and the respondents.

Q7. Is knowledge sharing important in your organisation?

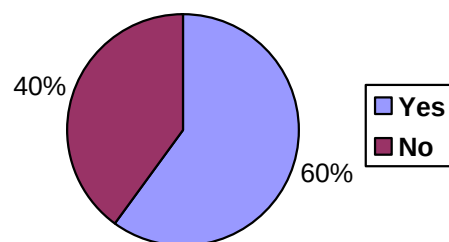


Figure 8.2 Responses to importance of knowledge sharing in the firm

Forty percent of the respondents suggested that their organisations did not see knowledge sharing as important, whereas sixty percent said they did.

Contrasting this finding with that from the next question reveals something interesting.

Q8. How important is the issue of knowledge sharing to you? where 1 = very

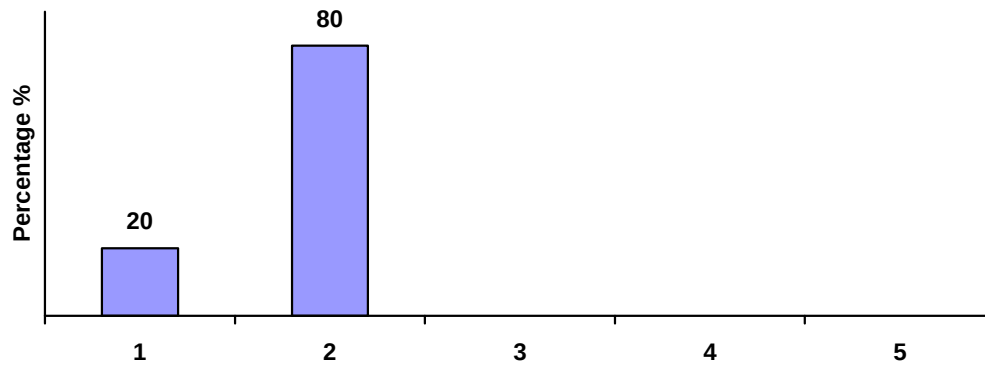


Figure 8.3 Responses to personal importance of knowledge sharing

All the respondents considered knowledge sharing either very important or important. However, from the last question, 40% of the respondents' organisations were found to not consider knowledge sharing important.

This is interesting, as it now makes more sense why the respondents considered the strategic guidelines the most useful. It seems that although practitioners see knowledge sharing important the challenge is practically establishing it on a strategic and organisational level.

8.5 Recommendations for improvement

The findings from the user evaluation questionnaire highlight some areas that can be improved. For example:

- *The thoroughness of the content*; although 80%, in table 8.3, fairly agreed that the content within the IBF was thorough and practical there seemed to be a need to improve and make it more robust.
- *The technological focus area*; Table 8.2, highlighted that there is a need to make the technological focus area more useful.

- *Improve navigation*; A need for more cross-referencing was established.

The author, in terms of specific recommendations, requested suggestions for improvements in the following question:

Q5. What changes or additional features would you suggest to improve the guidelines?

Two suggestions were made by two respondents. One suggestion that was made was graphical in nature; one of the respondents highlighted that the links on the mind maps were not obvious and hence could have been made clearer to identify.

The other suggestion was as following: *improve navigation, when you drill down you have no idea where you are in the portal, how deep you are or where it fits in the context of the bigger picture - less pages would be better with distinctions.*

Both these suggestions are valid and are areas that qualify for recommendations for improvement. To gain detailed specific recommendations for improvement a better instrument would have been interviews, had the author had more time this instrument would have been exercised.

8.6 Summary

This chapter has presented the user evaluation of the guidelines. Three criteria were used; ease of use, usefulness and benefits. The findings highlighted, in regards to the first criteria, that the guidelines were fairly easy to use, although some valid concerns were raised. In regards to the second criteria; usefulness, the guidelines was by in large useful with some areas like strategy more useful than others.

In regards to the last criteria; the benefits of the guidelines, this was indicated by not only the finding that 60% of the respondents would consider using it, but that an equal proportion suggested that they would recommend it to colleagues.

Although the responses to the guidelines were encouraging, areas that needed improving were flagged up.

Conclusions

The outcome of any serious research can only be to make two questions grow where only one grew before

- Thorstein Veblen (1857 - 1929)

The question that this thesis has sought to address is 'how knowledge sharing can be improved in organisations'. In seeking to address the question the research was structured into three phases; these phases enabled the author to do three things;

- Establish an understanding of knowledge sharing and some of its challenges;
- Determine how the problem of the lack of knowledge sharing could be structured and identified;
- Consequently, to develop and evaluate a set of guidelines that aimed to address the problem.

This chapter will summarise the research findings and discuss their implications, present some of the limitations of the research and finally provide recommendations for future research.

9.1 Research Findings

The nature of knowledge, identified as that which gives people the capacity to act highlighted that the sharing of it, required people to want to help others develop new capacities for actions. This process of helping, is what raised knowledge sharing from practices like information sharing. It was found to be a process that required people to genuinely have the interest in helping others to not only understand the relevance but develop the expertise to act on information.

This research has found that the process of knowledge sharing within firms is currently influenced by a range of factors. The industrial questionnaire conducted as part of the research identified factors like trust, management emphasis, culture and incentive systems to all play a part in influencing the levels of knowledge sharing.

The case studies, which aimed to establish how knowledge managers approached the sharing and managing of knowledge within their real life contexts, also resulted in a number of other factors. In dealing with these factors organisations were found to engage in a range of activities.

These included developing and nurturing communities of practice, developing strategic networks and understanding and improving existing work processes. Some of these activities were found to stretch across the organisation, to address factors like culture that were found to be deep-rooted and to have organisation wide influence.

These ranges of activities that organisations engaged in were found to revolve around four areas; strategy, people, process and technology. Moreover, it was found that the factors that influenced knowledge sharing were able to be clustered around one or more of these areas. Having identified this, the author was able to structure and identify a range of activities which organisations needed to focus on in each area, in the form of guidelines.

The user evaluation of the guidelines highlighted that it was largely easy to understand, useful, with areas like strategy more useful than others and beneficial.

9.2 Implications of the Research

The guidelines suggest that improving knowledge sharing within organisations requires the developing of a holistic view of the firm. In this context, the value of the guidelines may be to help practitioners in industry understand what is

required to be done to make knowledge sharing work and even answer the question 'where do we start?'.

The need to ensure that knowledge sharing will deliver business value and that it gets the necessary organisational support, suggests that the most important area that firms need to start with is the 'Strategic Focus'. Their knowledge priorities, that is what is important for them to know and hence be able to do, needs to stem from their assessment of their current business needs and their possible future needs.

Organisations that want be successful in improving knowledge sharing, have to then translate the knowledge priorities identified to the people who are required to share it. Leadership is essential in this process, primarily to encourage and emphasise for people to make time for knowledge sharing and secondly to translate a vision of what knowledge sharing can do that is better for people than what is. The guidelines suggest that a communicated vision, supported by a steering group of business leaders and sponsors is essential.

Communities - that is groupings of people who bond and form relationships around common interests, will naturally result. The guidelines suggest that organisations need to exploit and focus on these communities – 'People Focus'. They need to focus on generating capital from the relationships formed.

To identify these communities organisations need to analyse and understand their processes – Process Focus. From the process analysis, organisations should identify how the firm operates, what knowledge is used, where it comes from and strategically important groupings of people.

To support these groupings of people in sharing knowledge, particularly if they are physically separated, firms need to assess how well they are exploiting

there existing technology and whether they needed to invest in other technologies to support them – ‘Technology Focus’.

The holistic approach developed in this research that includes focusing on strategy, people, process and technology posits that addressing the various factors that influence knowledge sharing, identified in chapter 2, like culture and lack of management emphasis requires developing an organisational wide view.

In account of this, it is hoped that a role of the guidelines could be to become a tool that practitioners, could use in the planning, evaluating and benchmarking of their endeavours. The author conceives that it can be used as tool to explain to sponsors and senior managers some of the key factors that need to be taken into account in appraising initiatives to improve knowledge sharing.

9.3 Limitations of the Research

This research aimed through the development of a set of guidelines to address the question how knowledge sharing can be improved in organisations. Although the author has gained user evaluation of the guidelines, it has not been possible to identify to what extent the guidelines could improve knowledge sharing within organisations.

Additionally, this research was principally qualitative in nature and adopted an inductive methodology. This meant that the data collection techniques like the interviews and their consequent analysis were susceptible to interpretation. The author, however, to counter this has aimed to be as transparent as possible in the research methods and included where relevant descriptions as to how conclusions were reached.

9.4 Recommendations for Future Research

An important area for future research is the piloting of the guidelines. It was not possible in the course of this research as it would have required greater time, resources and more importantly a test organisation that would have been willing to pilot it. The pilot of the guidelines would have been used to conclusively identify, through empirical results, to what extent the guidelines improved knowledge sharing.

In addition to the question how knowledge sharing can be improved in organisations; the author as a result of the exposure gained to vast amount of factors that influence knowledge sharing, in the way of the questionnaire and case studies conducted, feels that the following research areas could also be explored:

- The literature review and case studies both highlighted that environments that lead to the developing of high levels of trust and knowledge sharing behaviours have been found to frequently exist amongst non-formal organisational forms. Communities of practice are examples of such forms. The challenge with such groupings of people is that they are often self directed. Given this, the question that results is 'how can informal organisational forms like CoPs be formally supported without compromising the high levels of trust that develop due them being informal and self directed?'
- The guidelines in the technological focus area make reference to two types of strategies for which knowledge can be shared, codification and personalisation. A number of organisations, particularly large consultancies pursue codification strategies. Employees in such firms would share knowledge they gained, for instance, as a result of projects by documenting them into databases.

One of the knowledge managers in the case studies conducted in this research termed this strategy as one that focuses on the 'just-in case' scenario. That is to say, people document what they can make explicit of their knowledge into databases just-in case it would benefit others.

This approach, should the knowledge that has been documented not be used or be in form that does not generate a capacity for action in others, can cost the organisation time and money. The question that arises is 'how can knowledge sharing, for those who adopt a codification strategy – that is people to document approach, be made to occur in a just-in time basis rather than just-in case?'

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Appendix A

SAMPLE OF THE KNOWLEDGE SHARING QUESTIONNAIRE

Knowledge Sharing Questionnaire

1. Organisation (1/6)

1. Do you see any value in having a knowledge officer (someone responsible for identifying and distributing knowledge) in the organisation?

- ☐ Yes
- ☐ No
- ☐ Don't Know

2. Do you believe that managers in the organisation:

- ☐ Put a strong emphasis on knowledge sharing
- ☐ Put a modest emphasis on knowledge sharing
- ☐ Put a weak emphasis on knowledge sharing

3. Does your organisations culture:

- ☐ Strongly promote knowledge sharing
- ☐ Modestly promote knowledge sharing
- ☐ Weakly promote knowledge sharing

2. Learning and Motivation (2/6)

4. Are there physical locations within the office where staff can socialise with co-workers?

- ☐ Yes
- ☐ No
- ☐ Don't know

5. How often do employees have the opportunity to rotate around projects?

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Always
- ☐ Not applicable

6. Which one statement best describes how trust effects the level of knowledge sharing between co-workers?

- ☐ Trust has a strong effect on the level of knowledge sharing
☐ Trust has a modest effect on the level of knowledge sharing
☐ Trust has a weak affect on the level of knowledge sharing

7. Do you see any value in rewarding staff to share what they know with co-workers?

- ☐ Yes
☐ No

8. Picture an expert in your department; How much effect would any of the following situations have on the level of knowledge available by co-workers in the department? 1 = Strongly effect

- Retirement of the expert
- Promotion of expert within the department
- Transfer of expert to another department
- Movement of the expert to another organisation

3. Technology (3/6)

9. What technologies are available for employees in your organisation?

	Yes	No	Don't Know
Internet	☐	☐	☐
Email	☐	☐	☐
Intranet	☐	☐	☐
Groupware	☐	☐	☐
Telephone Conferencing	☐	☐	☐
Video Conferencing	☐	☐	☐
Knowledge management software	☐	☐	☐

10. How good is the technology in your organisation in facilitating knowledge sharing?

- ☐ Very Good
☐ Good
☐ Reasonable
☐ Poor
☐ Very Poor

4. Overall impression of knowledge sharing (4/6)

11. How good are co-workers in sharing knowledge about the following: 1 = Very good

	1	2	3	4	5
Markets	☐	☐	☐	☐	☐
Competitors	☐	☐	☐	☐	☐
Core-competencies	☐	☐	☐	☐	☐
Products	☐	☐	☐	☐	☐

12. How would you rate the level of knowledge sharing between... 1= Very good

- Co-workers within the same department ☐
- Co-workers from different departments ☐
- Co-workers and managers ☐

* 13. Please check the box that reflects your feeling to the following statements. 1 = Strongly agree

	1	2	3	4	5
The culture in our organisation promotes collaboration and knowledge sharing	☐	☐	☐	☐	☐
In our organisation emphasis is placed on team performance rather than individual performance	☐	☐	☐	☐	☐
The appraisal system for employees allows the organisation to identify those who often share knowledge	☐	☐	☐	☐	☐
Employees have an adequate understanding of what knowledge sharing involves	☐	☐	☐	☐	☐
Our IT investments often deliver their initial benefits at the initial cost	☐	☐	☐	☐	☐
The technology in our organisation is effective in facilitating knowledge sharing between teams that are physically separated	☐	☐	☐	☐	☐
Knowledge sharing is viewed as important in our organisations	☐	☐	☐	☐	☐
Management regularly emphasise the importance of knowledge sharing and the use of best practice	☐	☐	☐	☐	☐
Employees are fully aware of the skills and knowledge of their co-workers	☐	☐	☐	☐	☐

5. Business Landscape (5/6)

14. Type of organisation?

- ☐ International
- ☐ Multinational
- ☐ National
- ☐ Small and medium enterprise
- ☐ Other (please specify)

15. Estimate Number of Employees

- ☐ 50 and below
- ☐ 50-250
- ☐ 250-1000
- ☐ 1000 and above

16. What are your company's core business activities/service offerings?

1

2

3

17. What is the intensity of the competition in your core market like?

- ☐ Very high
- ☐ High
- ☐ Moderate
- ☐ Low
- ☐ Very low

6. Demographics (6/6)

17. How long have you been in the organisation?

- ☐ 1 year or below
- ☐ 1-3
- ☐ 3-5
- ☐ 5 and above

18. Name (optional)

19. Position

20. Email Address

APPENDIX B

FINDINGS FROM THE KNOWLEDGE SHARING QUESTIONNAIRE

Section 1 Organisation:

1. Do you see any value in having a knowledge officer (someone responsible for identifying and distributing knowledge) in the organisation?

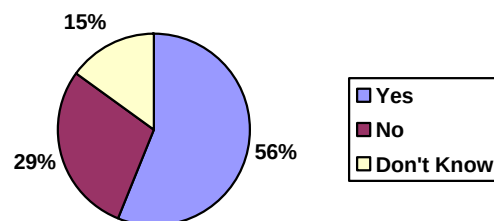


Figure B.1 Response to value of knowledge officer

2. Do you believe that managers in the organisation: Put a strong, modest or weak emphasis on knowledge sharing?

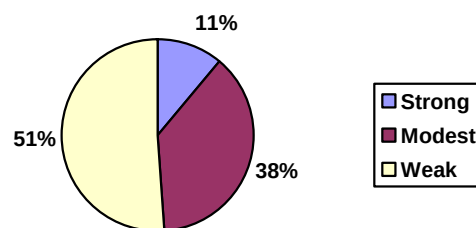


Figure B.2 Response to management emphasis on knowledge sharing

3. Does your organisations culture: strongly, modestly or weakly promote knowledge sharing?

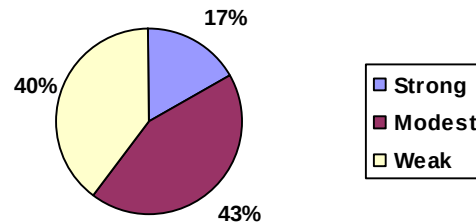


Figure B.3 Response to organisation cultures' promotion of knowledge sharing

Findings from Q1 - Q3:

The value of identifying and distributing knowledge in organisations is recognised this is indicated by the value organisations see in having a knowledge officer. However, paradoxically it was found that managers in organisations by-in large put a weak emphasis on knowledge sharing. Additionally, the culture in most organisations does not strongly promote knowledge sharing.

Section 2: Learning and Motivation

4. Are there physical locations within the office where staff can socialise with co-workers?

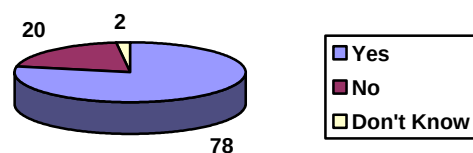


Figure B.4 Response to existence of physical locations

Findings from Q4:

By-in large organisations have physical locations within the office where staff can socialise. As knowledge sharing is a social process, organisations need to examine whether they are maximising the potential of these locations in their capacity of nurturing knowledge sharing behaviours.

5. How often do employees have the opportunity to rotate around projects?

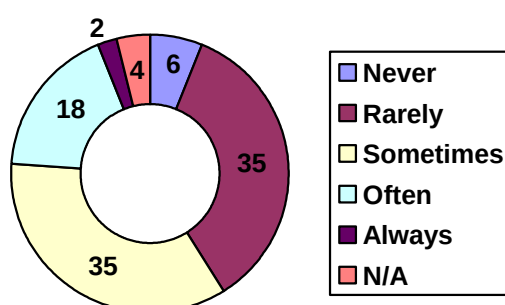


Figure B.5 Response to employee rotation around projects

Findings from Q5:

It seems that organisations aren't employing the approach of rotating staff often around projects. The rotation of employees around projects and departments can help them not only develop social capital in the way of relationships, but can help them experience other work practices, which in turn can help them break out of silo mentalities.

6. Which one statement best describes how trust effects the level of knowledge sharing between co-workers? Trust has a strong, modest or weak effect on the level of knowledge sharing.

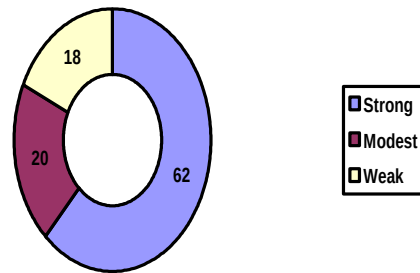


Figure B.6 Response to effect of trust on knowledge sharing

7. Do you see any value in rewarding staff to share what they know with co-workers?

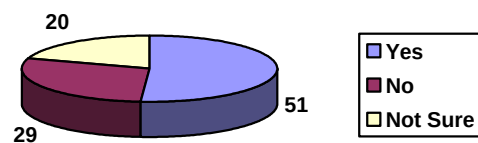


Figure B.7 Response to value of rewarding staff for knowledge sharing

Findings from Q6 & Q7:

Trust was found to have a strong influence on the levels of knowledge sharing, in addition to this organisations saw value in rewarding staff who shared knowledge. Although rewards are important, especially in the short term, in the long term firms should rely on trust and relationships to be the drivers for knowledge sharing.

8. Picture an expert in your department; How much effect would any of the following situations have on the level of knowledge available by co-workers in the department? 1 = strongly effect.

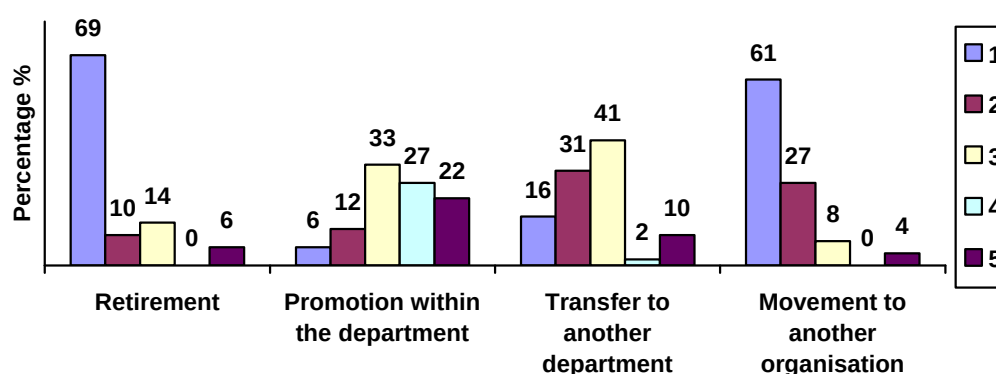


Figure B.8 Response to factors influencing levels of knowledge of co-workers

Findings from Q8:

The level of knowledge available to co-workers in a department were found to be most affected with the retirement of an expert from that department followed by the movement of that expert to another organisation. In regards to movement of the expert within the organisation the transfer of the expert to another department had a greater effect than the promotion of that expert within the department.

Section 3: Technology

9. What technologies are available for employees in your organisation?

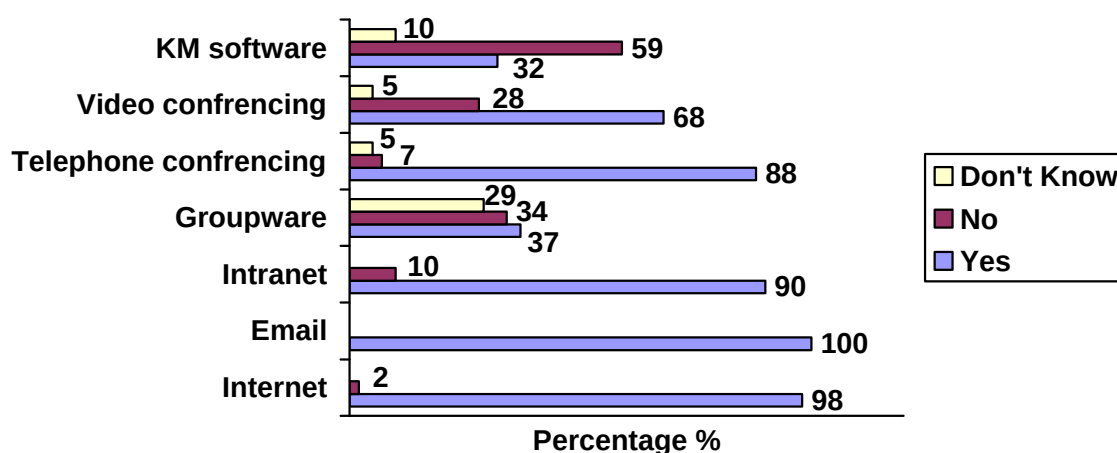


Figure B.9 Response to technologies available in the organisation

10. How good is the technology in your organisation in facilitating knowledge sharing?

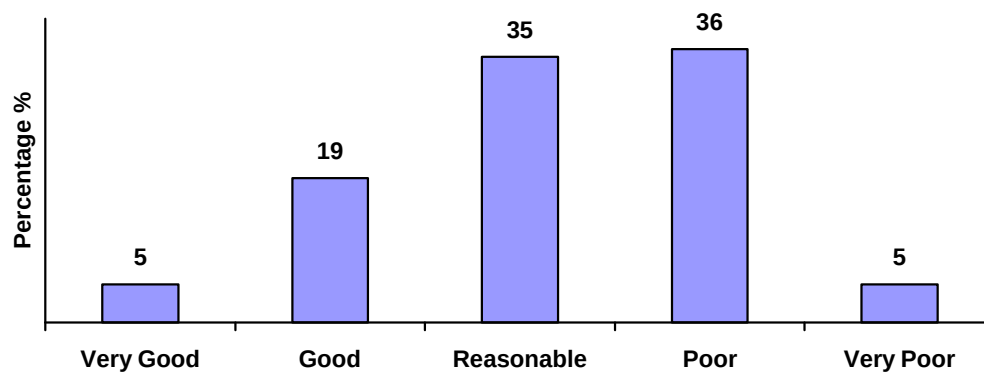


Figure B.10 Response to how good technologies facilitated knowledge sharing

Findings from Q9 & Q10:

On balance more organisations (41%) found their technologies as poor or very poor in facilitating knowledge sharing in contrast to 24% who found them very good or good. This suggests that organisations may need to invest more in collaborative technologies or better exploit their existing technologies. The majority of organisations had technologies like internet, email and an intranet. Technologies like groupware and KM software were found to be less prevalent.

Section 4 Overall Impression of Knowledge Sharing

11. How good are co-workers in sharing knowledge about the following: 1 = Very good

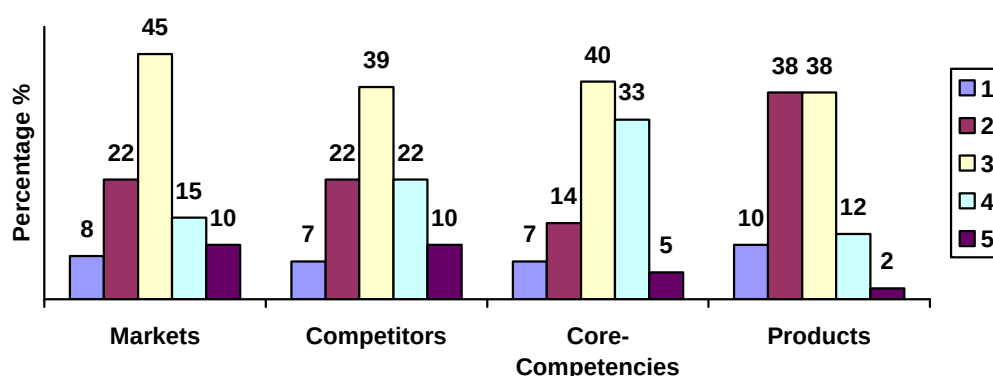


Figure B.11 Response to areas co-workers were good in sharing knowledge

12. How would you rate the level of knowledge sharing between... 1= Very good

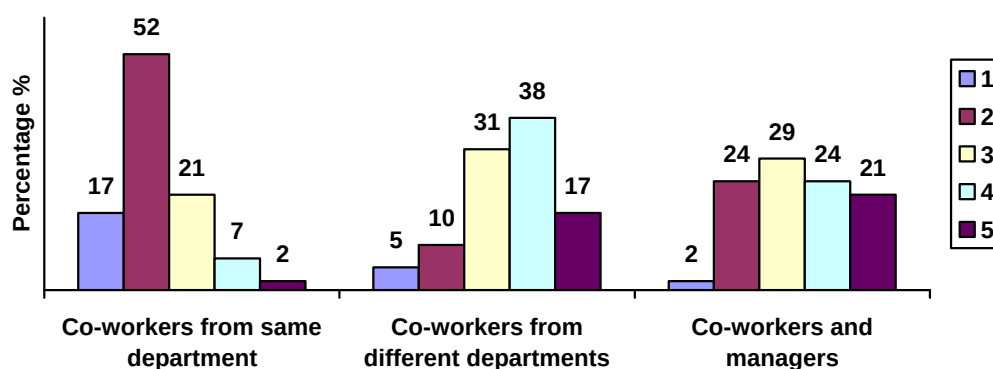


Figure B.12 Response to the level of knowledge sharing across organisation

Findings:

Staff in organisations are best in sharing knowledge about products and worst in sharing knowledge about their core-competencies. With regards to who knowledge sharing take place between, it was found that it took place the most amongst co-workers from the same department and the least from co-workers from different departments. Surprisingly the level of knowledge sharing between co-workers and managers was quite poor. On balance, more organisations (45%) rated the level of knowledge sharing between co-workers and managers towards the lower end of the scale i.e. poor or very poor in

contrast to the 26% who rated it towards the upper scale i.e. Very good or good.

13. Please check the box that reflects your feeling to the following statements.

1 = Strongly agree

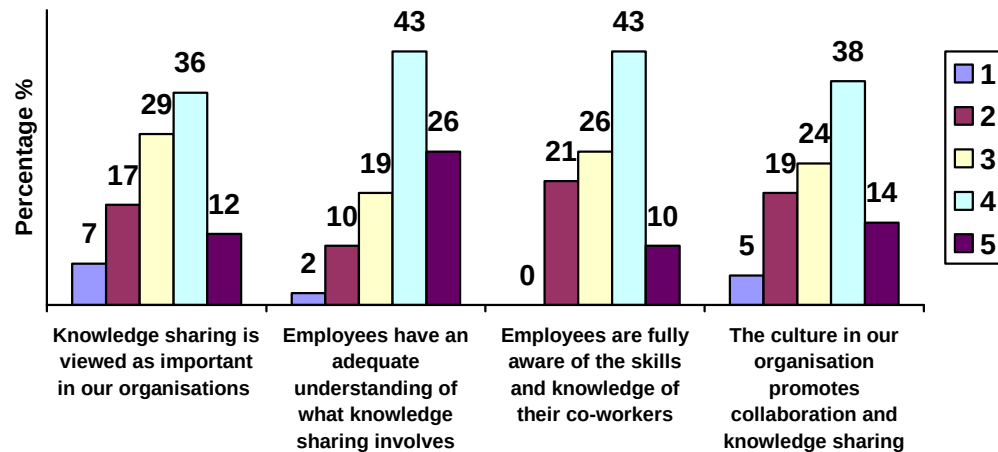


Figure B.13 Response to Statements – part 1

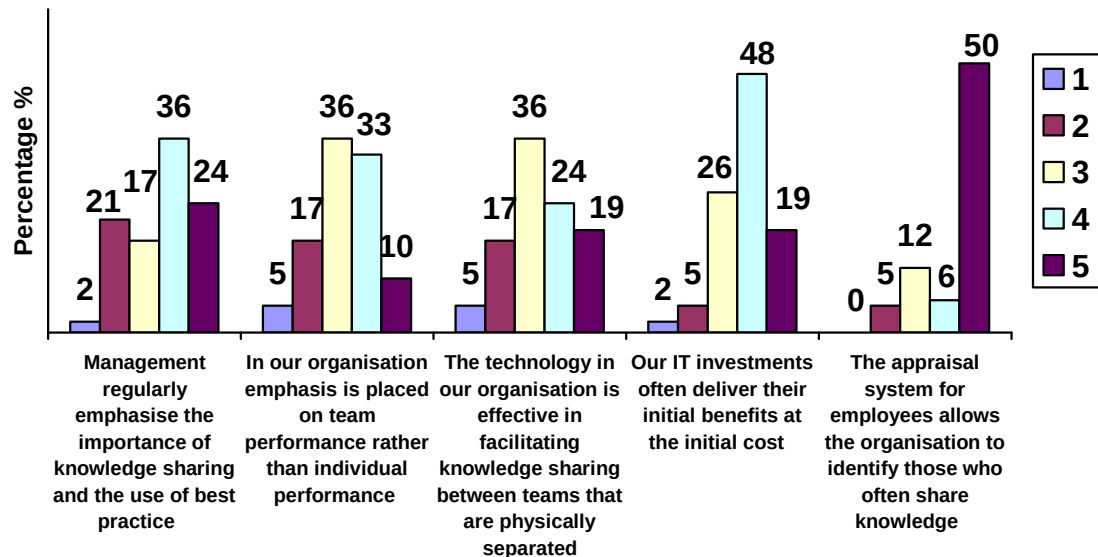


Figure B.14 Response to Statements – part 2

Findings:

This section aimed to corroborate and check the consistency of some of the previous findings. It was found that the lack of management emphasis on knowledge sharing, the averse affect of culture on it and employees not being aware of the knowledge of their co-workers were all found to be consistent. A finding which suggests an inconsistency was the lack of the appraisal system acknowledging employees who shared knowledge. This it seem is in contrast to the finding that organisations saw it valuable to reward co-workers who share knowledge.

Appendix C

KNOWLEDGE MANAGEMENT STRATEGIES

O'Dell et al (1999) highlight that organisations have different strategies in place to address their knowledge management needs. They refer to a study carried out by the American Productivity & Quality Centers (APQC) and a consortium team, who found that six strategies were used amongst the collaborating companies, namely:

1. Knowledge management as a business strategy;
2. Transfer of knowledge and best practices;
3. Customer-focused knowledge;
4. Personal responsibility for knowledge;
5. Intellectual asset management; and
6. Innovation and knowledge creation.

The key points of each of the strategies found by the study, as discussed by O'Dell et al are presented below.

Knowledge Management as a Business Strategy - Organisations that pursue this type of strategy frequently see knowledge as a product of the organisation i.e. management consultants. Such organisations focus on aligning their KM strategy closely with the business strategy.

Transfer of Knowledge and Best Practices - This strategy is widespread amongst the organisations that are involved in benchmarking. That is the pursuit of knowledge and best practices either by looking within the organisation or to other organisations.

The APQC study found that organisations that pursued this strategy placed emphasis on the “importance of teams, relationships, and networks”. Metaphors like the learning organisation were found to be used in such organisations to power knowledge management activities.

Customer-Focused Knowledge - Organisations that seek to develop customer intimacy focus on this strategy. The APQC study found that organisations that pursued this strategy focused on “obtaining deep knowledge about their customers, their customers’ business, and how to create products and services for the purpose of making loyal customers”.

Personal Responsibility for Knowledge - This strategy focuses on making knowledge management practices embedded within the work practices of employees. Organisations that pursue this type of strategy require a culture of high trust that not only fosters shared learning and collaboration but emphasises on self-management and drive.

Intellectual Asset Management - The study found that organisations that pursued this strategy emphasised on the “enterprise-level management of specific intellectual assets such as patents, technologies, operational and management practices” with the view of leveraging these assets to generate new market value. KM amongst such organisations was viewed as KM as “a vehicle for value management”.

Innovation and Knowledge Creation - Organisations that pursue this type of strategy identify knowledge creation as a priority of their knowledge management activities. Liebowitz explains that the challenge for organisations who adopt this strategy is the stimulating and improving the knowledge of their employees.

Appendix D

RESPONSES TO CASE STUDY QUESTIONS

Section 1: Background

Q. Briefly describe the activities of the knowledge management services?

Company A: - The KM function at the company provides the following services to the organisation:

- Provide accessibility to key knowledge
- Provide awareness of business critical processes
- Develop awareness of chronological activities in operations
- Develop awareness of CoPs

As the function develops, over the coming year/s, the range of services that it provides may change.

Company B: - The activities of the service include:

- Liaise and develop relationship with business leaders
- Developing and nurturing CoP business networks.
- Make people aware of what others are doing.
- Intranet design
- Research and analysis
- Surveys

Company C: - The KM function at the company provides a wide range of activities: These include:

- Conducting research projects with universities
- Developing codification techniques for knowledge

- Developing mechanisms and tools like Communities of Practice (CoPs) and lessons learnt databases.

Company D: - The company is organised along a matrix structure that consists of various line of business .The Knowledge management services in the company tend to be people centric. The central activities revolve around

- The managing and nurturing of professional communities.
- The facilitating and brokering of relationships.
- The designing and nurturing of the virtual collaborative learning environment.

Q. For how long has the knowledge management services been running at Company (A...D)?

Company A: - The KM service started to take shape and form with the appointment of the knowledge manager, 8 months ago

Company B: - KM service has been running in the company since the 1989

Company C: - Since 1999

Company D: - Knowledge management has been running in the company for the last seven to eight years.

Q. What would you say differentiates your KM activities from your competitors?

Company A: - No external benchmarking has been carried out.

Company B: - The KM priorities at the company have shifted from traditional content management to Communities of Practice (CoP) business networks. The KM priorities are very much on people. Other organisations tend to have KM, itself, as a silo function within a function. Legacy systems like Lotus notes tend to revolve around silo structures. At company B through CoP business networks the organisation has been able to generate synergy between KM efforts.

Company C: - The Company has developed unique ways of transferring expert knowledge. Moreover the decision making diagnostic tools developed are quite defining and unique to the organisation

Company D: - Our key differentiator is the structured approach we take to communities, for example mapping to business needs, the professional community steering committee and governance model, along with the integrated use of tools for collaboration and communications.

Section 2: Knowledge Management projects

Q. How do you identify the type of problems, that KM could help to solve?

(How do you identify what type of knowledge is important to manage?)

Company A: -The KM function is there to support the organisation better achieve its business objectives. The type of problems it could help to solve essentially are identified by interacting with business leaders and operational staff. Examples of problems are:

- The accessibility to key knowledge
- Locating information that is accurate and up-to-date

The nature of how the organisation evolved tended to be around silos. The problem this generated was inconsistency. Similar documents exist on given areas, and at this point of time, there are instances where people do not know what the latest or best practice document is.

Company B: -The type of problems that KM can solve is identified by the business needs. Important knowledge is identified by people. Putting people in touch with people is the aim of KM in the company. The KM role is to then support the interaction and work of these people.

Company C: - KM covers a broad spectrum. At the company KM is done 60 % through people. It is predominantly a people to people process. Problems that

KM could solve are identified through structured knowledge audits and the studying of process relationships.

Company D: - The KM function identifies the type of knowledge that is important to manage by interacting with leaders from business units. In fact, a professional community steering board, which consists of leaders from major lines of business and knowledge managers, was developed around 5/6 years ago to ensure community programmes address business needs and also to ensure that we do not replicate the same activities in different communities – eg ensuring consolidation of communities

Q. Can you give me an idea of some of the knowledge management projects you are currently working on?

Company A: - From the knowledge management audit, which was conducted over the first six months, four projects have resulted:

- *The development of a process mapping system (PMS).* This system was built to identify key best practices as well as template manuals associated with the business critical processes. Once this system is in place, it will be rolled out so that people will have access to documentation that they previously never had access to. It will be a centralised tool to help people gain an understanding of processes, that they should be aware of but have not been communicated.
 - It is a bespoke system. The knowledge manager is working in-house with the internal information systems analyst
- *Managing and participating with communities of practice (CoPs).* CoPs are groups or forums for people with similar levels of expertise or interest in particular areas. They have been set to identify areas that need further work. For instance the policy development group forum has been set up with key members to

look at particular policies that need revising. CoPs in the organisation have an important role. There are 15 – 20 CoPs in the organisation, which no one is really managing. They have been set up in a fairly unstructured way and are now starting to be formalised. There is some inefficiency in how they work, which the PMS will help to iron out. Additionally it will help people become aware of these cops, as not everybody is aware of them.

- *Communication of KM to people.* People have heard and aware of KM. However, there needs to be a concerted effort to communicate what tools are available, what value employees can get from them, and what benefits they can realise as individuals as well as the organisation. This is important in order for them to contribute.
- *Developing of Skills database.* The first step in a knowledge management strategy is to know what we know. The purpose of the database is to identify expertise in particular positions and departments. Once captured it will be communicated, so that everybody will have access to each others strength in terms of skills.

Company B: - The types of projects that are carried out by KM in the company include:

- Industrial analysis
- Global team is carrying out adoption and roll out of Intranet
- Content Management
- Developing people networks

Company C: - There are range of projects, these include

- *Capturing design knowledge:* currently young engineers have been assigned a project of capturing the knowledge of three senior engineers.

- *Developing search and retrieval techniques for databases and*
- *Introducing semantic web technology*

Company D: - The knowledge management projects mainly revolve around:

- Developing community capabilities
- Designing and developing virtual learning tools

Q. What are the typical steps involved in the implementation of KM projects?

Company A: - In regards to KM projects, like managing CoPs or communication of KM through workshops, they generally are implemented in an unstructured way. Essentially, it is specific to the given circumstance.

Company B: - The generic steps involved in KM implementation are to:

- Identify what is not working in the business
- Develop Proposal for problem (include case studies)
- Gain endorsement (this prevents people saying that they did not ask for system.)
- Adopt and roll out

Company C: - There are no typical steps for introducing KM projects, per se. It depends on the individual project. If it is completely new, the first activity would be to conduct a knowledge audit. From that other activities would result.

Company D: - For KM projects it depends on the program i.e. storytelling, after action reviews, knowledge retention et.c. Each program would have a different approach. For professional communities, generically the steps are:

- Proposing an idea/project
- Seeking governance and direction (Steering committee)
- Getting buy-in for the proposed idea/project
- Involve and get people into communities

Q. What would you say are the main benefits the company have realised from KM?

Company A: - The organisation is currently in the early stages of KM. They are finding out where they are, in order to find a strategy that would best fit the organisation.

As KM is yet to be operationalised, benefits have yet been realised. There are forecasted benefits and these include:

- Ensuring systems compliance
- Ensuring business process compliance
- Better cross divisional knowledge exchange
- Better interdepartmental knowledge exchange
- Better exploitation of best practices.

Company B: - The company has realised a number of benefits the main benefits have been:

- A new sense of business synergy
- Better cross divisional knowledge exchange

Company C: - The main benefits that have been realised from KM are:

- Improved product quality and;
- The reduction in mistakes, through the exploitation of lessons learnt.

Company D: - The key benefits that the company has realised include:

- The increased speed in delivering projects
- The development of a safe collaborative environment, essential during times of organisational change like acquisitions
- The Increase in pipeline (people with competence to deliver)
- Developing leadership behaviours

Q. What do you think are the key challenges for KM in your organisation?

Company A: -The principal challenge is Cultural, i.e. resistance to change
The organisation is not extremely technically literate, so training and finding time for it will also be a challenge.

Company B: - There are a number of challenges with KM these include:

- Providing knowledge on a 'just in time basis' rather than 'just in case'
- Effectively defining what knowledge should be managed
- Encouraging motivation
- Time constraint

Company C: - The main challenges are:

- Ensuring that the organisation continually invests resources into KM and
- Getting people to routinely use the tools: so as to make it "embedded behaviour"

Company D: - There are a number of challenges for KM on an organisational level, these include:

- Operating in different work ethics/cultures
 - Transferring knowledge in short time spans
 - learning from experience
- Identifying where and how different divisions complement each other.

Section 3: KM and Staff

Q. How do you introduce knowledge management tools to employees?

Company A: - The approach will be phased. Initially the knowledge manager will be speaking to assistant directors, making them aware of KM. They will in turn speak to their staff. In addition, the knowledge manager will be conducting regional workshops. This will give employees a deeper understanding of some of the tools available and the benefits they can realise.

Company B: - It depends on the tool, a number of approaches are used these include:

- Desk visits
- Newsletters
- Departmental meetings
- Taster sessions followed by intranet sessions

Company C: - The approach through which tools are introduced to employees depends on the circumstance and the tool. The approaches include:

- Explaining the type of tools available and the value of these tools to senior managers, so that they in turn liaise with their employees.
- Using the corporate intranet.
- Providing brochures that explain what tools and training is available.

Company D: - There are a number of approaches that are used these include: Videos, books and brochures. Online learning, community leader and member trainings and events hosted by the KM community and Continuous Learning organisation

Q. How do staff feel about Knowledge Management? What type of feedback have you got from staff?

Company A: -There is a mixed view. Stakeholders know it needs to be conducted. In fact during the knowledge audit a stakeholder survey took

place. It revealed that 70-80% felt KM was important; on a scale to 1-5 they rated it 4.5-5 really important. Conceptually they understand its importance.

The issue is in terms of practically how to implement it and also how to make time for it. In order for KM to work staff need to contribute outside their normal job roles. Hence, this time constraint, concerns people.

Company B: - There is a positive feeling about KM amongst staff. The often underestimate how much information is available to them

Company C: - There are mixed views, senior managers feel it is important and believe that it should be done. Operational staff feel that it is nothing special and that they do it anyway. The role of the KM function is to foster better understanding of the value that can be realised from the tools, along with demonstrating their sophistication.

Company D: - There has been good feedback. The professional communities that have been set up have provided staff a safe environment to collaborate and share tips. The creation of the steering committee and the (200+ world wide) communities in the organisation is indicative of how important communities are perceived.

Q. What type of tools are there in the organisation that facilitate staff to share knowledge? Would you describe any of them as breakthrough?

Company A: - In terms of organisational mechanisms, CoPs exist

- On the systems front – legacy systems are often used

In regards to a breakthrough system:

- Recently a Balanced Scorecard System (BSC) has been introduced; it will partly be linked to KM system. It is a revolutionary concept, in this sector so in that sense it is breakthrough.

Company B: -There are number of tools that staff use, the main tools are the content management system and the intranet. The organisation uses the cutting edge in technology however the novelty in KM results from how the company exploits the tools. The tools are no magic bullet; value is generated by how they are used.

Company C: - A range of tools are used these include:

- The capability intranet
- The lessons learnt database and
- The CoPs

Company D: - The central tool that helps staff to share knowledge is the executive sponsorship of key executives for people to have time to be part of activities . In addition to this there are collaborative tools available in the organisation that include online collaboration like forums, instant messenger, distribution lists mapped to community registration tools, voice conferencing, document storage/access tools and real time communication tools. To help leaders make full use of what's available they are provided a virtual physical toolkit. (this is also shared with members as it has multiple value in the organisation)

Q. What are the key challenges in getting staff to share knowledge?

Company A: - The key challenges are overcoming:

- *The time constraint*
- *Eliciting knowledge from others.* Some people may be unable to express in words or documents the wisdom or knowledge they have. They may know what they know but the challenge is communicating it.
- *Political reasons:* sometimes politics can be a hindrance to knowledge sharing.

Company B:

- *Encouraging motivation*; contributing to KM is not part of the job description so getting people to invest time, outside their job roles, is a big challenge.
- *Managing different perspectives*; KM can become all things to all people; you need to manage the different perspectives.
- *Managing lateral tension*: Politics can play a part in inhibiting knowledge sharing

Company C: - The nature of work in the company makes legislation a key factor that inhibits knowledge sharing. Outside of legislation, the main challenge is the expert feeling a loss of control. This is essentially a cultural problem.

Company D: - There are a range of challenges in getting staff to share knowledge these include:

- *Cultural*: beliefs like knowledge is power can inhibit the sharing of knowledge.
- *Motivation*: encouraging people to contribute to knowledge sharing and communities outside their job roles is a challenge. For instance sales are paid to sell, why should they do anything else?
- *Developing trust*
- *Developing shared language*

Section 4: KM and strategy

Q. Have management bought into the practice of KM? What are challenges in getting Management on board?

Company A: -

- Management have bought into KM. In fact the knowledge manager recently presented the KM strategy and the findings of the KM audit to the CEO and senior management and they endorsed it.
- As the organisation appointed the knowledge manager, and made the decision to focus on KM, there were no major challenges in getting managers on board

Company B: - Management have bought into KM. The main challenge is demonstrating that KM is addressing and helping to solve business needs. This was ensured by involving business leaders as part of KM proposals and implementations.

Company C: - The management recognise the importance of KM, particularly in certain areas like engineering. The challenge was convincing them as to why they should allocate sufficient resource to KM. This was done by presenting key needs, identified through the interaction with top engineers, that KM could solve. Effective communication of what can be realised through KM is what helps in bringing management on board.

Company D: - Yes management have bought into KM. Sponsorship from senior executives is considered a success factor in KM programs. The involvement and buying in of senior management is a central activity of the KM function. The challenge in getting them on board is the demonstrating of value.

Essentially, KM aim to transpose ideas into valuable action. People may argue how do you measure whether you give people ideas or just trigger them off. Non-traditional means like storytelling are being introduced to overcome this challenge and demonstrate value.

Q. What is the relationship between the KM strategy and the companies' business strategy? Where does KM fit in?

Company A: - There is a distinct link between KM and the business. The BSC links key strategic objectives of departments and divisions to business objectives. As a result activities and targets stem from that. This system that has been put in place, although it is in the early stages, will be integrated party with the KM system. Ensuring that KM supports the business objectives. The systems integration will allow focus on business objectives. Each of the targets and activities of divisions and departments will be linked back to business objectives. So that every activity has business purpose.

Company B: - The KM strategy is very much linked to the business strategy. It is like a thread that runs through the business.

Company C: - The KM strategy is linked to the engineering strategy rather than business strategy. Reliability, and its improvement, tends to be what the KM strategy focuses on.

Company D: - KM strategy is inextricably linked to the business strategy. (this is a key differentiator – generally communities outside of this don't grow so fast or have as much value) Sponsorship from business leaders is what gives the mandate for KM projects to materialise. This only happens when a business purpose of the project is established.

Q. What are the key issues in successful implementation of KM strategy?

Company A: -

- *Effective Communications of KM*
- *Expectation Management:* Meeting everybody's need, obviously is impossible, people will make demands on particular information they would want access to. It is important that expectations are managed; not just expectation of operational staff, but senior managers. Senior

managers may have expectation that this strategy will resolve all these issues. In actual fact, cultural and political issues along with phased approach may mean problems are resolved slowly.

Company B: -

The key success factors are:

- Business buy-in
- Leadership
- Top down and bottom up support
- The active selling of the benefits.

Company C: - There are three key issues in KM implementation:

- The organisation needs to ensure that KM has direction. It is important that the organisation can answer questions like; why they are doing KM? What is the relationship between KM and the business? If organisations feel like doing KM because it is a nice thing to do, essentially it will have no direction and not yield meaningful results.
- Beyond identifying direction and implementing KM, it is important that the management are shown that KM is alleviating their problems. The value of KM has to be demonstrated.
- Finally KM tools and programs need to be developed that are not burdensome on staff.

Company D: - The key issues for successful implementation of KM are to:

- Develop guidelines
- Set the boundaries of the implementation
- Engage stakeholders
- Develop and foster trust between people

Appendix E

SAMPLE ENTRIES FROM DATABASE OF CASE STUDY RESPONSES

The database was created in Microsoft Excel. Responses from the case studies were coded into tables within Excel and clustered around topics. Below is an example of a query on the topic “Buy-In”.

Table E.1- Query of topic “Buy-In”

No	Section	Topic	Case Study Company	Response
38	KM & Strategy	Buy-In	D	The involvement and buying in of senior management is a central activity of the KM function.
43	KM & Strategy	Buy-In	D	Engage stakeholders
92	KM Projects	Buy-In	B	Gain endorsement (this prevents people saying that they did not ask for system.)
125	KM & Staff	Buy-In	A	Stakeholders know it needs to be conducted. 70-80% felt KM was important
130	KM & Strategy	Buy-In	A	Management have bought into KM. CEO and senior management and have endorsed KM

Appendix F

EVALUATION QUESTIONNAIRE

User Evaluation of Guidelines

1. Ease of Use

1. Please indicate your views to the following statements; where 1=strongly agree

	1	2	3	4	5
The site was easy to navigate	☐	☐	☐	☐	☐
The site was well designed	☐	☐	☐	☐	☐
The content was easy to understand	☐	☐	☐	☐	☐

2. Usefulness

2. How do you rate the overall usefulness of the guidelines? where 1=very useful

1	2	3	4	5
☐	☐	☐	☐	☐

3. How useful did you find the following Key Focus Areas: where 1=very useful

	1	2	3	4	5
Strategic Focus	☐	☐	☐	☐	☐
People Focus	☐	☐	☐	☐	☐
Process Focus	☐	☐	☐	☐	☐
Technology Focus	☐	☐	☐	☐	☐

4. Was there any guideline you disagreed with?

- ☐ No
- ☐ Yes (please specify)

5. What changes or additional features would you suggest to improve the guidelines?

3. Benefits

6. Please indicate your views to the following statements; where 1=strongly agree

	1	2	3	4	5
The content was thorough and practical	☐	☐	☐	☐	☐
I would consider using some or all of the guidelines in my organisation	☐	☐	☐	☐	☐
I would recommend these guidelines to colleagues	☐	☐	☐	☐	☐

4. Background

7. Is knowledge sharing important in your organisation?

- ☐ Yes
☐ No
☐ Other (please specify)

8. How important is the issue of knowledge sharing to you? where 1=very

1	2	3	4	5
☐	☐	☐	☐	☐

9. Name

10. Position

11. Email

Appendix G

RESPONSES TO PERTINENT POINTS FROM THE USER EVALUATION

POINTS:

- 1. I think you have made good progress, however I believe you have covered only elements of knowledge sharing activities. In terms of content steering group to me should form governance and direction. Steering groups require visionary leaders not necessarily experts.*
- 2. Would argue against trying to hard measure but focus on competency development and improved employee culture and behaviours expressed through accountability to learn and develop.*
- 3. Process development should include user acceptance testing and inputs. Struggling a bit with the breakdown, to me people process and technology collectively where they interact provide knowledge and information - putting knowledge evaluations under process implies that its tangible when it isn't and links it too hard to technology.*
- 4. And what constitutes a knowledge audit?? Evaluating a piece of information or the competencies that exist?? Is it not really information flows you refer to not knowledge they are distinctly different.*
- 5. Equality of access to technology is essential and tools should be intuitive to use. Would suggest focus on demand for tools rather than implementing what you think is wanted - wait for a pull!*

Point 1:

In regards to elements of knowledge sharing that were not covered, the respondent did not mention specific elements of knowledge sharing activities that were not covered. Given more time, a useful exercise would have been to arrange a follow up discussion or interview with the respondent to identify specific elements that seemed to be missed and should have been covered.

In regards to the steering group having visionary leaders, the author does not suggest within the steering group guideline, the qualities required of the leader, rather the requirement of it being composed of “experts and leaders from all echelons of the organisation” is discussed.

With respect to the qualities required of a leader, the author covers it in the ‘People Focus’ under the section identify the right leader. The following qualities were recommended to be sought after *“enthusiastic about their practice, inspirational and good networkers”*. It is, however, accepted that it was mentioned in the context of communities but is equally applicable in the context of the steering group. In the context of the steering group, rather than the leader being enthusiastic about the practice, they would need to be enthusiastic about the cause for knowledge sharing.

The visionary outlook of the leader stems from their passion for the KM vision and their ability to create what Peter Senge (1990) describes as being creative tension, which is covered immediately after the steering group guideline under define KM vision.

Point 2:

The guidelines acknowledge that traditional hard measures find it difficult to assess the value of knowledge sharing. Rather, the author recommends using non-traditional methods like fact-based story-telling. The respondent from the user evaluation highlights that the focus should be on *“competency development and improved employee culture and behaviours”*. The guidelines are not averse to that focus, but highlight that the evidence of it, needs to be embodied in stories with \$ value attached to them.

That is to say firms need to identify, for instance, what new competencies individuals have learnt as a result of their development and what they have

been able to do as a result of it. The value of this new capacity for action needs to be embodied within stories that senior executives can relate to.

Point 3:

The 'Process Focus' does not suggest that organisations should develop their processes but rather analyse them with the 'view – in the future - towards potentially improving it and homogenizing non-standard processes'. The author agrees that prior to conducting a process development user acceptance testing is required as well as user inputs. But the crux of the 'Process Focus' is different, its purpose is to identify how the firm operates and delivers their services and goods to their customers.

In regards to knowledge evaluations the guidelines suggest that they assessed by fact based stories not under process. The guidelines within 'Process Focus' however do highlight that a knowledge audit should be conducted. This is distinct from evaluation, it rather aims to identify what people need to carry out their jobs; this includes both information and competences.

Point 4:

A knowledge audit is the activity that helps organisations develop an understanding on what knowledge the organisation has, who has it and how it flows. Knowledge, here, as mentioned in the guidelines, refers to 'what people need in order to carry out their jobs'. This constitutes information as well competencies that people need, to carry out their jobs.

In regards to knowledge flows, as mentioned in the guidelines, it is about identifying the path from where knowledge is needed to where it is located. Here, as mentioned, knowledge constitutes information as well as competencies people need. It maybe the case that an individual with a

particular competence, for instance, in repairing an oil rig in Siberia is known to constantly get calls from that rig. Determining knowledge flows would aim to make visible this relationship between the people at the rig and this particular individual.

Point 5

The respondent in regards to the technology focus makes a very interesting point; namely *“Would suggest focus on demand for tools rather than implementing what you think is wanted - wait for a pull!”*. It was realised that the technology focus was found to be the least useful guideline. This suggests as highlighted in the respondents comment that the needs for technology in firms is organisational specific. It is based on a pull factor within each organisation and that perhaps explains why the majority of the respondents to the evaluation questionnaire found it the least useful guideline.