

A Knowledge Management Initiative
in a
Juvenile Detention School

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I certify that this dissertation which I now submit for examination for the award of MSc in Computing (Knowledge Management), is entirely my own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

This dissertation was prepared according to the regulations for postgraduate study of the Dublin Institute of Technology and has not been submitted in whole or part for an award in any other Institute or University.

The work reported on in this dissertation conforms to the principles and requirements of the Institute's guidelines for ethics in research.

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Date: ***25 July 2008***

ABSTRACT

The preservation of *knowledge* has been a human endeavour since the dawn of time. Using whatever resources possible, humans have recorded *knowledge* for the purpose of bequeathing it to the next generations. With each technological advance, it would appear that the resources available for recording *knowledge* have improved. Not only this, but with each advance, the accessibility and availability to this *knowledge* has been enhanced; and in our present times, the impact of technology has made it easier than ever before. As with education, the consequence of making *knowledge* more available and accessible is the creation of more knowledgeable individuals; individuals who live in a modern society which has been termed the *knowledge society*. The potential of these knowledgeable individuals or *knowledge workers* as key assets in the production of services and goods is well recognised.

Knowledge management has emerged, hand in hand, with this new breed of worker. As a tool, organisations are using *knowledge management* as means to preserve the *knowledge* of these workers. For different reasons, private sector organisations have been quicker to embrace *knowledge management* than their public sector counterparts. Ironically, governments support the concept of the *knowledge society* and all the benefits it promotes, yet, many of the agencies who operate on their behalf do not use *knowledge management*. This is all the more strange given that conducting business on behalf of the nation is *knowledge* intensive.

Oberstown Boys School is one such agency. Operating in the domain of justice, its business is the detention of juvenile offenders. Given the nature of business, which is people focussed, the research of this project explores if a *knowledge management* initiative could be cultivated there. Through use of a *knowledge audit* the project will explore where the knowledge is in the organisation and explore how technology can help.

Key words: *knowledge, knowledge management, knowledge society, knowledge audit, public sector organisation, juvenile, justice.*

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1 INTRODUCTION

1.1 *Background*

In 1993, Karl Wiig authored “Knowledge Management Foundations: Thinking about Thinking – How People and Organisations Create, Represent and Use Knowledge” (Wiig, 1993). It was probably the first time the term Knowledge Management (KM) was officially published but, in one form or another, KM has been with us for a very long time before this. Throughout the course of human history, one of the fundamental characteristics of all societies is the task of preserving the knowledge of both past and present generations, the task of augmenting it accordingly, and the task of bequeathing its benefits to future generations. Practitioners of these knowledge tasks are many and include philosophers, priests, teachers, politicians, scribes, scientists, doctors, authors, artists, librarians, to name but a few.

Even so, during the years of the late 20th century and early 21st century the concept of KM has flourished as a topic of much research and usage. Many organisations have invested heavily in KM in an attempt to fulfil many different objectives, namely in areas such as innovation, competitiveness and financial profit. To date, a multitude of KM initiatives have been implemented in a wide range of industry sectors, all reporting varying degrees of success. In contrast, many other organisations, though recognising the concept of KM and acknowledging its benefits, have never attempted to implement any KM initiatives. It would appear the objectives of these organisations are more people focused with less regard for innovation, competitiveness and financial profit. Thus, investment in KM has not been a prerogative. It can be shown that these very different objectives generally define the characteristics of private and public sector organisations; the former, in its provision of products and services, are motivated by making profit, whilst the latter, in its provision of service to people, are not. However, it should be noted that KM initiatives are not exclusive to private sector organisations but are less common in the public sector ones.

Technology is a core part of modern society but it has been a factor, in its various forms, throughout the course of human history. However, technology development and advances during the past one hundred years has been unprecedented, particularly in the

areas of information and communication. These developments and advances have provided many new possibilities which have helped with the germination and implementation of many of the aforementioned KM initiatives. However, to believe a successful implementation of a KM initiative rests solely on the provision of these technological developments and advances would be unwise. As already noted, KM is an ageless topic and its premise is concerned with the entire process of discovery and creation of knowledge, dissemination of knowledge, and the utilization of knowledge. Accepting this premise would conclude that elements of KM feature in many job roles regardless of whether a dependency on technology exists or not. Even so, the ongoing day to day reliance and demands on the use of technology makes it impossible to ignore or avoid. In addition, it is widely recognised by many in KM circles that the four pillars approach is required in support of any KM initiative. These four pillars are leadership, organisation, technology and learning. In application, these pillars are critical success factors for KM implementation. Therefore, the use of the technology pillar is not sufficient to drive a KM initiative, however, failing to recognise the role of technology pillar in supporting a KM initiative would be inappropriate.

With all of the publicised accounts of KM research, KM initiatives and KM implementations during the past two decades; very little, if any, can be located on the topic of Juvenile Detention (JD). It would be easy to suggest that the reason for this is because the area of JD is both a sensitive and confidential one, but in simpler terms JD centres are public sector organisations and their objectives are clearly very different to most organisations which have embraced KM. JD centres are primarily concerned with the detention of young people in safe, secure and caring environments. The employees ensure these environments are created and sustained. Bearing this in mind, it is evident that the emphasis on the use of technology is very low and the objectives of innovation, competitiveness and financial profit would be considered very alien, or have no place, in these settings.

Nevertheless, public sector organisations are beginning to implement KM initiatives at the behest of Government, in line with Ireland's vision for a knowledge economy. New objectives concerned with efficiency, cost cutting and demographics within the public sector workforce are driving these initiatives. Not only this, the implementation of KM initiatives is imperative to fulfil the challenge, established by the Government, to

create a knowledge economy which is vital to the development and prosperity of the nation.

1.2 Research Problem

The participating organisation in this research project is Oberstown Boys School (OBS) in Lusk, Co. Dublin, which is one of several JD centres in the Republic of Ireland. The aim of the project is to explore and evaluate the impact of implementing a small KM initiative, which is designed to make some of the data, information and knowledge, as recorded and archived by the organisation, more accessible for use by the employees. In doing so, it is envisaged that the provision of these accessible archives would be a contributing factor to establishing KM in OBS.

1.3 Research Objectives

In accordance of meeting the aim of this research project, the following objectives have been achieved throughout the dissertation and contributed to the overall outcome:

- An overview of KM; an explanation of the knowledge economy in Ireland; how a public sector organisation, such as a JD centre, is part of the knowledge economy; an overview of a JD centre, such as OBS, and why it is a suitable candidate for KM.
- Some of the key artefacts used in OBS will be identified, through use of a knowledge audit, and described within a knowledge context. One of these key artefacts will be identified for selection. The selected artefact is a journal known as the *Client Care Plan* and the importance of its role in OBS will be described, both on a daily and historical basis.
- Some of the different types of interactions or knowledge processes conducted between the employees and the *Client Care Plan* will be identified. These interactions or knowledge processes will be analysed and modelled accordingly.
- One of the modelled knowledge processes will be selected and an assessment of how technology could be effectively applied to supporting this process will be conducted.

- A small experiment, with a small software application representing the selected modelled knowledge process, will be presented to the employees and they will be requested to evaluate its effectiveness.

1.4 Research Methodology

Both primary and secondary research was performed throughout the duration of this research project.

The secondary research comprised a literature review of material which would best assist in meeting the objectives of the project. The areas covered in the literature review were:

- Knowledge
What is knowledge? Is it different to data and information? What types of knowledge are there? Where does it reside?
- Knowledge Management
What is KM?. What benefits it brings to an organisation and the reasons why it is adopted by some organisations and not by others. Is technology a factor?
- The Knowledge Society
What is a Knowledge Society? How is it important? What role does the Irish Government have in its development and how does this impact the public sector organisations?
- Knowledge Management Strategies and Technology
What are KM strategies? Why use them? The Knowledge Audit – why use it?D
Is technology a factor, is it used in KM?
- Juvenile Detention
An overview of JD. Where does OBS fit into the juvenile justice. Why is juvenile justice and juvenile detention a suitable case for KM.

Various different sources were used to complete the literature review, which include the following:

- Journals
- White Papers
- Conference proceedings
- Books
- Organisational websites
- Newspapers

The primary research conducted for this project was in two stages. The first stage, which is the knowledge audit stage, involved the use of a survey to assess the organisation's knowledge assets. In addition, the survey would try to establish what level of technological competence exists amongst the employees, to assess if there would be some degree of resistance to KM initiative given that technology would be required to support it.

The results of the first stage of the primary research combined with the findings of the literature review would be used to create the experimental application and presented to the employees which will evaluate its effectiveness. In effect, this will be the second stage of the primary research and its findings may be compared to the first stage to gauge if the KM initiative was successful or not.

1.5 Resources

The availability of the following resources are essential to the completion of this dissertation:

- Library Facilities

Access to the Dublin Institute of Technology's library facilities proved to be invaluable when conducting the literature review. The ability to access the facilities from home and work proved very useful.

- Software

The following list of software would be used for the purpose of this project:

- Windows and Ubuntu Operating Systems.
- Microsoft Office Suite and OpenOffice for writing the dissertation.

- MySQL Database Software for data storage.
 - Programming Software, PHP or Ruby on Rails for creating the application.
 - Survey Software to be decided
- Computer and other hardware

Two laptops will be used for the purpose of this project. The first will be used to write the dissertation. The other will host the developed application and will be used for testing purposes. The only other piece of hardware used will be a scanner. This will be used for creating graphic datatypes which will be stored in the database.
 - Internet and Email

The availability of the internet will be invaluable as it will give access to a large amount of online material for the purpose of the literature review and application development. The availability of email will facilitate communication with my project supervisor and contacts in the Juvenile Detention Sector.
 - Contacts in Juvenile Detention Sector

The author of this dissertation is employed in the Juvenile Detention Sector and as such has easy access to many individuals who will participate in the research at every stage.
 - Project Supervisor Guidance

Regular contact with the project supervisor for advice and guidance will be crucially important for completing the dissertation. Contact will be made through email and planned face to face meetings.

1.6 Scope and Limitations

The aim of this research project is to measure the impact of a KM initiative in one of several JD centres in the country. The scope or size of the initiative is determined to be small due to the fact that the efforts of the project focus on a single knowledge process

belonging to only one artefact used in the organisation. Therefore, it should be noted that the initiative is not an overall KM implementation for the organisation. If the initiative is successful, it could be considered to be a building block in the overall strategy to implementing KM in the organisation. Conversely, if the initiative is not successful, a post mortem may reveal the factors which resulted in the outcome. These factors could be rectified for the purposes of future initiatives which are outside the scope of this project. Either way, the success or failure of the initiative will not have incurred any great investment of organisational resources.

Though a great deal of KM research and case study literature exists, there is very little which deals with the subject of JD. Though, this can be considered to be a great limitation to fulfilling the aim of the project, it would necessary to explore and review any KM initiatives which have been implemented in other public sector organisations for the purpose of learning and benefiting from their experiences.

1.7 Project Deliverables

Though the primary aim of this research project is to measure the impact of a KM initiative in a JD centre, the following list of deliverables will be presented:

- A literature review of KM, the knowledge economy, public sector organisations and KM
- A literature review of JD, citing OBS as an example, and why it is suitable for KM.
- A compiled list of all the artefacts used in OBS by the employees.
- A compiled list of all the knowledge processes associated with the selected artefact from the compiled list of artefacts. Choice of artefact will need to be justified.
- A model representing one of the knowledge processes with the selected artefact. Choice of knowledge process will need to be justified.
- A critical review of all the available and applicable technologies with the view to selecting the one which would best support the modelled knowledge process.
- The analysis and requirements to design an experiment which would be used by the employees for evaluation of effectiveness. The results of the evaluation

would be presented. Results of a pre-experiment survey would be presented. A comparison between pre and post experiment results would be presented.

- A conclusion outlining the outcome of the research project and areas of future work.

1.8 Organisation of Dissertation

The dissertation is divided into nine chapters and is organised as follows:

- Introduction
- Chapter 2
The reader will be introduced to knowledge. What it means and how it differs to data and information. The reader will be presented with the different types of knowledge and the different places it is stored.
- Chapter 3
The reader will be introduced to the concept of KM, discussing the driving factors, the benefits and barriers to implementing it. In addition, the reader will be presented with an outline of some of the KM processes. Finally, “The Four Pillar” framework is outline as a guide for implementing successful KM programmes.
- Chapter 4
The reader will be introduced to the concept of the Knowledge Society, highlighting the link between it and KM. A discussion will describe the implications which the Knowledge Society has for governments, organisations and society.
- Chapter 5
The reader will be introduced to the concept of KM strategies highlighting their importance if a successful KM programme is to be implemented and pay particular interest to the use of a knowledge audit.

- Chapter 6

The reader will be introduced to an overview of juvenile justice in Ireland. Background to one of the juvenile detentions schools, Oberstown Boys School (OBS) will be presented and reasons why it would be a suitable candidate for KM.

- Chapter 7

The reader will be introduced to the KM initiative, citing OBS as an good case study subject. Reference to each of the topics or concepts touched on in the previous chapter will be used to perform an analysis and to help shape the KM initiative.

In addition, the reader will be presented with the findings of the KM initiative. Some of the artefacts used in OBS will be identified. Some of the processes identified with each artefact will be identified. A review will be conducted for the purposes of selecting a process for a given artefact for further work, that is; experimentation. Reasons, justifying the selection will be presented to the reader.

- Chapter 8

The reader will be introduced to the experiment and its results will be presented.

- Chapter 9

The reader will be introduced to the conclusion of the project, highlighting its outcome and proposing future work in the area.

2 KNOWLEDGE

2.1 Introduction

The purpose of this chapter is to explain in detail what is meant by knowledge. In order to achieve this, knowledge is distinguished from data and information and all three concepts will be illustrated with the use of some examples. In addition, some of the perspectives commonly used to view knowledge, typically subjective and objective viewpoints, will be summarised. Moreover, a description of the different types of knowledge is presented, with special attention given to the spiral of knowledge. The subject of the data-information-knowledge continuum will be discussed. Finally, an explanation of the various reservoirs, or locations, in which knowledge may reside will be presented.

2.1 What is Knowledge?

There is much confusion in the literature and in practice on what exactly the key concepts of data, information and knowledge actually are. The terms are frequently used interchangeably, which is both incorrect and causes confusion which leads to serious time wasted on many projects (Stenmark, 2002). Consequently, confusion about what data, information and knowledge are - how they differ, what those words mean - has resulted in enormous expenditures on technology initiatives that rarely deliver what the firms spending the money needed or thought they were getting. Often firms don't understand what they need until they invest heavily in a system that fails to provide it (Davenport & Prusak, 1998).

It is important to emphasize that data, information and knowledge are not interchangeable concepts and a clear distinction between of all three should be stressed. Organisational success or failure can often depend on knowing which of them you need, which you have and what you can and can't do with each. Understanding what those three things are and how you get from one to another is essential to doing knowledge work successfully. Even so, there is no denying that a relationship exists between the concepts and it is best to begin with a brief comparison of the three terms

and the factors involved in transforming of data into information and information into knowledge (Davenport & Prusak, 1998).

2.1.1 Data

Many definitions to describe what data is have been proposed. Some of these definitions are:

- *Data is a set of discrete, objective facts about events* (Davenport & Prusak, 1998).
- *Data comprises facts, observations, or perceptions (which may or may not be correct)* (Becerra-Fernandez, Gonzalez & Sabherwal, 2004).
- *Data is symbols which are not yet interpreted* (Spek & Spijkervet, 1997).
- *Text that does not answer questions to a particular problem* (Quigley & Debons, 1999).

Thus, data represents raw numbers or assertions, and may therefore be devoid of context, meaning, or intent. The following example can be considered to be data;

A restaurant sales order including two large burgers and two medium-sized vanilla milkshakes.

Although, data is devoid of context, meaning, or intent, it can be easily captured, stored, and communicated using electronic or other media (Becerra-Fernandez, Gonzalez & Sabherwal, 2004). All organisations need data and some are heavily dependent on it. Banks, insurance companies, utilities, and government agencies are obvious examples. Record keeping is at the heart of these “data cultures” and effective data management is essential to their success. Efficiently keeping track of millions of transactions is their business. But for many companies, even some data cultures, more data is not always better than less. It has been suggested that if you have more data, objectively correct decisions will automatically present themselves. However, this is

false on two counts. First, too much data can make it harder to identify and make sense of the data that matters. Second, and most fundamentally, there is no inherent meaning in data. Data describes only a part of what happened; it provides no judgement or interpretation. While the raw material of decision making may include data, it cannot tell you what to do. But data is important to organisations because it is the raw material for the creation of information (Davenport & Prusak, 1998).

2.1.2 Information

Many definitions to describe what information is have been proposed. Some of these definitions are:

- *Information is a message meant to change the receiver's perception* (Davenport & Prusak, 1998).
- *Information is a subset of data, only including those data that possess context, relevance, and purpose* (Becerra-Fernandez, Gonzalez & Sabherwal, 2004).
- *Information is data with meaning* (Spek & Spijkervet, 1997).
- *Information is text that answers the questions who, when, what, or where* (Quigley & Debons, 1999).

Typically, information involves the manipulation of raw data to obtain a more meaningful indication of trends or patterns in the data (Becerra-Fernandez, Gonzalez & Sabherwal, 2004). Continuing with the previously mentioned example:

For the manager of the restaurant, the numbers indicating the daily sales (in currency, quantity, or percentage of daily sales) of burgers, vanilla milkshakes, and other products are considered information. The manager can use such information to make decisions concerning pricing and raw material purchases.

The facts about the daily sales of burgers represents information for the restaurant manager but only data for the customer. Data becomes information with the addition of meaning, and this can be achieved in various ways. Several of these methods are (Davenport & Prusak, 1998):

- Contextual we know for what purpose the data is gathered.
- Categorise we know the units of analysis or key components of the data.
- Calculate the data may have been analysed mathematically or statistically.
- Correct errors have been removed from the data.
- Condense the data may have been summarised in a more concise form.

Finally, whilst technology can be a great help when transforming data into information, it cannot help with context, and humans must help with categorisation, calculating, correction and condensing (Davenport & Prusak, 1998).

2.1.3 Knowledge

Many definitions to describe what knowledge is have been proposed. Some of these definitions are:

- *knowledge is defined as, a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, and norms. Knowledge is not neat or simple. It is a mixture of various elements; it is fluid as well as formally structured; it is intuitive and therefore hard to capture in words or understand completely in logical terms.*

Knowledge exists in people, part and parcel of human complexity and unpredictability. (Davenport & Prusak, 1998).

- *Knowledge is defined as, knowledge in an area as justified beliefs about relationships among concepts relevant to that particular area (Becerra-Fernandez, Gonzalez & Sabherwal, 2004).*
- *Knowledge is the whole set of insights, experiences and procedures that are considered correct and true and that therefore guide the thoughts, behaviours and communications of people (Spek & Spijkervet, 1997).*
- *Knowledge is text that answers the questions why and how (Quigley & Debons, 1999).*

What these definitions immediately make clear is that knowledge is not neat or simple. It is a mixture of various elements; it is fluid as well as formally structured; it is intuitive and therefore hard to capture in words or completely understand in logical terms. Continuing with the previously mentioned example:

The daily sales of burgers can be used, along with other information, to compute the amount of bread to buy. The relationship between the quantity of bread that should be ordered, the quantity of bread currently in the inventory, and the daily sales of burgers is an example of knowledge. Understanding this relationship (which could be conceivably be stated as a mathematical formula) helps to use information to compute the quantity of bread to be purchased. However, the quantity of bread to be ordered should be considered information and knowledge. It is simply more knowledge.

Thus information becomes knowledge when people do all the work and this transformation can be achieved in various ways. Several of these methods are (Davenport & Prusak, 1998):

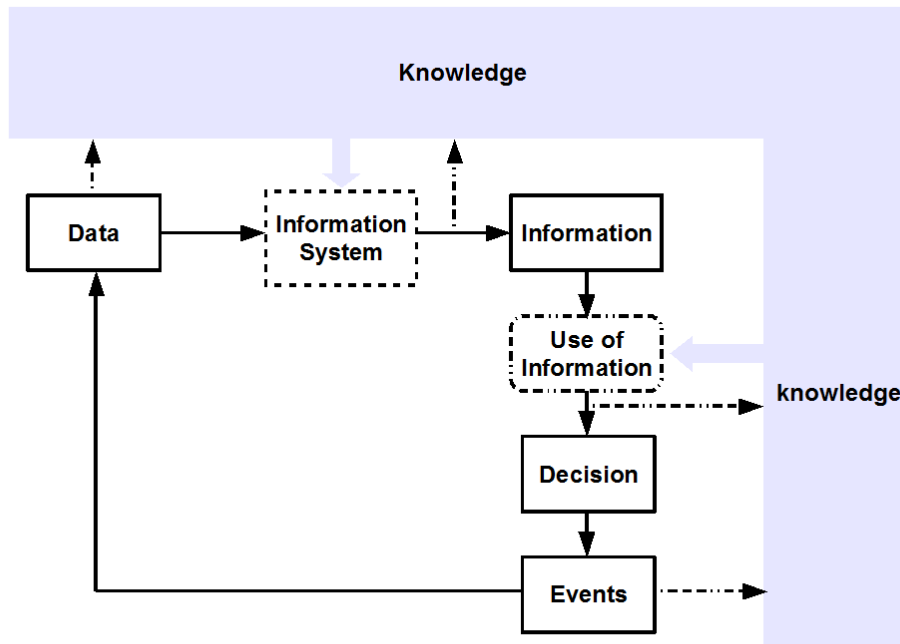
- **Comparison** How does information about this situation compare to other

situations we have known?

- Consequences What implications does the information have for decisions and actions?
- Connections How does this bit of knowledge relate to others?
- Conversation What do other people think about this information?

Knowledge creation continuously takes place all around us and its source can be other individuals, experts and organisational routines. The delivery mechanisms for knowledge can vary and performed with the use of structured media and person-to-person contact. *Figure 2.1* depicts how knowledge, data and information relate to information systems, decisions and events. Knowledge helps to convert data into information. Knowledge can be stored in a manual or computer-based information system, which receives data as input and produces information as output. Additionally, the use of information to make a decision requires knowledge as well. The decisions, as well as certain unrelated factors, lead to events, which cause generation of further data. The events, the use of information, and the information system might cause modifications in the knowledge itself (Becerra-Fernandez, Gonzalez & Sabherwal, 2004). In this respect, consider our example:

On ordering raw materials based on sales, information about changes in suppliers might cause changes in the perceived relationship between the quantity on hand, the daily sales, and the quantity to be ordered.



*Figure 2.1 – Relating Data, Information and Knowledge to Events
(Becerra-Fernandez, Gonzale & Sabherwal, 2004)*

2.2 Alternate Views of Knowledge

There are alternate views of knowledge which can either be subjective or objective. The subjective view represents knowledge using two possible perspectives: as a state of mind, or as a practice. The objective view represent knowledge in three possible perspectives: as an object, as an access to information, or as a capability.

2.2.1 Subjective View of Knowledge

According to the subjective view, reality is socially constructed through interactions with individuals (Schultze, 1999). Knowledge is viewed as an ongoing accomplishment, which continuously affects and influenced by social practices (Boland & Tenkasi, 1995). As knowledge cannot exist independently from social practices and human experiences it can be consider as follows (Becerra-Fernandez, Gonzalez & Sabherwal, 2004):

2.2.1.1 Knowledge as State of Mind

This perspective considers knowledge as a state of an individual's mind. Organisational knowledge is viewed as the beliefs of the individuals within the organisation whereas the individuals have differing experiences and backgrounds, their beliefs, and hence their knowledge, could differ from one another. Thus, the focus is on enabling individuals to enhance their personal areas of knowledge so that they can apply them to pursue organisational goals (Alavi & Leidner, 2001).

2.2.1.2 Knowledge as Practice

This perspective considers knowledge as a view which is held by a group and not decomposable into elements possessed by individuals. Thus, “knowledge is neither possessed by one agent nor contained in any one repository” (Schultze, 1999). Equally, knowledge doesn't reside in anyone's head but in practice. Knowledge is composed of beliefs as a collective instead of individual and are better reflected in organisational activities than in the minds of organisational individuals. Viewed from this perspective, knowledge is “inherently indeterminate and continually emerging” (Tsoukas, 1996).

2.2.2 Objective View of Knowledge

The objective view is the opposite to the subjective view. According to the objective view, reality is independent of human perceptions and can be constructed in terms of *a priori* categories and concepts (Schultze, 1999). Therefore, knowledge can be located in a form that can be discovered and improved by humans. Three possible perspectives are (Becerra-Fernandez, Gonzalez & Sabherwal, 2004):

2.2.2.1 Knowledge as Objects

From this perspective knowledge is something that can be stored, transferred and manipulated. They can be of several different types and exist in a variety of locations.

2.2.2.2 Knowledge as Access to Information

From this perspective knowledge is the condition of access to information (Alavi & Leidner, 2001). Thus, knowledge is viewed as enabling access and utilisation of information. This extends the previous view of knowledge as objects, with an emphasis on access to these objects.

2.2.2.3 Knowledge as Capability

Given the previous two perspectives of knowledge, this perspective differs in that it focuses on the way the knowledge can be applied to influence action. Thus knowledge becomes a strategic capability that can be applied to seek competitive advantage.

The five perspectives differ in their focus in viewing knowledge but they are all consistent in viewing knowledge as a set of beliefs about relationships. However, for the purpose of this research a position that is more objective is adopted.

2.3 Different Types of Knowledge

Many different classifications of knowledge have emerged over the years (Blackler, 1995; Crowley, 2000; Snowdon, 2000; Choo, 2002; Alter, 2002). For example, knowledge has been categorised as individual, social, casual, conditional, relational and pragmatic (Alavi & Leidner, 2001) and also as embodied, encoded and procedural (Venzin et al., 1998). The following section examines some of the more important classifications of knowledge.

2.3.1 Procedural or Declarative Knowledge

The first distinction for examination is between declarative knowledge and procedural knowledge. There are as follows (Becerra-Fernandez, Gonzalez & Sabherwal, 2004):

- Declarative knowledge focuses on beliefs about relationships among variables. For example, all other things being equal, greater price charged for a product would cause some reduction in its number of sales. Thus it can be stated in the

form of propositions, expected correlations, or formulas relating concepts represented as variables. Thus, declarative knowledge may be characterised as “know what”.

- Procedural knowledge, on the other hand, focuses on beliefs relating sequences of steps or actions to desired outcomes. An example of such procedural knowledge is the set of justified beliefs about the procedure that should be followed in a government agency in deciding on whom to award the contract for a particular area. Thus, procedural knowledge may be viewed as “know how”.

2.3.2 Tacit or Explicit Knowledge

Of all the classifications of knowledge, none are as widely accepted as the elaborate classification into its explicit and tacit forms (Nonaka & Takeuchi, 1995; Polanyi, 1958; Sveiby, 1997).

2.3.2.1 Explicit

Explicit knowledge is knowledge that has been or can be articulated, codified, and stored in certain media. Very often, it is technical or academic data or information that subscribes to some formal structure. The most common forms of presenting explicit knowledge are manuals, documents, procedures, mathematical expressions, copyrights and patents. Other forms of explicit knowledge can be audio-visual. Explicit Knowledge is readily transmitted and shared to others through print, electronic methods and other formal means. The storage of explicit knowledge employs the usage of a hierarchy of databases and is accessed with high quality, reliable, fast information retrieval systems. Once codified, explicit knowledge assets can be reused to solve many similar types of problems or connect people with valuable, reusable knowledge. Sharing processes often require major monetary investments in the infrastructure needed to support and fund information technology (Hansen et al., 1999). Acts of gathering and using explicit knowledge assume a predictable, relatively stable environment. Marketplace competition, changing customer needs, among other factors, reduce stability.

The following demonstrates the use of explicit knowledge in an organisation. The 82,000 worldwide employees of Ernst & Young are creating a global brain of explicit knowledge to include cultural differences. Their repository of global "best practices" is founded on sharing and documenting knowledge. They approach business issues from an array of perspectives. No matter where in the world a problem occurs, there is "no one right answer" but many workable approaches. Ernst & Young view knowledge objects as templates of core insights that can be used in any cultural environment (Wah, 1999a).

Andersen Consulting (now Accenture) created elaborate ways to codify, store and re-use explicit knowledge. Its "people-to-documents" approach extracts information from the person who developed it and makes it independent of its developer. All client-sensitive information is removed and selected information is reused. Information is transformed into a proven, successful solution that can be used in the same or similar industry (Hansen et al., 1999).

2.3.2.2 Tacit

The concept of tacit knowledge comes from scientist and philosopher Michael Polanyi. He became known to a larger audience by being quoted in the writings of Kuhn (Kuhn, 1962) and more so due the writings of Nonaka and Takeuchi (Nonaka, 1994; Nonaka and Takeuchi, 1995). One of Polanyi's famous aphorisms is: "we can know more than we can tell" (Polanyi, 1966). Polanyi speaks of tacit knowledge as a backdrop against which all actions are understood. However, Nonaka uses Polanyi's term somewhat differently in the area of knowledge management by indicating that particular knowledge that is difficult to express. The strong influence of Nonaka's writings in this area has allowed this misconception has been widely adopted. Conversely, there may have been less confusion had Nonaka used the term implicit knowledge instead of tacit knowledge (Stenmark, 2002).

Even so, the widely accepted definition for tacit knowledge is that it is knowledge that people carry in their minds and is difficult to access, express, process, capture, or transmit in any systematic or logical manner. Often, people are not aware of the knowledge they possess or how it can be valuable to others until it is needed. Tacit

knowledge is considered more valuable because it provides context for people, places, ideas, and experiences. It also includes know-how, rules of thumb, judgement, insights and skills. Effective transfer of tacit knowledge generally requires extensive personal contact and trust. Consequently, people use metaphors, analogies, demonstrations and stories to convey their tacit knowledge to others (Stewart, 1997). Listeners can evaluate story content and actions and apply useful tacit knowledge to their own jobs.

For instance, employees of Datafusion Inc., an information-technology products and consulting firm, take photos at business conferences and share these photos with colleagues. The stories employees write contain notes and descriptions, or explicit knowledge. Stories about why things happened and how information could be applied contain tacit knowledge. Tacit knowledge, as context, is often easier to remember and talk about than explicit knowledge or content (Wah, 1999b).

McKinsey & Company and Bain & Company use people-to-people methods to personalise tacit knowledge and encourage and reward individual ownership of knowledge and the process. Tacit knowledge is personalised when specific expertise is used to provide creative, analytically rigorous advice on high-level strategic problems. This personalises tacit knowledge fits the company culture, customer needs and standard reporting methods. Both companies built worldwide networks of people who had successfully solved similar problems by enabling them all to work together to create realistic solutions to the problems. Networks were connected so tacit knowledge could be shared face-to-face, over the telephone, by e-mail and through video conferences (Hansen et al., 1999).

2.3.2.3 The Spiral of Knowledge

Though there is a clear distinction between tacit and explicit knowledge, interactions between them do occur. It is suggested that these interactions create knowledge in an organisation. Nonaka & Takeuchi proposed a model, which represents the interactions between the two types of knowledge (1995). The model is known as either: The Spiral of Knowledge, The Knowledge Spiral, or SECI Model, and is displayed in *Figure 2.2*. The model was constructed from empirical evidence gathered in case studies of Japanese companies, notably the Matsushita Electric Industrial Company in 1985.

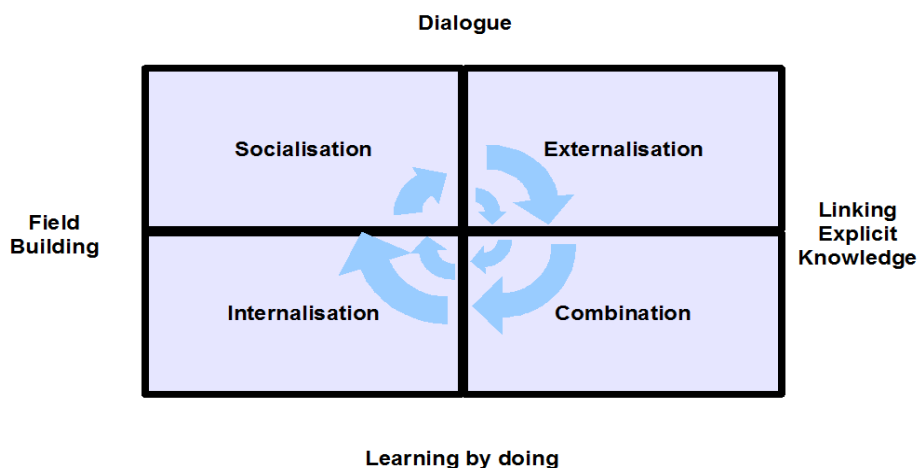


Figure 2.2 – The Spiral of Knowledge (Based on Nonaka & Takeuchi, 1995)

The Spiral of Knowledge can be seen as a 2x2 matrix. In each quadrant, knowledge is either explicit or tacit. There are four modes of transfer from quadrant to quadrant: socialisation, externalisation, combination and internalisation. Each are explained as follows (Rumizen, 2002):

- ***Socialisation*** involves transferring tacit knowledge from one person to another. It is transferred through interactions between individuals, which may also be accomplished in the absence of language. Individuals may learn and gain a sense of competence by observing behaviour modelled by others. For example, coaching, mentoring and apprenticeships instruct tacitly through observation, imitation, and practice.
- ***Externalisation*** makes tacit knowledge explicit. Because the conversion of tacit to explicit knowledge involves a cognitive abstraction into a concrete concept, metaphors are recommended as a way to facilitate this translation. Metaphors assist individuals in explaining concealed concepts that are otherwise difficult to articulate by assisting individuals in forming impressions based on “imagination and intuitive learning through symbols”. In other words, metaphors create networks of related concepts as prototypes to facilitate the

ability to understand abstract, imaginary concepts. Furthermore, dialogue is also important as talking face-to-face allows people to share their beliefs and learn to better explain their thinking through instant feedback and exchange of ideas.

- **Combination** transfers explicit knowledge to explicit knowledge. It embodies the aggregation of multiple examples of explicit knowledge and it is suggested that this is where IT can really shine. Explicit knowledge will exist in documents, e-mail and databases; and can be readily shared through meetings, briefings and conferences whereby the diversity of knowledge sources combine to shape a new and enhanced conception. The key steps are getting the relevant knowledge, editing and processing it to make it usable, and disseminating it.
- **Internalisation** is the conversion of explicit knowledge to tacit knowledge and occurs through a series of iterations in which concepts become concrete and ultimately absorbed as an integral belief or value. Where externalisation utilises metaphors to facilitate knowledge conversion, internalisation represents an active process of learning. In this mode, participant share explicit knowledge that is gradually translated, through interaction and a process of trial-and-error, into different aspects of tacit knowledge.

2.3.3 General or Specific Knowledge

Another classification of knowledge focuses on whether knowledge is possessed widely or narrowly. These are described as follows (Becerra-Fernandez, Gonzalez & Sabherwal, 2004):

2.3.3.1 General Knowledge

This type of knowledge is possessed by a large number of individuals and can be transferred easily across individuals. For example, knowledge about the rules of a football can be considered general, especially amongst fans of the game.

2.3.3.2 Specific Knowledge

This type of knowledge is possessed by a very limited number of individuals and is expensive to transfer (Hayek, 1945; Jensen & Meckling, 1996). The distinction between the manager/coach and typical fan watching a football game. A manager has the knowledge needed to filter, form the running game, the information required to evaluate and help players. Few fans may have this knowledge, and so it is considered specific. Specific knowledge can be one of two types:

2.3.3.2.1 Technically Specific Knowledge

This type of specific knowledge is deep knowledge about a specific area. It includes knowledge about the tools and techniques that may be used to address problems in that area. Often this knowledge is acquired through the use of formal training and augmented by experience in the field.

2.3.3.2.2 Contextually Specific Knowledge

This type of specific knowledge refers to the knowledge of particular circumstances of time and place in which work is performed (Hayek, 1945; O'Reilly & Pondy, 1979). Contextually specific knowledge pertains to the organisation and the organisational subunit within which tasks are performed. An example is a football goalkeeper who has knowledge of the team's defensive capabilities. Contextually specific knowledge cannot be acquired through training, but must be obtained from within the specific context.

2.4 Combining the Classifications of Knowledge

	<i>General</i>	<i>Contextually Specific</i>	<i>Technically Specific</i>
Declarative			
Explicit	A book describing factors to consider when deciding whether to buy a company's stock. This may include price to earnings ratio, dividends .	A company document identifying the circumstances under which a consultant team's manager should consider replacing a team member who is having problems with the project	A manual describing the factors to consider in configuring a computer so as to achieve performance specifications.
Tacit	Knowledge of the major factors to consider when deciding whether to buy a company's stock	A human relations manager's knowledge of factors to consider in motivating an employee in a particular company.	A technician's knowledge of symptoms to look for in trying to repair a faulty television set.
Procedural			
Explicit	A book describing the steps to take in deciding whether to buy a company's stock.	A company document identifying the sequence of actions a consultant team's manager should take when requesting senior management to replace a team member having problems with the project.	A manual describing how to change the operating system setting on a computer so as to achieve desired performance changes.
Tacit	Basic knowledge of the steps to take in deciding whether to buy a company's stock	A human relations manager's knowledge of steps to take in motivating an employee in a particular company.	A technician's knowledge of the sequence of steps to perform in repairing a television set.

*Table 2.1 – Illustration of the different types of knowledge
(Becerra-Fernandez, Gonzalez & Sabherwal, 2004)*

It is possible to combine the different classifications of knowledge outlined in the previous sections. Procedural knowledge can be either tacit or explicit, so too can declarative knowledge. The above table, *Table 2.1*, illustrates this combining of classifications (Becerra-Fernandez, Gonzalez & Sabherwal, 2004):

2.5 Locations of Knowledge

Knowledge resides in several different locations or reservoirs, which are summarised in *Figure 2.3*. They encompass people, artefacts and organisational entities and are described in the following section.

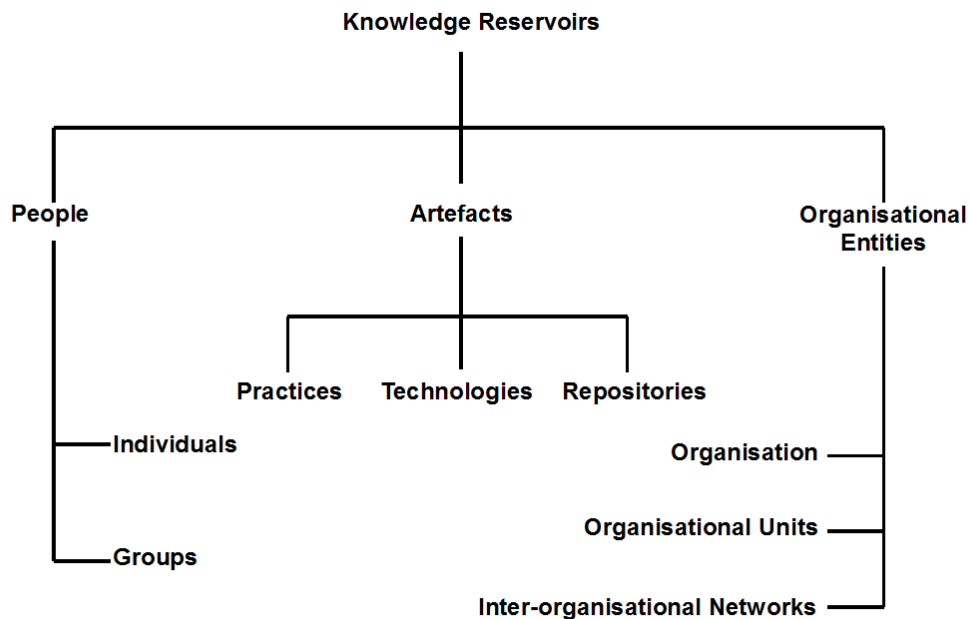


Figure 2.3 – The Reservoirs of Knowledge (Becerra-Fernandez, Gonzalez & Sabherwal, 2004)

2.5.1 Knowledge in People

A considerable component of knowledge is stored in people. Some of this knowledge is stored in individuals within organisations. The knowledge stored in individuals is the reason several companies continually seek ways to retain knowledge that might be lost because of individuals are retiring or otherwise departing from the organisation (Becerra-Fernandez, Gonzalez & Sabherwal, 2004).

Additionally, knowledge resides within groups because of the relationships among the members of the group. When several individuals work together for a long time, they instinctively know each others strengths and weaknesses, understand the other's

approach, and recognise aspects that need to be communicated and those that need to be taken for granted (Skyrme, 2000). Furthermore, groups form beliefs about what works well and what does not. This collective knowledge is greater than the sum of each individual's knowledge.

2.5.2 Knowledge in Artefacts

Over a long period of time, knowledge is stored in organisational artefacts. Some will be stored in practices, organisation routines, or sequential patterns of interaction. In this case knowledge is embedded in procedures, rules and norms that develop through experience over time and guide future behaviour (Levitt and March, 1988).

Knowledge is also stored in technologies and systems. In addition to storing data, information technologies and computer-based information systems can store knowledge about relationships (Becerra-Fernandez, Gonzalez & Sabherwal, 2004).

Knowledge repositories represent another way of storing knowledge. These artefacts could be either electronic based or paper based, such as books, papers and other documentation (Becerra-Fernandez, Gonzalez & Sabherwal, 2004)

2.5.3 Knowledge in Organisational Entities

Knowledge is also stored within organisational entities. In an organisational unit, such as a department or office, knowledge is stored partly in the relationships amongst its members, which is a formal grouping of individuals who come together not because of common interests, but instead because of organisational structure. Over time, as individuals of these units depart and are replaced by others, the successors inherit some, but not all, of the knowledge developed by their predecessors. This knowledge may have been acquired through systems, practices and relationships within the unit. Additionally, this knowledge tends to be contextually specific as it reflects the role of the specific department or unit.

An organisation, such as a business unit or a corporation, also stores knowledge, especially contextually specific knowledge. The norms, values, practices and culture

within the organisation contains knowledge that is not stored in the mind of any one individual. Thus the organisation responds to external events, not only on the knowledge stored in individuals and organisational units, but on the overall organisational knowledge gathered over time.

Knowledge is stored in inter-organisational relationships. Relationships are established with customers and suppliers, and knowledge is created and embedded in the relationships. Organisations often learn from their customers' experience with products about how often these can be improved and learn about new products that might be appealing to customers (Becerra-Fernandez, Gonzalez & Sabherwal, 2004).

2.6 Conclusion

In this chapter the nature of knowledge has been presented to the reader by distinguishing it from data and information. Thus, within specific areas of endeavour knowledge was defined as justified beliefs about relationships among concepts in that area. Different perspectives of knowledge were presented which considered knowledge as a state of mind, as a practice, as an object, as an access to information and as a capability. Some classification of knowledge were presented highlighting their differences; between procedural and declarative, between tacit and explicit, between general and specific. In the case of tacit and explicit knowledge, the spiral of knowledge was highlighted and explained. Finally, a description of the possible locations of knowledge was presented. The next chapter covers knowledge management which explores how knowledge in its various forms can be managed for the benefits of the organisation.

3 KNOWLEDGE MANAGEMENT

3.1 Introduction

Exploring the introduction of Knowledge Management (KM) in a public sector organisation is central to the research of this project. Therefore, the primary purpose of this chapter is to introduce the reader to KM. This is achieved by: firstly, presenting a historical background of KM; secondly, a description of what KM is; thirdly, a description of the factors driving KM; fourthly, a description of the barriers to KM; fifthly, the processes involved in KM, and what factors must be considered to model the KM system and ensure its successful delivery.

3.2 Historical Background

Knowledge Management as a concept has been around since the 1950s, the recognition of it as a discipline occurred in the 1990s when the term was coined (Wiig, 1993). Since then, it has attracted substantial attention, having accumulated a large volume of academic research contributed from varied fields, and having been extensively experimented in many organizations seeking to leverage their intellectual resources (Saito & Umemoto, 2005).

From a philosophical and academic aspect, KM has been in practice for a long time before this, in a less formal manner. In some cases it has been claimed that organisations and information professionals have been practising KM-related activities for years (Broadbent, 1998; Streatfield & Wilson, 1999). Given that knowledge is as old as time itself and it could be argued that KM began with the first cave paintings (Frappaolo, 2006). Knowledge and expertise clearly have been managed implicitly as long as work has been performed. The first hunters surely were concerned about the expertise and skills of their team mates when they went out to capture prey. They also, we must surmise, ascertained that what they knew as the best and most successful practices were taught to up-and-coming hunters to ensure the long-term viability of the group (Wiig, 1997). It has been suggested that the ancient Egyptians understood and practised KM (Neilson, 2001). The Great Pyramids are artifacts representing the skills, technologies and social perspectives of the people who built them. (Newman, 2001). In

ancient Greece, philosophers, such as Aristotle and Plato, discussed what knowledge is and its importance (Stenmark, 2002). Indian mathematicians built upon generations of knowledge to develop mathematics that is quite sophisticated even by today's standards. Phoenicians were implicitly concerned about how knowledge about trade logistics and merchant practices was built, transferred to employees and applied to make operations as successful as possible (Wiig, 1997). The tasks of preserving knowledge, augmenting knowledge, and bequeathing knowledge have been practised by many throughout the course of human history. This has culminated in the creation of learning institutions, such as schools and universities, who are concerned about the knowledge transfer processes and the creation and application of knowledge.

From an organisational and business aspect, KM, as a formalised practice, finds its roots in the educated workforce that arose out of World War Two (Frappaolo, 2006). Towards the end of the twentieth century and the early years of this century, individuals and organisations are realising the increasingly important role of knowledge, as a competitive tool, as they face the competitive environments which have been created by the forces of technology, globalisation and the emerging knowledge economy. With the arrival of the knowledge society, only the organisations that can identify, value, create and evolve their knowledge assets will succeed. Knowledge, rather than capital or labour, is described as the only meaningful economic resource in the knowledge society (Drucker, 1993). Additionally, it has been identified that many organisations are unable to function as knowledge based organisations, because they suffer from learning disabilities (Senge, 1990). To overcome this disability, organisations must innovate or die. Thus their ability to learn, adapt and change equally becomes a core competency for survival.

3.3 What is Knowledge Management?

Describing KM is by no means an easy task. The number of definitions which have been proposed are abundant and it would be beyond the scope of this dissertation to highlight them all. However, in order to give the reader an idea of the diversity, some definitions and descriptions are highlighted as follows:

- *Knowledge management focuses on how an organisation identifies, creates, captures, acquires, shares and leverages knowledge. Systematic process support these activities, also enabling replication of successes. All of these are specific actions organisations take to manage their knowledge (Rumizen, 2002).*
- *Knowledge management embodies organisational processes that seek the synergistic combination of data and information-processing capacity of information technologies, and the creative and innovative capacity of human beings (Malhotra, 1998).*
- *Knowledge management is a set of processes, practices, and management philosophies that exist to collect, process, store, and make available the organisational knowledge that enables the organisation to be more proficient and competitive in the delivery of its products and services. (McNabb, 2007).*
- *Knowledge management may simply be defined as doing what is needed to get the most out of knowledge resources (Becerra-Fernandez, Gonzalez, Sabherwal, 2004).*
- *Knowledge management is defined as the substantiated understandings and beliefs in an organisation about the organisation and its environment (Nonaka & Takeuchi, 1995)*
- *Knowledge management is defined as changing mix of workers' experience, values, expert insight, and intuition that provides an environmental framework for evaluating and incorporating new experiences and information. It resides in the minds of workers, but it is often expressed in the culture of the organisation, including its routines, processes, systems, and norms (Tiwana, 2002).*

Not one of these definitions use the same wording. It has been suggested that, all of these definitions of KM are largely context dependent and therefore there may be some flexibility of interpretation about what it is (Cram & Sayers, 2001). Furthermore,

defining KM is difficult achieve as it is acknowledged to encompass a wide array of tasks and activities (McGrath, 2007). However, due to the number of different definitions, many authors have indicated that this is one of the reasons why KM has not achieved greater acceptance among organisational managements. Frappaolo (2006) succinctly summed this dilemma when he wrote, “KM is not a technology, although technology should be exploited as an enabler. It is not a directive, although strategic leadership is imperative to successful KM. It is not a business strategy, although one aligned with the tenets of KM must exist. It requires culture that promotes faith in collectively sharing and thinking. But, culture alone will not render a vital KM practice. It is perhaps the lack of a singular definition that has delayed the more-wide scaled deployment of KM.”

Essentially, KM is about managing information to utilise the knowledge in an organisation in order to benefit from finding and applying innovative answers to old and new questions. KM does this by achieving the following (Awad & Ghaziri, 2004):

- Making organisational knowledge visible no matter where it is.
- Provides access to an organisation's collective expertise anywhere in the organisation.
- Retains the organisation's knowledge in times of change.
- Exploits knowledge as an organisational asset.
- Helps to ensure the knowledge is up to date and relevant.
- Helps the organisation do the right thing.
- Embeds knowledge in the organisation's processes.
- Enables the survival of the organisation.

Equally, there are a list of things that KM does not do for an organisation. In his book, *Knowledge Management Toolkit*, Amrit Tiwana detailed the following list as a preventative measure to intense vendor pitches (Tiwana, 2002):

- KM is not knowledge engineering. Rather, KM falls into the domains of management and information systems, not computer science.
- KM is not only about digital networks; it is about management processes. Technology is an enabler, not a driver.
- KM is not about building a smarter internal communications network (intranet). Nor are they the same. KM is about knowledge and experience.
- KM is not a one time investment in technology. It is a future-oriented investment that requires consistent attention and evaluation.
- KM is not about “enterprise-wide *infobahns*” (information highways in organisations). KM should not be confused with enterprise information systems. The primary focus is on helping the right people have access to the right knowledge at the right time.

The one thing in common with all the descriptions of KM is that it is clearly not Information Management (IM) which focuses on internal and external publications. Nor is it organisational know-how (Cram & Sayers, 2001). It is suggested that KM is different from IM in that “the latter focuses on finding the stuff and moving it around, while the former is also concerned about how people create and use the stuff” (Bukowitz, 2000). IM is usually, though not always, concerned with electronic and paper-based information, while KM deals with a far broader range of approaches to communicating and using both knowledge and information. KM includes a number of soft issues that involves fostering an environment in which both knowledge and information are not only shared but also created.

However, KM is not without its critics. To some, KM is considered to be just another management fad, like Management by Objectives (MBO) and Total Quality

Management (TQM). Moreover, knowledge and KM are seen by some as simply other names for information and information technology (Fuller, 2002; Wilson, 2002). To others, KM represents a major paradigm shift from an industrial to an information economy, in which knowledge is now the organisation's most valuable resource, which should be managed and utilised wisely. It is important to remember that KM has both a technological and a social side. And, it is a management discipline that is still in its formative stage. Thus, the arguments of both its critics and its champions have some credibility (McNabb, 2007). Furthermore, decades of practising in the private companies attests that KM is not just another management fad as some critics claimed. It has passed the fad stage and is here to stay (Cong & Pandya, 2003).

3.4 Factors driving Knowledge Management

Many of the activities undertaken as part of KM programmes are not new and have existed for some time. However, KM provides a fresh focus for an organisation to improve the way it views, measures and values knowledge which explains why it has emerged as a significant movement in business (Knight and Howes, 2003). (Knight & Howes, 2003) and (Evans, 2000) have suggested a number of factors for this:

- Increasing awareness of knowledge over and above assets like land, labour and capital, as a source of competitive advantage and value in organisations.
- A growing emphasis on organisational learning and regeneration as a way of coping with the ever-increasing pace of change.
- A recognition that people own knowledge (human capital, the knowledge worker) and that this has a value has resulted in the retention of talent (or know-how) becoming a top strategic issue.
- The trend towards globalisation, which increases competition while also breaking down and blurring boundaries and creating interdependencies between organisations, customers and suppliers.

- The impact of technology which has opened up huge possibilities in respect of KM, while at the same time adding to the challenge due to the sheer volume of information being generated and passed around.

These and other drivers have found a common theme in KM, as expressed in *Figure 3.1*. The related disciplines influencing KM allows its proponents to appreciate the different perceptions that people may have about it. For example, a human resources specialist may stress learning and reward factors, while an intellectual property lawyer may focus on the explicit capture and registration of knowledge. They each will rightly believe that they are focusing on KM, yet there will be also be value gained by considering viewpoints from other perspectives (Knight and Howes, 2003).

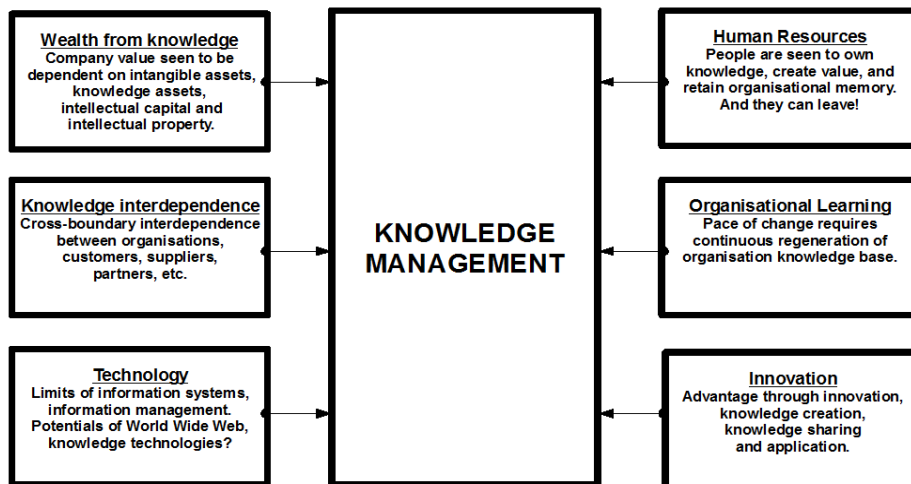


Figure 3.1 – Drivers of Knowledge Management (Knight & Howes, 2003)

3.5 Barriers to Knowledge Management

Given that KM is about making knowledge within the organisation more beneficial it would come as a surprise to learn that barriers do exist to its usage. To breakdown these barriers it is necessary to understand what they are.

3.5.1 Employees

Employees make a number of assumptions and decisions which shape their attitudes and within the context of KM they are as follows:

- The belief that knowledge is power. This creates knowledge hoarding by the individual in the belief that it assures job security. Thus, the organisation has failed to instil the belief that it owns the knowledge and not the individual employee.
- You get no credit for sharing knowledge. Due to the lack of reward the organisation encourages the “cog in the machine” mentality held by the employee.
- Don't have the time to share the knowledge. The organisation fails to provide the downtime for the employee to share knowledge. This gives the employee the opportunity to defend their position for not sharing knowledge.
- Fear of making mistakes. If the organisation is seen as one which punishes mistakes, there is a reluctance for the employee to offer solutions, whether it is a mistake or success.
- Don't know how much they know. If the organisation fails to recognise that every employee has knowledge to contribute, they will not contribute.
- Don't realise the value of their knowledge to the organisation. The organisation has failed to explain the “knowledge chain” and how much the employees knowledge is a key asset to the business.
- Don't know how to share their knowledge. The organisation has failed to provide an infrastructure which would enable knowledge sharing. (Turban & Aronson, 2001)

3.5.2 *Organisational Culture*

Formally, an organisational culture can be defined as a set of values, beliefs and assumptions that are deeply held by employees in the organisation (Rumizen, 2002). Furthermore, organisational culture is defined to consist of three layers (Schein, 1997). These layers are:

- ***Artefacts*** Artefacts are the visible aspects of the organisational culture. Examples of these artefacts are: what is on the bulletin boards, what pictures or art are on the walls, what the furniture looks like, how the offices are set up, how people decorate their office space, how people are dressed, how people greet each other, how meetings are conducted, how well people seem to work with each other, and the pace of how people interact with each other.
- ***Explicit Values*** The explicit values, or espoused values, are what the organisation says that it believes. Some of these values are: corporate vision statements, overall mission, strategies, justifications for strategies, codes of ethics, advertising brochures, material from organisation website, and written policies. Unfortunately, some of these espoused values have nothing to do with the way the organisation operates and words mean less than action. This divergence is often a function of age and sometimes behaviour that is 180 degrees off the espoused values may be observed. As the organisation grows older, the greater the gap can be and it is evident that something unseen is driving the behaviour (Rumizen, 2002).
- ***Tacit Values*** Tacit values are those which develop over time. In fact, they are tacit knowledge, the seldom discussed assumptions that are behind the actions we take. We know more than we can tell. In this environment, when pressed about the reasons for doing something, with annoyance the response is, “That's the way we

do things around here.” The assumption is embedded to the point that it is indisputably right, so right that assumptions are neither voiced or questioned (Rumizen, 2002).

The characteristics of organisational culture is that it is learned overtime and provides employees with a framework to perform their duties. It is stable, well embedded and difficult to change. It is memory and reinforces the view that what has worked in the past can work in the future. It is very complex, particularly in respect to its tacit trait which makes it hard to quantify.

3.6 *Implementing Knowledge Management*

3.6.1 *Knowledge Processes*

Not unlike the definition of KM, many authors researching and writing in the KM field of inquiry seem to have their particular favourite lists of basic elements which constitute the management of knowledge. These basic elements are otherwise known as the *knowledge processes*. However, there appears to be no consensus about which processes should be considered to support KM, which largely depends on the perspective adopted by the authors and the context (Saito & Umemoto, 2005).

The most frequently cited set of knowledge processes is The Spiral of Knowledge proposed by Nonaka and Takeuchi (1995). This set of knowledge processes focuses on the social interactions between people, the *process* aspect of knowledge. However, a set of knowledge processes based on a different perspective offered by Alavi and Leidner (2001) focuses on the *product* aspect of knowledge, which suggests that knowledge is something that is *created, stored and retrieved, transferred and applied*. Saito & Umemoto (2005) argue that knowledge comprises different aspects: it can be, at one time or another, a *process* or *product*. Therefore, if knowledge is a product - it is more tangible or *explicit*. If knowledge is a process - it is seen as something which unfolds while in motion. It is the process of knowing, of understanding, and it is mostly *tacit*.

Needless to say, all of these different sets of knowledge processes, which have been proposed, are not mutually exclusive. There is a degree of overlap, each becoming meshed and intertwined with the other. For instance, Alavi and Leidner's create process includes the whole of The Spiral of Knowledge from Nonaka and Takeuchi. On the other hand, Nonaka and Takeuchi's combination process can be interpreted to contain all four processes from Alavi and Leidner's model. In fact, knowledge processes in organizations are complex, treat both *product* and *process* aspects of knowledge, and apply to different levels of analysis: individual, group, departmental, organizational and even inter-organizational level. In spite of this complexity, there seems to be a degree of similarity among the terminology used by different authors. By comparing the meanings of the terms employed in different models, it is possible to recognize some semantic proximity among them, *Table 3.1* (Saito & Umemoto, 2005).

It is important to note that authors sometimes refer to processes occurring at different levels when classifying KM technologies. For instance datamining and collaborative filtering create knowledge at the machine level. E-learning can be used to create knowledge at the individual level. Group-decision support tools facilitate the creation of knowledge at the group-level. And community support tools can help to create knowledge at the organizational level. In this manner, it is not feasible to directly relate a given KM technology to a specific knowledge process, due to the systemic characteristics of both of them (Saito & Umemoto, 2005).

Nonaka & Takeuchi, 1995	Alavi & Leidner, 2001	Jashapara, 2004	Maier, 2004	CEN, 2004
Externalisation	Creation	Capturing	Identification Acquisition Creation	Identify Create
Combination	Storage and Retrieval	Organising Storing	Organising Publication Search and Retrieval Deletion and Archiving	Store
Socialisation	Transfer	Sharing	Distribution Collaboration	Share
Internalisation	Application	Evaluating	Application Evolution Selling	Use

Table 3.1 – Knowledge Processes in the Literature (Saito & Umemoto, 2005)

Thus, to distil all of these processes into simple set of terms it is possible to identify four main KM processes. These would be knowledge discovery, knowledge capture, knowledge sharing and knowledge application. Ultimately, performing these KM process activities would only enhance, in a cost-effective fashion, the impact of knowledge on an organisation's goal achievement, that is; it reaps the benefits which KM proposes to do. These distilled KM processes are briefly described as follows (Becerra-Fernandez, Gonzalez, Sabherwal, 2004):

- **Knowledge Discovery** may be defined as the development of new tacit or explicit knowledge from data and information or the synthesis of prior knowledge. The discovery of new explicit knowledge relies on combination and new tacit knowledge relies on socialisation.
- **Knowledge Capture** may be defined as the process of retrieving either explicit or tacit knowledge that resides within people, artefacts or organisational entities, noted in previous chapter. Externalisation involves converting tacit knowledge into explicit knowledge, internalisation involves converting explicit into tacit knowledge.
- **Knowledge Sharing** may be defined as the process through which explicit or tacit knowledge is communicated to other individuals. Knowledge sharing means effective transfer so that the recipient of knowledge can understand it well enough to act on it (Jensen & Meckling, 1996).
- **Knowledge Application** may be defined as a process whereby knowledge contributes most directly to organisational performance when it is used to make decisions and perform tasks. Of course, this process depends on the available knowledge so it is largely dependent on the discovery, capture and storage processes.

Regardless of the set of knowledge processes chosen it is important to understand what a KM system is. It should be viewed as a living, dynamic system in which new, innovative tools, goals, approaches, and other elements are being added almost daily. Parts of what was new in KM in one year are likely to be supplanted or replaced in the

next. As KM concepts continue to evolve and change their focus, they are eventually replaced by improved ideas and processes as our knowledge about knowledge grows. KM, is indeed, an evolving discipline (McNabb, 2007).

3.6.2 Knowledge Management System Model

McNabb (2007) suggests that in order to model a KM system there needs to be a recognition of the fundamental building blocks – each with a varying set of parts or components – which would constitute its existence. These building blocks are otherwise referred to as chief subsystems of KM system and are described as follows:

- ***Information Processes Subsystem***

A technology-based *information processes subsystem* is responsible for collecting, codifying and recording data according to the organisation's needs, in forms that people want and need, according to protocols and procedures set forth by the organisation.

- ***Social Processes Subsystem***

A *social processes subsystem* would be responsible for transferring and transforming information into knowledge through the processes of socialisation, internalisation, combination, and externalisation.

- ***Human Interactions Subsystem***

The *human interactions subsystem* would employ such tools as knowledge audits, communities of practice, and knowledge registries, among others, in order to begin the transition from a culture of knowledge hoarding into one of knowledge sharing.

- ***Collaborative Culture Subsystem***

A *collaborative culture subsystem* would make it the norm for all the experiences and knowledge of all members of a community of interest to be

freely shared and employed when and where they are needed for carrying out the mission of the organisation.

- ***Organisational Learning Subsystem***

An organisational learning subsystem would enable the transformation of organisation focus from adaptive (reactive) change to generative (proactive) change.

Some of these subsystems may already exist in the organisation but as yet have not been formalised or recognised and is, to some extent, mentioned in the next section.

3.6.3 Knowledge Management Success

However, to ensure the success of a KM programme it is necessary to look at a number of critical factors. In 1999, Stankosky and Carolyn Baldanza authored, “Knowledge Management: An Evolutionary Architecture Toward Enterprise Engineering.” Leaving aside many of the conflicting statements derived from KM works and writings, Stankosky and Baldanza focussed on determining the critical elements of KM which Stankosky termed, “The DNA of Knowledge Management.” Stankosky and Baldanza believed that the operative work of KM was the management of knowledge assets; they believed that these assets already existed in companies but the know how to articulate them did not exist and, consequently, had little to no guidance on how to manage them.

At the same time Stankosky asked one of his doctoral students, now Dr. Francesco Calabrese, to help him to look at as many KM works and practices that could be found. Relying heavily on KM research by Gartner et al and KM summary work by (Despres & Chauvel, 2000), what emerged from their research was an initial collection of the “KM apples” and “KM barriers”. The goals were to identify the key apples or ingredients necessary for a KM system and to design into the equation the prescription to overcome the barriers to KM success.

Stankosky found many formulations. One such formulations stated that KM was all about people and not technology; and Communities of Practice became the main application for this group. Another formulation stated that KM was all about technology, and “portals and yellow pages” of knowledge workers became the applications for this group. Other formulations stated that it was about people, technology, and process. It was apparent that there seemed to be a multitude of different sayings or approaches, depending on the point of view.

Even so, Stankosky reviewed and categorised all the so-called models, elements, definitions, pronouncements, cautions, and approaches, and it became apparent to him that there were four principle areas or groupings, each containing many elements and validated through some scientific approach. These four groups became known as “The Four Pillars” and all the KM elements were grouped under the following: Leadership/ Management, Organization, Technology, and Learning, *Figure 3.2*.

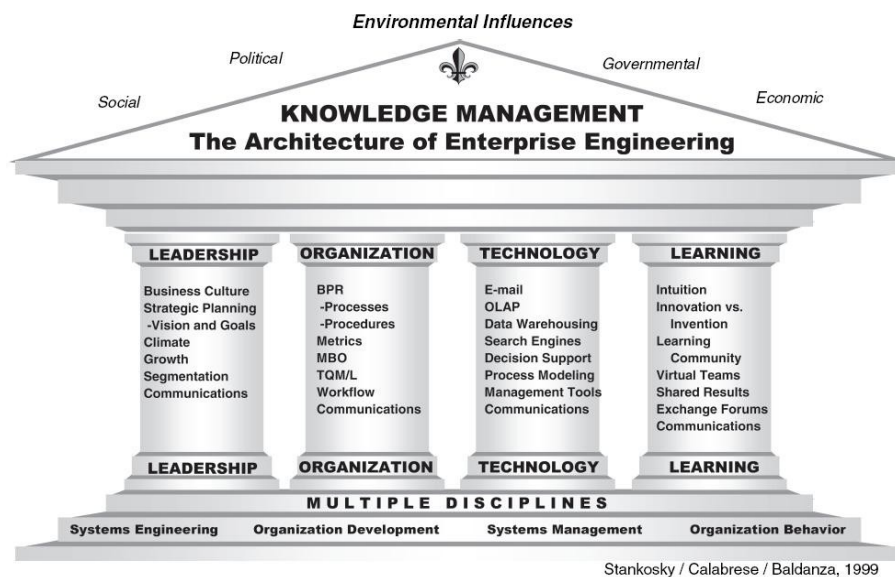


Figure 3.2 – The Four Pillars (Stankosky, Calabrese & Baldanza, 1999)

Each pillar can be described as follows:

- ***Leadership***

Deals with the environmental, strategic, and enterprise-level decision-making processes involving the values, objectives, knowledge requirements, knowledge sources, prioritization, and resource allocation of the organization's knowledge assets. It stresses the need for integrative management principles and techniques, primarily based on systems thinking and approaches.

- ***Organisation***

Deals with the operational aspects of knowledge assets, including functions, processes, formal and informal organizational structures, control measures and metrics, process improvement, and business process re-engineering. Underlying this pillar are system engineering principles and techniques to ensure a flow down, tracking, and optimum utilization of all the organization's knowledge assets.

- ***Learning***

Deals with organizational behavioural aspects and social engineering. The learning pillar focuses on the principles and practices to ensure that individuals collaborate and share knowledge to the maximum. Emphasis is given to identifying and applying the attributes necessary for a "learning organization."

- ***Technology***

Deals with the various information technologies peculiar to supporting and/or enabling KM strategies and operations. One taxonomy used relates to technologies that support the collaboration and codification KM strategies and functions.

However, there is a caveat, all four pillars must be balanced in order to avoid failing the whole system (Stankosky, 2001).

Dating from May 2000 to May 2004, a total of 11 doctoral dissertations, through the George Washington University, were conducted. The findings and writings of Dr Charles Bixler were noted. According to (Bixler, 2000) in application, the pillars represent critical success factors for KM implementation, and to achieve a basic entry level KM program, it has been determined that all four pillars must be addressed. Bixley offers a summary of the four pillars as they apply to the reality of KM implementation citing that:

- ***Leadership***

Focus must be placed on building executive support and KM champions. A successful implementation of a knowledge management system requires a champion or leader at or near the top of an organization who can provide the strong and dedicated leadership needed for cultural change.

- ***Organisation***

Operational processes must align with the KM framework and strategy, including all performance metrics and objectives. A KM system must be designed to facilitate KM throughout the organisation, requires organisational change, and inevitably act as a catalyst to transform the organization's culture. Thus, in order to begin changing the organization, KM must be integrated into business processes.

- ***Learning***

The best tools and processes alone will not achieve a KM strategy. Ultimately, people are responsible for using the tools and performing the operations. Organizational learning must be addressed with approaches such as increasing internal communications, promoting cross-functional teams and creating a learning community. Learning is an integral part of KM. In this context, learning can be described as the acquisition of knowledge or a skill through study, experience or instruction. Enterprises must recognize that

people operate and communicate through learning that includes the social processes of collaborating, sharing knowledge and building on each other's ideas. Managers must recognize that knowledge resides in people, and knowledge creation occurs in the process of social interaction and learning.

- ***Technology***

Technology enables and provides all of the infrastructure and tools to support KM within an enterprise. While cultural and organizational changes are vital to achieving a KM strategy, a lack of the proper tools and technology infrastructure can lead to failure. Any technical solution must add value to the process and achieve measurable improvements. Properly assessing and defining IT capabilities is essential, as is identifying and deploying best-of-breed KM software and IT tools to match and align with the organization's requirements. The Gartner Group defines 10 technologies that collectively make up full-function KM. The functional requirements that enterprises can select and use to build a KM solution include:

- capture and store
- search and retrieve
- send critical information to individuals or groups
- structure and navigate
- share and collaborate
- synthesize
- profile and personalize
- solve or recommend
- integrate with business applications
- maintenance

However, no technology product meets every requirement, and before selecting a solution, enterprises need to clearly define their KM strategy, scope and requirements, and perform product evaluations to identify technology products that effectively meet their needs.

In conclusion, Bixley states that KM is not a separate function characterised by a separate department or process, it must be embedded into all of the organisation's business processes. KM is crucial to achieving permanent performance improvements and innovation; and the four pillars clearly provide the necessary architecture to initiate and implement it.

3.7 Conclusion

This chapter highlights that KM has always existed, even if it has existed as a concept since the middle of the last century. However, when the task of trying to define and formalise what it is took place, it appears to be magically beyond grasp. Many of the definitions and literary sources were unable to present a clear consensus on the subject. It has been suggested that definitions and descriptions of KM are largely context dependent. Thus, it would appear that there is no one KM solution which can be applied to all organisations. The saying, "*different horses for different courses*" springs to mind. Unfortunately, the downside to this lack of consensus has paved the way for many to criticise KM who have suggested that it nothing more than the relabelling of older reinstated management tools. Even so, KM is here to stay and from an organisational perspective, what appears to be certain is that KM is about managing the information and knowledge in order to benefit from finding and applying innovative answers to old and new questions.

However, implementing a KM programme could be described as a balancing act. For every factor which exists to drive KM, there exists a number of barriers which prevents its progress. For instance, when considering the factor which puts a growing emphasis on organisational learning, it comes into contact with the fear of making mistakes barrier, especially if the organisation is one that punishes mistakes. Furthermore, KM is a change programme and it commonly will come into close contact with the organisational culture which tends to be resistant to change.

Not unlike KM itself, many authors seem to have their particular favourite lists of basic KM process elements which constitute a KM programme. These were briefly covered and compared. Ultimately, the processes are not the chief concern but a clear understanding of what a KM system ultimately aims to achieve. With this in mind, a

KM model was suggested outlining its key fundamental building blocks which are, in effect, its chief subsystems: Information Processes Subsystem, Social Processes Subsystem, Human Interactions Subsystem, Collaborative Culture Subsystem and Organisational Learning Subsystem.

Finally, “The Four Pillars” were outlined which are recognised as critical factors for the success of a KM programme.

4 THE KNOWLEDGE SOCIETY

4.1 *Introduction*

The description of our society as a Knowledge Society (KS) is only one among many others that has been introduced in an attempt to characterise some of the main developments it has undertaken in the late twentieth and early twenty-first centuries (Keenan et al., 2002). Needless to say, other descriptions have been proposed, such as, the media society, the risk society, the multi-cultural society, the global society etc. and a more detailed overview can be found in (Pongs 1999, 2000). Even so, accepting the description of our society as a KS one has met with objections from commentators for various reasons. Some hold that they imply that current changes are revolutionary, whereas they should be thought of more as evolutionary trends. Some argue that since all human societies have relied upon knowledge and information, the terms are implicitly discounting the capabilities of earlier societies and privileging the sorts of knowledge, and information that our societies particularly prioritise (Keenan et al., 2002).

For the purpose of this research project, the aim of this chapter is to give the reader an understanding of what the KS is by providing some background history concerning its origins and to describe some of its basic characteristics. Following on from this, a description of the implications which the KS has for governments and organisations, especially in terms of policy and knowledge management.

4.2 *Background*

During the 1960s, the studies of the Austrian American Economist Fritz Machlup, Austrian American Management Writer Peter Drucker and the American Political Scientist Robert E. Lane greatly influenced the concept of the KS. The contribution of knowledge work to the economy was first clearly examined and emphasized by Machlup who is also credited with popularizing the concept of the information society (Machlup, 1962). Lane is known as one of the first authors who noted the term “*knowledgeable society*” and in his article he argued against irrational politics and

asked for more rational knowledge. He demanded rational knowledge as scientific expertise in order to improve societal decision making processes (Lane, 1966). In his book, *The Age of Discontinuity*, Drucker provided guidelines for mastering the discontinuities brought about by information technology and knowledge work (Drucker, 1969).

During the 1970s, American Sociologist Daniel Bell explored the emerging predominant role of “theoretical knowledge” as the new “axial principle” of society, particularly in the fields of politics, work and science (Muller-Prothmann, 2005). Further concurrent reasoning can be found in the Japanese “Plan for an Information Society” of 1972 (Masuda, 1990 (1981)), the Richta Report (Richta, 1971) and (Porat, 1977; Edelstein, 1978). But most importantly, Bell foretold the coming social age and invented a new phrase to describe it: “*the knowledge society*”. In his book, *The Coming of the Post-Industrial Society*, Bell charted an economic shift from an industrial economy where most people were engaged in producing things, to a post-industrial where the workforce was increasingly concentrated on services, ideas and communication. Much of the new emphasis, Bell argued, would be increasingly dependent on people and institutions that produced knowledge – in science, technology, research and development. Bell rejected the concept of a post-capitalistic society, because the new society would be determined by “knowledge” instead of “labour” (Krings, 2006). Bell commented that, “*The post-industrial society is a knowledge society in a double sense: first the sources of innovation are increasingly derived from research and development...second, the weight of the society – measured by a larger proportion of Gross National Product and a larger share of employment – is increasingly in the knowledge field*” (Bell, 1976 (1973)).

During the 1980s and 1990s, the academic and public awareness became steadily intensified and extended the general themes of the societal centrality of knowledge to a broad variety of fields of investigation (Krohn, 2000; Muller-Prothmann, 2005). The growing popularity of the KS term during the 1990s was fostered especially through the work of Peter Drucker and Robert Reich, through their continued research in management theory (Muller-Prothmann, 2005). However, another concept of the KS was developed by the German-American sociologist Nico Stehr in his book, *Knowledge Societies* (Stehr, 1994). In contrary to Bell his theory implies the ability of

social action. He does not focus mainly on technology, but on knowledge contents, the position of the human beings within new media, solidarity and social power. He considers that the increasing penetration of knowledge in all societal levels produces a tremendous need for qualification and performance by all professionals. When for Lane the amalgamation between the scientific, public and economic sector still was a wishful thinking, according to Stehr's analysis the role of experts becomes extremely important in the KS. For him the development of knowledge can therefore be considered as the basis both for social inequality, for social conflicts as well as a source for social solidarity. But similar to Bell's theoretical approach he assumes a strong social change towards a KS without developing systematically the problems of social change (Krings, 2006).

Although there is a long historical debate about the importance of knowledge for the development of modern societies, there is no consistent theory of a KS. None of the sciences of sociology, economics or management offer a theoretical and empirical concept of a KS (Krings, 2006). In the following section, a number of components are suggested as a useful way of describing the KS.

4.3 What is the Knowledge Society?

KS is one of many terms which has been voiced in an attempt to describe some of the main developments in industrial societies in the late twentieth and early twenty-first century. Though, this statement is without its criticisms, it is fair to suggest that one of the characteristics of a KS is that it recognises that knowledge is an asset, a major creative force, and a major component of any human activity, be it; economic, social, scientific or cultural. When any of these activities are pursued, a subsequent large supply of knowledge and information is required.

Early attempts to describe a KS indicated that the dominant role of science and technical-scientific knowledge is the basic feature. In modern times, there are some who continue to believe that this is the case (Gibbons, 1994).

Lane defined a knowledgeable society as one that is predominantly characterised by its members who:

- inquire into the basis of their beliefs about man, nature and society;
- are guided (perhaps unconsciously) by objective standards, and, at the upper levels of education, follow scientific rules of evidence and inference in inquiry;
- devote considerable resources to this inquiry and thus have a large store of knowledge;
- collect, organise and interpret their knowledge in a constant effort to extract meaning from it for the purposes at hand;
- employ this knowledge to illuminate (and perhaps modify) their values and goals (Lane, 1966).

From a socio-economic point of view, the KS is characterised primarily through three facts that have been identified in the debates of the 1960s and 1970s (Machlup, 1962; Bell, 1976(1973); Porat, 1977):

- knowledge as productive force: the manufacturing of goods and services increasingly needs knowledge-based resources compared to material resources;
- employment structure dominated by knowledge workers: more than half of the employees of a society are employed at a workplace with knowledge-based work;
- general expansion of public and private research activities, like high increase or research and development expenditures.

Besides focussing on the economic aspects, the KS can be distinguished on four different levels (Muller-Prothmann, 2005) as described by (Wirth, 2000) as follows:

- On a sociological level, KS means that knowledge and expertise based structures and processes spread throughout society and into everyday life.
- On a technological level, KS is characterised through extensive dissemination of technological infrastructures in the form of knowledge-based, sensitive transport systems for information, communication, persons, goods, energy and financial transactions.

- On an organisational level, it is stated that knowledge-based management methods, globalisation of business communication and knowledge as resource for production of goods and services, gain increasing importance.
- On a psychological level, education life-long learning and the individual ability to handle excessive information are popular keywords.

Following the debates of the 1990s, Maasen summarises the widely-accepted conceptions of a KS and are listed as follows:

- Besides money and power, information, knowledge and expertise play an important role as influential resources for social reproduction.
- Increase of knowledge-based work and occupations and their permanent diffusion into other social spheres. Education and career paths are not linear anymore.
- Developments are caused by science as the dominant paradigm, globalisation of information and knowledge networks, higher awareness of risks and contingencies, increase of knowledge from the demand side as well as the supply side.
- Transformational social effects due to the extension of knowledge as the basis for all the functional spheres in society as an evolutionary process.

All of the above conceptualisations of the KS consider it to be an attractive counterpart to the industrial society and as a societal concept to successfully approach the social and economic problems in the future (Muller-Prothmann, 2005).

The European Foundation for the Improvement of Living and Working Conditions (EFL) (Keenan et al., 2002) suggests that a useful way of thinking about KS is that it involves the intersection of several related trends. Generally, these trends can be linked back to many of the points raised in the aforementioned conceptualisations and are as follows:

- ***Information Societies***

The information society is a historical era which can be viewed much like the

steam or electrical eras and can be dated back to the late 1970s. It is one of the components of the Knowledge Society – not surprisingly, since information is one of the components of knowledge. The question which arises is this: what is so distinctive about the present historical era regarding information and knowledge when other human societies throughout the course of history have equally accumulated and applied knowledge of various sorts, and have also produced and processed a wide range of information? It appears that the answer can be traced to the large-scale diffusion and utilisation of information technology (IT), which has allowed unprecedented capabilities with the capturing, processing, storing, and communication of data and information. This is the main argument which suggests that it makes sense to think of the industrial world as moving into an information society.

However, IT is a relatively discontinuous phenomenon and the information society has arguably already passed through a number of distinctive phases. For example, computers were large and remote, used only for large scale number-crunching applications, but now they are ubiquitous, appearing in machinery such as machine tools and industrial robots, and based on stand-alone personal computers. In the current phase the diffusion of IT capabilities has extended still further – into items of workplace and domestic equipment - and in which networking is important. Already the contours of the next phase can be discerned, with commentators talking about ubiquitous computing or “*ambient intelligence*”.

Information societies may take various forms around the due to different political and cultural arrangements, but the boundaries between them may dissolve due to the global communications permitted by IT. These communications will enable subcultures and interest communities to form irrespective of national boundaries, allow the expansion of companies into new global markets and open the doors to the migration of labour and students. Elements of different cultures are being transferred around the world on an unprecedented scale – though some elements are favoured more so than others.

Thus the KS depends on the information society for its infrastructure. However, though the information society is necessary it is not solely sufficient for a KS, which requires more than just the active implementation of new technologies.

- ***Innovation***

Besides IT, recognition of the importance of innovation cannot be ignored as it contributes as an element in corporate and national competitiveness; and in strategies to increase the efficiency and effectiveness of organisations of all types. Innovation can be either technological or non-technological.

- ***Technological***

IT is a revolutionary technology applicable to all types of economic activity due to the fact that all human activities involve information processing. However, other technologies of extremely wide scope are also becoming available and increasingly complex societies are creating social and industrial demands for new products and processes.

These developments underpin the increasing importance of innovation as an element in corporate and national competitiveness. Use of new processes makes organisations able to operate at lower cost and higher quality. Development of new products allows them to capture new markets (or meet social needs better). Innovative capacity is seen as differentiating between successful and unsuccessful organisations, regions and systems. Furthermore, members of a KS are more likely to be better informed and will seek to make their views known as consumers, users of innovations or citizens concerned with the ethical, social and environmental implications of technological change.

Thus, innovation is central to the KS and is reflected in investment in

Research and Development (R&D) and other associated activities, such as, efforts to create innovative labour forces, efforts to secure intellectual property rights and efforts to create innovative consumers

Also there is a role for scientific and technological (S&T) knowledge in innovation in a KS. Consequently, the volume of knowledge is increasing and the resulting innovations are more complex due to the ever-increasing number of diverse bodies of knowledge. The implications of such complexity has resulted in the necessity for organisations to collaborate more when accessing knowledge.

- ***Non-Technological***

S&T is not the only basis for innovation. Innovators need to have knowledge of markets, user requirements, regulations, access to finance, organisational change, and how to do things which have aesthetic, cultural, social or organisational elements.

Innovation in social affairs may often stem from knowledge gained through practical experience rather than from research. One reflection of KS trends is that many government organisations are seeking to be more systematic in the way in which they develop and assess policies – they seek to become learning organisations, using more “evidence-based” mechanisms in policy design and implementation. Methods such as evaluation studies are being employed to determine what works and what does not, and how policies may better meet their objectives. Such methods are also used by some large charities and voluntary organisations.

In a KS, knowledge of social innovation can be widely diffused through the information networks that are effectively global in reach. However, more research into social innovation in the KS is required.

- ***Service Economies***

Service economies are a development in western industrial societies where the majority of employment is concentrated in services, accounting for major economic output. For some, service is an important management principle and increasingly the value-added is composed of elements of design, marketing, and so on, and not from the manufacturing process itself.

The knowledge-intensity of production is growing in the KS. Organisations have an increasing proportion of their staff performing service operations rather than physical production, and are also investing more of their resources on acquiring inputs from business services as opposed to raw materials. Specialised services are providing critical inputs to organisations in all sectors on a vastly increased scale. Activities like R&D are often contracted out to specialist services, which are also important in helping organisations assimilate new technologies. Other specialised services, such as software, telecommunications and environmental issues, have grown which reflect the new demands placed on organisations, which they do not already possess.

The service economy thus involves a change in relations between business and consumers, the growing requirements for specialised knowledge, changes in the nature of work and changes in lifestyle.

- ***Globalisation***

Globalisation is a process which involves the combining of economic, technological, sociocultural and political forces (Croucher, 2004). Thus, the globalisation of economies is facilitated by IT, and in turn stimulates more innovation-based competition. It promotes demand for better understanding of diverse cultures and regulatory systems, and allows for new avenues of learning from the experience of other organisations and countries. It promotes better political understanding and enables collaboration between governments.

- ***Demography***

Demography is the statistical study of all populations. It encompasses the study of the size, structure and distribution of populations, and spatial and/or temporal changes in them in response to birth, death, migration and ageing. In view of these aspects, demography has become a very important subject for modern societies. The issue of ageing Western populations has serious implications for education, working life, health and consumption patterns. In addition, issues concerning the extent to which migration is used as a solution to demographic imbalance and how the vigour and diversity associated with population movement can be maximised in the face of social strains and xenophobic sentiment from some quarters.

- ***Knowledge Management***

One can easily disagree over whether knowledge can be managed in today's knowledge intensive society. Knowledge is largely cognitive and highly personal, while management involves organisational processes. However, the management of knowledge has arisen as an important specific issue in KS, which has been covered in the previous two chapters. What is certain is that organisations are seeking to apply formal techniques and new information systems to help them make more effective and efficient use of their data, information and knowledge resources.

In light of these trends a number of questions have been raised, such as: Can we measure KS developments? How does KS relate to social change? What does the KS mean for working conditions? What does the KS mean for industrial relations? What does the KS mean for living conditions? (Keenan et al., 2002)

4.4 Knowledge Society and Knowledge Based Economy

One of the significant questions raised in the last section was: Can we measure KS developments? There have been many efforts to develop new statistics and systems of

indicators to measure the diffusion of new IT in business and the community, and to examine levels of use and even styles of use (for example; more or less active ways of implementing ecommerce). These efforts are ongoing, and provide valuable material with which to compare different countries and regions, and even social groups and industrial sectors. Typically, major reports on the "knowledge based economy", usually show numerous indicators which are introduced as evidence for the emergence of KS, and sometimes also for purposes of international benchmarking. Such indicators are often cited as:

- Data on availability of and access to telecommunications and the Internet
- Data on use of PCs and the Web by businesses of various types for ebusiness and e-commerce
- Data on Educational Qualifications
- Patterns of Work, Employment and Skills
- Use of new technologies in e-Government and public services such as Health

Equally, the term, "knowledge-based economy" prioritises the instrumental use of scientific knowledge for competitive economic advantage. Science is seen as both the key factor of new production and as traded commodity-product in itself. In a keynote speech a former UK Prime Minister stated that, "a knowledge economy is an economy where we do not compete on wages – how can we when China's wage costs are 5 per cent of ours? – but on intelligence, on innovation, on creativity" (Blair, 2006 in TAKING EUROPEAN KNOWLEDGE SOCIETY SERIOUSLY, 2007).

Consequently, the "knowledge society" and "the knowledge based economy" appear to be inextricably intertwined and it would be impossible to consider either one exclusively.

4.5 The Knowledge Society and Government

Any government would be concerned with the economic well-being of its nation and it would consider it vitally important that it cultivates a society which fully embraces knowledge in all its forms. Consequently, many initiatives have been introduced by governments to encourage the use of knowledge.

4.5.1 International

In response to the needs to embrace the importance of knowledge as an asset, a defining European commitment was struck in 2000, with the agreement of the Lisbon Agenda by the EU Council of Ministers. This committed Member States to the ambitious goal of becoming “the world’s leading knowledge-based economy” by 2010. This agreement, known as “eEurope - An Information Society For All” (eEurope, 2000) is a political initiative to ensure the European Union fully benefits for generations to come from the changes the Information Society is bringing. These changes, the most significant since the Industrial Revolution, are far-reaching and global. They are not just about technology. They will affect everyone, everywhere. Bringing communities, both rural and urban, closer together, creating wealth, sharing knowledge, they have huge potential to enrich everyone’s lives. Managing this transformation represents the central economic and social challenge for the Union. It will impact profoundly on European employment, growth and productivity for the next five years and for decades afterwards. eEurope is intended to accelerate positive change in the Union. It aims at ensuring this change towards the Information Society is cohesive, not divisive. Integrating, not fragmenting. An opportunity not a threat. In essence, eEurope aims at bringing the benefits of the Information Society to the reach of all Europeans.

The key objectives of eEurope are:

- Bringing every citizen, home and school, every business and administration, into the digital age and online.
- Creating a digitally literate Europe, supported by an entrepreneurial culture ready to finance and develop new ideas.
- Ensuring the whole process is socially inclusive, builds consumer trust and strengthens social cohesion

To achieve this, Europe needs to address its weaknesses and exploit its strengths. It must overcome the handicaps that are holding back the rapid uptake of digital technologies:

- generally expensive, insecure and slow access to the Internet and e-commerce
- an insufficient digitally literate on-line population
- lack of a sufficiently dynamic, entrepreneurial, service-oriented culture
- a public sector which is not playing a sufficiently active role in enabling the development of new applications and services

The eEurope initiative builds on the current policy framework, concentrating on priority actions which address these handicaps. Where European strategy matters. Where European action can count. Where inequalities between Member States in terms of access and utilisation of Internet can be reduced. Where there is European added value in developing common approaches to problems. These actions are:

1. European youth into the digital age
2. Cheaper Internet access
3. Accelerating E-Commerce
4. Fast Internet for researchers and students
5. Smart cards for secure electronic access
6. Risk capital for high-tech SMEs
7. eParticipation for the disabled
8. Healthcare online
9. Intelligent transport
10. Government online

Each action focuses on specific ambitious targets which need to be achieved urgently. The European Commission cannot achieve these targets alone. A joint effort of the Member States, the European Commission, industry and citizens is required. These efforts should be extended to accession countries (eEurope, 2000).

It was officially reaffirmed in 2004, and has been a continual preoccupation of EC and member-state policy actors (TAKING EUROPEAN KNOWLEDGE SOCIETY SERIOUSLY, 2007).

4.5.2 National

Ireland, as a member state of the European Community, is committed to the eEurope agenda. Currently, the Information Society Policy Unit (ISPU) in the Department of the Taoiseach has overall responsibility for developing, co-ordinating and driving implementation of the Information Society agenda. The aim of the ISPU is to ensure that Ireland develops as a fully participative, competitive, knowledge-based Information Society, with all of the benefits that entails. The ISPU also has specific functional responsibility for the following areas:

- further developing the potential of eGovernment
- development of an inclusive Knowledge Society
- management of the Access, Skills and Content (ASC) Initiative
- the National Payments Conference
- responding to EU and international reporting requests on the Information Society in Ireland

As of July 2008, the ISPU have indicated that work is ongoing on the development of a new national action plan on the knowledge society, which will be published over the coming months. This third national action plan will succeed the following reports:

- Implementing the Information Society in Ireland – An Action Plan (1999) which addressed areas such as: telecommunications infrastructure; development of electronic commerce and business opportunities; enabling measures; legislative and regulatory measures; ICTs and delivery of public services; support areas where action is needed; and taking the work forward.
- Progress Implementing the Information Society - Second Report of the Inter-Departmental Implementation Group, July 1999 which provides a review of progress since the Action Plan was launched. It also includes details of further initiatives arising from the Action Plan which are now being proposed such as: Local Authorities; Land Registry; Companies registration Office (CRO); Dept. Education and Science; Dept. Foreign Affairs; GMS/Health Board and Dept. Justice, Equality & Law Reform.

- New Connections (2002). which addressed areas such as: Key Infrastructures (telecommunications infrastructure; legal and regulatory environment; and eGovernment) and Supporting Frameworks (eBusiness; R&D; lifelong learning and eInclusion).
- Two reports were published following the New Connections (2002) report, the first progress report in February 2003 and the second progress report in April 2004. The foreword in both reports indicate that much progress has been made.

However, in 2002 the Information Society Commission (ISC) published, “Building the Knowledge Society Report to Government” outlining Ireland’s relative weaknesses in addressing the challenges of the emerging knowledge society and highlighted the following:

- Levels of broadband connectivity are very low both in absolute and comparative international terms.
- We have traditionally low levels of investment in research and development and a relatively low level of patenting activity.
- General societal engagement with Internet technologies is weak relative to leading countries, reflected in a both a low residential Internet penetration rate and significantly shorter amounts of time spent online by the average user.
- We have poor rates of participation in adult education and training by international standards, pointing to a bigger challenge in embracing a culture of lifelong learning.
- We are behind leading countries in the application of ICTs to the education sector.
- Our relatively high VAT rate in an EU context tends to undermine our attractiveness as a location for distribution of digital content – a market that is developing an increasing strategic importance. The global digital content market is estimated to be growing at an annual rate of around 30 percent and is projected to be worth in the region of \$434b by 2006.

In 2005, the ISC published, “Learning to Innovate - Reperciving the global information society” which outlined a number of recommendationsing Ireland’s

relative weaknesses in addressing the challenges of the emerging knowledge society and highlighted the following:

1. Establishment of Broadband Delivery Group
2. Renewal of eGovernment Strategy
3. Renewal of eBusiness Strategy
4. Community-based ICT Programmes
5. eAccessibility
6. ICT Security
7. Monitoring Engagement with ICT
8. Knowledge Society Foresight

As of July 2008, there are no new publications to indicate what levels of progress have been made with the development of our knowledge society.

Leaving aside this ambiguity, another initiative should be mentioned. This initiative is known as the “Towards 2016 Ten-Year Framework Social Partnership Agreement 2006-2016”. The parties involved include the government, trade unions, employers, farming organisations and the community and voluntary sector. The purpose of this initiative is to maintain a strategic focus on key national priorities which help create and sustain the conditions for employment growth, fiscal stability, restructuring of the economy to respond to new challenges and opportunities, a dramatic improvement in living standards and a culture of dialogue which serves the social partners, but more importantly, the interests of the people of the Ireland.

In this agreement recognition for the KS is clearly acknowledged in section five. It acknowledges the pending publication of the KS Action Plan, which will build upon the outcomes of the previously mentioned action plans of 1999 and 2002 whilst recognising the ubiquity of technology, the need to use technology as a tool in the drive towards the knowledge economy activities and the need to provide greater inclusiveness. It will be in line with the European Initiative and will provide for the continued exploitation of ICTs by all; including government, private sector organisations, public sector organisations and the community and voluntary sector – all of which are social partners (Towards 2016).

4.6 *The Knowledge Society and Organisations*

Whilst governments recognise the benefits of a knowledge society for its citizens and economy, these benefits are also recognised by many of the organisations who conduct business on a daily basis. If an organisation is to succeed, it must identify, value, create and evolve its knowledge assets. As we already identified, knowledge, rather than capital or labour, is described as the only meaningful economic resource in the knowledge society (Drucker, 1993).

There are numerous types of organisations throughout the world. They range from the giant multinationals to small traders and partnerships, and from large public sector services to small charities. Some organisations produce goods, such as computers and motor cars, others produce services, such as insurance and customer advice. Some organisations produce only one product, others produce many. Predominantly, organisations belong to either the private sector or public sector, and occasionally some may be a hybrid where a privately run organisation is partly owned by the government.

Despite the obvious variations in the nature of different organisations, there are some principles common to all.. Organisations can be said to operate rationally, that is to say their members are drawn together specifically in order to pursue goals or objectives. In order to pursue such goals efficiently, an organisation will tend to be divided into separate functions, such as production, administration and marketing. Separation of functions leads to efficiency because it enables specialisation to take place which, in turn, allows for the development of expertise in fairly narrow areas. But it also entails problems of control and communication. In consequence, organisations are characterised by the proliferation of rules guiding internal relationships between its members and the external relationships its members must establish with suppliers, customers and the community at large. Organisations are thus bureaucratic; they have goals, a division of functions, a hierarchy of control and a set of rules.

The term bureaucracy tends to evoke in the public mind an image of “form-filling” and “buck-passing” by faceless, bored administrators. To a large extent this is a reflection of reality. The rule-book approach stifles initiative and the separation of the worker

from his product helps to create a lack of work satisfaction. This is the inevitable price of bureaucracy which, nevertheless, offers the most efficient form of large scale operation. Not all organisations are, however, rigid or mechanistic. Some organisations, such as, research establishments, which depend heavily on the initiative and inventiveness of their members, are organic. Here, the hierarchy of control is more diffused and rules are used less than in the mechanistic case.

With regards to this research, the distinction between public sector organisations and private sector organisations is described. In either case, these organisations may be seen as responsible for producing goods and services for consumption or use by people or other organisations.

4.6.1 Private Sector Organisations

A private sector organisation, or business organisation, is one whose primary function is geared to respond to, and in part create, the wants of consumers in a market economy. There are a number of different types of business organisation. Typically, these are:

- Small, single product organisations – often controlled and managed by its owner with very little formal structure. More energy is spent on production and selling rather than activities such as research and development.
- Large, single product organisations – often characterised by a more formal organisational structure, broken down into separate functions/departments. Each department is responsible for one part of the flow of activity of the raw material stage to the point which the product is supplied to market. In this type of organisation, there is generally some research into ways of improving the product or the process of production.
- Large, multiple product organisations – often characterised by expanding a range of products. Usually, this diversification of products lead to the adoption of a divisional organisational structure whereby each division are responsible to an over-arching board of top management. These organisations typically search for new products as well as undertake research into product and process improvements.

- Service Sector organisations – often characterised by the provision of a service to the consumer. Examples of services are banking, retailing and leisure. Thus, these organisations need to be in close contact with its consumer population.

There are a number of factors which govern the size and structure of organisations. These are:

- Availability of finance – access to large amounts of finance/capital has been proven to be an important stimulus to the growth of companies. Gaining access to this finance can be provided through the use of *limited liability*, *the Stock Market* and *retained profits*.
- Impact of technology - changes in technology have affected the organisation in a number of ways. First, new technology has introduced the possibility of new products. Second, production methods have incorporated technology in such a way as to achieve economies of scale. Third, new technology in communications has open doors to new markets in different countries.
- Market changes – the market environment is continuously changing. However, markets have been characterised by the following features: first, growth in size; second, change in patterns of demand; and third, the rise in competition. As mentioned, technology has had a huge impact on the availability of new markets and typically *globalisation* is a term which describes this phenomenon.
- Government – governments do little to discourage the growth of industrial organisations. Its attitude is conditioned by the realisation that large organisations, with their vast resources for capital investment, their ability to search for new products, and their capacity to reap significant economies of scale, offer the best means of ensuring effective competition in domestic and foreign markets.

In general, the primary objective of any private sector organisation is to achieve profit. Profit can be described as a condition which is achieved when the excess of an organisation's revenue over its total costs is at its highest level.

4.6.2 Public Sector Organisations

A public sector organisation is an organisation which is not geared towards the needs of the market system or the drive to make profit. Public sector organisations represent the many complex roles which a government must conduct when it intervenes in the market to achieve political, social and economic ends. Therefore, there are many more types of public sector organisations than in the case of private sector organisations. Public sector organisations can be classified according to:

- Size – public organisations range in size from the small, for example; Dept of Environment, to the extremely large, for example; Dept of Finance.
- Source of finance – all public sector organisations are financed through some form of Treasury department upon approval of the government.
- Purpose in governments – the variety in the purposes and the functions of public organisations mirrors the many various activities undertaken by government.
- Degree of autonomy – all public sector organisations are, in some way, accountable to government. However, they differ in the degree of discretion which they possess in relation to the independent formulation and implementation of policies. Thus, more central government departments would have less discretion than their more less central counterparts.

Typically, the structure of government can be broadly classified under three broad headings:

1. Central government organisations – these are government departments which are charged with the task of putting parliamentary policies into practice.
2. Local authorities – these are responsible for the provision of many services, including housing, fire protection and library services.
3. Agencies – a substantial amount of government business is conducted not by government departments or local authorities but by government agencies. Such public sector organisations have been created, often in a haphazard fashion, to satisfy specific social needs.

Unlike private sector organisations, profit is not an objective of public sector organisations. Generally, government is concerned with improvement to the general welfare or well-being of the community as a whole. Such an objective may be expressed in very broad terms, such as “the creation of a fair and just society” or “the maintenance of a thriving economy in which everyone can achieve a reasonable standard of living.” However, political objectives are also found to exist. Politicians hold office only if they are elected. It should, therefore, come as no surprise to discover that political parties use economic policies to acquire votes, and that, in consequence, public sector organisations are sometimes obliged to take action which are of a political nature.

4.6.3 Organisations and their use of Knowledge Management

For many years the management of knowledge has been recognised by private sector organisations in an attempt to fulfil many different objectives such as innovation, competitiveness, lower costs and financial profit. Public sector organisations are typically thought to come later to the concept of KM. The OECD (2003b) suggests that this is in part due to a traditional environment whereby competitiveness and the “bottom line” are afforded less priority than in the private sector. However, in response to the KS, government and European initiatives, and increasing pressure to improve efficiency and effectiveness, together with the importance of sharing knowledge across government agencies, it comes as no surprise that in recent years the management of knowledge has become an important public management theme (O’Riordan, 2005). The OECD (2003a) emphasises that public sector organisations have different incentives, strengths and weaknesses compared to private sector organisations in relation to the management of knowledge. On the one hand, the pressure of competitiveness, the incentive to lower costs, the drive for innovation and the pursuit of financial profit are traditionally less important for public sector organisations. In addition, outcomes are typically less clear and less measurable. Finally, management structures tend to be quite hierarchical which, it is suggested, provide fewer incentives for innovation and teamwork.

However, the activities of public sector or government organisations are frequently knowledge intensive, with a need to maintain a whole-of-government perspective an

important consideration. Evidence of these knowledge intensive activities is the necessity to maintain records of all activities and for reasons of public interest transparency and access to these records of knowledge is critical. Finally, ageing civil and public servants and increased staff turnover create new challenges for the preservation of institutional memory and the training of new staff (O’Riordan, 2005).

In light of this, the Irish Government has proposed initiatives, as noted above, to help meet these challenges within the government and public sector organisations but more importantly its initiatives also encourages research and development, more life-long learning, a better communications infrastructure, as a vehicle to encourage further investment from private sector organisations, which are ultimately beneficial to our society and citizens.

4.7 Conclusion

The purpose this chapter was to describe the meaning of the “knowledge society” to the reader by providing a historical background, describing some conceptualisations and identifying some of the emerging trends which it has produced. Though it may be difficult for some to accept the term “knowledge society” to describe or label our modern society, this has not stopped governments from adopting either the term or concept to develop policies. Governments accept the significant role which knowledge has in the shaping of our modern society, given the recognition it has as an important asset. As noted earlier, governments are concerned with the improvement of the general welfare or well-being of the community as a whole and if the role of knowledge helps with fulfilling this objective it should be embraced.

In light of this, the European Community introduce its eEurope initiative in 2000 with a view to embracing the importance of knowledge as an asset. It is a political initiative to ensure the European Community fully benefits from the changes the Information Society is bringing where sharing knowledge will create wealth and enrich the lives of every European citizen. Needless to say the management of this transformation represents a central economic and social challenge for the Community. Ireland, as a member of the European Community, is committed to the eEurope initiative and has

made its own proposals to embrace the importance of knowledge as an asset and the creation of the knowledge society.

Organisations are also an integral part of our modern society. Organisations exist to provide employment, and to provide goods and services for consumption. A description of private sector organisations and public sector organisations, citing the differences in make-up and objectives of each, were outlined to the reader. The objectives of either type of organisation has in some way dictated how knowledge and its management has been employed. In either case, what is important is the necessity for governments to stimulate the provision, creation and use of knowledge for the purpose of reaping social and economic rewards which the “knowledge society” ultimately aims to achieve.

5 KNOWLEDGE MANAGEMENT STRATEGIES

5.1 Introduction

If we are to accept that we live in a knowledge society, and as such, knowledge is a major resource, it is clearly important that provisions be made to manage it. However, given that knowledge is used in many different contexts and that so many organisations function differently, it should come as no surprise to learn that many different KM programmes have been implemented. When considering a KM strategy whilst implementing a KM programme, it is worthwhile to bear in mind that a “one size fits all” strategy doesn't exist. What is a perfect KM strategy in one organisation may be a disastrous one in another. Thus it is important to tailor your strategy to meet the needs of your organisation. The following chapter discusses the need and importance for a KM strategy and will look at some KM strategies which have been proposed to assist with the implementation of KM programmes in organisations.

5.2 The Need for a KM Strategy

In real terms, KM is a complex activity and implementing it is very much a change management project. For KM to deliver a business impact, it is necessary to stand back from the operational side of the organisation with the view to developing a concrete plan or strategy to implementing it, which to some large extent makes sound business sense. The use of a more coordinated approach also establishes an awareness of the importance of knowledge, as a way of improving efficiency, effectiveness and innovation, at every level of the organisation.

5.3 Examples of KM Strategies

The following section outlines some of the KM strategies which have been proposed by commentators. The purpose of doing so is to identify some common features which exist in the KM strategies for the purpose of developing or tailoring a strategy to meet the needs of the organisation which is pertinent to this project. The KM strategies are as follows:

5.3.1 The 10-Step KM Road Map

In 2002, Amrit Tiwana authored *The Knowledge Management Toolkit: Orchestrating IT, Strategy, and Knowledge Platforms*. In his book, Tiwana proposed a 10-Step KM Road Map as a means to developing a knowledge strategy. The steps and their sequence are described in *Table 4.1*.

Phase 1 Infrastructure Evaluation	1	Analyse the Existing Infrastructure
	2	Align Knowledge Management and Business Strategy
Phase 2: KM system analysis, design and development	3	Design the Knowledge Management infrastructure
	4	Audit Existing Knowledge Assets and Systems
	5	Design the Knowledge Management Team
	6	Create the Knowledge Management Blueprint
	7	Develop the Knowledge Management System
Phase 3: Deployment	8	Deploy, using the Results-Driven Incremental Methodology
	9	Manage Change, Culture and Reward Structures
Phase 4: Evaluation	10	Evaluate Performance, Measure ROI, and Incrementally Refine the Knowledge Management System

Table 4.1 – 10 Steps of the KM road map (Tiwana, 2002)

The 10-Steps of the KM road map are distributed over 4 phases and are described as follows:

5.3.1.1 Phase 1: Infrastructural Evaluation

The first phase of the 10-Step KM Road Map involves 2 steps which are:

- Step 1 - Analysis of Existing Infrastructure: An understanding is established of the various components that constitute the KM strategy and technology framework. By analysing and accounting for what is already in place in your organisation, critical gaps can be identified in the existing infrastructure. Consequently, it is possible to build on what already exists and also stands a

better chance of generating stronger management support for the KM project because of the perception that the “old” existing investments are not abandoned.

- Step 2 – Aligning KM and Business Strategy: Business strategy is usually at a high level and is concerned with abstractions and visions, whilst developing systems is at a low level and uses specifications and features. The second step of the road map aims to make the connection between the KM platform design and the business strategy.

5.3.1.2 Phase 2: KM System Analysis, Design and Development

The second phase of the 10-Step KM Road Map involves 5 steps which are:

- Step 3 – KM Architecture and Design: An understanding of the infrastructural components that constitute the KM system architecture are selected. Creating the KM system model requires thinking in terms of an *infostructure*, rather than an infrastructure, whereby the first choice is the collaborative platform. Whether the Web or a proprietary platform is used depends on the organisation.
- Step 4 – Knowledge Audit and Analysis: A KM project must begin with what your organisation already knows and does this through the use of a knowledge audit and analysis. Gaining knowledge of the knowledge assets within an organisation helps to identify those that are both critical and weak, and to identify the strengths of the organisation.
- Step 5 – Designing the KM Team: The formation of a KM team is necessary for the design, build, implementation and deployment of a KM system in an organisation. To design an effective KM team, identifying key stakeholders both within and outside the organisation must be performed; identifying sources of expertise needed to design, build and deploy the system successfully while balancing the technical and managerial requirements must be performed.
- Step 6 – Creating the KM System Blueprint: The KM team builds a KM blueprint that provides a plan for building and incrementally improving a KM system. Working towards designing a KM architecture requires understanding the seven-layer architecture specifically in the context of the organisation concerned and determining how each of these can be optimised for

performance and scalability, as well as high levels of interoperability. The blueprint will also position and scope the KM system to a feasible level where benefits exceed costs. The blueprint will establish way to future-proof the KM system so that it doesn't “grind to a halt” with the introduction of the next wave of new technology.

- Step 7 – Developing the KM system: Upon creation of the blueprint for the KM system, the working system needs to be constructed whilst tackling the issues of integrating a system across different layers.

5.3.1.3 Phase 3: Deployment

The third phase of the 10-Step KM Road Map involves 2 steps which are:

- Step 8 – Pilot Testing and Deployment Using Results Driven Incremental (RDI) Methodology: Any project such as a typical KM system must take account the actual needs of its users. Although a cross-functional KM team can help uncover many of these needs, a pilot deployment is the ultimate reality check. Thus, a decision must be made as to how to select the cumulative releases with give the highest payoffs first. Finally, one will evaluate how to use the RDI methodology to deploy the system, using cumulative results-driven business releases.
- Step 9 – Leadership and Reward Structures: The most erroneous assumption that is made by many organisations is that the intrinsic value of an innovation such as a KM system will lead to its enthusiastic adoption and use. However, knowledge sharing cannot be mandated – employees are not like troops but more like volunteers. Encouraging use and gaining employee support requires new reward structures that motivate employees to use the KM system and contribute to its enthusiastic adoption. In addition, it also requires enthusiastic leadership that sets an example to follow.

5.3.1.4 Phase 4: Evaluation

The fourth phase of the 10-Step KM Road Map involves 1 step which is:

- Step 10 – Real-Options Analysis for KM: Measuring return on investment (ROI) must account for both financial and competitive impacts of KM in the organisation. Being able to measure returns serves two purposes: hard data and monetary figures can be used to prove the impact of effective KM, and it allows refinement of the KM design through subsequent iterations.

Tiwana proposes that the 10-Step KM Road Map is built on years of cumulative research involving small and large organisations in a variety of industries worldwide. It is a road map that will help build a KM Strategy and KM system that can be tailored to any organisation (Tiwana, 2002).

5.3.2 The Knowledge Needs Approach

In 2003, Tom Knight and Trevor Howes authored *Knowledge Management: A Blueprint for Delivery*. In their book, Knight and Howes developed and proposed a 5-Stage Management Delivery Framework which is a process for comprehensively defining and implementing a knowledge strategy, summarised in *Figure 4.1*.

The five stages are described as follows:

5.3.2.1 Stage 1: Understand the Pressure to Change

This stage defines the pressures, such as driving factors, which are placed on the organisation and an investigation is required to explore the potential to leverage knowledge with the view to fulfilling corporate objectives.

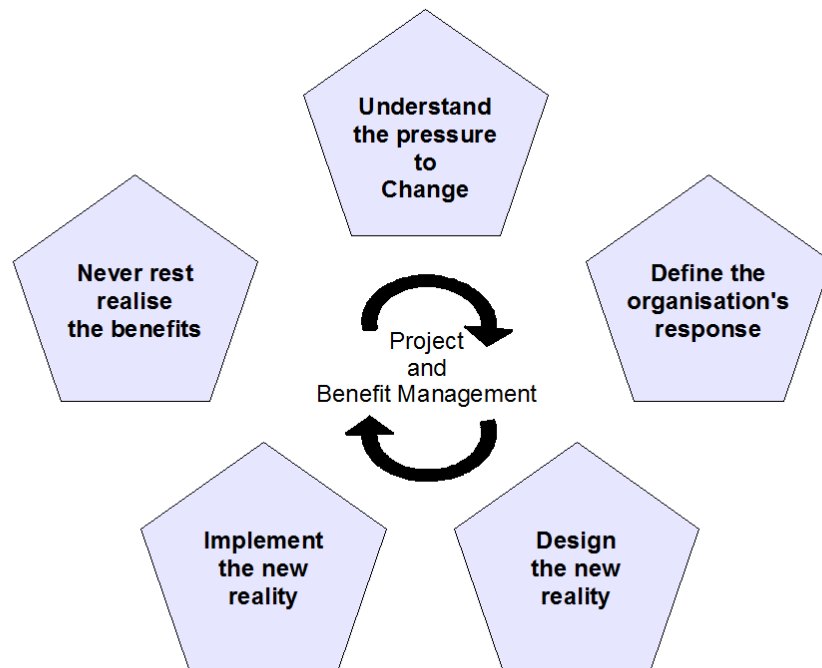


Figure 4.1 – The Five-Stage management delivery framework (Knight & Howes, 2003)

5.3.2.2 Stage 2: Define the organisation's response

This stage, by means of a Knowledge Audit, assesses the organisation's current knowledge base and defines a vision for the role of knowledge in the future and identifies the benefits which any programme will be required to deliver.

5.3.2.3 Stage 3: Design the New Reality

This stage focuses on how to work with five broad 'levers and enablers' of change, pulling them together into a detailed strategy with a plan of action.

- Leadership
 - KM strategy development activity should begin the process of helping leaders and managers define and demonstrate the sorts of knowledge sharing behaviours that need to be developed in order to build value.
- People

Analysis of the role of people in the KM programme – looking at behaviours around communication and knowledge sharing, and the skills to carry these out using various tools at their disposal. This all occurs within an environment and culture that may encourage or hinder effective KM – motivation and incentives are key areas for analysis and action.

- Process

Business processes exist to add and deliver value to end customers of the organisation. The strategy should examine the potential for new processes to improve knowledge identification, use, creation, sharing and recording. Processes in an organisation can be likened to clothes in a wardrobe – it is easy to add new clothes but sorting and clearing out those not required is a more difficult task. In a similar way, processes tend to build up and need clearing out every so often. With knowledge processes, there will likely be significant opportunities to improve the value they can add, and to link them together to improve end-to-end performance.

- Technology

Addressing the technology component is often confused with the discipline of KM itself. Technology is an enabler and provides all of the necessary infrastructure and tools to support KM within an organisation. Thus a KM strategy would have to look at the issues and potential offered by technology.

- Information

Any strategy must consider the basic ingredient that underlies the personally held knowledge of the organisation's employees and partners. The relevance, availability, context and quality of available information in and across organisations will determine in large measure the success of any knowledge initiatives.

5.3.2.4 Stage 4: Implement the New Reality

This stage outlines how the implementation is realised by planning the change whilst apportioning responsibility for the management and delivery of the initiative, determining budgets, priorities and overall shape of the programme.

5.3.2.5 Stage 5: Never Rest – Realise the Benefits

This stage is concerned with improving the results of the changes and on delivering measurable benefits. The pressures and circumstances of an organisation are constantly changing and there must be permanent monitoring and improvement process.

5.3.3 Other Strategies

There are many numerous strategies. One such strategy is outlined by Frappaolo, who quickly acknowledges that no two knowledge practices will be exactly the same, and no two will evolve in precisely the same way. However, there are basic steps that should be taken in order to increase your success with knowledge management. These ten steps are as follows (Frappaolo, 2006):

1. Define the community
2. Define a strategy and critical success factors
3. Execute a knowledge audit
4. If necessary, execute a formal return on investment.
5. Determine the right approach to knowledge leadership for your organisation.
6. Identify and agree upon the core competencies of the organisation.
7. Take an inventory of the knowledge sources the community uses and those it does not use.
8. Determine the quality of existing informal knowledge practices.
9. Build an ecosystem ripe with incentive plans.
10. Supply an infrastructure and the means to improve.

Another strategy proposed by Rumizen, involves the following guidelines (Rumizen, 2006):

- A good KM strategy is a plan of action that describes what needs to be done, says what needs to be accomplished, is linked to the strategy of the organisation, and gives a time-line.
- An executive sponsor is a critical success factor for a KM programme.
- The necessity to define what KM means for your organisation.

- The need to develop a vision for KM.
- The need to consider when putting together the strategy is whether or not the strategy spans the organisation or focuses on small areas.
- Another issue for consideration is whether to concentrate on explicit knowledge or tacit knowledge. Concentrating on explicit knowledge leads to codify. Concentrating on tacit knowledge leads to connecting people.

Another approach, described by (Kelleher & Levene, 2001), indicates that conducting a knowledge audit as “a formal documented of an organisation's current knowledge base’ represents a useful starting point for implementing KM. It helps through identifying how employees currently store, access, use and store the knowledge that they need to do their jobs. It should also uncover some of the barriers to knowledge use and transfer that might exist in the organisation and at the same time highlight the examples of good practice that could be applied in other areas (O’Riordan, 2005).

The logical follow-up form the knowledge audit is to develop a strategy which fundamentally addresses the role of knowledge in the organisation and describes how it can be mobilised in support of business objectives. However, the strategy should not only be based on senior management demands, but should also reflect what other employees need. Consequently, the process involved in developing the strategy is as critical as the final document. Some of the themes that are likely to be addressed in developing the strategy include (Kelleher & Levene, 2001):

- Organisational priorities for KM.
- KM vision and mission.
- KM operating plan.
- KM Budget.
- Plan for KM technical infrastructure.
- Proposed KM organisational structure.
- Proposed KM metrics and proposed knowledge sharing incentives and rewards.
- Plans for KM training.
- Plans for communication of KM strategy to internal and external stakeholders.
- Plans for integrating KM and organisation strategy.

5.3.4 Some other Considerations

5.3.4.1 The Four Pillars

In a previous chapter, recognition to using “The Four Pillars” as proposed as a necessity to ensuring success with the implementation of a KM programme. Though, none of the above strategies explicitly mention the use of “The Four Pillars”, it is evident that many similar themes are present, in particular; leadership and technology.

5.3.4.2 Start Small - balance a long-term vision with quick wins

A good strategy will reflect a balance between ‘quick-wins’ and building a sustainable knowledge management capability into the long-term. The advantage of quick wins is that they allow people to see immediate benefits, and therefore they are more likely to give their support.

5.4 What is a Knowledge Audit?

One of the common themes in all of the strategies outlined is the use of the knowledge audit. The knowledge audit (Hylton, 2000) is the all-important first major phase, stage, or step of a KM initiative. It is used to provide a sound investigation into the organisation's knowledge health. The knowledge audit is a discovery, verification, and validation tool, providing fact finding, analysis, interpretation and reports. It includes a study of corporate information, and knowledge policies and practices, and of corporate information and knowledge structure and flow.

The knowledge audit serves to help the audited unit, whether the whole organisation or part of it, to determine whether it “it knows what it knows” and “knows what it doesn't know” about its existing knowledge state. It will also help to unearth what it should know to better leverage knowledge for business and competitive advantage. This enlightenment sets the agenda for the KM initiative, program and implementation.

A complete knowledge audit will evaluate:

- The organisation's knowledge environment.
- Its knowledge ecology – corporate knowledge structure and the enhancing social and behavioural culture of the people.
- Knowledge sources and use.
- How and why knowledge is acquired, accessed, disseminated, shared and used.
- Investigates the perceptions of KM effectiveness through the knowing eyes of the knowledge people – the true knowledge workers.
- Offers a full and detailed examination, review, assessment and evaluation of an organisation's knowledge abilities, its existing knowledge assets and resources, and its KM activities.
- Determination what knowledge is being managed and how well it is being managed.
- Helps make the knowledge visible, understandable and appreciated.
- Investigates and evaluates the company's information systems, its processes and its knowledge enabling tools and technology.

The main knowledge auditing tools are the knowledge survey, the knowledge inventory and knowledge mapping.

5.5 Conclusion

With any project or endeavour, there is always a need to create a plan or develop a strategy. In the case of KM, this is equally true and important if there is a need to implement KM successfully. However, no two KM programmes are the same due to the fact that knowledge is used in many different contexts and that so many organisations function differently. Consequently, a number of strategies were outlined to the reader to indicate their diversity, which, in some way, reflects the diversity of KM programmes which have been implemented. Fortunately, many of the strategies have some common themes, in particular, the knowledge audit. The knowledge audit appears at some stage in all of the outlined strategies which would suggest its importance and relevance. Thus some background about what a knowledge audit was outlined. Some other considerations were outlined, in particular, “The Four Pillars”.

Given that the purpose of this project was to explore the introduction of KM into a public sector organisation, it would seem fitting that a knowledge audit would be conducted. However, the next chapter will introduce the public sector organisation to the reader.

6 IRISH JUVENILE JUSTICE

6.1 Introduction

The purpose of this chapter is to outline the current state of juvenile justice in the country of Ireland. The reader will be presented to the Irish Youth Justice Service and its responsibilities to provide a better service in matters of juvenile justice as it endeavours to fulfil the objectives of the National Youth Justice Strategy. Oberstown Boys School will be introduced, highlighting its current role in juvenile justice. Some background information, its organisational structure, its current use of the relationship model of care, and locations of knowledge will be presented. Future plans and considerations for the organisation will be highlighted. Finally some thoughts regarding KM matters will be raised.

6.2 Background

The statistics of an Garda Siochana (Irish police force) show that the types of offence committed by children under the age of eighteen years are primarily theft, alcohol-related offences, criminal damage, assault, traffic offences, drugs possession, public order offences and burglary. In most cases, the Garda Juvenile Diversion Programme is used to deal with these offences.

6.3 The Irish Youth Justice Service (IYJS)

In December 2005, following a review of the youth justice system, the Government agreed a programme to implement youth justice reforms (Youth Justice Review, 2006). These reforms included the establishment of the Irish Youth Justice Service (IYJS) as an executive office of the Department of Justice, Equality and Law Reform and a number of key legislative amendments to the Children Act 2001 (Children Act 2001). These were aimed at changing the way in which responsibility for youth justice matters was previously spread across a number of Departments. It is now coordinated and focused by a single body, the IYJS and it has a number of responsibilities which are:

- Develop a unified youth justice policy

- Devise and develop a national strategy to deliver this policy and service
- Link this strategy where appropriate with other child related strategies
- Manage and develop children detention facilities
- Manage the implementation of provisions of the Children Act 2001 which relate to community sanctions, restorative justice conferencing and diversion
- Co-ordination of service delivery at both national and local level
- Establish and support consultation and liaison structures with key stakeholders including at local level to oversee the delivery of this service and response
- Develop and promote information sources for the youth justice sector to inform further strategies, policies and programmes

Office of the Minister for Children and Youth Affairs (OMCYA)

In December 2006, the Government established the Office of the Minister for Children and Youth Affairs (originally called the Office of the Minister for Children) to bring greater coherence to policy making for children. The OMCYA focuses on harmonising policy issues that affect children in areas such as early childhood care and education, youth justice, child welfare and protection, children and young people's participation, research on children and young people and cross-cutting initiatives for children.

The IYJS operates within the strategic environment of the OMCYA to ensure that youth justice issues are viewed in the wider context of children's services generally.

Expert Group

Subsequently, a cross-departmental Expert Group, consisting of representatives of the IYJS, Department of Education and Science, Children Detention Schools, Irish Prison Service and the Office of Public Works, was set up in April 2006 by the Minister for Children. The cross-departmental Expert Group was tasked to:

- Conduct the necessary planning and consultation to facilitate the transfer to the Irish Youth Justice Service of responsibility for the detention of children currently detained by the Department of Education and Science, and the Irish Prison Service

- Plan for the necessary redevelopment of existing detention facilities and the development of new facilities, if required, to meet the future residential accommodation requirements of offending children under 18 years, ordered to be detained by the courts.

By December 2006, the Expert Group presented its first report (Expert Group Report, 2006) to the Minister for Children citing a number of recommendations. A second report was presented to the Minister for Children in September 2007 providing an update on how the Group was progressing on its original recommendations. By the end of 2007 the final report was submitted and its recommendations were factored into the National Youth Justice Strategy.

National Youth Justice Strategy

In March 2008, the Minister for Children launched the National Youth Justice Strategy for 2008-2010. The Strategy focuses on children who have already had some contact with the criminal justice system.

The aim of the Strategy is to provide a partnership approach among agencies working in the youth justice system. It includes a number of goals and targets for IYJS and other agencies to help measure progress and to assess where available resources should be targeted.

Speaking at the launch of the Strategy, the Minister said, “The purpose of the National Youth Justice Strategy is to develop a coordinated approach among agencies working in the youth justice system over the next three years. I am convinced that the Strategy lays strong foundations for the continued development of a successful youth justice system focused on reducing offending and improving outcomes for both young people and our community (Smith, 2008).”

The Strategy was developed in consultation with a number of key stakeholders including Government Departments and agencies. Based on the principles of the Children Act, 2001 and the Government’s decision to reform the youth justice area, the Strategy contains five high level goals:

1. To provide leadership and build public confidence in the youth justice system;
2. To work to reduce offending by diverting young people from offending behaviour;
3. To promote the greater use of community sanctions and initiatives to deal with young people who offend;
4. To provide a safe and secure environment for detained children which will assist their early re-integration into the community;
5. To strengthen and develop information and data sources in the youth justice system to support more effective policies and services.

High Level Goals number four and five of the National Youth Justice Strategy have consequences for the detention school services and will be covered in the following sections of this chapter.

6.4 Detention School Services

It is important as part of growing up for a child to stay in contact with their family and community. It is because of this that the court may decide that the child can stay in their own school and be part of their community, but still deal with the consequences of the child's actions.

Sometimes however, because of the type of offence committed and the particular circumstances of the case, the Court will send a child to a place of detention. Before sending a child to detention, the Court will try to make sure that no other option is available that would address the offences which the child has committed. If a child needs to be placed in detention, the Detention School Services can utilise either:

- St. Patrick's Institution, or
- any one of the following Children Detention Schools:
 - Trinity House, Lusk, Co Dublin.
 - Oberstown Boys School, Lusk, Co Dublin.
 - Oberstown Girls School, Lusk, Co Dublin.
 - Finglas Child and Adolescent Centre, Dublin 11.

However, the Children Act 2001 is now currently part of legislation, St. Patrick's Institution will at some stage in the future cease to accommodate sixteen and seventeen year-olds. The IYJS is responsible for managing the Children Detention Schools and is currently taking steps to develop these schools for the purpose of catering for these sixteen and seventeen year-olds. However, until these places are available, St. Patrick's Institution will continue to be used for sixteen and seventeen year-old boys.

6.5 Oberstown Boys School

6.5.1 Background

Oberstown Boys School (OBS) is registered reformatory School and place of Detention which is located near Lusk in north Co. Dublin. Since 1991 OBS has provided specialist residential care and education for young people, between the ages of twelve and sixteen years, who are in conflict with the law. The purposes of OBS is to:

- provide care, education and re-integration in an open setting for challenging young people who commit criminal offences.
- provide a caring and safe environment that allows us to control, contain and address challenging behaviour. Together, we work towards the young person taking responsibility for their behaviour.

OBS values the promotion of an environment where openness, respect and fairness exist for all that live and work in and are involved there. To this end, OBS uses the following guiding principles:

1. We approach our task in a professional manner and endeavour to provide the highest quality service.
2. We treat all people with dignity and respect.
3. We provide a caring and safe work and living environment for all. We keep our environment a child friendly and homely as possible, within the bounds imposed by the need for safety and security.

4. Staff are our greatest resource and will be encouraged to develop personally and professionally.
5. Our primary role is to create opportunities for change.
6. Our approach is one of partnership and inclusion and we encourage innovation and creativity.

To meet these high standards, OBS is committed to employing adequate numbers of experienced residential care staff from a number of different parent disciplines such as: teaching, nursing, social care, and psychology. Furthermore, it employs a number of people who have no formal qualification but with substantial youth work experience. OBS is fully committed to training and developing all staff to their potential with the view to:

- ensure that quality programs can be safely delivered to all young people.
- to providing a twenty-four hour a day three-hundred and sixty-five day a year service to all courts in the state. Thus, OBS can accept young people on remand orders, detention orders and High Court referrals; and can currently accommodate up to twenty boys in total.

6.5.2 Organisational Structure

OBS is governed by a board of management on behalf of the IYJS. In total OBS employs three directors, four unit managers, four administrative staff, two maintenance staff, three housekeeping staff, six stores and laundry staff, and sixty care staff - consisting of residential care workers (RCWs) and night supervisor officers (NSOs). In total, OBS employs eighty-two staff. *Figure 6.1* gives some idea of the organisational structure which exists. On paper, the organisation typically exhibits a traditional hierarchical structure. However, due to the nature of the business and the size of the organisation a strong camaraderie exists amongst the staff. Everyone knows each other and this sometimes creates the impression that the traditional hierarchical structure doesn't exist. Thus information can flow in either direction between a member of care staff and the director, between a member of staff and deputy directors; between a member of staff and unit managers; and between the care staff themselves.

Unit managers are responsible for the management of the three units and care staff are allocated amongst the units. However, at times it would appear that the units operate differently and this can be attributed to the make-up of the staff teams. Moreover, within the units, teams appear to operate differently.

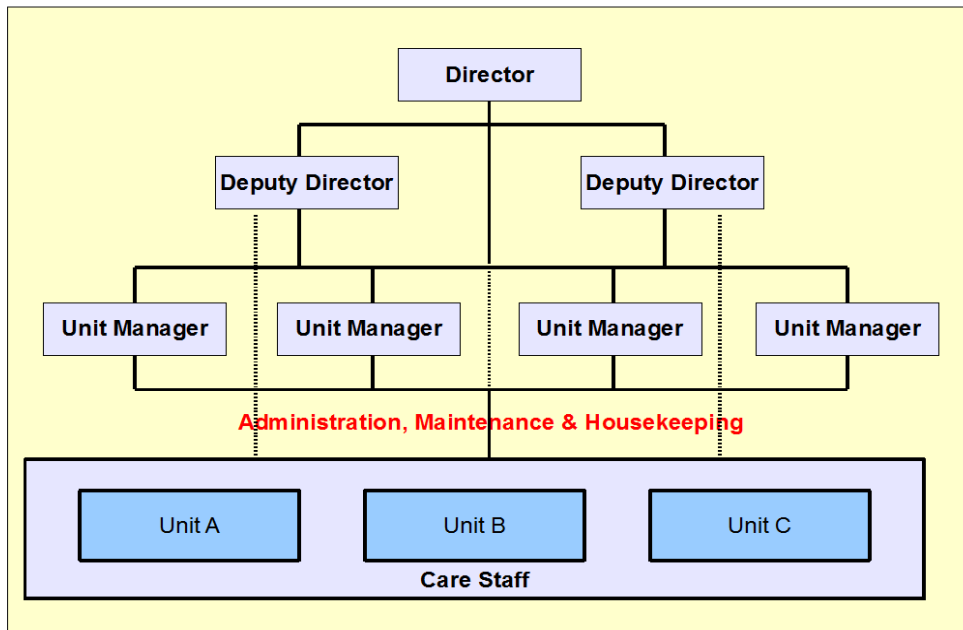


Figure 6.1 – Oberstown Boys School Organisation Structure (Author, 2008)

Needless to say, a definite chain of command does exist and becomes very evident when sensitive matters relating to the well-being of the young people who live in OBS arise. Finally, the support services such as administration, maintenance and housekeeping exist throughout the organisation.

6.5.3 Relationship Model of Care

Given that OBS recognises that deprivation of liberty is very difficult for young people, the care staff always seek to work in accordance with policy which involves the use of the relationship model of care. The relationship model of care involves getting to know each young person with the ultimate aim of making each young person's experience of care in the school a positive one. Ultimately, there are a number

of benefits to using the relationship model. One benefit is that staff are provided with better opportunities to aid and assist a young person in times of crisis; another benefit is the opportunity to teach the young person better coping and decision making skills than the ones they already possess; another benefit is the opportunity to teach a number of skills, such as life and social ones, to the young person.. However, care staff must overcome a number of obstacles which each young person presents before these benefits are realised. In addition, care staff seek to pro-actively work with parents and any relevant outside agencies for the purpose of providing care, education and any preparatory work which assists with the re-integration of the young person back into the community.

6.5.4 Locations of Knowledge in OBS

In chapter two, it was indicated that knowledge resides in several different locations or reservoirs in an organisation and identifying some of these in OBS is addressed here.

People

In terms of people, a considerable amount of knowledge is tacit, technically specific and contextually specific due to the fact that care staff, through the use of the relationship model of care, interact with the young people on a daily basis. In terms of groups, care staff operate in teams of four and the differences between the teams is evident based on the collective knowledge and the diversity of the knowledge which is contributed by each member of the team.

Artefacts

Repositories

Besides the professional care which each member of care staff provides, there is a clear duty for staff to keep and maintain a set of records for each young person. These set of records will typically contain observations, decisions and concerns which pertain to each young person. The care staff record information on a twenty-four-seven, three-hundred and sixty-five day basis and it can be stated that the quantities of information gathered is extensive. This confirms the statement noted earlier that suggests that

public sector organisations tend to be knowledge intensive and this is no different for OBS. In terms of knowledge, these collections of client records are repositories and explicit.

In light of the emphasis which is placed on record keeping in OBS, the following section provides some background to this process. There are a number of repositories where records of each young person are kept. Firstly, since each young person has an individual programme of care, the care staff utilise and tailor a number of therapeutic care programs to meet their specific needs. Each young person's program is monitored closely, noting progress or setbacks, in areas such as; behaviour, outreach, re-offending, substance abuse and education, with all findings recorded accordingly in their care plans, or otherwise known as the *client care plan*.

Secondly, all daily activities in OBS are monitored and recorded on a daily basis in the *unit logbook*. The *unit logbook* will reflect all the interactions between the young people, interactions of young people with their visiting family, interactions between staff and young people, and the movement of young people under the supervision of staff in all areas of the campus.

Other sources for recording information are the co-ordinator check-list, the unit diary, the unit meeting logbook and the unit handover book, to name a few.

What is important to note is that all record keeping, since the establishment of OBS in 1991, is performed by handwriting. Notwithstanding, the use of handwritten logs has its advantages such as (Garfinkel & Spafford, 1996):

- they are not easily altered and provide a nearly tamper-proof record of important information
- they can record many different kinds of information
- when there is an outage with a computer system, it is still possible to access your paper logs
- if a disaster befalls computer disks, it is possible to recreate some vital information from paper, if it is in the log book
- if a log book is kept as a matter of course, such information might be more likely to be accepted in court proceedings as business records. This advantage is important if there is a need to criminal or civil legal action

- juries are more easily convinced that handwritten paper logs are authentic, as opposed to computer logs
- having copies of significant information in the log book prevents having to search all the disks on a number of workstations for some selected information.

However, the use of handwritten logs also has its disadvantages such as:

- can be easily lost as there are no backups
- handwriting can be illegible
- storage issues as it can take up a lot of space especially when the records are kept in perpetuity
- data cannot be easily amended or can be difficult to edit
- inefficient and can take a long time to find specific files
- paper can get torn, or damaged in some way
- paper dies it has a tendency to discolour (turns yellowish over time)
- ink pigments can fade with time

Another issue regarding these records is their security, against loss and theft; and confidentiality. The confidentiality of all client records is of paramount importance and must not be breached, except on the principle of, “a need to know basis”. The following OBS staff have access to current files: Director, Deputy Directors, Unit Manager, Principal, Care Staff, Teachers, Nurses and Administration Staff. Additionally, professional services, attached to OBS, also have access to current files: Psychologists, Psychiatrists, Doctors, Dentist, Social Workers, Child Care Advisor and Guardian Ad Litem. However access is limited on the following basis:

1. Files are only available for purposes directly connected with the carrying out of one’s duties, as an employee of OBS, or the carrying out of research formally approved under the Centre’s Research Policy.
2. Information on files should only be used to further the best interests of the young person involved.
3. Information on file may not be passed or communicated to sources outside the Centre except:
 - To an officer of the court assigned to the young person by the court.

- To a probation officer assigned to the young person by the court.
- To a social worker assigned to the young person by a health board responsible for the young person.
- To agencies to which application is being made to assist in the placement of the young person after his stay in the Centre. In these cases information should be limited to what is necessary to further the best placement of the young person.
- For the purpose of research, information may only be released on receipt of a written request to the Director or Deputy Director specifying the information required, the purpose for which it is required and the person/persons who are likely to have access to it. Written approval of the request must be granted before the information is released. Such approval should be noted on file.

Practices

During its seventeen year history, many practices have evolved in OBS and would currently be considered to be best practice.

Organisational Entities

Organisation

OBS has stored a lot of contextually specific knowledge. Many of the norms, values, practices and culture have evolved during its history, especially when consideration is given to the nature of business it is involved in.

Organisational Unit

The knowledge stored in the three units of OBS differ from each other. This is due to the different formal grouping of individuals in each unit. And the knowledge tends to be contextually specific as it reflects the role of the unit.

Inter-organisation Relationships

Relationships between OBS and external agencies do exist and knowledge is stored and embedded in these relationships.

6.6 Future Plans and Considerations

Confidentiality

In terms of confidentiality, it is understandable that the current safeguards are in place regarding access to them. However, the confidentiality of these paper records is only as good as the people who subscribe to it. The same also applies with a computer based system and similar safeguards would need to be taken into consideration. But the issue of confidentiality should not be allowed to be a barrier.

Record Keeping

In its seventeen year history, OBS has provided a quality service of care to the young people who have been in conflict with the law. During this time OBS has accumulated a vast quantity of paper records which it must store in perpetuity. Many of the disadvantages associated with the storage of paper records must be addressed with the view to giving some consideration to their preservation.

Two recommendations of note were raised in the Expert Group Report on Children Detention Schools in December 2007. In the report the Expert Group advised the Minister for Children on the subjects of location of the detention facilities and capacity planning.

On the subject of location, currently, three of the four detention schools are based on the Oberstown site in Lusk, Co Dublin whilst the other school is based in Finglas, Dublin 11. The Expert Group looked at several build options regarding the future development of the detention services. It finally recommended *option 4* to the Minister for Children. This option involves the development of new facilities on the Oberstown site to replace OBS, the long term unit of Oberstown Girl's School and the Finglas Child and Adolescent Centre whilst retaining Trinity House School and Cuan Beag (a recently built girl's long term unit).

On the subject of capacity, the Expert Group considered the subject of capacity planning and recommended that an estimated one-hundred and sixty-seven beds would be required. When this time comes, the detention services may conclude that it will not

be feasible or practical to use the current methods of record keeping with the increased number of clients. Thus, the present is the best time to review this issue.

In line with the recommendations in the Expert Group report, the development of the new national children detention facilities was approved by Government in March 2008 and can be linked to the fourth High Level Goal in the National Youth Justice Strategy, which was also announced at this time.

Information and Data Sources

In addition, the fifth High Level Goal in the National Youth Justice Strategy raises the issue of “strengthening and developing information and data sources in the youth justice system to support more effective policies and services.” Thus, it is safe to suggest that technological elements will be factored into the future development of the detention facilities on the Oberstown site. However, as yet, no discussions regarding this matter are publicly known.

Knowledge Management

Given the level of change which is expected to occur during the redevelopment of the juvenile justice system, it would seem apt to use this opportunity to explore the possibility of introducing and incorporating a KM programme into this redevelopment.

The goal to develop and strengthen data and information sources appears to suggest that a technological infrastructure would be installed during the building of the new detention facilities. Assuming the technological infrastructure is an IT one, it would be one of “The Four Pillars” and certainly a step in the right direction to implementing a KM programme.

The sources of knowledge in OBS need to be assessed and a knowledge audit is necessary. Moreover, lessons learned from conducting the knowledge audit may be used to design a better audit which can also be used in the other detention schools as part of an overall KM programme for the IYJS.

6.7 Conclusion

In this chapter, the subject of juvenile justice was covered and the role which the IYJS must take to administer it. The role and position of OBS was explained and some of the locations of it's knowledge were highlighted. The chapter concluded with some observations regarding the future development of the detention schools and a number of KM considerations were outlined.

7 THE KNOWLEDGE AUDIT

7.1 Introduction

Why do a knowledge audit? As stated before, conducting a knowledge audit, as described by (Kelleher & Levene, 2001) is “a formal documented assessment of an organisation's current knowledge base” and represents a useful starting point for implementing KM.

The knowledge audit helps to identify how employees currently store, access, use and share the knowledge that they need to do their jobs. This would seem very pertinent in light of the fourth and fifth goals which are outlined in the National Youth Justice Strategy 2008-2010 document, which highlights increased planning capacity (resulting with increased levels of record keeping) and the strengthening and development of data sources (National Youth Justice Strategy, 2008).

Furthermore, the knowledge audit should also uncover some of the barriers which might exist in the organisation to the use and transfer of knowledge; and at the same time highlight examples of good practice that could be applied in other areas (Kelleher & Levene, 2001).

The knowledge audit conducted in the organisation for this research project was based on the “Auditing Organisational Knowledge” template questionnaire (TRAINMOR-KNOWMORE Partners, 2008). In view of the knowledge audit description (Hylton, 2002) provided back in in chapter 5, this template questionnaire was selected as it hit many of the points which were raised in this description. Care was taken to re-modify the questionnaire so that it would be more applicable to the organisation in question, for instance, given the nature of work in OBS some of the business processes would be alien in most organisations, for example, activities surrounding the clients - conflict resolution and client interaction. The questionnaire can be found in Appendix A.

The questionnaire is broken into seven sections which are explained in section 7.2. Each section comprises of several questions and the style and nature of most questions required that the participants to tick answer boxes - each of which belongs to an

appropriate answer category. Each answer category used a numerical value which could then be used in the analysis, which was a quantitative endeavour. Thus, most questions were of this nature in the survey unless otherwise indicated. The decision to adopt this approach was based on informal conversations with work colleagues who suggested that it would be easier to get participation and that an interview based approach may not provide a good set of results. In addition, the results to a quantitative questionnaire could be used to quickly yield results which outlined trends of belief as held by members of the organisation. With these results it would then be possible to further explore areas of interest. Needless to say, some of the questions invite the respondents to make some additional comments about the organisation they work in and also encourage the respondents to identify areas of note which have been overlooked during the design of the questionnaire. Again, the purpose of doing this was to further explore areas of interest.

The importance of “The Four Pillars” framework (Stankosky, 1999; Bixler, 2000) was not considered during the design phase of the Knowledge Audit Survey Questionnaire. However, given that “The Four Pillars” are considered to be critical success factors for KM implementation, it was decided that the findings from the survey would be, in some way, compared with a number of the criteria of each pillar in “The Four Pillars” framework. By doing this, an attempt was made to try and establish how healthy the organisation currently is in KM terms and make the appropriate recommendations to implement a KM programme which may have some chance of success.

7.2 Breakdown of the Knowledge Audit

The Knowledge Audit Survey Questionnaire is broken down into seven different sections and are described as follows:

Section A – Demographic Data

The results to this section of the questionnaire could be used to ascertain answers such as:

- What men believe compared to women.
- The average no. of years of experience in various departments
- Differences between managers and staff on certain topics
- The average level of professional experience in various processes and department (experience is an important tacit knowledge index)

Though they may not be initially used, all the details asked in this section are considered as being very important and would be used for later data comparisons.

A total number of eight questions are presented to each questionnaire participant.

The first seven questions record the basic demographic details of each respondent, such as; name, job position, department, age, gender and years of work experience in the current organisation and previous organisations.

The eighth and final question records some elements relating to tacit knowledge (level of knowledge of business processes pertinent to the organisation) of each respondent. Though, this question is quantitative in nature it does attempt to get the respondent to volunteer other organisation processes which may not have been factored in the design of the questionnaire.

Section B – Basic Knowledge Profile

The results of this section of the questionnaire can be used to ascertain answers such as theoretical knowledge, foreign language skills, IT skills, professional skills and experience.

A total number of nine questions are presented to each questionnaire participant.

The first question aims to identify the academic qualifications (diplomas, degrees, etc); professional accreditations; and certified skills and training of each respondent. The style of these questions are direct but open ended and require the respondents to provide the details to the questions.

The second question addresses competency in foreign languages and it was included in the questionnaire as it is considered a strategic knowledge issue for future work of the organisation, especially if future clients are a reflection of the multi-cultural society which we currently belong to.

The third question tries to establish the level of IT skills of each respondent. This is considered an important question as IT skills are important knowledge elements for most or all organisations in the Knowledge Society. Additionally, it would be wrong to assume that most of the respondents do not possess IT skills given that IT resources are not readily available to the majority of employees in the organisation. These skills may have been obtained elsewhere. Furthermore, ascertaining the level of IT skills amongst the respondents may highlight the benefits and problems of introducing IT. Consequently, this question is broken into several parts;

- Part one tries to ascertain the level of IT skills. The style of these questions are direct and request either a yes or no response.
- Part two tries to ascertain the method by which respondents connect to the internet.
- Part three tries to ascertain from the respondents if they believe there would be any benefits with the introduction of computers in the organisation. The style of this question is open-ended and requires the respondents to indicate the benefits which they believe may exist.
- Part four is similar in style to part three but tries to ascertain the problems with the introduction of computers in the organisation. Once again the respondents are required to indicate the problems which they believe may exist.
- Part Five requests the respondents to offer any further thoughts or comments they may have on the subject of technology use and the style of this question is open-ended.
- Part Six lists a number of specific software applications. The respondents are asked to rate their level of experience with each one and are given the opportunity to include any applications which they deem relevant.

The fourth question asks each respondent to rate the importance of the following four basic elements of their knowledge in the work place:

- theoretical knowledge
- professional experience
- personal professional contacts
- personal experience.

In addition, each respondent is asked to rate if any of these 4 factors are useful in their place of work and to their colleagues. Consequently, the question is broken in to 4 parts to reflect each of the factors.

The fifth question aims to record the level of awareness amongst other colleagues of the four basic elements of a respondent's knowledge.

In essence, both questions four and five try to analyse how well staff are connected and establish the usefulness and value they place on their basic knowledge elements.

The sixth question aims to establish if the respondent is open to share their knowledge. The style of this question is direct and requests either a yes or no response.

The seventh question aims to record the level of awareness of the respondent to the four basic elements of a colleague's knowledge.

The eight question aims to record if the respondent is willing to know more about a colleague's knowledge. The style of this question is direct and requests either a yes or no response.

Questions six and eight try to analyse the degree of give and take of each respondent with regards to sharing knowledge.

The ninth and final question asks each respondent to list a number of skills which they believe to be necessary to assist them in the work they do.

Section C – Work Analysis in a Knowledge Context

The results of this section of the questionnaire can be used to ascertain answers about how much time people spend on activities they perform in the organisation, how they communicate with each other and do they know where to go get assistance/help if they need it.

A total number of three questions are presented to each questionnaire participant.

The first question aims to record the average time spent by all staff in all possible employee actions, thus providing quantitative estimations of where staff effort is spent and by whom. Knowing where staff effort is focused is deemed to be very useful information for any organisation which embarks on planning KM initiatives. Additionally, respondents are requested to indicate other job functions which were omitted during the design of the questionnaire.

The second question aims to identify the communication needs between all staff and all departments. The style of this question is quantitative but also attempts to get the respondent to identify other departments which were omitted during the design of the questionnaire. In addition, the respondents are request to comment on the reasons why they communicate with each other.

The third and final question aims to identify, in a more detailed manner, the specific knowledge gaps which each respondent has in terms of doing his/her work. For example, if a high percentage of employees declare that they often don't know who to ask for information then it is very possible that the company should focus its KM efforts in this area. This would include investigating why people cannot locate other appropriate colleagues easily and subsequently lead to the improvement of communication structures to overcome this obstacles.

Section D – Knowledge and Information Sources

The results of this section of the questionnaire can be used to ascertain answers such as how information and knowledge is currently recorded in the organisation; and where it is recorded; and how can it be accessed.

A total number of sixteen questions are presented to each questionnaire participant.

The first question aims to establish how data and information is recorded by each respondent. The results of this question are important as its relevance can be linked back to question three of Section B in the questionnaire. The style of this question is direct and expects only 1 of 2 possible answers which can be used for quantitative analysis.

The second question aims to establish where data and information, pertaining to the work conducted by each respondent in the organisation, is recorded, be it computers, journals, log books. The style of this question is open-ended but intends to identify the more important artefacts used in the organisation.

The third question aims to establish the major problems which are experienced with the current method of recording data and information in the organisation. The style of this question is open-ended but collectively the answers could be used for quantitative analysis.

The fourth question aims to establish the major benefits which are acknowledged with the current method of recording data and information in the organisation. The style of this question is open-ended but collectively the answers could be used for quantitative analysis.

The fifth question aims to identify from each respondent how the organisation currently archives its data and information. The style of this question is open-ended but collectively the answers could be used for quantitative analysis.

The sixth question aims to establish the major problems which are experienced with the current method of archiving data and information in the organisation. The style of this question is open-ended but collectively the answers could be used for quantitative analysis.

The seventh question aims to establish the major benefits which are experienced with the current method of archiving data and information in the organisation. The style of this question is open-ended but collectively the answers could be used for quantitative analysis.

The eighth question aims to establish the main reasons why it would be necessary to access archived data and information. The style of this question is open-ended but collectively the answers could be used for quantitative analysis.

The ninth question asks the respondent if he/she has ever needed access to this archived data and information. The style of this question is direct and expects either a yes or no response. The collective answers could then be used for quantitative analysis.

Regardless of the answer in question nine, the tenth question asks the respondent if access was sought to archive data or information, would he/she know what to do. The style of question is open-ended.

The eleventh question aims to establish any benefits with the possibility of having easier access to archived data and information. The style of this question is open-ended but collectively the answers could be used for quantitative analysis.

The twelfth question aims to establish any problems with the possibility of having easier access to archived data and information. The style of this question is open-ended but collectively the answers could be used for quantitative analysis.

The thirteenth question aims to rank the usefulness of all possible explicit knowledge resources used in the company/organisation under study. Additionally, it is envisaged that this question could be linked to the results obtained in question 2 of this section. The style of this question is quantitative but does offer the respondent to indicate both

the importance of the knowledge resource and include others which may have been omitted during the design of the questionnaire.

The fourteenth and fifteenth questions aim to rank the frequency & usefulness of all possible social interactions among staff during work. Social interactions at work are an important means for knowledge transfer, especially for tacit knowledge.

The sixteenth and final question aims to investigate staff preferences for all possible communication methods. Communications plays an important role for knowledge transfer and statistical data could identify several important details in relation to the company's communication culture. The style of this question is quantitative but does offer the respondent to indicate other methods of communication which may have been omitted during the design of the questionnaire.

Section E – Organisation Culture

The results of this section of the questionnaire can be used to ascertain answers about the culture and people of the organisation.

A total number of four questions are presented to each questionnaire participant.

The first three questions try to assess several cultural elements in the organisation. As noted earlier, the characteristics of organisational culture are that it is learned over time, provides employees with a framework to perform their duties, is stable, well embedded and difficult to change. It is memory and reinforces the view that what has worked in the past can work in the future. It is very complex, particularly in respect to its tacit trait, which makes it hard to quantify. Thus, the style of questions one, two and three are designed to present the respondent with a number of statements which they either agree or disagree with, or, believe or disbelieve. The overall outcome of the questions is quantitative but sufficient to give an early indication of the problems which the organisational culture may present with any KM initiative/implementation.

The fourth and final question tries to investigate the current quality of spaces for meetings and time availability for meetings, either informally or formally, amongst staff.

Section F – Motives and Salaries

Motivating staff is essential when encouraging them to engage in any project or change programme. Furthermore, how they are rewarded is important and this section tries to identify what reward mechanisms should be utilised.

A total number of two questions are presented to each questionnaire participant.

The first question tries to establish the factors which should be taken into account for the purposes of remuneration/salary policy.

The second question tries to identify if financial or other types of motivation should be given to staff so as to improve knowledge sharing.

Section G – Knowledge Management in the Organisation

The overall aim of this section is to get respondents replies to the notion of what KM is and to ascertain the barriers to its implementation in the organisation.

A total number of two questions are presented to each questionnaire participant.

The first question outlines a list of possible management interventions for all five of the following important Knowledge Management elements:

- Communication for Tacit Knowledge Exchange
- Information-Flow among Staff
- Explicit Knowledge Issues (documents)
- Cultural Change
- People Issues

The overall aim is to get respondents replies as if they were in charge of organisational KM. The statistical analysis of this data would support KM teams to better focus their efforts on appropriate KM problems as identified by respondents.

The second and final question is a key question in the questionnaire. It is placed at the end of the questionnaire and seeks to identify (in the view of personnel) the most likely barriers that KM implementation would have in the organisation.

7.3 *Conducting the Knowledge Audit Survey*

This section outlines the steps taken to conduct the knowledge audit survey in OBS.

7.3.1 *Audience*

The audience considered for the survey were the following employees in OBS: management – director, deputy directors and unit managers; administrative staff; and care staff - residential care workers and night supervisor officers.

7.3.2 *Distribution*

The distribution of the Knowledge Audit Survey Questionnaire, to the employees of OBS, commenced on the week beginning Monday, 5th May 2008. One week was allowed for the distribution of the questionnaires, to cater for the different shift patterns and, more importantly, to deliver it by hand. Delivery by hand was considered to be a very important step as it provided the opportunity to discuss the nature and purpose of the questionnaire with each potential participant.

7.3.3 *Collection*

The collection of the completed Knowledge Audit Survey Questionnaires, from the employees of OBS, officially commenced a week later, on the Monday, 12th May 2008. However, some questionnaires were returned before this date. Two weeks were allowed for the collection of the questionnaires and was performed by hand. The justification for using two weeks was once again due to different shift patterns but also to remind and encourage employees to complete the questionnaires.

7.3.4 *Cataloguing and Recording of Results*

From the onset of receiving completed questionnaires, the results were entered into a spreadsheet document, “OpenOffice.org 2.4 Calc”. Each section of the questionnaire was allocated a separate worksheet in the document. A numbered column in each sheet was allocated for the results provided by each respondent and the number was recorded

on the completed questionnaire, thus acting as an index. The actual completed questionnaires were then filed away in lever arch folders. In addition, recording each respondent's results in columns also provided the opportunity to migrate the collected data to some other application, such as a statistical analysis application, at some other time in the future and could be used for comparison tests if future Knowledge Audits were conducted.

7.4 Analysis of the Knowledge Audit Survey Questionnaire Responses

In total, the number of OBS employees identified for the participation of the Knowledge Audit Survey Questionnaire were sixty-eight. However, due to various reasons, such as long-term sick, annual leave, newly commenced employees, and declination to participate, only fifty-eight employees received the questionnaire. By the end of the collection period, a total of forty-eight questionnaires were returned – an eighty-three percent return rate – and could be considered a very good indication of the willingness of employees to engage new developments. Please refer to APPENDIX B for tables and charts.

As stated earlier, the responses for each section of the questionnaire were entered into separate worksheets in the spreadsheet used for this research project. Charts representing the findings and responses of the survey can be found in the appropriate APPENDIX B and the following literature outlines some of the key findings in the analysis of these responses.

Section A – Demographic Data

This section of the questionnaire was straightforward, in particular questions one through seven. However, question eight would have involved a little more thought. Having said this, all the respondents completed this section of the questionnaire without problem. Interestingly enough and though optional, it was suspected that respondents may have been reluctant to provide their names but most had no problems with this request and gladly put their names to their completed questionnaire. If required, this made it very possible to revisit certain topics in the questionnaire with the respondents at some later stage, if needed.

There are a lot of interesting graphs to review and can be found in APPENDIX B. As indicated earlier, though they may not be initially used, all the details asked in this section are considered as being very important and could be used for later data comparisons. Even so, question six and question eight were of particular interest.

Question six explores the number of years which each respondent has worked in OBS and it is evident from the bar chart that a greater number of staff totalling thirty belong to the categories: between 0-3 years; between 3-6 years; and between 6-9 years. Though it wasn't factored into the analysis for this project it would be interesting to extract the data for these work experience brackets and draw comparisons between them and the older work experience brackets, especially in terms of the response to the questions in later sections.

Question eight records each respondent's level of knowledge of business processes pertinent to the organisation. Understanding the key organisational processes in OBS is essential to understanding the results and bar chart for this question. Essentially forty-seven of the respondents are involved in the key organisational processes such as: co-ordinating, care planning, conflict resolution, case conferencing, inter-agency dealings and reporting.

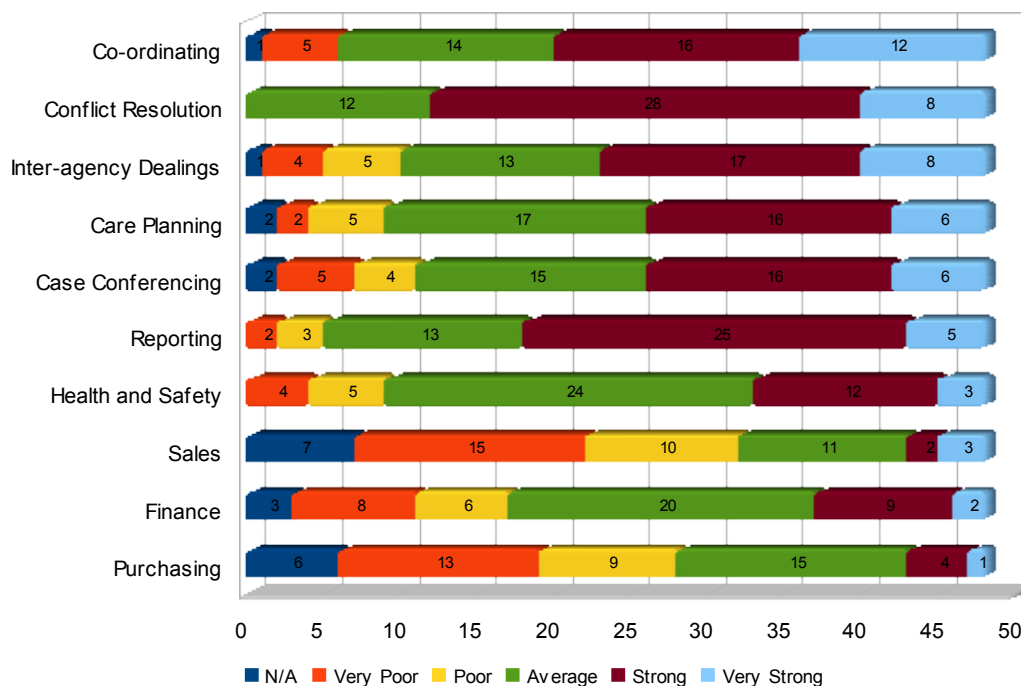


Figure 7.A.1- Level of knowledge of Business Processes

It is evident from the bar chart in *Figure 7.A.1* that the majority of the staff believe they are average, strong or very strong when it comes to performing these particular organisational processes. In contrast, there is a swing away from this level of

competence when the organisational processes are of a financial nature. This comes as no surprise when they are not core function for the forty-seven respondents. Needless to say, it could be argued that there is a strong case for the provision of training when a sizeable proportion of respondents indicate that they only possess average level skills in some of these core organisational processes. What would be interesting is revisiting this area in an one to one interview setting to explore whether the respondents are genuine about how they perceive their level of knowledge and performance in these core organisational processes.

Though the responses in this section were not utilised to their full potential, an additional question could have been added which would request the respondent to indicate the number of years working in the current position and number of years in previous work positions.

Section B – Basic Knowledge Profile

Obtaining responses to some of the questions in this section was not as straightforward as in the previous section. For instance, question one which explores the area of education created some unexpected outcomes.

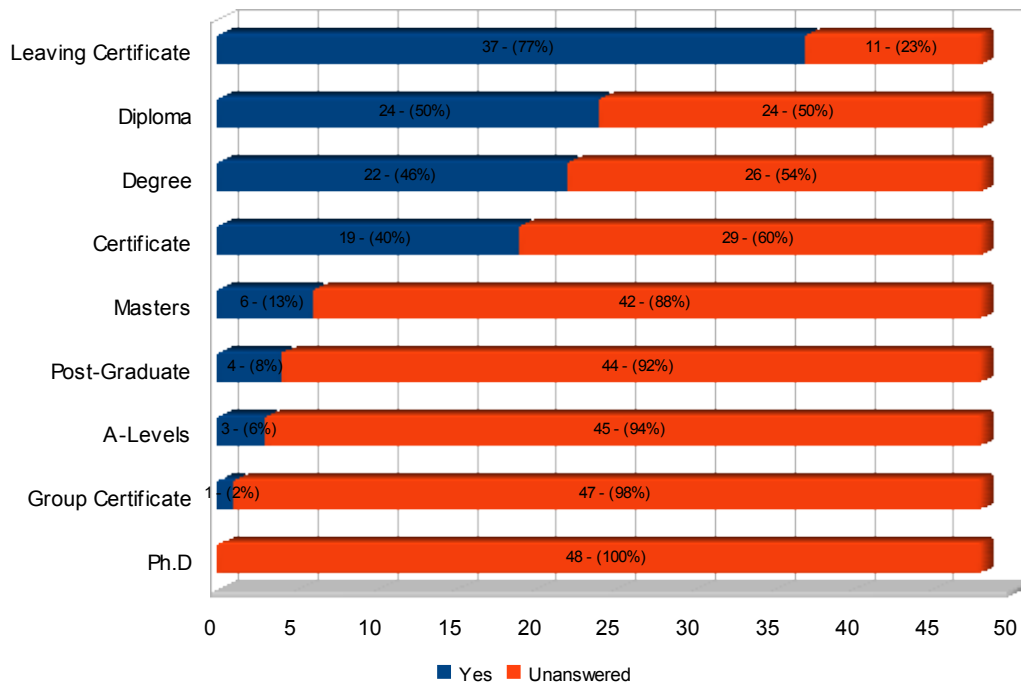


Figure 7.B.1 – Employee Academic Qualifications

A lot of the respondents did not complete the *Level of Academic Education* question and consequently their responses had to be categorised as unanswered, which reflects neither a yes or no answer. The bar chart in *Figure 7.B.1* displays this outcome.

In addition, very few respondents completed the *Level of Professional Accreditation* question. This seemed strange when a lot of the respondents come from very different professional backgrounds. It was hard to ascertain why both of these questions were left uncompleted but the responses to the *Other Certified Skills/Training* question may have provided a clue to suggest a answer to this trend.

All of the employees of OBS receive formal certified training in a number of key areas to assist them in their work. Some examples of these key areas are Therapeutic Crisis

Intervention (TCI), First Aid and Fire Safety. There was a high expectation that all respondents would have acknowledged they had received training in these aforementioned areas. However, this was not the case. Only fourteen, or twenty-nine percent, of the forty-eight respondents acknowledged they had received TCI training. Only twenty, or forty percent, of the forty-eight respondents acknowledged they had received First Aid training. Only nine, or eighteen percent, of the forty-eight respondents acknowledged they had received Fire Safety training. There appeared to be a tendency for the employees to play down their skill levels and it could be argued that this behaviour was exhibited by the respondents when they sat down to answer the previous two questions. Is this tendency for individuals to play down their skills a deliberate action or does it support the the statement *that people do not know what they know?* It is certainly an area that warrants further investigation and it would be proposed that a one to one interview sessions would prove to be more successful when obtaining responses.

Question two addressed the issues of foreign languages. It has been suggested that our growing multicultural society will present OBS with new challenges in this area. The bar charts in *Figures 7.B.2* and *7.B.3* display the responses to this question. It would seem that a wise course of action would be to focus some attention to this area for the coming future. Interestingly enough, some of the respondents remarked that if we were to look at foreign languages it would also be wise to look at issues which would occur due to religious beliefs and cultural differences.

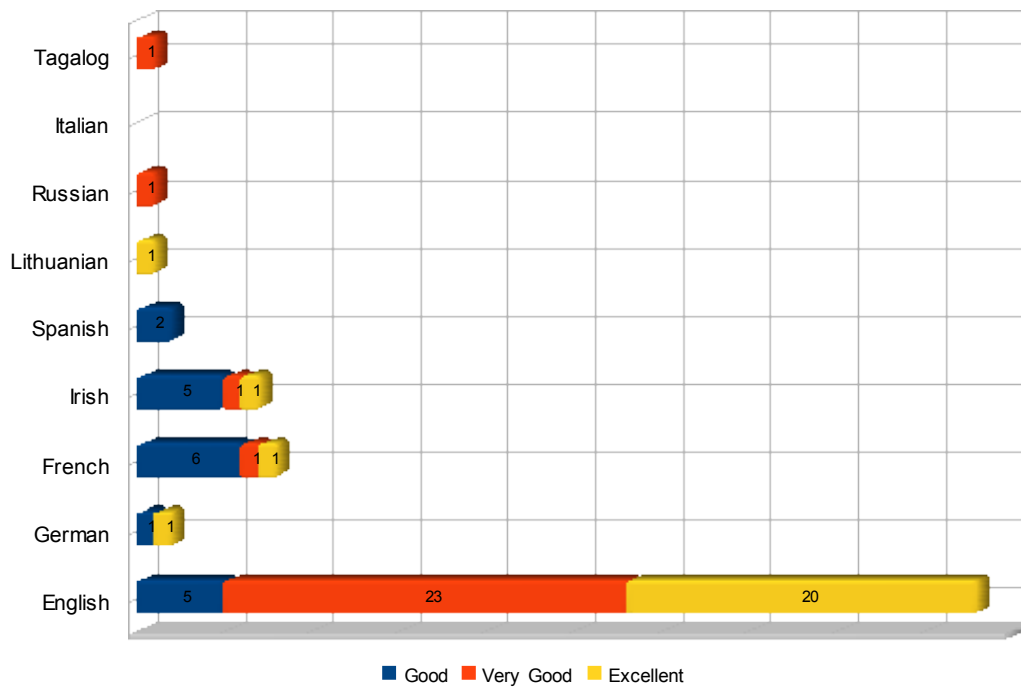


Figure 7.B.2 – Written language profile of employees

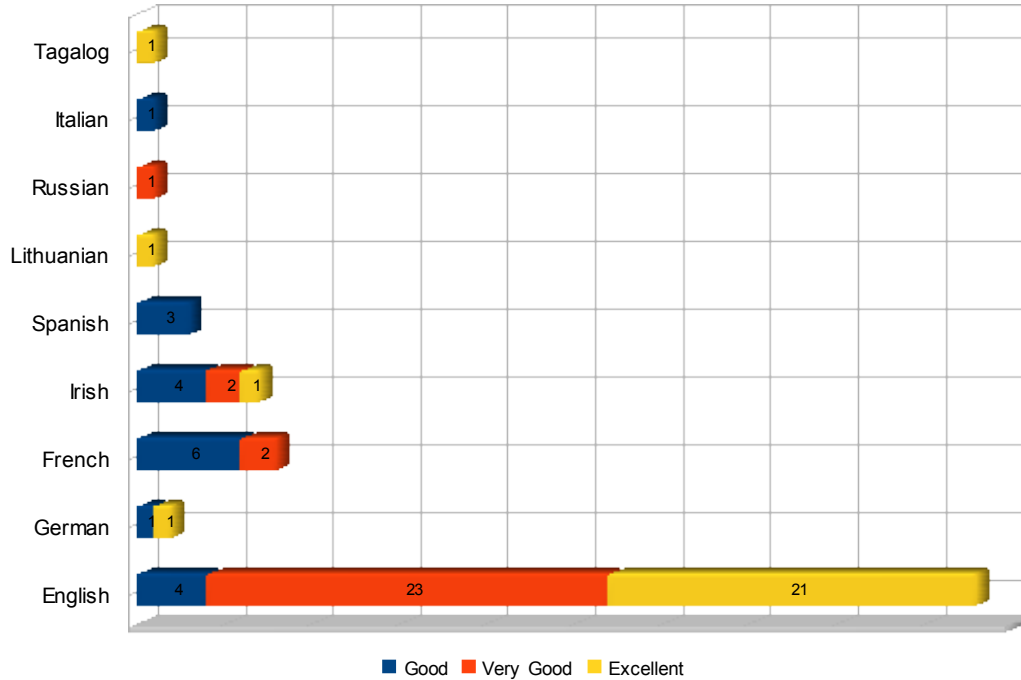


Figure 7.B.3 – Oral language profile of employees

Question three explores the IT skills and IT knowledge which each respondent possesses. The bar chart in *Figure 7.B.4* gives us some idea of the basic IT elements of the respondents.

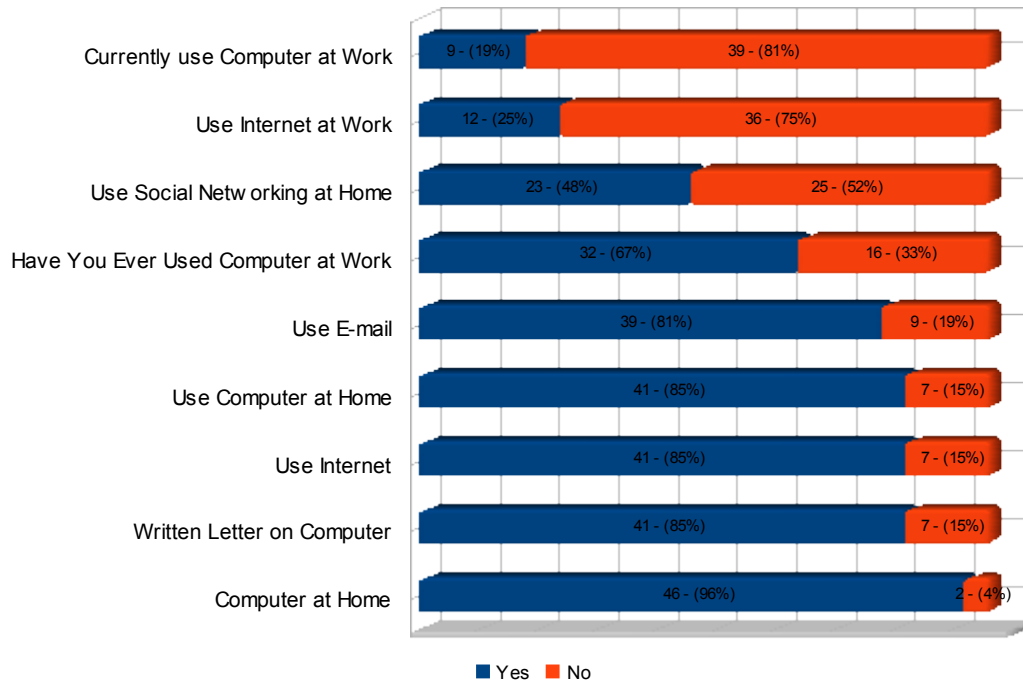


Figure 7.B.4 – Basic IT skills and knowledge of employees

It is very clear that though people do not use computers in the workplace they do use them and have access to them in the home environment. For the sake of the record only two respondents indicated that they do not have a computer at home with another five indicating that they do not use a computer at home. Effectively, seven, or fifteen percent, of the forty-eight respondents do not use a computer at home. The lack of IT usage in the workplace will have some significance when discussing the results obtained for question one in Section D of the questionnaire but it would be easy to suggest that eighty-five percent of the respondents would be capable of using IT in the workplace if it were implemented.

Following on from this, respondents were asked to indicate if they have an internet connection. In *Figure 7.B.5*, the pie chart shows that forty-five, or ninety-four percent, of the forty-eight respondents do have an internet connection. One of the factors which

can be considered from these results is the degree of broadband penetration which has occurred. As stated earlier, broadband is a crucial element of the knowledge society.

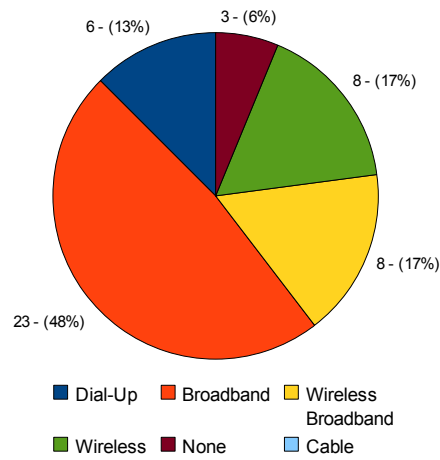


Figure 7.B.5 – Internet Connection

The respondents were asked to indicate whether they believed there would be any benefits with the use of computers in the organisation.

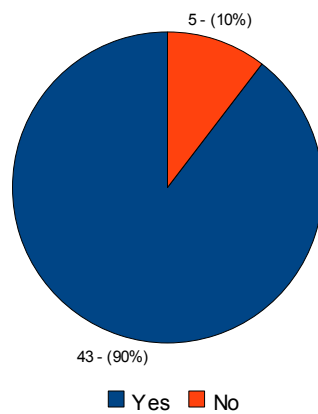


Figure 7.B.6 – Benefits with use of technology in the workplace

In *Figure 7.B.6*, the pie chart indicates that forty-three, or ninety percent, of the respondents believe there would be benefits with the use of technology in the workplace citing improvements in areas such as: access, communication, efficiency, information sharing, information management, recording and storage. Please refer to APPENDIX B for the full list of benefits. In contrast, the respondents were asked to

indicate whether they believed there would be any problems with the use of computers in the organisation.

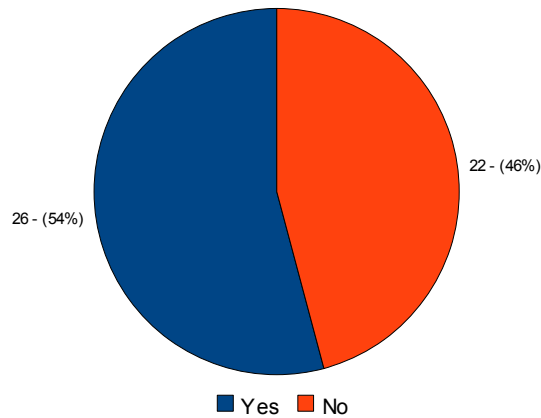


Figure 7.B.7 – Problems with use of technology in the workplace

In *Figure 7.B.7*, the pie chart indicates that twenty-six, or fifty-four percent, of the respondents believe there would be problems with the use of technology in the workplace citing problems in areas such as: confidentiality, computer illiteracy, security and training. Please refer to the APPENDIX B for the full list of problems.

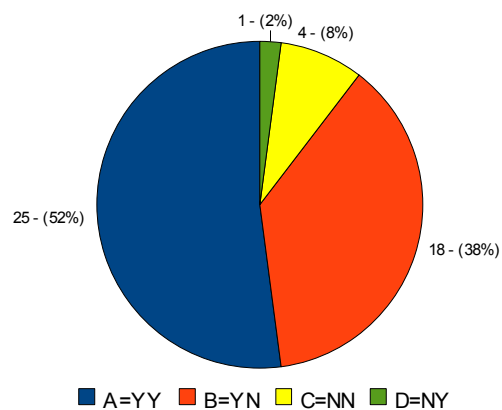


Figure 7.B.8 – Benefits and problems with use of technology in the workplace

However, the above analysis discusses the factors of benefits and problems independently when considering the use of computers in the organisation. However,

when considering these factors jointly a very different picture emerges. Consider the pie chart in *Figure 7.B.8* whereby four categories A, B, C and D are identified. These categories are described and listed in the following table, *Table 7.B.1 – Joint benefits and problems with use of technology in workplace.*

Category	Description	Percentage Breakdown
A	Respondents who believe there will be benefits and problems	52%
B	Respondents who believe there will be benefits and no problems.	38%
C	Respondents who believe there will be no benefits and no problems.	8%
D	Respondents who believe there will be no benefits and lots of problems.	2%

Table 7.B.1 – Joint benefits and problems with use of technology in workplace

It is very re-assuring to note that respondents in category A, at fifty-two percent, believe there would be benefits and problems with the use of IT in the organisation, suggesting that they retain a very realistic outlook as not all implementations are perfect. Thus members of this category are far more willing to engage with making improvements to overcome problems.

Respondents in category B, at thirty-eight percent, believe there would only be benefits with the use of IT in the organisation, whilst no problems would exist. This category of respondents would cause some concern. It is possible to suggest that members of this category would believe that IT would provide all the answers and solutions, a panacea for want of a suitable word. Furthermore, this category of respondents would provide little input as they would believe IT would do the job for them, thus they would be unprepared to make any improvements to overcome any problems which may occur, let alone recognise the problems to begin with. This category would have to be targeted in later work and it would be necessary to highlight the problems which members of category A raised so as to commence discussion on the subject of using IT in the workplace. In terms of problems which respondents of category B failed to recognise, the same challenge would be present with category C. Respondents of this

category fail to recognise the problems. However, they also recognise to see the benefits and it would be necessary to outline all the benefits which respondents in category A and category B raised.

Finally, respondents in category D clearly see the problems but see no benefits. Thus it would be necessary to outline all the benefits which respondents in category A and category B raised.

The subject of identifying benefits and problems with the use of IT in the organisation could benefit from further discussion by conducting workshops, working groups or one to one interviews. Regardless of whether problems are acknowledged or not indicates that barriers may exist and would need addressing.

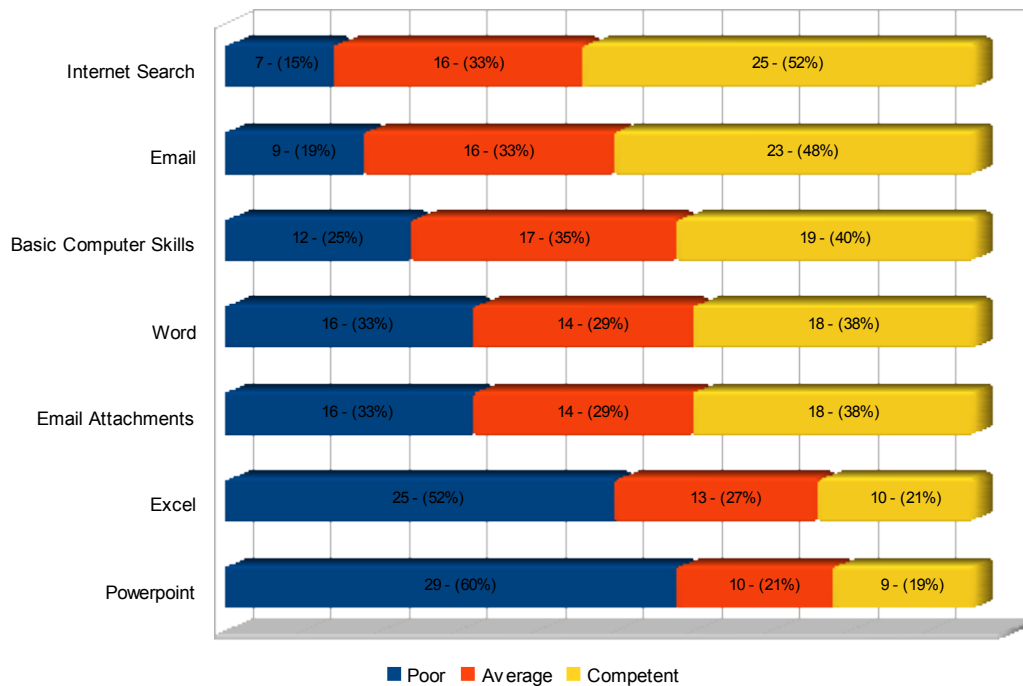


Figure 7.B.9 – Computer skills of employees

Following on from this, respondents were asked to indicate the skill level in some notable software applications. In *Figure 7.B.9*, the bar chart highlights that most employees have either an average or competent skill level in most applications with the notable exceptions, MS-Powerpoint and MS-Excel.

Question four explores the four basic elements of knowledge, theoretical knowledge, professional experience, personal professional contacts and personal experience, of each respondent in the work place. From observing the pie charts in APPENDIX B it is evident that theoretical knowledge, professional experience and personal experience are considered far more useful in the workplace and to colleagues than personal professional contacts.

Question five addresses to what extent are colleagues aware of the four basic elements of knowledge of each respondent. From observing the pie charts in APPENDIX B it is evident that most colleagues are somewhat aware of a respondent's theoretical knowledge, professional experience and personal experience but business contacts do not rate well. These findings would, to some extent, support the findings in question four.

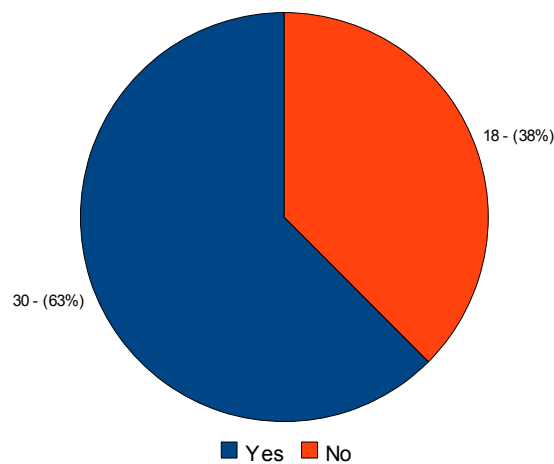


Figure 7.B.10 – Allow colleagues to know more of your knowledge

Question six attempts to establish if respondents were prepared to allow their colleagues know more about their knowledge. The pie chart in *Figure 7.B.10* above shows that shows that thirty, or sixty-three percent, of the respondents would be inclined to allow their colleagues to know more. Unfortunately, the question doesn't attempt to ascertain why the remaining eighteen, or thirty-seven percent, of the respondents are unwilling to allow their colleagues know more about their knowledge.

Question seven addresses to what extent a respondent is aware of a colleague's the four basic elements of knowledge. From observing the pie charts in APPENDIX B it is evident that most respondents are somewhat more aware of a colleague's theoretical knowledge, professional experience, business contacts and personal experience.

Question eight six attempts to establish if respondents want to know more of their colleagues knowledge. The pie chart in *Figure 7.B.11* below shows that forty, or eighty-three percent, of the respondents want to know more of their colleagues' knowledge. Unfortunately, the question doesn't attempt to ascertain why the remaining eight, or seventeen percent, of the respondents do not want to know more of their colleagues' knowledge.

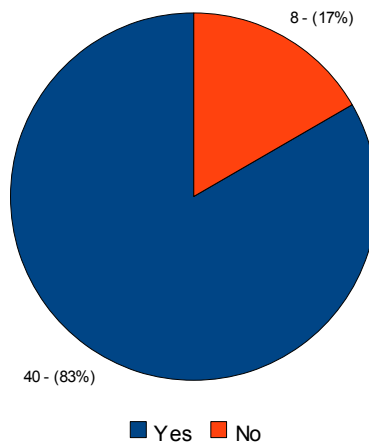


Figure 7.B.11 – Would like to know more of your colleagues knowledge

What makes for further research is when you compare the responses for question six and question eight. It is clear that the respondents clearly want to know more about their colleagues but are less inclined to reveal more about themselves to their colleagues.

The final question in this section, question nine, explores what skills and abilities which respondents would like to attain. The full list of skill areas can be found in APPENDIX B but the top five areas identified were:

- Communication
- Reporting
- Computer
- Specialised
- Support

Section C – Work Analysis in a Knowledge Context

The responses to the first question in this section produced a wide range of results which made analysis very difficult. Respondents had very different recollections of how much time they spend performing various activities during a work shift. Furthermore, the time spent at the same activity during two different shifts could greatly differ depending on the stability of the workplace. Thus, for the purpose of analysis, the activities were listed in order of how much the respondents acknowledged the time they spent at the activity. Consequently, based on average figures, the *Table 7.C.1 – Average time spent on business activities* was compiled:

Activity	Percent of Time Spent
I spend time interacting with the clients	43
I read/write the Daily Logbook	11.59
Conflict resolution	8.38
House-keeping chores	6.96
I read/write client care plans	6.25
I read/write incident reports (absconds, restraints, assaults, etc)	5.41
Meetings (Unit, Management, other)	4.82
I read printed documents (books, manuals, policies and procedures)	3.29
Inter-agency dealings	2.77
I read the master files for the clients	2.64
Case Conferencing	1.7
I process electronic files (reading, writing, etc)	1.62
I read and reply to e-mails	0.95
I search for information on the internet	0.62

Table 7.C.1 – Average time spent on business activities

Table 7.C.1 gives a fair reflection of how time is spent by the respondents of the organisation but it also gives an indication of how much time is spent on activities whose associated knowledge context is either tacit or explicit, for instance: interacting

with the clients could be considered a tacit knowledge function whereas reading and writing the daily logbook could be considered more explicit than tacit.

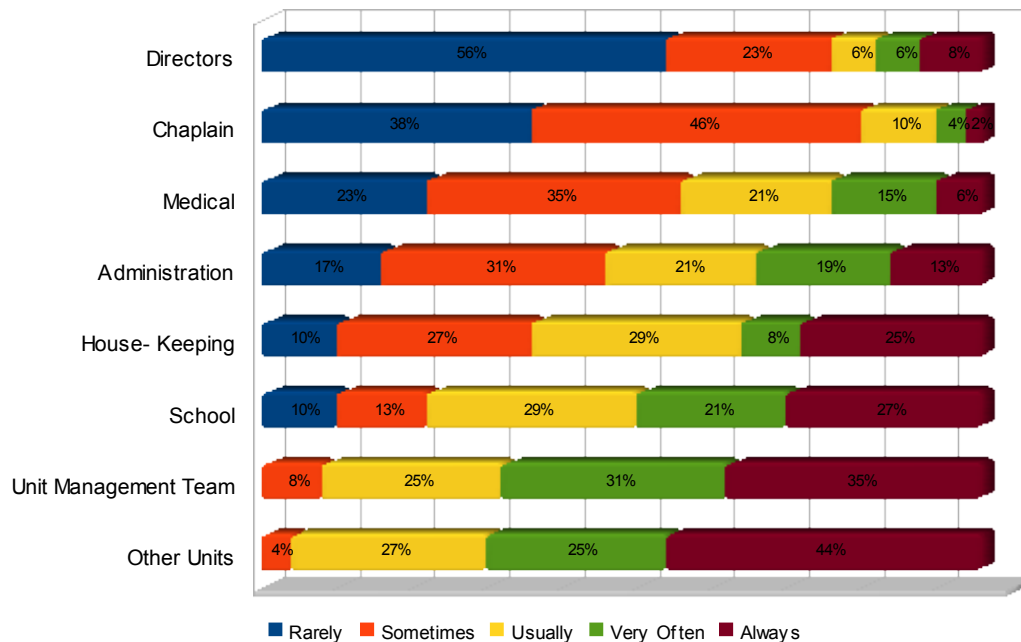


Figure 7.C.1 – Communication with others

Question two explored the level of communication between the respondents and others. The pie chart in *Figure 7.C.1* gives an indication of the level of communication which occurs in the organisation. In order to understand the findings in this pie chart, consider if the respondent was a care staff. The care staff would communicate frequently with individuals in all areas of the organisation but it is evident that most of the communication would occur close to the location of where the care staff works. Hence, communication with the categories such as; “*other units*” and “*unit management team*”, would rate highly with them. In contrast, care staff would communicate to a lesser extent with the *directors*. One of the failings of this question was to include a category titled, *colleagues*. It would have been nice to establish the set of responses to the inclusion of this category.

The final question of this section aims to identify the specific knowledge gaps which each respondent has in terms of doing his/her work. The bar chart in *Figure 7.C.2* gives a good indication of these knowledge gaps. For example, consider the category,

“you are not sure about *HOW* you should do something”. Forty-six percent of the respondents rarely find this a problem. However, the remaining fifty-four percent of the respondent do. This is clear evidence to suggest improvement. The same can be found in the other three categories, especially the category, “you are not sure *WHERE* to find relevant information..

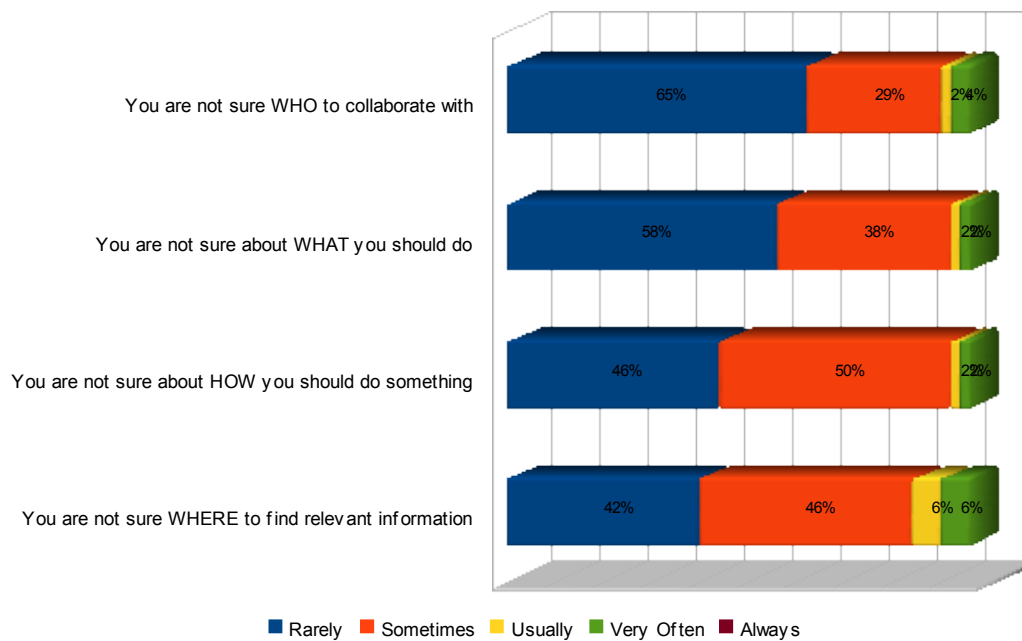


Figure 7.C.2 – Knowledge gaps which prevent an employee from doing work

Section D – Knowledge and Information Sources

Question one was used to ascertain the means by which data and information is recorded in the organisation. The respondents were given two options – Computer Input or Handwriting

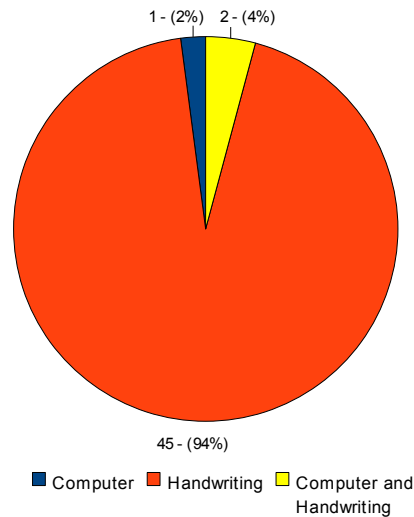


Figure 7.D.1 – Data and information input method

In *Figure 7.D.1*, the pie chart shows that forty-five, or ninety-four percent, of the respondents indicated that all of their data and information input is recorded by means of handwriting; two, or four percent, of the respondents indicated that they record data and information by means of handwriting or computer; and one, or two percent, of the respondents indicated that all of their data and information is recorded by means of computer. Earlier in question three of section B of the questionnaire the lack of IT usage in the organisation was identified. The results of question one in this section further supports this lack of IT usage. Addressing this lack of IT usage would be a priority and would possibly be easy to achieve given that eighty-five percent of the respondents already use computer technology at home.

Question two was used to ascertain the places where data and information is recorded in the organisation. A total of sixty-five different places were indicated by the forty-eight respondents and can be found in APPENDIX B. The following table, *Table*

7.D.1 - *Places where data and information are recorded*, lists the top fifteen places as indicated by the respondents

Entry Number	Places where data and information are recorded	No of Hits
1	Unit Log Book	45
2	Care Plan	43
3	Handover Logbook	18
4	Unit Diary	17
5	Medical Log	17
6	Incident report forms	16
7	Co-ordinator Check-list	16
8	Key Logbook	14
9	Separation Logbook	11
10	Money Book/Cash Recording of Unit Float and Boys Pocket Money	11
11	Therapeutic Crisis Intervention Forms	11
12	Unit Roll Call Book	10
13	Unit Meeting Book (Minutes)	10
14	Daily Ratings	10
15	Urine Analysis Book	9

Table 7.D.1 - Places where data and information are recorded

Each table entry was rated according to the number of times each respondent made reference to it. Therefore, by way of an example; in the case of entry number one, the Unit Log Book, forty-five respondents made reference to it in their answers; in the case of entry number two, the Care Plan, forty-three respondents made reference to it in their answers. However, the drop in the number of references made between entry number two and entry number three should be noted. Entry number three, the Handover Log, only registers eighteen respondents making reference to it, a drop of twenty-five references from the previous entry. This highlights to a large extent the importance of both the Unit Log Book and Care Plan in the eyes of the employees of the organisation. However, it should be noted that only forty-five respondents made reference to the Daily Log Book as a central process/function of their day-to-day work. The reason for this is that three participants are based in the administration building and the Daily Log Book does not form part of their day-to-day work. Conversely, a

process/function which is conducted in the administration building but not on the units, where most of the respondent population resides, would be equally important but is not included in the table by virtue of the fact that it registered a low number of hits. Similarly, the same rationale applies with each subsequent entry in the table. Thus the table only truly reflects the results of the predominant work force which are based on the units.

Question three was used to ascertain the problems, as perceived by the respondents, with the way data and information is currently recorded in the places identified in the question two. The responses to this question were collated and categorised; and can be found in a table in APPENDIX B. The following table, *Table D2 – Problems with current method of recording data and information*, lists the top five categories which are sources of problems. Once more, each table entry was rated according to the number of times each respondent made reference to it.

Entry Number	Problems with current method of recording Data and Information	No of Hits
1	Accuracy	22
2	Time	18
3	Handwriting	16
4	Duplication	15
5	Access	10

Table 7.D.2 – Problems with current method of recording data and information

To give the reader an understanding of each of the above categories, here are examples of the statements provided by the respondents. For accuracy: *inconsistencies due to the fact that people have their own style of writing and presenting information; everybody records events in differing amounts of detail; inaccurate details – not factual; often staff leave out some vital information; poor spelling; too brief ; critical incidents not recorded correctly; not detailed enough; at times it is only possible to record a summary of the event.* For time: *time consuming, time consuming searching logs for information; time consuming and repetitive; reduces time spent on case work; takes a long time to go back through old logs, especially the ones which are not on the unit anymore.* For handwriting: *sometimes very hard to read/decipher hand writing; hand*

writing is not always legible; being able to read it clearly; difficult to read some handwriting; handwriting can be poor. For duplication: duplication of Information; loads of different logs and diaries; a lot of it is repeated elsewhere; duplication of Daily Unit Log and Separation Log; information stored everywhere in bulk and duplicated. For access: not easy to access; main files are not accessible at all times; not readily accessible in written form; access to information – not sure where to find it; availability of relevant information not always at hand; very hard to access information quickly; difficult to access correct times and dates of certain information; don't always know where to access information; some records are kept in master files and cannot be accessed outside office hours.

Question four was used to ascertain the benefits, as perceived by the respondents, with the way data and information is currently recorded in the places identified in the question two. The responses to this question were collated and categorised; and can be found in a table in APPENDIX B. The following table, *Table 7.D.3 – Benefits with current method of recording data and information*, lists the top four categories which are sources of benefits. Once more, each table entry was rated according to the number of times each respondent made reference to it.

Entry Number	Benefits with current method of recording Data and Information	No of Hits
1	Access	13
2	Reference	6
3	Accuracy	5
4	Handovers	5

Table 7.D.3 – Benefits with current method of recording data and information

To give the reader an understanding of each of the above categories, here are examples of the statements provided by the respondents. For access: *current unit logs and care plans are always to hand; easy and quick access; accessibility; easy access to information; easier linkage to add information; more accessible follow-up of present/past clients; easier to access information.* For reference: *it is easier to review old data when it is hard copy recorded; a lot of cross referencing – separation/care plans/unit log book; cross checking of the different sources of information can give a*

clearer picture of events. For accuracy: accurate; provide more accurate profile of client; accurate; accurate database; handwriting logs means that staff are extra aware of what they are writing. For handovers: information and communication with colleagues; easier to transfer information; the logs are very handy if an employee has not been in work for a period of time and by reading the logs the employee will get information which may not be gained from colleagues; recording of data keeps all staff alert to what is currently occurring on the unit on a daily basis and strengthens the accountability process

The responses to questions three and four have their merits. However, in the context of the categories used in the analysis for both questions, a number of differences were noted. For instance, responses recorded in the access category present very different thought patterns and it is hard to ascertain from the results why this may be. There again, the categories as compiled by the researcher may be incorrect or misleading. What is certain is that these topics need revisiting and the responses already recorded could be used as the starting point of discussion.

Entry Number	The way Data and Information is archived	No of Hits
1	Administration	43
2	Computers	6
3	Unit Office	5

Table 7.D.4 – The way data and information is archived

Question five was used to ascertain the way data and information is archived in the organisation. The responses to this question were collated and categorised; and can be found in a table in APPENDIX B. The above table, *Table 7.D.4 – The way data and information is archived*, lists the top three categories indicated. Once more, each table entry was rated according to the number of times each respondent made reference to it. It is clear from the the table that the organisation's administration area is responsible for the archiving of data and information. The majority of the respondents, who are care staff, provided this overwhelming statistic with responses such as: *logbooks, care plans, journals and check-lists are stored in administration; files in reception Area; written logs are removed from the unit and stored; store room (in administration);*

DCPO's office; management's Office; store room full of filing cabinets; placed in boxes of relevant similarity in storage; stored in master files and lockers; unsure, presumption is that all relevant documents are centrally stored in the administration building; some information is stored in Administration but not all of it. Identifying computers as a category was unexpected but with responses such as: *Computers; Computer files; Software Account Packages* made no sense if the responses were provided by the care staff. As it happens, these responses were provided by the few administrative staff who took part in the survey. Finally, in the case of the unit office the following responses were provided: *rating sheets are placed in a drawer or discarded; old contact details are stored in the office; on unit stored on desk and in folders on shelves*. It would appear that the information which is archived on the unit is less important than the information which is removed from the unit and subsequently stored in administration.

Question six was used to ascertain if there are any problems, as perceived by the respondents, with the way data and information is currently archived as identified in the question five. The responses to this question were collated and categorised; and can be found in a table in APPENDIX B.

Entry Number	Problems with the way Data and Information is archived	No of Hits
1	Access	16
2	Hazard	10
3	Paper Storage	10
4	Storage	8
5	Search	7

Table 7.D.5 – Problems with the way data and information is archived

The above table, *Table 7.D.5 – Problems with the way data and information is archived*, lists the top five categories indicated. Once more, each table entry was rated according to the number of times each respondent made reference to it. To give the reader an understanding of each of the above categories, here are examples of the statements provided by the respondents. For access: *access to master files is limited; hard to access; large degree of dependency on administration staff to find information*

required; only possible to gain information in master files when administration is open; all records pertaining to one client should be within reach and shouldn't involve going from one building to another; not easily accessible store rooms; hard to access information outside office hours; you have to go to administration to get it; need to call manager to access files during out of hours; not always accessible. For hazard: pest hazard and all paperwork could be easily lost; flood hazard and all paperwork could be easily lost; fire hazard and all paperwork could be easily lost. For paper storage: a lot of paper storage as log books are very bulky; many different forms of books to fill out and store; lack of storage for paper; too much paper. For storage: poorly stored in outbuildings; non-secure storage; space consuming; lack of Space; is it safely stored or secure. For search: old log books and care plans can be hard to find; hard to trace old information; hard to trace relevant information when removed; difficult to research information in storage due to quantity of books; difficult to retrieve information efficiently; takes time to get information sifting through logs; difficult to locate information efficiently.

Question seven was used to ascertain if there are any benefits, as perceived by the respondents, with the way data and information is currently archived as identified in the question five. The responses to this question were collated and categorised; and can be found in a table in APPENDIX B.

Entry Number	Benefits with the way Data and Information is archived	No of Hits
1	None	7
2	Hard Copy	5
3	Access	4
4	Secure	4

Table 7.D.6 – Benefits with the way data and information is archived

The above table, *Table 7.D.6 – Benefits with the way data and information is archived*, lists the top four categories indicated. Once more, each table entry was rated according to the number of times each respondent made reference to it. To give the reader an understanding of each of the above categories, here are examples of the statements provided by the respondents. For none: *none; not really; I do not have or see any*

problems. For hard copy: handwritten record by person's involved; safe keeping of original documents; hard copy back-up of most files; at least it exists; paper provides a permanent record. For access: access to all previous logs and care plans can be done; physically accessible; it is mostly accessible by staff when required; accessible to those who are not computer literate. For secure: security; logs are stored securely, number systematically and organised; all kept in same secure setting.

Similar to the outcome with questions three and four earlier, both questions six and seven have their merits. As before, in the context of the categories used in the analysis for both questions, a number of differences were noted. For instance, responses recorded in the access category present very different thought patterns and it is hard to ascertain from the results why this may be. Once more the researcher may accept that the definition of the categories to be incorrect or misleading. Even so, discussions relating to handwritten records need take place and if this can be replaced. Furthermore, there seems to be confusion as to whether the storage of the current data and information is truly secure. What is certain is that the area of archiving data and information needs to be revisited for the purpose of designing a robust archiving strategy. The responses already recorded in the survey could be used as the starting point for this discussion process.

Question eight was used to ascertain if there are any reasons why the archived data and information needs to be accessed and reviewed. The responses to this question were collated and categorised; and can be found in a table in APPENDIX B. The following table, *Table 7.D.7 – Reasons to access archived data and information*, lists the top five categories indicated. Once more, each table entry was rated according to the number of times each respondent made reference to it.

Entry Number	Reasons to access archived Data and Information	No of Hits
1	Reference	24
2	Investigations	18
3	Legal	10
4	Analysis	6
5	Information Sharing	6

Table 7.D.7 – Reasons to access archived data and information

To give the reader an understanding of each of the above categories, here are examples of the statements provided by the respondents. For reference: *For Case Conferencing purposes; relevant references; historic experiences/events; reference for Case Conferences/Reviews; to learn about new client (key child); to review plans of care and reports; to access basic information quickly (name, address, parents names, etc); incidents; personal Injuries; return of client to organisation; previous placements; historical reference; past files for organisation clients; to read about client's previous placements and family.* For investigations: *to assist with investigations into allegations made against staff and other clients; complaints; to check information and records in the event of an enquiry; to investigate the current whereabouts of past clients; allegations; investigations and reports on incidents; allegations of past client mistreatment.* For legal: *court cases; court reports; legal Action; legal review; warrants – times and dates checked; legal issues.* For analysis: *checking for patterns of behaviour; audits; to check on a particular item; post mortems on critical incidents; to gain an insight into commonalities in case profiles.* For information sharing: *hand-overs to other organisations; providing information to other agencies; information sharing; to pass on information to other agencies and professionals; hand-overs to other organisations/agencies; enquiries subsequent to a boy leaving.*

Judging by the responses it is clearly evident that there are many important reasons to access archived data and information. However, given the number of highlighted problems noted above - which far outweigh the benefits - there appears to be room for developing an infrastructure which could make use of this data and information in a more efficient and effective way.

Question nine ascertains from the respondents if they have ever needed to access the archived data and information.

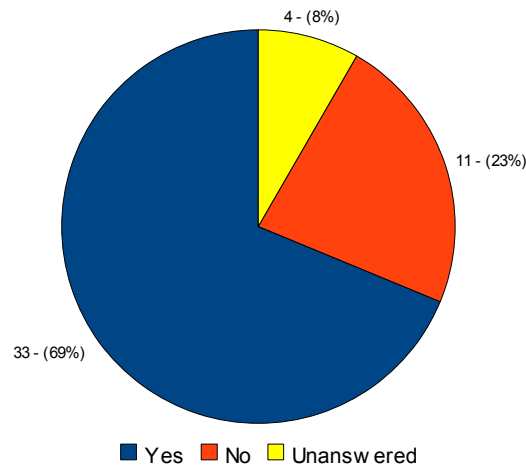


Figure 7.D.2 – Have you ever needed to access archived data and information

In *Figure 7.D.2* the pie chart shows that thirty-three, or sixty-nine, of the respondents indicated yes to accessing archived data and information. Eleven, or twenty-three percent, of the respondents indicated no to accessing archived data and information. Four, or eight percent, of the respondents did not answer the question. It is clear that access to the archives is necessary but questions need to be raised as to why they are not accessed more frequently.

Entry Number	What would you need to do to get access to archived Data and Information	No of Hits
1	Management	27
2	Administration	24
3	Chronological	3
4	Colleagues	2
5	Computer	2
6	DCPO	1

Table 7.D.8 – What would you need to do to get access to archived data and information

Question ten ascertains what the respondents needed to do to gain access to the archived data and information. The responses to this question were collated and

categorised; and can be found in a table in APPENDIX B. The above table, *Table 7.D.8 – What would you need to do to get access to archived data and information*, lists the categories indicated. Once more, each table entry was rated according to the number of times each respondent made reference to it. To give the reader an understanding of each of the above categories, here are examples of the statements provided by the respondents. For management: *Ask one of the unit managers or one of the directors for permission to access data and information; contact management; signed permits to allow the photocopying of appropriate material; inform manager of required data, then approach administration staff to obtain same; identify relevant documents, source the documents and look through them for the required information.* For administration: *request forms from administration; request care plans and daily logs from administration; must get secretary to find information before you get the chance to read it; ask the receptionist; gain past log books/care plans/individual client files from administration staff; go to administration staff to ask them to try get old files.* For chronological: *dates order; dates of injuries; identify information required using dates and times.* For Colleagues: *ask other staff members for assistance.* For computer: *look up on desktop; search computer network.* For DCPO: *seek permission from Designated Child Protection Officer (DCPO).*

It appears evident that most seem to have an idea what they need to do to access the archived data but there is appears to be a bottleneck, where access needs to be sought through management and administration. It can be argued that this is a very inefficient method for channelling information, by utilising a great amount of resources but also it is a barrier to information sharing.

Question eleven explores what the benefits would be with the possibility of easier access to the organisation's archived data and information. The responses to this question were collated and categorised; and can be found in a table in APPENDIX B. The following table, *Table 7.D.9 – Benefits with easier access to archived data and information*, lists the categories indicated. Once more, each table entry was rated according to the number of times each respondent made reference to it.

Entry Number	What would you need to do to get access to archived Data and Information	No of Hits
1	Speed	19
2	Access	13
3	Efficiency	11

Table 7.D.9 – Benefits with easier access to archived data and information

To give the reader an understanding of each of the above categories, here are examples of the statements provided by the respondents. For speed: *less time consuming; it would take less time to find the information you need, especially if there are time constraints; time saving due to availability; instant and efficient retrieval and storage; if the system were computerised both access to these documents and an accurate assessment of them would be made swifter; quicker problem solving; faster supply of information.* For access: *quicker access (efficient); more accessible; unnecessary to leave unit so you can be still present in case an incident occurs; morning times and weekends are usually quieter when I could have time to read relevant case files but are not accessible; sometimes it is out of office hours that I wish to access a file.* For efficiency: *better continuity of work process; convenience; efficiency; less troublesome; not having to inconvenience other staff; better overview of information; unnecessary to access information through third parties; less people power needed.*

Question twelve explores what the problems would be with the possibility of having easier access to the organisation's archived data and information. The responses to this question were collated and categorised; and can be found in a table in APPENDIX B. The following table, *Table 7.D.10 – Problems with easier access to archived data and information*, lists the categories indicated.

Entry Number	What would you need to do to get access to archived Data and Information	No of Hits
1	Security	9
2	Confidentiality	7
3	Mislaid	6

Table 7.D.10 – Problems with easier access to archived data and information

Once more, each table entry was rated according to the number of times each respondent made reference to it. To give the reader an understanding of each of the above categories, here are examples of the statements provided by the respondents. For security: *security (compromised); information may be leaked; no problems if it is adequately protected; safety of the information.* For confidentiality: *confidentiality issues; need to be mindful of security and confidentiality; confidentiality must be respected; compromised confidentiality of clients; potential loss of confidentiality.* For mislaid: *the possibility of storing information inappropriately; management perception that staff will not return papers to filed location; staff may be careless with files and care plans; too many people having access can lead to items not being put back in their right place- look at the current state of the unit offices; more likely to go missing; information may end up being filed away in the wrong places when returned.*

If you review the last three questions there appears to be a great degree of overlap with the responses for questions ten, eleven and twelve. Question twelve highlights issues of security, confidentiality and the mislaying of very sensitive data and information. Hence, this would explain the controls which are in place, as highlighted in question ten, whereby staff members need to go through management and administration to access this same information. However, question eleven highlights the benefits of having better access, such as efficiency, speed and less time consumption. Given these responses, it can be deduced that the current controls do not create an infrastructure which is beneficial for sharing information quickly throughout the organisation, and the matter of trust does warrant closer inspection.

Question thirteen aims to ascertain the usefulness of all possible explicit knowledge resources used in the organisation. The respondents were given a number of examples and asked to rate how often they used each one. In *Figure 7.D.3* the bar chart gives an indication of the results.

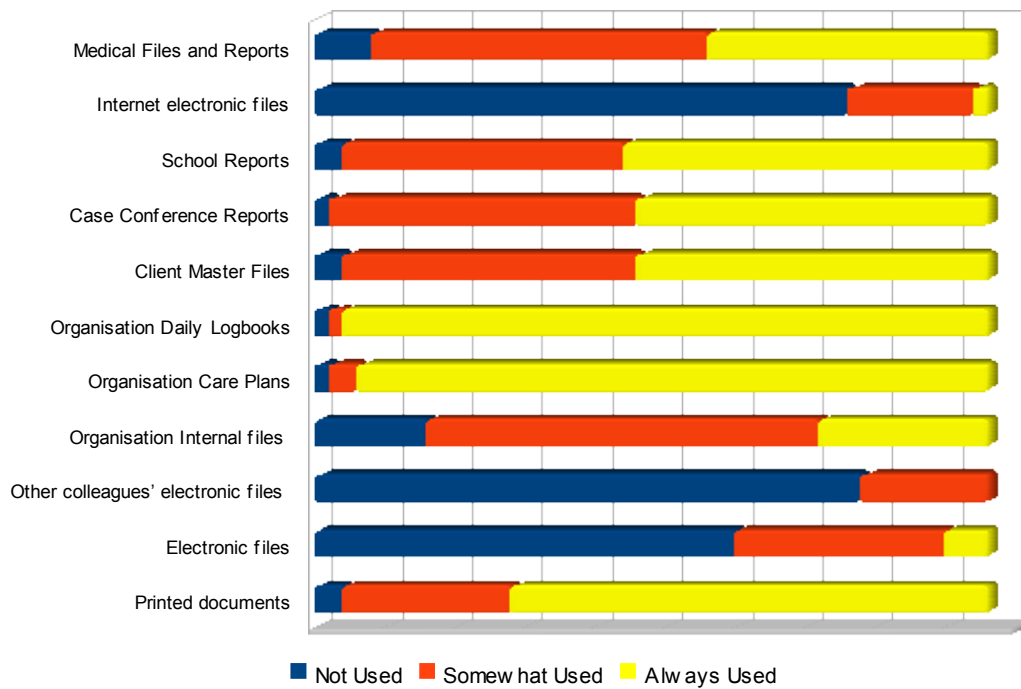


Figure 7.D.3 – List of knowledge resources

It is evident from this bar chart that the two most frequently used explicit knowledge resources, used by the respondents, are the client care plans and the unit daily logbooks. This came as no surprise and this result is further supported by the responses already obtained in question two of this section.

Questions fourteen and fifteen aims to rank the frequency and usefulness of all possible interactions between the respondents of the organisation. In both questions the respondents were given the same examples and asked to rate how often they participate each one and then how often they find each one beneficial. The bar charts in *Figures 7.D.4* and *7.D.5* give an indication of the results.

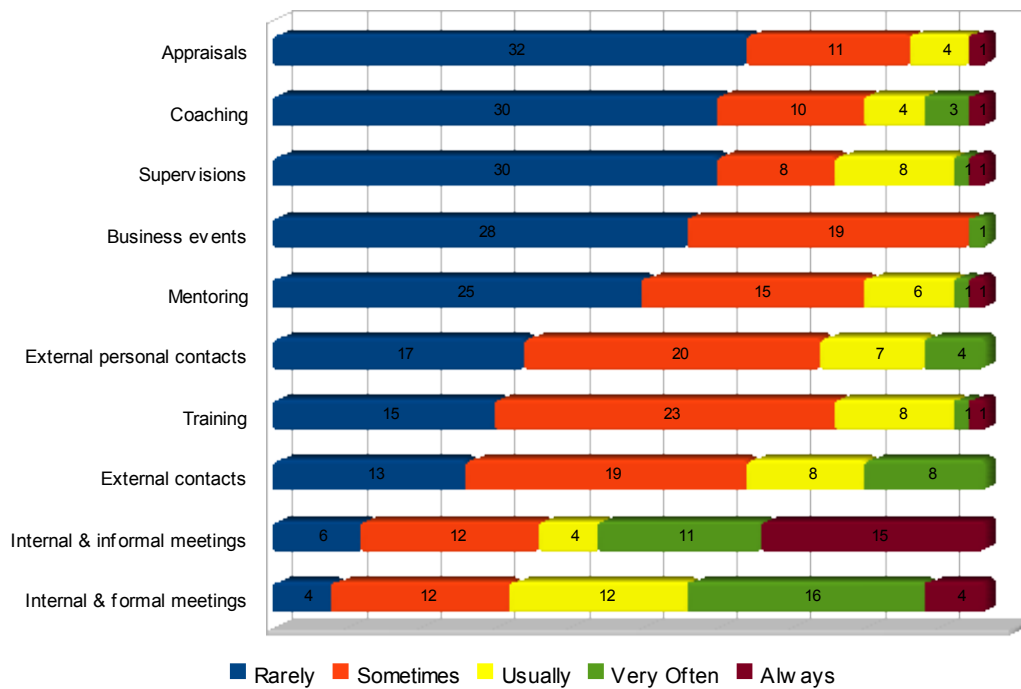


Figure 7.D.4 – Participation in the following

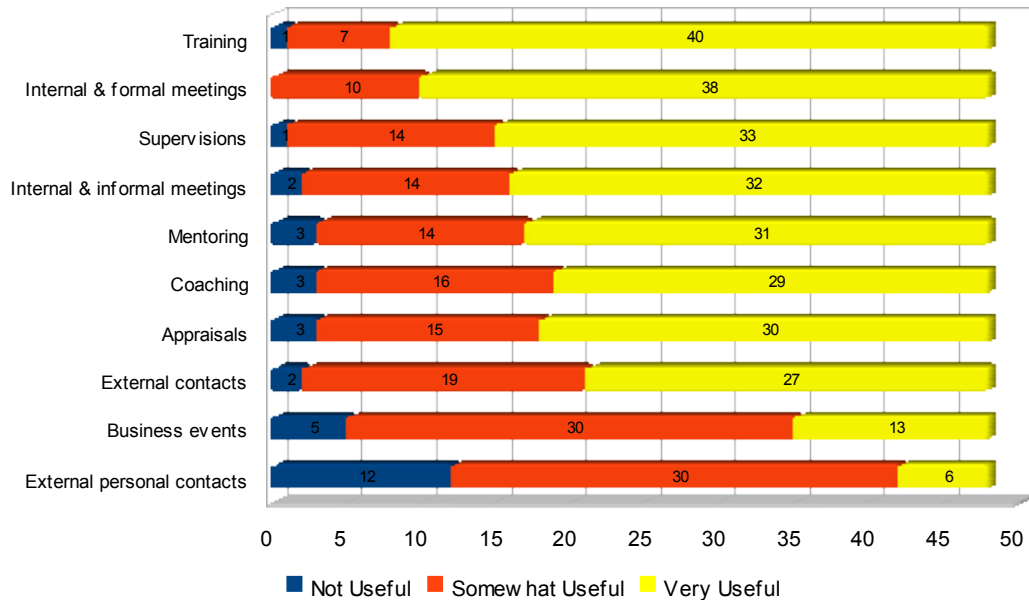


Figure 7.D.5 – Beneficial methods of communication

It is evident from these bar charts that some of the interactions are very beneficial, such as: training, coaching, mentoring, appraisals, supervisions and meetings. These can be identified as examples of tacit knowledge transfer. However, respondents feel that they are participating in these interactions more often they appear to. Thus communication is very beneficial to the respondents but doesn't occur often enough and it can be suggested that a review of the communication infrastructure is necessary to help remedy this.

Question sixteen tries to ascertain the preferred methods of communication in the organisation. The respondents were given a number of methods of communication and asked to rate their preference. In *Figure 7.D.6* the bar chart gives an indication of the results.

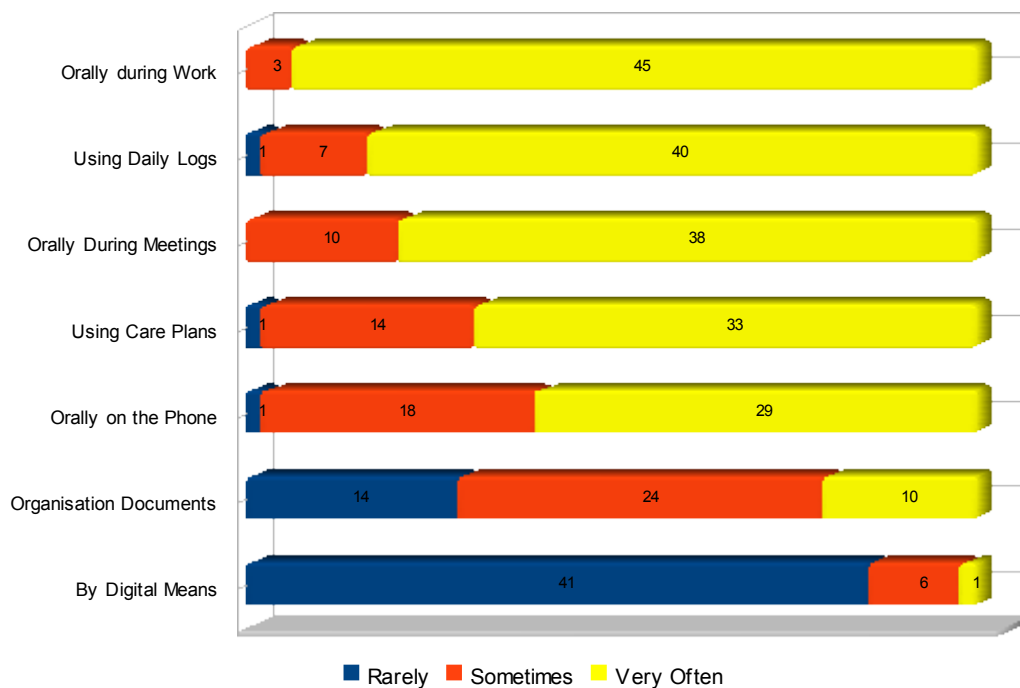


Figure 7.D.6 - Preferred method of communication

It is evident that the preferred methods of communication are a reflection of how the respondents currently communicate throughout the organisation. Due to the lack of technology it is clear that communication via digital means rates very poorly. Organisation documents are used appear to be used as and when needed. The explicit knowledge resources identified in question two and thirteen – the care plans and daily

unit logs – are used very often. In addition, oral communication is used extensively in the organisation but it is hard to indicate if it is effective or not.

Section E – Organisation Culture

Questions one, two and three try to assess, from the respondents, several of the cultural elements of the organisation. Question one explores through the eyes of each respondent how the employees of the organisation operate collectively and the bar chart in *Figure 7.E.1* presents the results of this question.

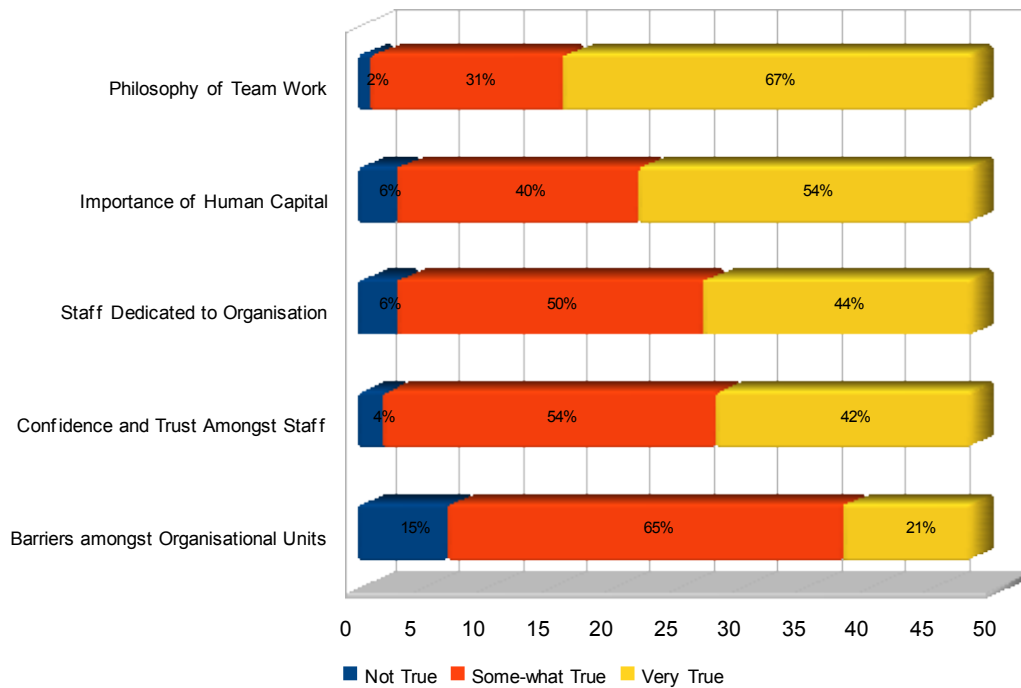


Figure 7.E.1 – How true are these statements

It is very difficult to draw any definitive conclusions from the results of this question. There are those who find the each statement either *very true* or *not true* – the former rating very high and the latter rating very low. However, there appears to be a large group of individuals who believe that the statement is *somewhat true*. But what does *somewhat true* really mean? Does it reflect discontent? It is hard to know from the results presented. Equally, do the same individuals belong to this group who found these statements *somewhat true*? It would be wise to return to these groups, who found the statements *not true* or *somewhat true*, to establish the reasoning for answering the question the way they did. It would be necessary to reverse this mindset because it would create resistance to any management initiative – knowledge or otherwise.

Question two explores each respondents' personal views of their position in the organisation and the bar chart in *Figure 7.E.2* presents the findings.

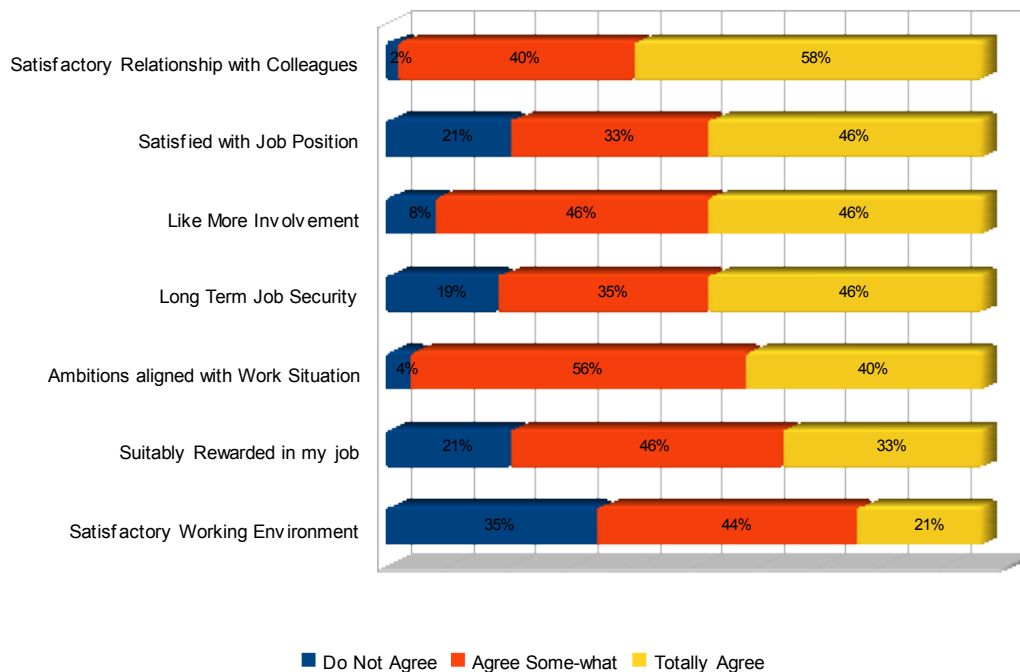


Figure 7.E.2 – Extent of agreement with following statements

As in question one, there appears to be individuals who are either *agree* or *disagree* with each of the statements in question two. However, the levels of agreement are reduced in some cases and the levels of disagreement are increased in some cases. What is certain is that there appears to be a group of individuals who only *agree somewhat* with each of the statements. In general, it appears is that over fifty percent of the employees are not content with their current roles in the organisation, It is impossible to indicate from the survey why this is the case. Needless to say, if there is discontent, it may help understand the findings in question one. Again, it would be wise to revisit this area.

Question three explores the characteristics of each respondent and the bar chart in *Figure 7.E.3* presents the findings. It is evident from the bar chart that most of the respondents have a desire to improve, learn more and share knowledge. This is a most agreeable result. However, the issue of making mistakes in work is out of character with the other statements. Though fifty percent of the respondents *disagree* with the

statement, the other fifty percent *somewhat* or *totally agree* with it. With this fear comes the subject of trust, which is a very important and strong attribute for an organisation to possess if it is going to learn and grow.

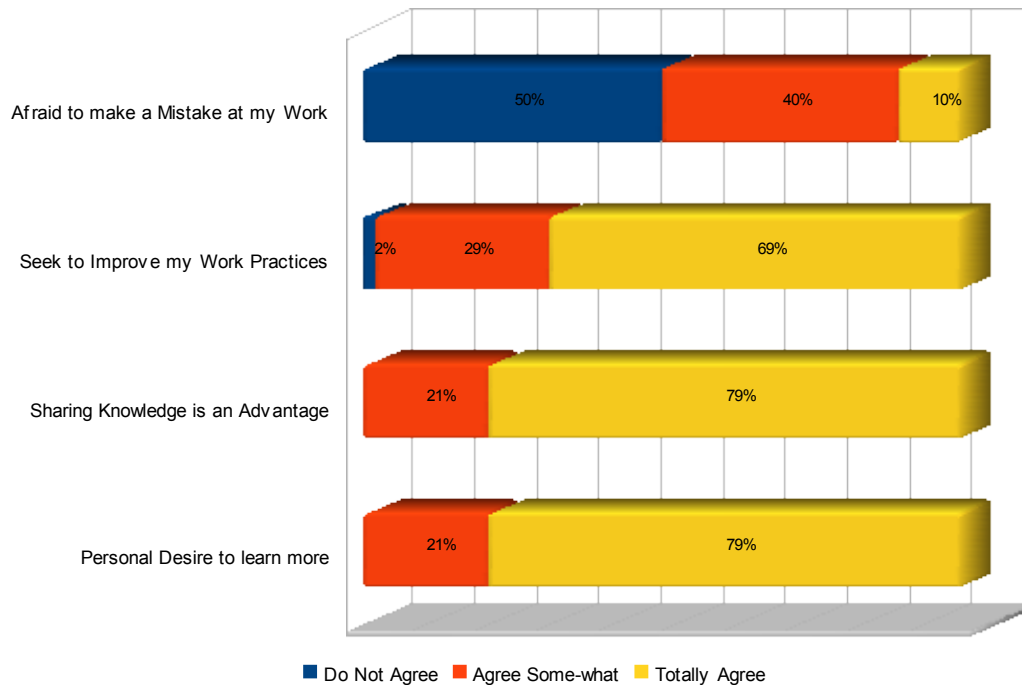


Figure 7.E.3 – Statements which characterise you

Consequently, the subject of trust would need to be addressed.

Question four tries to ascertain the statements which characterise the work environment. The bar chart in *Figure 7.E.4* presents the findings. It is evident once more than a group of individuals are not committed to agreeing or disagreeing with the two statements presented in this question. However, there is a group who agrees with both statements and a group which disagrees with both. If we were to disregard the indifferent group the results would suggest that there is neither sufficient time nor sufficient infrastructure to conduct meetings and discussions. However, as a caveat, this deduction does not take into account the very make-up of the groups. For instance, if twenty-seven percent of the respondents believe there is insufficient time for discussions, does this infer that they also constitute the forty-two percent of respondents who believe there is an insufficient infrastructure for meetings. This is another area that clearly warrant further research work.

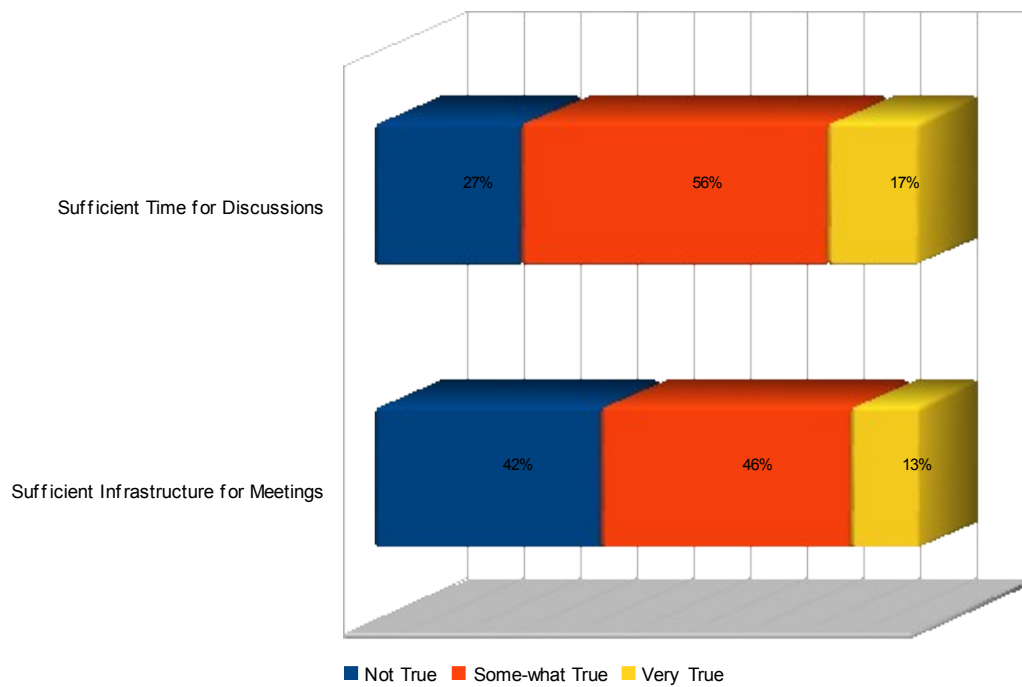


Figure 7.E.4 – Statements which characterise the work environment

All of the results presented in this section somewhat indicate that there is room for improvement in the culture of the organisation. However, the results warrant further analysis and further research is required. However, approaching this future work would need to be conducted with the utmost care and the need to ensure confidentiality would be paramount.

Section F – Motives and Salaries

Question one tries to ascertain what factors are considered important for the purposes of remuneration or salary.

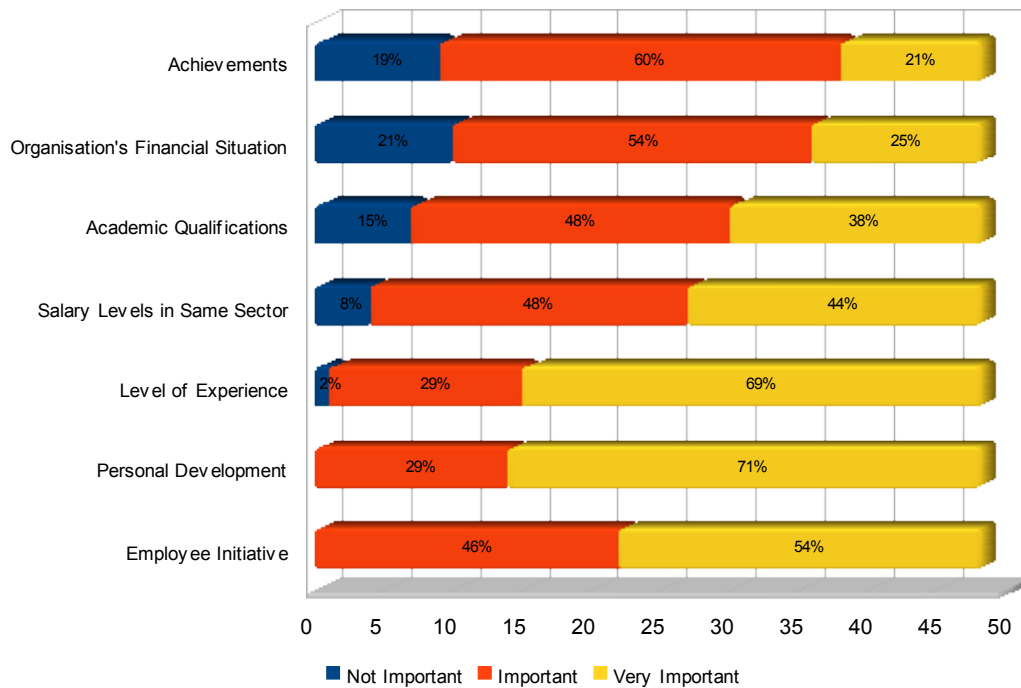


Figure 7.F.1 – Factors which affect salary levels

The bar chart in *Figure 7.F.1* presents the findings to this question. It is evident that every factor that was presented to the respondents was considered *important* or *very important*. However, some of the factors did receive a response which indicate they are *not important*. However, these responses seem strange as they would be considered important as they are a means of retaining employees in an organisation. This would certainly be the case when considering the organisation's financial situation, salary levels in the same sector and level of experience. If the organisation's financial situation was grave which prevent salary reviews and salary levels are better elsewhere, then staff retention may become an issue and knowledge could possibly leave the organisation.

It would appear that the ugly subject of academic qualifications versus the level of experience has made an appearance in the findings of the survey. Both should be

considered beneficial and worthwhile to the organisation and should be factored into salary levels.

Though it is considered more of a private sector endeavour to factor achievements into salary levels, it is being introduced into the public sector and addressed by means of using the performance management and development system (PMDS). So if nineteen percent of the respondents do not consider this as a factor, now is probably the time to address this matter.

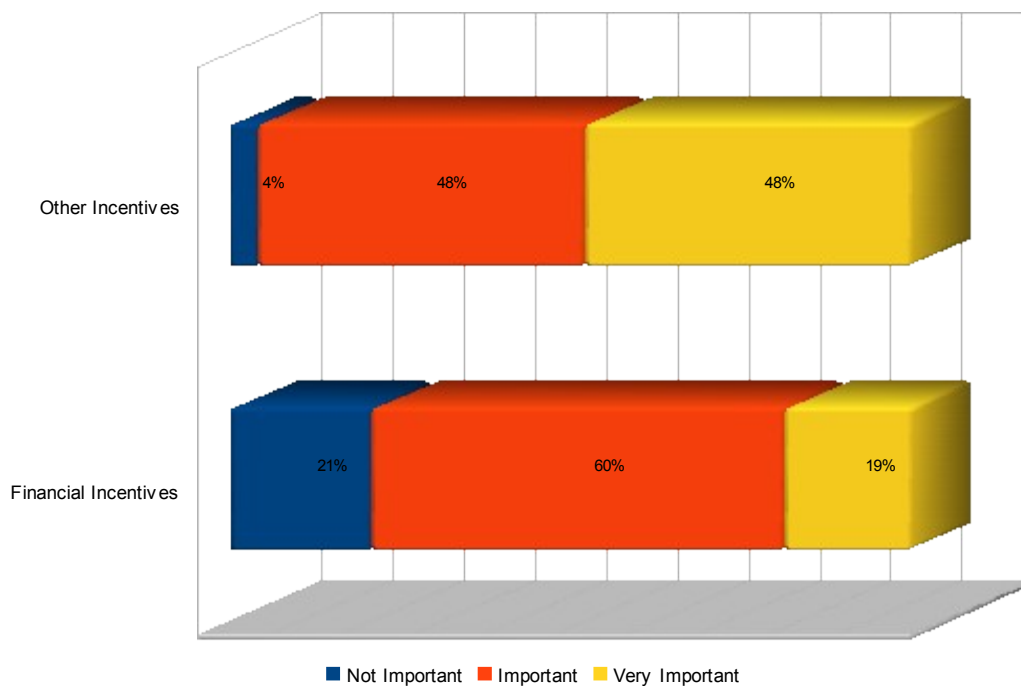


Figure 7.F.2 – Knowledge sharing incentives

Question two tries to ascertain if financial or other types of motives should be used to encourage knowledge sharing. The bar chart in *Figure 7.F.2* presents the findings to this question. It is evident that the majority of the respondents clearly would say yes to incentives in return for sharing knowledge. However, some believe that financial incentives are less important than other forms. The survey did not explore the various forms of incentives which could be used to enable knowledge sharing. This would certainly warrant further research.

Section G – Knowledge Management in the Organisation

Question one puts the respondents in the shoes of management as if they were in charge of the organisation's knowledge management and tries to ascertain what the responses would be to five important knowledge management elements. The following five bar charts in *Figures 7.G.1, 7.G.2, 7.G.3, 7.G.4* and *7.G.5* present the findings for each of these elements.

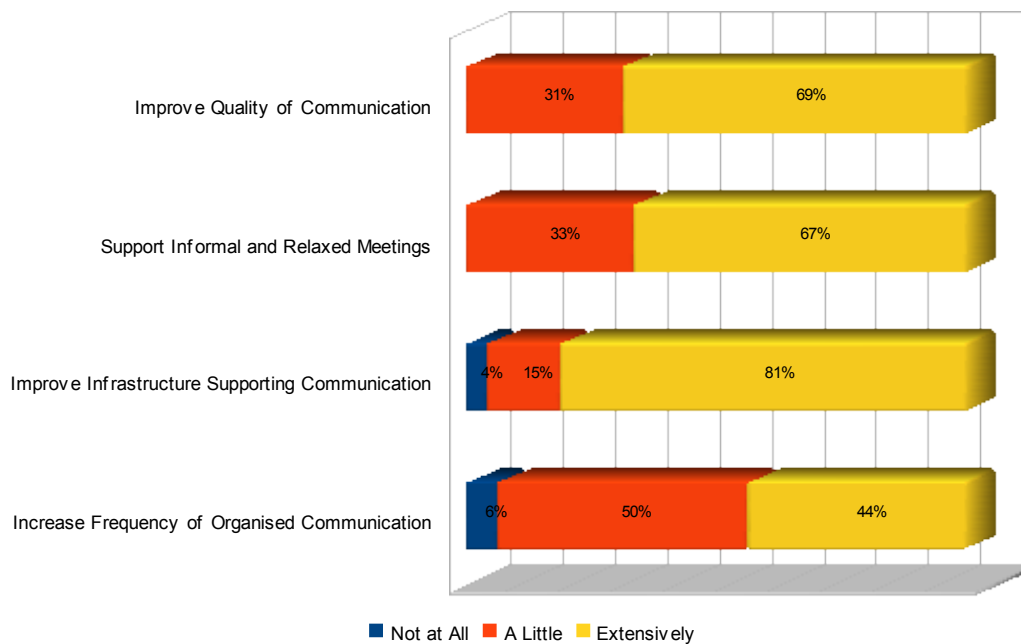


Figure 7.G.1 - Communication of Tacit Knowledge Exchange – what would you do?

Earlier, question four of section E touched on the area of communication by indicating that there is insufficient time and an insufficient infrastructure to conduct meetings and discussions. It would seem evident from the responses that every factor attributed to the “Communication for Tacit Knowledge Exchange” element of knowledge management would need to be addressed and would be achieved by extensively improving the quality of communication, support informal and relaxed meetings and improve the infrastructure supporting communication. However, increasing the frequency of organised communication is not addressed with the same fervour. However, if the first three factors are addressed as extensively as suggested it would

seem very likely that the frequency of organised communication would become an obvious by-product.

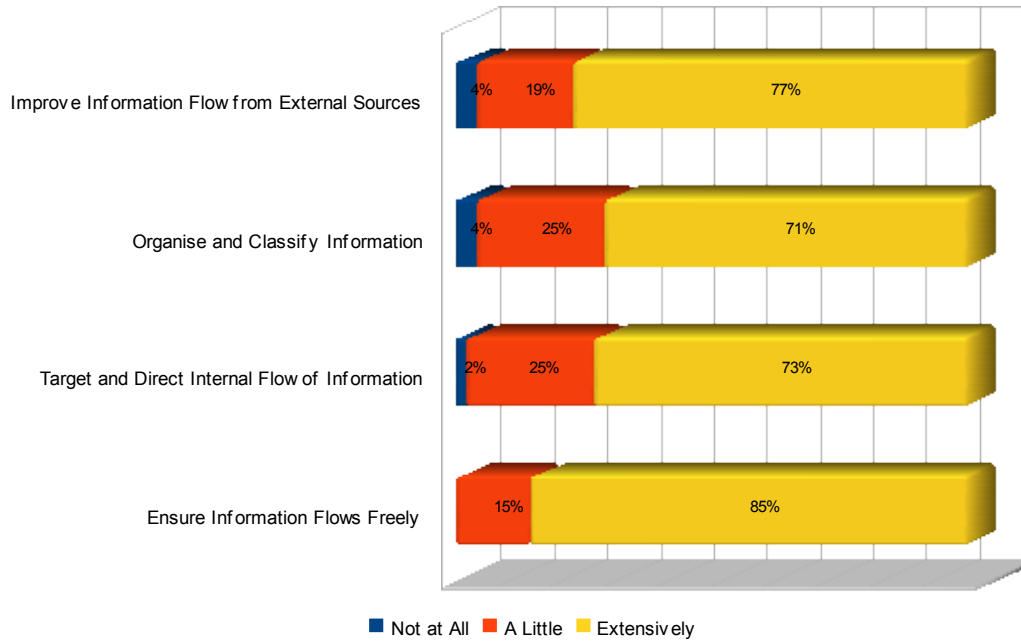


Figure 7.G.2 - Information Flow among Staff – what would you do?

It is very evident from the responses that every factor attributed to the “Information Flow Among Staff” element of knowledge management would need to be addressed extensively.

In the following bar chart regarding “Explicit Knowledge Issues”, It is very evident from the responses that the two factors attributed to this element of knowledge management would need to be addressed extensively.

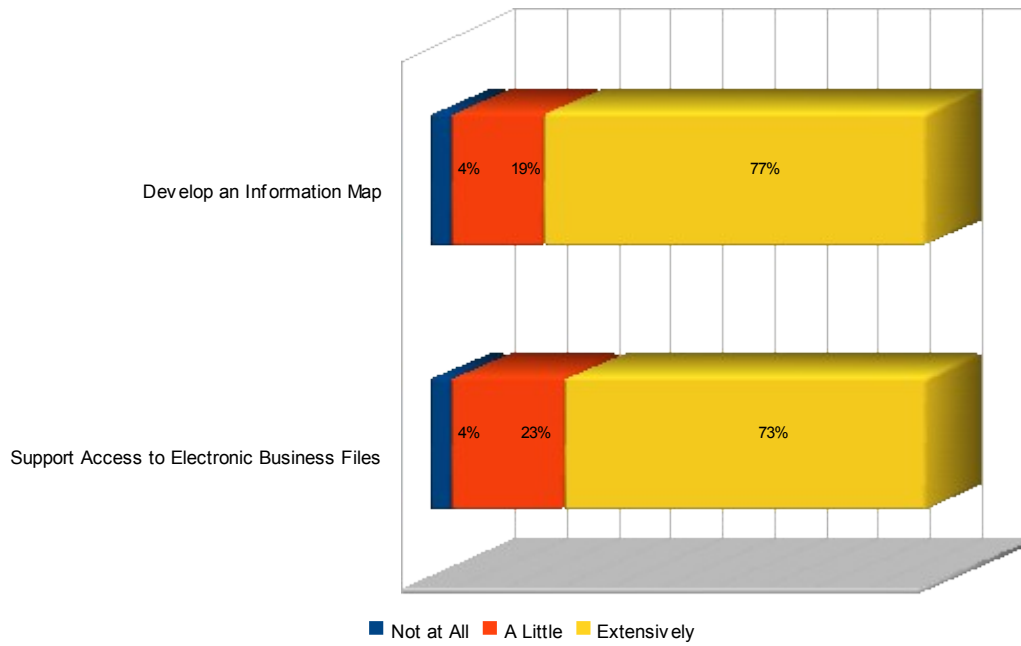


Figure 7.G.3 – Explicit knowledge issues – what would you do?

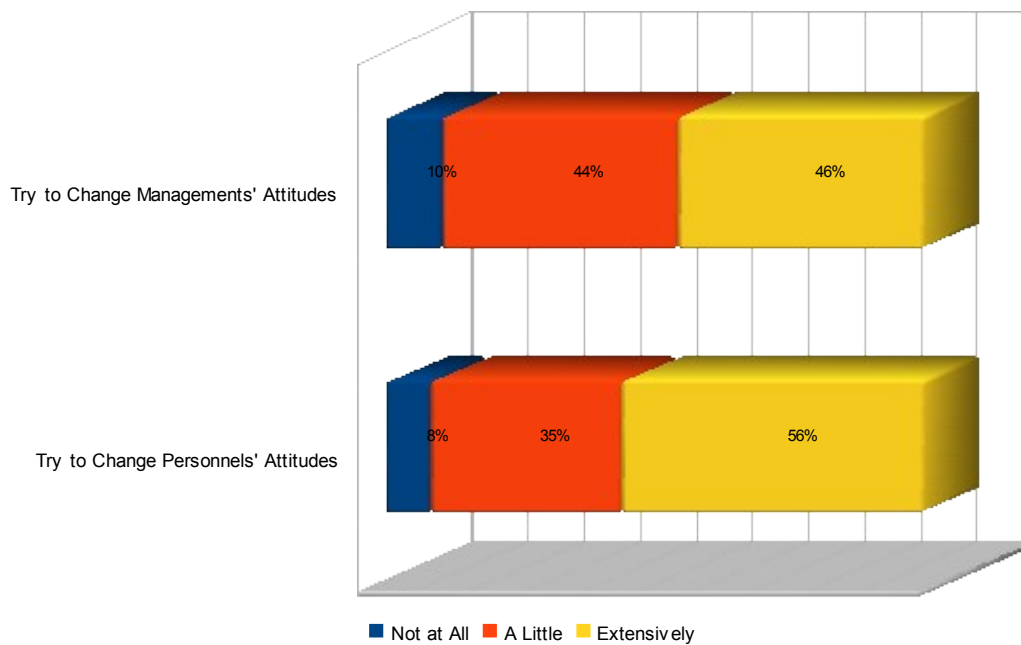


Figure 7.G.4 – Cultural change – what would you do?

It is evident from the responses that the two factors attributed to the “Cultural Change” element of knowledge management would need to be addressed but not as extensively as with the other elements. It would appear to suggest that this supports the earlier recommendation in Section E, which suggested that whilst addressing cultural issues in the organisation, it should be conducted with the utmost care and the need to ensure confidentiality would be paramount.

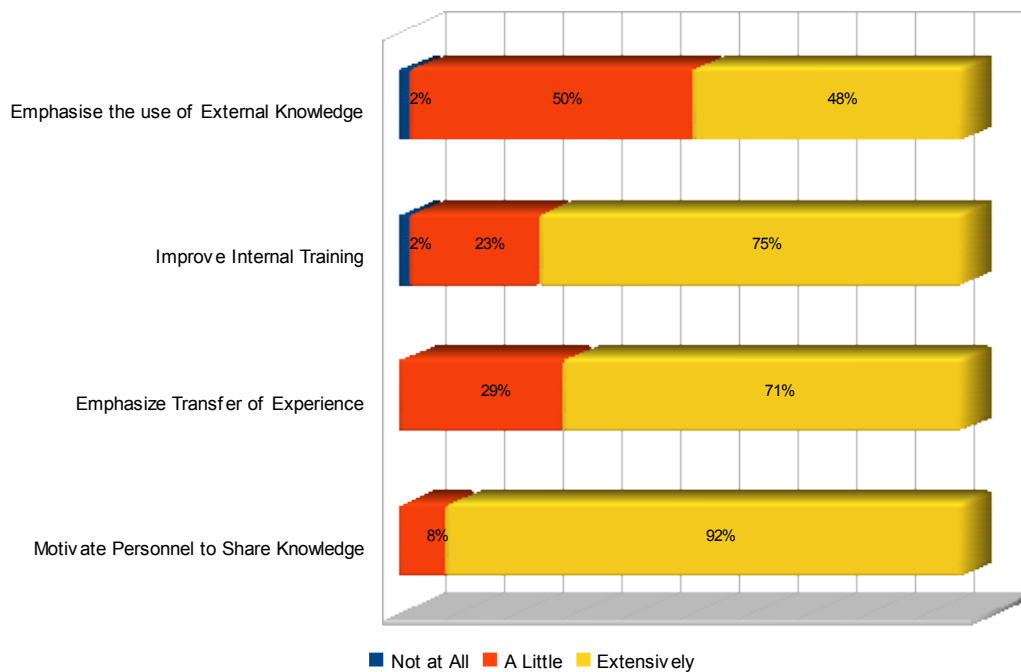


Figure 7.G.5 – People issues – what would you do?

It is evident from the responses that the four factors attributed to the “People Issues” element of knowledge management would need to be addressed extensively in some areas but to a lesser degree in others.

Overall, the responses for this question strongly suggest that there is room for improvement as barriers do currently exist in the organisation with how people obtain, use, store and communicate information.

The final question of the survey and of this section tries to identify the most likely barriers that a KM implementation would have in the organisation. The bar chart in *Figure 7.G.6* presents the findings to this question.

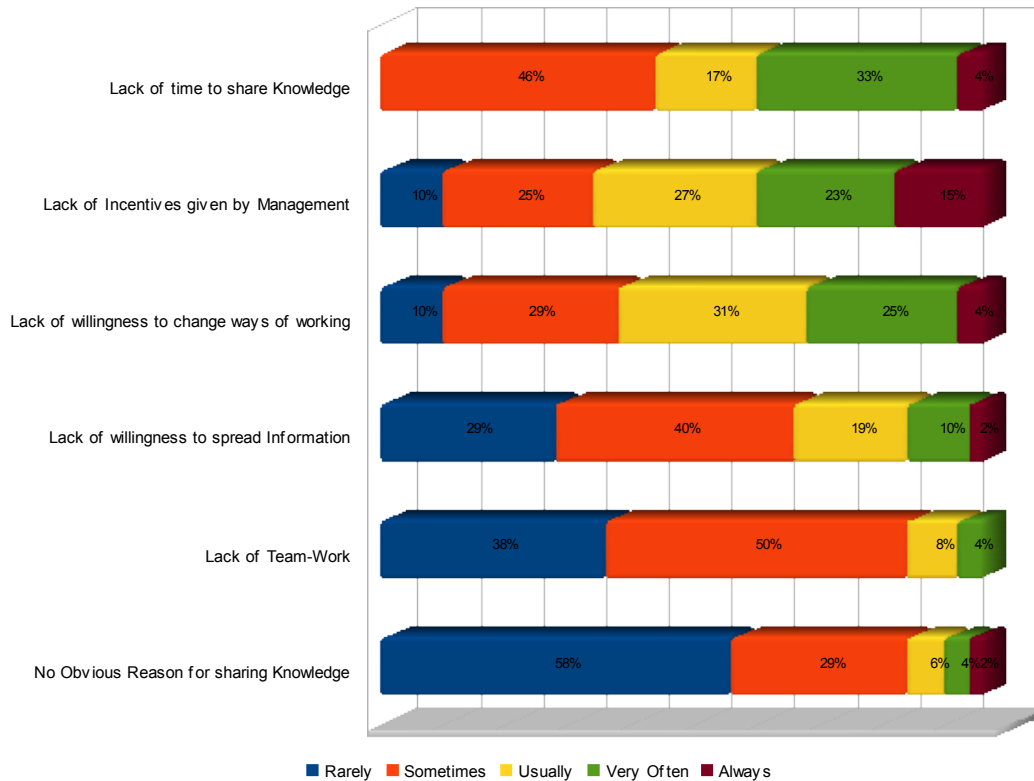


Figure 7.G.6 – Possible problems if KM policy exists

It is very difficult to find any issues with the findings in this bar chart following the responses of the previous sections. For the reader to interpret the findings, simply take the title of each colour in the legend, suffix it with the percentage reading of the respondent and prefix it to “there is” and then suffix the title on the y-axis to form the statement. For example; the factor *lack of team-work* on the y axis, using the legend colour blue which is *rarely*, the following statement can be formulated: *thirty-eight percent of the respondents indicate that rarely there is a lack of team work*. The same can be done for each of the factors. It is evident from the bar chart that though fifty-eight percent of the respondents indicate that rarely there is no obvious reason for sharing knowledge there appears to be problems with: providing the time; providing the incentives; changing the ways of working; and willingness to share information and knowledge.

7.5 The Knowledge Audit and The Four Pillars

After completing the Knowledge Audit the task of comparing the sections used with selected criteria from each pillar of “The Four Pillars” were undertaken in earnest. The outcome of this comparison process are as follows:

Leadership

Some of the criteria used from the leadership pillar for the purpose of this exercise were: business strategy and planning, culture, growth and executive support; and the outcomes are presented in the following *Table 7.1*:

Criteria	Knowledge Audit Survey
Business Strategy and Planning	At no stage does the knowledge audit doesn't take this criterion into consideration.
Culture	Section E of the knowledge audit explores the organisational culture. The concluding paragraph indicates that there is room for improvement in the culture of the organisation. In addition, the results suggest that further analysis and research should be conducted. Section G of the knowledge audit highlights the need for cultural change as this is a key KM element.
Growth	As with the Business Strategy and Planning criterion, at no stage does the knowledge audit consider this criterion.
Executive Support	Though the knowledge audit does not consider this criterion, it was necessary to obtain executive support. Executive support was obtained from the Director of OBS and it was agreed that the findings of the survey could be put to good use in the future.

Table 7.1 – The Leadership Pillar and Knowledge Audit

Organisation

Some of the criteria used from the organisation pillar for the purpose of this exercise were: processes, people, products, and metrics; and the outcomes are presented in the following *Table 7.2*:

Criteria	Knowledge Audit Survey
Processes	<p>The knowledge audit clearly identified a large number of processes in use throughout the organisation.</p> <p>Section A highlights some of the organisation processes and tries to rate the level of work experience which exists.</p> <p>Section C explores the average time spent by employees whilst conducting these organisational processes.</p> <p>Section D explores where data and information is both recorded and accessed; and the processes involved with performing both of these functions.</p>
People	<p>In essence, a lot of the knowledge audit looks at people.</p> <p>Section A of the knowledge audit attempts to profile each employee in the organisation, by demographic means.</p> <p>Section B of the knowledge explores the knowledge profile of each employee of the organisation taking into consideration: academic background, work experience, professional background and IT experience.</p> <p>Section E explores the organisational culture which essentially is about the people.</p> <p>Section F explores how to motivate people.</p> <p>Section G explores culture change and people issues.</p>
Products	<p>At no stage does the knowledge audit doesn't take this criterion into consideration. Given the nature of the business, conducted in OBS, this should come as no surprise. However, the artefacts which are created as a result of the business could be considered to be products, which are of great importance for the organisation.</p> <p>Therefore, Section D explores the nature of these products and their importance.</p> <p>Section G explores the accessibility to these products.</p>
Metrics	<p>At no stage does the knowledge audit doesn't take this criterion into consideration. However, as this was the first knowledge audit, this can be considered to be the first step of a metric process to gauge the implementation of KM in the organisation.</p>

Table 7.2 – The Organisation Pillar and Knowledge Audit

The only criterion used for the technology pillar for the purpose of this exercise was IT technology and the outcomes are presented in the following *Table 7.3*:

Criteria	Knowledge Audit Survey
IT Technology	<p>Section B of the knowledge audit explores the IT skill and knowledge level of each employee of the organisation. Subsequently each employee was asked to highlight the benefits and problems of using IT in the organisation.</p> <p>Section C of the knowledge audit highlighted that very few care staff actually use IT to conduct their business, whether it is searching for information, writing reports, writing emails, reading emails, or accessing electronic files for information.</p> <p>Section D of the knowledge audit touched on the subject of IT again by identifying how employees currently record data and information. This was a critical question as it was used to confirm the current IT usage in the organisation. As it happens, no IT is currently used by the care staff in the organisation.</p> <p>Section G of the knowledge audit touches on the subject of technology by exploring a greater use of electronic files in the organisation.</p>

Table 7.3 – The Technology Pillar and Knowledge Audit

Learning

Some of the criteria used from the learning pillar for the purpose of this exercise were: innovation, learning community, shared results (collaboration), and exchange forums; and the outcomes are presented in the following *Table 7.4*:

Criteria	Knowledge Audit Survey
Innovation	At no stage does the knowledge audit doesn't take this criterion into consideration. Whether this criterion is applicable is debatable. Even so, with the introduction of technology, it is possible that many of the current processes could be enhanced or give way to new approaches.
Learning Community	<p>Section B of the knowledge audit touches on subject of learning. It asks what skills and abilities do employees need to perform their job better.</p> <p>Section D of the knowledge audit explores if employees receive enough supervisions, training, coaching or mentoring.</p> <p>Section E of the knowledge audit explores the possibility of improving work practices, sharing knowledge and the desire to learn more.</p>

Criteria	Knowledge Audit Survey
	<p>However, the fear of making a mistake can be an impediment to learning more.</p> <p>Section F of the knowledge audit explores if gaining more academic qualifications and improving one capabilities is essential.</p> <p>Section G of the knowledge audit explores the possibility of improving internal training.</p>
Shared Results (Collaboration)	<p>Section B of the knowledge audit explores the knowledge of each employee. Furthermore, it explores how much of their knowledge is known to their colleagues and how much do they know of their colleagues' knowledge. Finally, it concludes with ascertaining if each respondent is prepared to share their knowledge and also like to know their colleagues' knowledge.</p> <p>Section C and section D of the knowledge audit touch on the subject of sharing by means of the various organisation process which exist – for instance with supervisions, mentoring, coaching and through the activities of searching for information within the organisation and from external sources.</p> <p>Section E of the knowledge audit explores how to improve the sharing of knowledge when it is seen to be an advantage and if there is a sufficient infrastructure in place to allow the sharing of ideas.</p> <p>Section G of the knowledge audit emphasises the importance of sharing knowledge.</p>
Exchange Forums	<p>At no stage does the knowledge audit doesn't take this criterion into consideration. However, if the meaning can be interpreted as meetings there are several references throughout the knowledge audit.</p> <p>Section C of the knowledge audit makes reference to meetings, case conferences and inter-agency dealings.</p> <p>Questions fourteen and fifteen of Section D of the knowledge audit make references to the use of meetings and business events.</p> <p>Section E of the knowledge audit makes reference to the setting up of a sufficient infrastructure to cater for meetings.</p>

Table 7.4 – The Learning Pillar and Knowledge Audit

Finally, communication is a criterion which is a factor in each of the pillars. Throughout the knowledge audit communication is referred to in sections C, D, E and G.

Though it can be shown that various sections of the knowledge audit can be posted to the pillars of “The Four Pillars” framework, the results are by no means conclusive. Firstly, the biggest failing of the knowledge audit was the design phase as it didn't consider the “The Four Pillars”. Once the audit was conducted and it became necessary to align the results to some chosen framework, some gaps began to appear in areas of the knowledge audit. Secondly, there is no score metric build into the design to show how well the audit performed in terms of each pillar – for example; after performing the audit there was no way of saying that the organisation scored seventy percent in leadership, sixty-five percent in organisation, twenty percent in technology and eighty percent in learning.

With respect to leadership, there is no accounting for strategy and planning. On reflection, posing a question on this topic would have been worthwhile. It would have given an indication as to how well the members of the organisation are kept informed of business strategies and planning. The same could be said of growth criterion. Highlighting some of the problems with the culture is achievable and can possibly be addressed by management. Obtaining executive support doesn't appear to be an issue thus inferring some measure of success. However, cultivating more support for a KM implementation would be required.

With respect to organisation, its criteria are referenced in several areas of the knowledge audit, though it doesn't appear that the approach is coordinated. In addition, the knowledge audit fails to convey a clearer understanding of how the organisation operates, in terms of its people, processes, products and metrics. Fortunately, further research could create a better understanding. Needless to say, some measure of success could be attributed to the knowledge audit for providing some degree of insight into the organisation.

With respect to technology, the knowledge audit proved successful by the clearly indicating that none of the care staff have access to technology, especially IT. In addition, the audit also indicated that a majority of the employees do use IT in a different setting such as, home.

With respect to learning, its criteria are referenced in several areas of the knowledge audit. It would appear that many of the respondents wish to do better, learn more and share their knowledge. Furthermore, the audit failed to address whether believe that there is a good training programme in existence in the organisation. Either way, some measure of success could be attributed to the knowledge audit for providing some degree of insight into the current state of organisational learning.

7.6 Critique on the Knowledge Audit

There is no doubt about acknowledging that a knowledge audit is one of the first necessary steps towards the introduction of KM into an organisation. However, there appears to be no hard and fast rule as to how you compile the audit questionnaire. As noted earlier, factoring “The Four Pillars” into the mix after designing the questionnaire was unfortunate but the lesson was learned. Consequently, if I were to design another questionnaire, maybe it would consist of only five sections, section one would be the personal/demographic details, section two would be the leadership section, section three would be the organisation section and so on. Needless to say, many of the questions in the current questionnaire would be contained in the new one.

In addition, many new questions became apparent whilst conducting the questionnaire. For instance, in Section B – Basic Knowledge Profile, there are two questions, the first question asks if the respondent wants his/her colleagues to know more about his/her knowledge. The answer can be *yes* or *no*. If the answer is *no* there is no additional question to explore why the respondent has provided this answer. Similarly with the question when the respondent is asked if he/she wants to know more of his/colleagues' knowledge.

The questions of the knowledge audit were predominantly quantitative and some were qualitative. However, the response to the qualitative questions were very poor. Many of the sections which asked for user input, such as looking for recommendations and comments, were left empty. The only sections of this kind which proved successful where the questions which asked the respondents to list problems and benefits. In contrast, too many conclusions could be ascertained from the quantitative questions

after analysing the responses. However, there is no escaping quantitative questioning but some of them could be redressed and presented with a qualitative slant.

The size of knowledge audit questionnaire was very long. Many of the respondents complained about its length and the time they had to give towards completing it. The possibility that some respondents grew weary of answering the questions is strong and this may have impacted the quality of the responses. In addition, inputting all of the questionnaires proved to be a painful and laborious task. I would strongly recommend to myself that future questionnaires be reduced in size.

As I was inputting the responses of each questionnaire, it became apparent from some of the answers that some of the respondents did not understand the questions. I believe that if I were present whilst the respondents were answering the questions, any queries or uncertainties they may have had with the questionnaire could have been addressed. For instance, in Section C – Work Analysis in a Knowledge Context, sticks in my mind, as many of the responses indicated a lack of understanding on the part of the respondents. However, this is an unfair comment as the question is unfair, given the nature of the business. Thus, I believe I could have conducted the questionnaire on an interview basis and this would have allowed me to explore some key areas in depth. Needless to say, if I had conducted my questionnaire on an interview basis I would never have received the number of respondents as I did. Thus, a balance needs to be found and if the plan is to ask questions in an interview setting, the questionnaire would have to be short and not take up too much of the participant's time.

Though the questionnaire acknowledge areas such as languages, it failed to address other issues such as culture and creed. In light of this, the questionnaire failed to address the impact of external factors which impact the way in which the workers in OBS may operate.

After inputting the responses of the questionnaire, the quantity of data to be analysed was vast. Even after presenting some small degree of analysis in this report, I already know that there are inconclusive findings. Most of the findings are based on averages but it was beyond the scope of the project to break down the results to find commonalities. A caveat was offered regarding these eventualities. For instance, in

Section E- Organisation Culture, question 4 established that twenty-seven percent of the respondents believe there is insufficient time for discussions and that forty-two percent of respondents believe there is an insufficient infrastructure for meetings – but how many of the respondents are common to both beliefs? Findings like these warrant further work.

From reading the above, it would appear to suggest that the knowledge audit questionnaire used for this research project is without merit, but I have to say that this is not entirely correct. The knowledge audit questionnaire had to start somewhere. It is essential to accept that a number of lessons have been learned and should be factored into future research work. As a fact, I would admit that this should always be the case.

7.7 Conclusion

A knowledge audit represents a useful starting point for implementing KM. In this research project, the knowledge audit proved to be a very worthwhile exercise and should be considered to be an initial formal documented assessment of the current knowledge base of OBS.

The results of the knowledge audit are extensive. It does require more in-depth analysis and it is certain that this analysis will surely raise more questions. The possibility of drilling deeper into some of the areas which the audit touched on, and also the areas which were not addressed, could prove to be the focus of future research. However, the focus of the audit raised some of the following key points:

- It helped to identify some of the sources of knowledge in the organisation. However, the audit tended to focus more on the sources of explicit knowledge than the tacit ones.
- It helped to identify how employees currently store, access, use and share the knowledge that they need to do their jobs – all of which is performed by means of handwriting, which presents its own problems. The knowledge audit also showed how people viewed the use of technology and if it could be a benefit

OBS. Needless to say, the audit showed that the idea of technology is not without its own set of problems.

- It helped to identify skills, which are not used, in OBS. This proved to be the case with the high percentage of IT usage by OBS, if only in the home environment. Conversely, the knowledge audit help to identify the way in which people tend to play down the skills they possess. This possibly contributed to the tendency for the audit to steer away form assessing the tacit knowledge in OBS.
- It also uncovered some of the barriers which exist in the organisation to the use and transfer of knowledge; again quoting the use of technology as a means to overcome some of these barriers.

To conclude, the knowledge audit proved a worthwhile and successful exercise. Furthermore, the level of participation exceeded expectations.

8 THE EXPERIMENT

8.1 Introduction

The following chapter presents the reader with details and findings of an experiment which was conducted in OBS. The experiment involved modelling a feature of one organisation process. The experiment was presented in the form of a web-based application and a number of the organisation employees were allowed to evaluate it.

8.2 Justification for the Experiment

During the course of this research project a number of factors were identified which justify the development of the experiment model and are listed as follows:

- Irish Youth Justice Service. As noted earlier, the publication entitled, “National Youth Justice Strategy 2008-2010” aims to provide a coordinated approach among agencies working in the youth justice service over the next three years. It sets out a number of goals and how these will be achieved to meet the objectives of the strategy. Goal number five is particularly interesting. It aims *“to strengthen and develop information and data sources in the youth justice system to support more effective policies and services.”* Therefore, at sometime in the future OBS will have to play its part in meeting the aims of this goal with greater use of technology. Developing this experiment helps to create awareness amongst the employees of OBS in preparation for fulfilling the demands of this goal and furthermore, will help with any consultative process which may occur.
- Towards 2016 Partnership Agreement. The publication entitled, “Towards 2016 – Ten-Year Framework Social Partnership Agreement 2006-2016” article 28.7 states that *“co-operation with the introduction and utilisation of new technology will continue. It is accepted that the use of new technology may necessitate significant change in work processes in order that the benefits of technology will be maximised.”* Again, the eventual increased usage of technology will occur in OBS. It would not be unreasonable for the IYJS to use

the partnership agreement to help maximise the use of technology, especially if one of its endeavours is to achieve a number of the objectives as proposed by goal 5 of the National Youth Justice Strategy 2008-2010. Once again, the development of the experiment would create awareness and furthermore, will help with any consultative process which may occur. Furthermore, the agreement endorses the notion of the, as noted in chapter four.

- The Four Pillars. As noted already, if knowledge management is to succeed in any organisation, it must meet the criteria proposed by “The Four Pillars”. The technology pillar in OBS is virtually non-existent. In some small way, the development of the experiment provides an opportunity to address this technology deficit. It gives the employees the opportunity to see how technology could be utilised in the organisation and stimulate discussion. These discussions could provide feedback which can be used for future development. Furthermore, the feedback may also indicate what fears or concerns may exist with technology usage.
- The Knowledge Audit. The knowledge audit confirmed the lack of technology usage in OBS. It also identified many of the work processes; data and information paper sources; and cultural barriers which exist in the organisation. The development of the experiment takes one of the work processes used in the organisation and presents it as a web-based software application. If it could be shown that this work process can be replaced with the use of technology, then some degree of compliance with the “Towards 2016 Partnership Agreement” has occurred. The experiment also intends to replace the current data and information paper source used in conjunction with the chosen work process. Use technology as storage would be positive step towards complying with goal five of the “National Youth Justice Strategy 2008-2010.” Finally, the experiment would help to better articulate some of the barriers to the use of technology in the workplace.

8.3 Development of the Experiment

The development of the experiment involved a number of steps. Decisions had to be made regarding the best way to develop the experiment model. Decisions had to be made regarding which organisation process should be used, what features were required, and finally the design of the experiment's specification.

Web Applications

Web-based applications are becoming more prominent (Lenz, 2007; Hardy & Carneiro, 2007). They are software applications which are accessed using a web browser over a network. Commonly, the network is the internet but it can also be an organisation's intranet. As the world has become more connected, more of what we do is performed on the web through the use of these web applications. Web-based application software has a number of advantages:

- Easier to distribute – unlike traditional software, which must be installed on each individual computer, changes in web applications can be delivered quickly and features can be added incrementally.
- Easier to deploy – there is no such thing as bug-free software. Web applications are themselves not immune to these unintended features. But with a web application, bug fixes are easy to deploy.
- Easier to maintain – a fix only ever has to be applied to the server hosting the web application. All users get the benefit from the fix at the same time, usually without any interruption in service.
- Platform-independent – web applications work on every platform that supports a web browser and there's nothing to install or download.
- Accessible from anywhere – if the web application server is available on the internet any machine on the internet can access it.

Even with all of these advantages, there are also some constraints. The biggest problem is the browser itself due to the fact that there are a number of contenders who all have a slightly different take on how to display the contents of a page. Thus, it is nearly impossible to achieve one hundred percent cross-browser compatibility. Another

constraint is the inherent complexity of web development. A typical web application will have many moving parts: protocols and ports, HTML and CSS, the database and the server, the designer and the developer, all of which conspire towards complexity. Despite these constraints, many advances have been made in the field of web development and many of the obstacles are being removed.

Thus a decision was made to develop the application as a web application and the following factors supported this decision:

- Advantages highlighted in the section above.
- Can be easily set-up with prototypes at very low cost and tested quickly.
- In “Section B, question 3 – *Figure 7.B.4*” of the knowledge audit forty-one, or eighty-five percent, of the respondents indicated that they used the internet. This meant that most users would be comfortable with a web based application as opposed to some other application.

Web Frameworks

Among the tools making their way into the world of web development is the framework. A framework is a collection of libraries and tools intended to facilitate development. Designed with productivity in mind, a good framework will provide a developer with a basic but complete infrastructure on top of which to build an application. Typically a good web framework can be described as follows:

- Full stack: everything you need for building complete applications should be included in the box. Having to install various libraries or configure multiple components is laborious. The different layers should fit together seamlessly.
- Open source: a framework should be open source, preferably licensed under a liberal, free-as-in-free license, like BSD or MIT.
- Cross-platform: a good framework would be platform-independent. The platform of choice is one of personal choice. Needless to say, the framework should remain as neutral as possible.

A good web framework will provide good structure and a practical set of conventions where everything has its place in the system, thus eliminating guesswork and increase productivity. A good web framework should have a database abstraction layer thus eliminating the need to deal with low level details of database access or be constrained to a particular database application. Finally, a good framework should have a culture and aesthetic to help inform programming decisions. It should gently guide the developer whereby difficult decisions are made by virtue of convention.

Rails

Rails is a best of breed framework for building web applications. It is complete, open source and cross-platform. It provides a powerful database abstraction layer called *Active Record*, which works with all popular database systems. Its philosophy is centred around beauty and productivity.

Rails was originally created by David Heinemeier Hansson and its first version was created when it was extracted from a real-world application called Basecamp.

Rails is practical and free of needless features and its goal is to solve eighty percent of the problems that occur in web development, assuming that the remaining twenty percent are the problems that are truly unique to the application's domain.

Rails has specific ideas about directory structure, file naming, data structures, method arguments and almost everything else. When writing a Rails application, it is expected that certain defined conventions are followed.

Rails is Ruby

Ruby is a programming language which was invented in 1994 by Yukihiro Matsumoto. Ruby is open source; is an interpreted, object-oriented scripting language; has an elegant, concise syntax; has powerful meta-programming features; and is well suited as a host language for creating domain-specific languages (DSLs). Rails actually uses this latter feature of Ruby to create a DSL for the purpose of web development. Whilst working in Rails it would appear as if the language was specifically designed to

construct web applications. This is a testimony to the power of Ruby as it is easy to forget that whilst using Rails you are actually writing Ruby code. Thus, Rails takes full advantage of Ruby's expressiveness.

Rails and Agility

Web applications are not traditionally known for agility. They have a reputation of being difficult to work with and a nightmare to maintain. In response to this dilemma, Rails appeared on the scene, helping to usher in a movement toward agile programming methodologies in web development (Ruby, Thomas, Hansson, 2008). Rails advocates and assists in the achievement of the basic principles of developing software as declared in the Agile Manifesto, in APPENDIX C. Rails was designed with agility in mind, and takes each of the agile principles to heart, almost obsessively. With Rails, you can respond to the needs of customers quickly and easily, and it works well during collaborative development.

The MVC Pattern

Rails employs a time-honoured and well established architectural pattern that advocates a division of application logic and labour into three distinct categories: the model, view and controller. In the MVC pattern *Figure 8.1*, the model represents the data, the view represents the user interface, and the controller directs all the action. The real power lies in the combination of the MVC layers, which is something that Rails handles for you. Each part of the MVC is a separate entity, capable of being engineered and tested in isolation. Thus a change in the model does not affect the views, and vice versa. Therefore, changes in the MVC application tend to be localised and low impact, easing the pain of maintenance considerably, while increasing the level of re-usability among components.

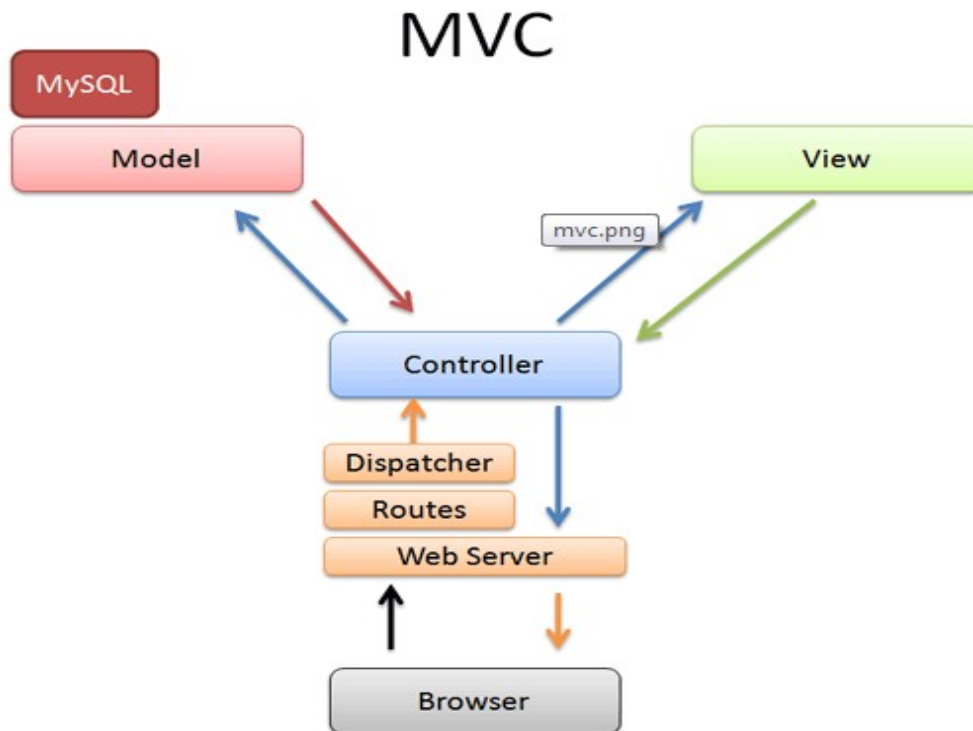


Figure 8.1 – MVC Pattern

The MVC Cycle

Generally the control flow of the MVC works as follows:

1. The user interacts with the interface and triggers an event (submission of registration form)
2. The controller receives the input from the interface (submitted form data).
3. The controller accesses the model, often updating it in some way (creating a new user with the form data)
4. The controller invokes a view that renders an updated interface (a welcome screen)
5. The interface awaits further interaction from the user, and the cycle repeats.

Although entire books have been written on this pattern, it is easy to grasp when it is employed the Rails way.

UBUNTU

The chosen platform for the experiment was Ubuntu, version 6.06 (Dapper Drake). It has consistently been rated among the most popular of the many Linux distributions and as with all the software applications mentioned so far, Ubuntu is free software and can be shared by any number of users. Both Rails and Ruby can be easily installed on Ubuntu.

MySQL

The MySQL database server is developed by a company called MySQL AB. MySQL is one of several cross-platform, open-source database servers that are available. While Rails supports plenty of other database servers (such as Oracle and Microsoft SQL Server, to name a few), MySQL is easy to install and set up, sports many advanced features, and is basically the only database server you can use with Rails without installing further database connection adapter software.

Bringing it all Together

An Acer laptop was employed for the purpose of this exercise and the following installation steps were taken:

1. UBUNTU OS.
2. The Ruby Interpreter and RubyGems
3. Rails
4. MySQL

Once all of the required software was installed successfully, the next step was deciding which organisation work process should be used for experimenting.

8.4 Choice of Organisation Process

The findings of the knowledge audit had identified many areas which required further research work. For the purpose of the experiment, the audit identified two key areas, both of which are explicit knowledge resources, which would be suitable candidates – the unit log book and the client care plan. Both of these resources are used extensively by the employees of OBS. During the course of a shift, employees will use either resource as a point of reference, for handover purposes, and will record events as they happen and information pertinent to the clients. The choice to select the client care plan as the basis of the experiment was based solely on the fact that it is a more structured resource which can be broken down into small modules of labour. It should be stressed that neither resource is more important than the other. By using the client care plan it would be possible to break it down into its smaller components for the purpose of conducting the experiment.

The client care plan is a book which is broken down into a total of sections. These sections are: admission details; current status; case conferences; individual crisis management plans; court; medical; absconds/non-returns; critical incidents; daily reports; additional information. Thus a lot of information is recorded in the client care plan. For the purpose of the experiment, it was decided that the “daily reports” section would be used as it is the section used more often than the rest.

8.5 Design of chosen Organisation Process

Typically, a daily report entry consists of three key pieces of information: the time and date of the entry; a written report detailing how the client is and if there are any problems which should be highlighted; and the signature of the care staff who wrote the report. At any time, other members of care staff can read the client care plan and read these entries, whereby questions can be asked resulting in discussions about the client. This is a common occurrence in OBS and usually a consensus is agreed upon which helps with the behavioural management of the clients.

Requirements

In terms of a requirement document, the daily report would consist of the following key points; reading an entry, writing an entry (time and date entry is created, written report text of entry, signature of staff who wrote entry), and the client which the report entry pertains to. To cater for this it was evident that a number of tables in the MySQL database were needed. APPENDIX D lists the schema for the database used for the experiment. In addition, another consideration was needed to cater with staff signatures and authorisation matters.

Tables

The first table required is the *clients* table which would capture the basic client information for the experiment. Details such as the PPS number, forename, surname and date of birth were decided upon.

The second table required is the *users* table which would capture the basic user information of those users who would be testing the experiment and ultimately using the system. Details such as PPS number, forename, surname, date of birth, username and password were decided upon. The username and password were added to cater for the signatures which are typically required when creating a daily report entry.

The final table required is the *dailylogs* table which would capture the daily report entry information during the course of the experiment. Details such as time and date, client id, user id, username and report text were decided upon. The daily report entry would record the report for the client and upon creation would record the user id and username.

Relationships

It is evident that a number of relationships would exist between the tables. These relationships are as follows:

A client in the *clients* table can have many daily reports recorded in the *dailyreports* table.

A user in the *users* table can have created many reports in the *dailyreports* table.

Interfaces

For the purpose of setting up users in the web application, there would have to be three interfaces; a list of users form, a create user form and an edit user form. Users which are created on the system would never be deleted.

For the purpose of setting up clients in the web application, there would have to be three interfaces: a list of clients form, a create client form and an edit client form. Clients which are created on the system would never be deleted.

For the purpose of the creating the daily report entries in the web application, there would have to be three interfaces: a list of clients form, a list of daily reports for selected client form and a create a daily report for selected client form. Daily report entries which are created on the system can be edited or deleted.

At the time of creating or editing entries, as defined and permitted above, there is an authorisation form which requests users to enter their valid username and password.

Finally, for the purposes of the web application, a main menu form was created which allow the users to select the appropriate option.

8.6 Development of the Web-based Application

The development of the web application was conducted using Rails. During the last three weeks of June 2008, the process of learning Rails and developing the web application was difficult but achievable. It is by no means a robust web application and many of the Rails conventions, which one should subscribe to, may have been broken during the course of development. However, it is envisage that many of the conventional issues will be revisited at some later stage. Finally, at the beginning of

the month of July 2008, I was in a position to present the experiment to care staff in OBS.

8.7 Presenting the Web-based Application

This section outlines the steps taken to present the web-based application in OBS.

8.7.1 Audience

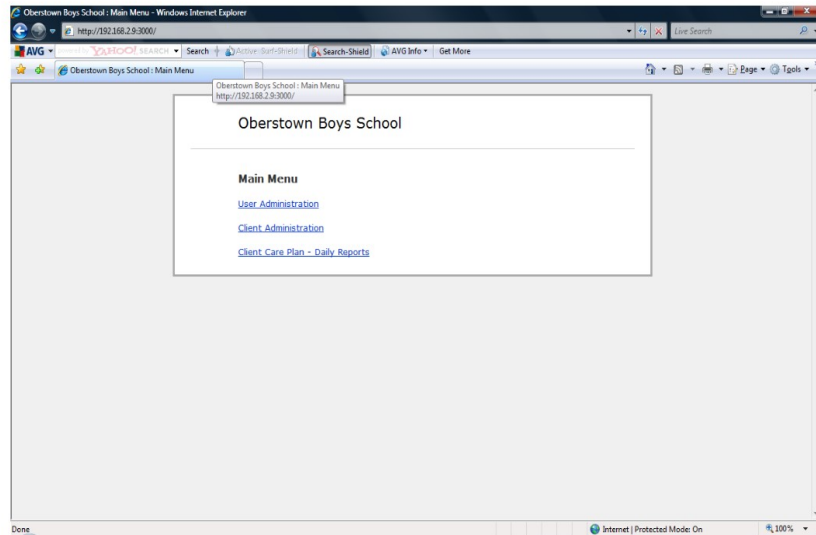
The process of allowing employees to view and test the prototype application is currently ongoing. Needless to say, a preliminary group were identified as a result of the knowledge audit and responses obtained in section B of the audit. *Table 7.B.1* of the analysis identified 4 categories of individuals: A, B, C and D. The employees in all categories were considered but a greater emphasis was placed on B, C and D.. As mentioned in the analysis, category B cause some concern as they believe that IT would provide all the answers and solutions, without problems. Category C and D were identified as been totally resistant to IT but their numbers are very small compared to the numbers in category B.

8.7.2 Presentation Method

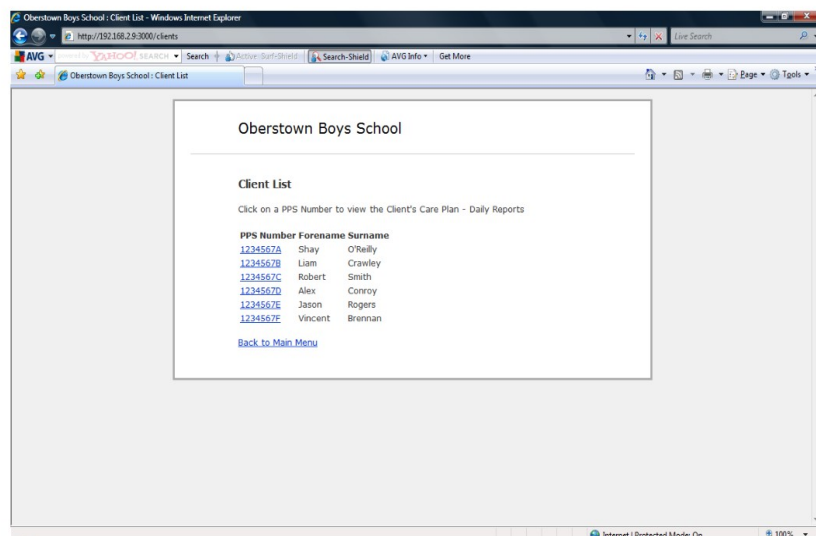
Employees were provided with two forms, one which outlined the purpose of the experiment and the second which asked for their feedback and thoughts of the experiment. These forms can be found in the (APPENDIX). Then, unceremoniously, the employee was provided with their username and password, placed in front of the laptop, and asked to engage with the web application with a small amount of guidance from myself. There was a purpose to taking this action; firstly, to test if the web application was intuitive and easy to use; and secondly, to see if the level of IT skills were present as indicated by the employee in the knowledge audit.

8.7.3 Application Screen Images

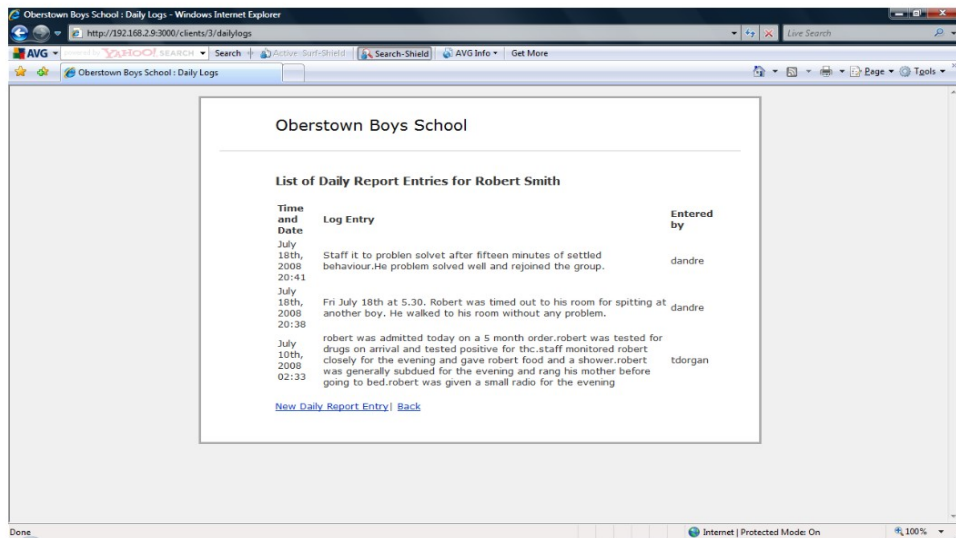
The following sequence of screen shoots, *Figures 8.2 – 8.7* outline the steps which need to be taken to record an entry in the daily report section of the client care plan.



*Choosing the bottom option on the screen will display the next screen
Figure 8.2 – Main Menu*

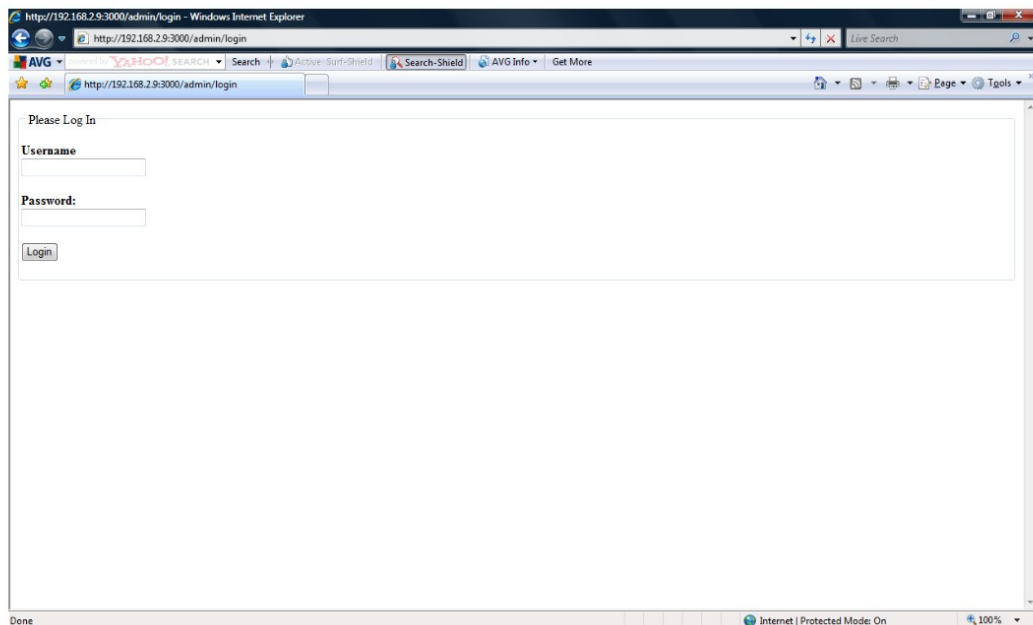


*Select a PPS number to chose client to view the existing entries in the client care plan
Figure 8.3 – Client List Menu*



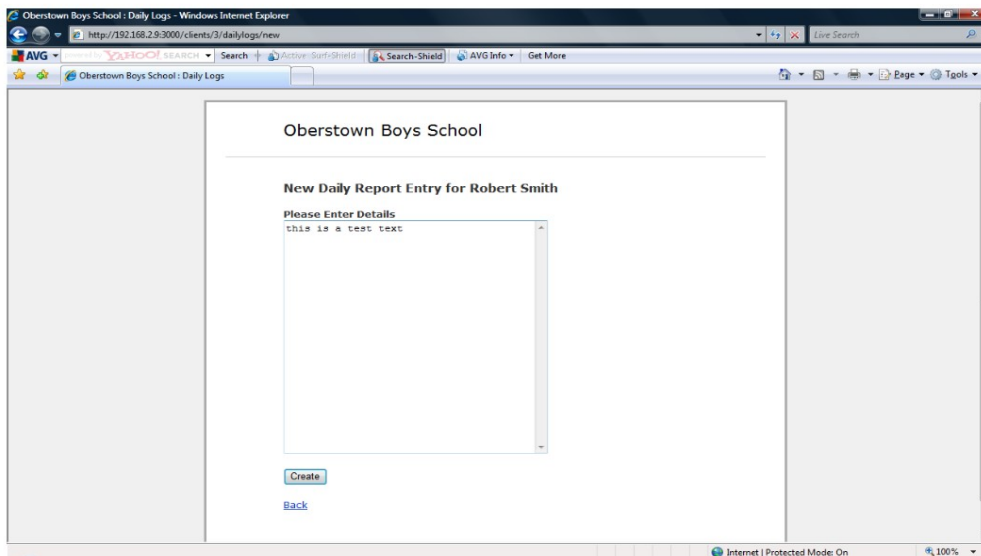
Select “new daily report entry” to create new entry or back to back a screen

Figure 8.4 – Daily Report Screen for Client

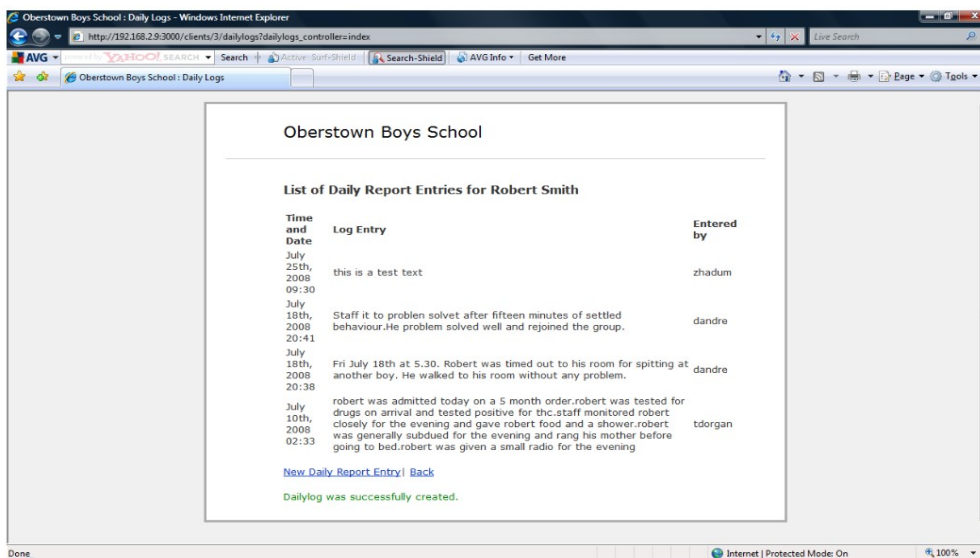


Please enter your username and password

Figure 8.5 – Authorisation Screen



Please enter details of report
Figure 8.6 – Daily Report Entry Screen



Daily Report Screen confirms the entry has been successfully entered.
Figure 8.7 – Daily Report Screen for Client (Updated)

The steps involved in creating a daily report entry are straight forward. The most interesting screen is the authorisation screen. This screen is only used when the user is about to write an entry into the system and when this happens, the username is tagged to the entry. Once the entry is stored in the database, the person is automatically logged off from the system, The purpose of doing this is to mimic the signature which a member of care staff would enter whilst writing an entry in the current paper based system and also prevents users using somebody else's username to record information.

The interface screens were designed to be as simple as possible so as not to overwhelm the participants during the experiment. The main menu contained three options of which one was of relevance to the users. The rest of the screens provided the user with only two options – one to exit or go back to the previous screen and one to select an option which opens another menu item or asks the user to login so as to perform some written task such as entering the details of the daily report.

8.8 Feedback

Currently, evaluation of the web-based application by the OBS employees is ongoing. At the time of writing this report only eleven employees had viewed the web-based application and have provided feedback and is presented as follows:

The form which the employees are asked to complete whilst evaluating the application consisted five sections.

8.8.1 First Impression of Application

The section attempts to elicit the first impression which the employees have of the application. All eleven employees responded to this question with the following comments in *Table 8.1*:

Evaluator	Comments
1	"Simple to use"
2	"very impressed, for those with basic computer and keyboard skills this application would be simple, ie; user friendly"
3	"Clear, concise, self-explanatory, uncomplicated, user-friendly"
4	"Very good"
5	"Good. Quite simple and easy to navigate. Also, it doesn't seem as if there would be a great deal of 'IT skills' required"
6	"Well put together, plain and simple, excellent alternative to written care-plans"
7	"Seems very user friendly and straight forward"
8	"Seems user friendly and is easy to access"
9	"Simplistic, clear instructions, very user friendly"
10	"Found the software easy to use. No problem with navigating through the different aspects of the application. Of course, it was legible"
11	"Like the use of the web browser, crude but simple, straight to the point"

Table 8.1 – Comments of first impression of application

Overall, the responses were very positive and very encouraging.

8.8.2 Representative of Real World Process

The section attempts to ascertain if the application represents exactly what people do in their place of work when they write a daily report in the client care plan. All eleven employees responded to this question with the following comments in *Table 8.2* :

Evaluator	Comments
1	<i>"I feel this matches the current method I use with regards to care plan writing."</i>
2	<i>"The template is representative of the daily report currently handwritten"</i>
3	<i>"Very representative of daily report system"</i>
4	<i>"Yes"</i>
5	<i>"Of daily admin? Yes"</i>
6	<i>"Certainly represents what we do in Oberstown. Much easier and competent way of managing and storing information"</i>
7	<i>"Yes"</i>
8	<i>"It represents what we do in our daily reports"</i>
9	<i>"Yes, basically bringing old method up to date. Much need development"</i>
10	<i>"To a certain degree, essentially the same content but easier to read/review"</i>
11	<i>"It reflects the way we enter and record information in the daily logs"</i>

Table 8.2 – Comments on whether application represents current working method

Yet again, the responses appeared to be very favourable.

8.8.3 Benefits

The section attempts to ascertain if the application would be beneficial to the people in their place of work. All eleven employees responded to this question with the following comments *Table 8.3*:

Evaluator	Comments
1	<i>"Easy access to file information for clients. Seeking out older information does not require searching for old care plans"</i>
2	<i>"All entries would be on a database and researching past entries would be relatively simple, also searching for 'something' specific would negate the current trawl through filed documentation"</i>
3	<i>"Faster, easier to store, easier to access, secure (password)"</i>
4	<i>"Very useful for searching for information, saves time"</i>
5	<i>"Reduces paper trail and cumbersome nature of the daily logs. Access to client information, not just daily reports, is potentially very easy"</i>
6	<i>"Easy access to care plans/logs. Makes it easier to read logs given handwriting. Less clutter. You cannot add on to logs at a later date. Good for updating individuals use of computers"</i>
7	<i>"Like the way it keeps an accurate time of entry for you and how entry is tied to the author"</i>
8	<i>"Less paper work. Takes up limited space. Easy access to read back on previous events/days. Easy to read as some peoples' handwriting can be difficult to interpret"</i>
9	<i>"More legible, easily accessible. Very clear, no more confusion due to poor hand-writing. Benefits in communication"</i>
10	<i>"Having entries clearly signed, dated ad timed relieves questions of uncertainty that happen with current care plans. Accessible. Easy to navigate. All care plans of all clients will be easy to access"</i>
11	<i>"Accessible and easy to understand. Paperless"</i>

Table 8.3 – Comments on benefits of the application

Yet again, the responses in this section appeared to be very favourable.

8.8.4 Problems

The section attempts to ascertain if the application would present problems or highlight any problems with its usage by people in their place of work. All eleven employees responded to this question with the following comments in *Table 8.4*:

Evaluator	Comments
1	<i>"Depending on computer/typing skills reports can be slower to do"</i>
2	<i>"1. With 6-8 boys on unit, the time frame at end of shift may be a problem, ie, one keyboard and one screen. Currently, we share the task in the handwritten format, ie, all care plans can be completed by a team in under 10 mins. 2. Boy on separation would result in extensive entries. 3. If non of the team on shift cannot use a computer. 4. Would management and indeed all staff engage in training?"</i>
3	<i>"In some cases a signature may be required? Search facility within account?"</i>
4	<i>""</i>
5	<i>"Limit to how many people can log daily reports at one time" As it is now, whole staff team can enter this information at the same time. Would onus fall on coordinator alone fro this data entry? No way of editing information once it is entered. Like wise, people may write something, accidentally fail to save it successfully and unwittingly leave a daily report blank. What if wrong information is entered? Data entry system may require staff training. Different people have different levels of computer literacy and ability with IT, whereas all staff are able to read and write regardless of training.</i>
6	<i>"No Spell checker. No search methods for particular words"</i>
7	<i>"Only around the subject of corrections"</i>
8	<i>"Can you go back into what you have just written to make corrections, eg; spelling mistakes or additions to daily report?"</i>
9	<i>"User training. Although very easy to use, not all staff would have computer training or confidence"</i>
10	<i>"Typos. Compromised confidentiality and leaked passwords. Lack of staff with computer skills, ie, lack of training in IT. General fear of fear some staff may have."</i>
11	<i>"Typing skills are non-existent and would impact the recording speed. Authorisation for access and security?"</i>

Table 8.4 – Comments on problems with the application

Yet again, the responses were plenty, insightful and give a fair indication of some of the concerns which accompany the use of IT, especially it it is proposed to replace existing methods which are currently used in the work place.

8.8.5 Comments, Suggestions and Recommendations

The section sought any further comments, suggestions and recommendations which the participants wished to make after evaluating the application. All eleven employees responded to this question with the following comments in *Table 8.5*:

Evaluator	Comments
1	<i>"System appears user friendly. I suggest suitable training to aid use of the system. Can system have search engine to aid research?"</i>
2	<i>"Have an automatic spell check and grammar check available while typing. An edit facility – a capability of editing the entry prior to posting it to the database"</i>
3	<i>"That training is provided to those who have difficulties using it"</i>
4	<i>"Can you change your entry or add something to it at later time? Should should save without pressing create, may not always be saved if this needs to be clicked"</i>
5	<i>"How large a system would it need to be to contain daily reports as well as all extra client information that is needed on a shift to shift basis? Given that the most important and vast majority of care staff work is done outside the office and on the floor of the unit, is computer data entry, one user at a time, one client at a time not going to take staff resources away from where it is needed mostly, eg; when a boy is on separation and a daily log is being update, perhaps in depth, potentially every 5-10 minutes, this may tie up staff. Again, for example, if a daily report needs to be updated with a log entry, problem-solving session or eventful day, the limited user access could slow down the administration role of the job "</i>
6	<i>"No problems or comments. Excellent Program"</i>
7	<i>"Some kind of spell check as there is no way of correcting mistakes after entry has been created. I like it , good work. Should be used for all paper work. Some form of highlighting for certain words used"</i>
8	<i>"Easy to use. User friendly. With computer text you can read it. Could you have in a margin beside text, any repetitive behaviour over days and weeks be highlighted as staff would use similar jargon, eg; poor verbals/language, restraints. This creates highlights of repetitive bad behaviour which can be brought to staff attention and can be used for Individual Care Management Plans (ICMPs)"</i>
9	<i>"Excellent idea. More professional system. Keep it simple, user friendly."</i>
10	<i>"For typos, have a word spelling check. General guide as to proper and professional language to use when entering data – especially for newer staff?"</i>
11	<i>"Is there another way of recording/authenticating who makes the log entry?"</i>

Table 8.5 – Comments, suggestions and recommendations

Yet again, the responses were plenty with many comments made.

8.9 Observations On The Feedback

As mentioned before, all participants in the survey will be asked to evaluate the web-based application. As mentioned before, *Table 7.B.1* identified 4 categories of opinion regarding the use of technology and are shown as follows:

Category	Description	Percentage Breakdown
A	Respondents who believe there will be benefits and problems	52%
B	Respondents who believe there will be benefits and no problems.	38%
C	Respondents who believe there will be no benefits and no problems.	8%
D	Respondents who believe there will be no benefits and lots of problems.	2%

Table 7.B.1 – Joint benefits and problems with use of technology in workplace

Each of the eleven evaluators of evaluated the web application belongs to only one these categories and can be seen in the following *Table 8.6*:

Category	Evaluator
A	1, 2, 3, 4, 7, 8, 10, 11
B	6, 9
C	
D	5

Table 8.6 – Relationship between category and evaluator

Interestingly enough, each of the evaluators who belong to category A confirmed their views which they have with the introduction of computers in the OBS organisation. Similarly, with sole evaluator in category D, had no problems expressing his/her views with the introduction of computers in the OBS organisation, but the views expressed were by no means against the idea of using computers but administrative and logistical problems with their use. Interestingly enough, those evaluators in category B, who indicated that their wouldn't be any problems with the use of computers in the OBS

organisation, on evaluating the application were eager to indicate minor problems and recommendations which they didn't do in the questionnaire.

8.10 Conclusions

This chapter presented the description of an experiment, chosen because of a number of driving factors, one of which is based on the results of the knowledge audit; designed with the use of leading edge technology tools; and evaluated by the staff in OBS and is still currently ongoing at the time of writing this report.

The feedback received from the evaluation of the web-based application proved to be a very constructive. Many of the response were very insightful and forums of discussion should be encouraged to assess what would be an acceptable application for all to use. Needless to say, as more employees evaluate the product, it hoped that some more considerations would be factored into the equation.

The web-based application is currently at phase one of development through the use of agile software methodologies it may be possible to re-iteratively develop the application to a point where all would be happy with its functioning.

Furthermore, it is also possible to address the technical learning curve which this experiment presented.

It would appear at this time that the experiment has produced some successful conclusions.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Introduction

The following chapter of this dissertation presents some conclusions and recommendations from performing this research project. The aim of this research was to cultivate a knowledge management initiative in a juvenile detention school by performing two tasks: firstly, to conduct a knowledge audit, which is widely recognised as a prerequisite to implementing any knowledge management programme in an organisation; and secondly, by using the findings of the knowledge audit and the literary research, create an experiment for evaluation by the staff of the organisation. By performing both of these tasks it was hoped to gauge if the organisation was receptive to the concept of knowledge management and the benefits it has to offer. This chapter presents a summary of the dissertation in terms of the initial aims and objectives, and what was achieved. In addition, this chapter discusses what the contribution to the body of knowledge was and what the potential areas for future research are.

9.2 Research Definition and Research Overview

The recognition of the knowledge society by the Irish Government is evident in its policy making and its commitment to the eEurope initiative. Consequently, more and more government departments and public sector organisations are required to comply with the objectives of these policies. One emergent trend of the knowledge society and subsequent presence in government policy is knowledge management; and many organisations are recognising the many benefits it has to offer. However, the implementations can be difficult. Though, embraced by private sector organisations long before their public sector counterparts, it would appear that this situation is changing.

This research project is set against this backdrop of change. It addresses the possibility of implementing a knowledge management programme in one public sector organisation, which, as it happens, has a key role in the Irish juvenile justice system. Hence, this research project is written with a reader in mind; someone who may be

involved in the Irish juvenile justice system; someone who may never have given any thought to the subject of knowledge; someone who may never have given any thought to possibility of how to manage knowledge; and finally, someone who many never realised the benefits which may gained through the management of knowledge.

The research for this dissertation was broken into two parts; a primary part and a secondary part. The primary research consists of two sections covered in two chapters and the secondary research consists of two sections covered in five chapters. The conclusions to this research is covered in the following two sections.

9.3 *Secondary Research*

The secondary research consists of five chapters. The first four chapters, chapters two, three, four and five, address the subject of knowledge and its impact on society and organisations. The fifth chapter, chapter six, addresses the subject of juvenile detention in Ireland.

9.3.1 *Chapter Two*

Chapter two reviewed the subject of knowledge and the following key points identified:

- In order to get an idea of what knowledge is, it was distinguished from data and information.
- Within specific areas of endeavour, knowledge was defined as justified beliefs about relationships among concepts in that area.
- Different perspectives of knowledge were presented which considered knowledge as a state of mind, as a practice, as an object, as an access to information and as a capability.
- Some classification of knowledge were presented highlighting their differences; between procedural and declarative, between tacit and explicit, between general and specific. In the case of tacit and explicit knowledge, the spiral of knowledge was highlighted and explained.
- Finally, a description of the possible locations of knowledge was presented.

9.3.2 Chapter Three

Chapter three reviewed the subject of knowledge management and the following key points identified:

- KM has always existed, even if it has only existed as a formal concept since the middle of the last century.
- KM is not easy to define. Many of the definitions and literary sources were unable to present a clear consensus on the subject. It has been suggested that definitions and descriptions of KM are largely context dependent. Thus, it would appear that there is no one KM solution which can be applied to all organisations.
- Due to the lack of consensus, KM has been exposed to criticism and some critics have suggested that it nothing more than the relabelling of older reinstated management tools.
- What appears to be certain is that KM is about managing the information and knowledge in order to benefit from finding and applying innovative answers to old and new questions.
- Implementing a KM programme could be described as a balancing act. For every factor which exists to drive KM, there exists a number of barriers which prevents its progress.
- KM is a change programme. It commonly will come into close contact with the organisational culture which tends to be resistant to change.
- KM processes were identified. But not unlike KM itself, many authors seem to have their particular favourite lists of basic KM process elements which constitute a KM programme. These were briefly covered and compared. Ultimately, the processes are not the chief concern but a clear understanding of what a KM system ultimately aims to achieve.
- A KM model was suggested outlining its key fundamental building blocks.
- “The Four Pillars” were outlined, recognised widely as critical factors for the success of a KM programme.

9.3.3 Chapter Four

Chapter four reviewed the subject of the knowledge society and the following key points identified:

- A description of the meaning of the “knowledge society” by providing:
 - a historical background,
 - outlining some key conceptualisations to describe it, and
 - identifying some of the emerging trends which it has produced, such as:
 - Information Societies
 - Innovation – technological and non-technological
 - Service Economies
 - Globalisation
 - Demography
 - Knowledge Management
- In generic terms, how government has responded to the knowledge society. How government has adopted the term or concept to develop policies. How government accepts the significant role which knowledge has in the shaping of our modern society, given the recognition it has as an important asset. The purpose of government is the improvement of the general welfare or well-being of the community as a whole and if the role of knowledge helps with fulfilling this objective it should be embraced.
- Examples of government initiatives were highlighted:
 - European Community response to the knowledge society. The introduction of the eEurope initiative in 2000 with a view to embracing the importance of knowledge as an asset. It is a political initiative to ensure the European Community fully benefits from the changes the Information Society is bringing where sharing knowledge will create wealth and enrich the lives of every European citizen. Needless to say the management of this transformation represents a central economic and social challenge for the Community.
 - Ireland, as a member of the European Community, is committed to the eEurope initiative and has made its own proposals to embrace the

importance of knowledge as an asset and the creation of the knowledge society.

- The role of organisations in the modern society. Organisations exist to provide employment, and to provide goods and services for consumption. A description of private sector organisations and public sector organisations, citing the differences in make-up and objectives of each, were outlined. It is these objectives which have dictated how knowledge and its management has been addressed.

9.3.4 Chapter Five

Chapter five reviewed the subject of the knowledge management strategies and the following key points identified:

- With any project or endeavour, especially a KM one, there is a need to create a plan or develop a strategy.
- No two KM programmes are the same due to fact that knowledge is used in many different contexts and that so many organisations function differently.
- A number of strategies were outlined to the reader to reflect the diversity of KM programmes which have been implemented.
- The importance of the knowledge audit. The knowledge audit appears at some stage in all of the identified KM strategies during the research. which would suggest its importance and relevance.
- Some other considerations were outlined, in particular, “The Four Pillars”
- As the purpose of the research project is the cultivation of KM in a public sector organisation, the use of a knowledge audit would seem to be appropriate.

9.3.5 Chapter Six

Chapter six reviewed the subject of the Irish juvenile justice and the following key points identified:

- The role of the newly formed government department called the Irish Youth Justice Service and its responsibilities.

- The role and position of Oberstown Boys School in the juvenile justice system.
- The impact of new legislation on the Irish juvenile system and subsequent implications for Oberstown Boys School. The key point is here is the push to develop and strengthen data and information sources.
- The possible locations of knowledge in Oberstown Boys School were highlighted.
- The chapter concluded with some observations regarding the future development of the detention schools and a number of KM considerations were outlined.

9.4 Primary Research

The primary research consists of two chapters. The first chapter, chapter seven, covers the knowledge audit conducted in Oberstown Boys School and the second chapter, chapter eight, covers the experiment conducted in Oberstown Boys School.

9.4.1 Chapter Seven

Chapter seven described the use of the knowledge audit in Oberstown Boys School. This involved a description of the knowledge audit survey questionnaire, the deployment of the questionnaire to all of the staff members, the collection of the completed questionnaires, the analysis of the results and a report of the findings. Some of the key points identified from this knowledge audit exercise were:

- It represents a useful starting point for implementing KM and should be considered to be an initial formal documented assessment of the current knowledge base of OBS.
- It proved to be a very worthwhile exercise.
- The results are extensive due to the high level of unexpected participation.
- It does require more in-depth analysis and it is certain that this analysis will surely raise more questions. The possibility of drilling deeper into some of the areas which the audit touched on, and also the areas which were not addressed, could prove to be the focus of future research.
- The primary focus of the audit raised some of the following key points:

- It identified some of the sources of knowledge in the organisation, even if most of the focus was on the sources of explicit knowledge than the tacit ones.
- It identified the current means to store, access, use and share knowledge which the employees need to do their jobs – all of which is performed by means of handwriting, which presents its own problems.
- It identified how employees viewed the use of technology and if it could be a benefit OBS. Needless to say, the audit showed that the idea of technology is not without its own set of problems.
- It helped to identify skills, which are not used, in OBS. This proved to be the case with the high percentage of IT usage by OBS, if only in the home environment.
- It identified the way in which people tend to play down the skills they possess. This possibly contributed to the tendency for the audit to steer away from assessing the tacit knowledge in OBS.
- It identified some of the barriers which exist in the organisation to the use and transfer of knowledge, such as access to archived records; again quoting the use of technology as a means to overcome some of these barriers.

9.4.2 Chapter Eight

Chapter eight described a small experiment, with the use of web-based application software, which was conducted in Oberstown Boys School. Justifying the experiment was based on a number of factors namely: the IYJS and its focus on strengthening and developing information and data sources in the future; government policy, in particular, the Towards 2016 Agreement which highlights the need to modernise but also the fact that the knowledge society is endorsed in the agreement; by accepting “The Four Pillars” as a guide, IT would have to be a factor; and finally, the results of the knowledge audit which indicated a favourable response to the use of IT.

A description of web-based technologies were reviewed. This review formed the basis of justifying its usage to create the experiment. Conducting the experiment involved

members of staff engaging the web-based application on a laptop. The application was evaluated by the staff and their thoughts were captured on a feedback form.

The feedback received from the evaluation of the web-based application proved to be a very constructive and many of the responses were very insightful. Thus forums of discussion should be encouraged to assess what would be an acceptable application for all to use. Needless to say, as more employees evaluate the product, it hoped that some more considerations would be factored into the equation.

The web-based application is currently at phase one of development through the use of agile software methodologies it may be possible to re-iteratively develop the application to a point where all would be happy with its functioning.

It would appear at this time that the experiment has produced some successful conclusions, more importantly, employees in Oberstown Boys School are quite willing to embrace the use of technology to assist them in their work.

9.5 Recommendations

There are a number of areas highlighted by this research project which would warrant future research. These areas are as follows:

- Presentation of the current findings of this research to the management of Oberstown Boys School and ultimately to the Irish Youth Justice Service. Highlighting the benefits of KM to management can be addressed by showing that it enables organisations to be effective and efficient.
- Identify the future plans for information and communication technologies, which the Irish Youth Justice Service hopes to adopt given that it aims to improve its data and informations sources to drive decision making and policy making. By doing this, a better knowledge management strategy could be devised and it would become an objective to establish how knowledge

management may be embedded within this information and communication technology infrastructure.

- Highlight the concerns which exist with the current methods of storing paper records in Oberstown Boys School. This work also requires the need to identify the best possible solution to address this concern.
- The research in this report gravitated towards the management of explicit knowledge more so than the management of tacit knowledge. Exploring the tacit knowledge in Oberstown Boys School warrants further research. This would involve going back to the knowledge audit and identifying the areas which would better assist in this work.
- To continue with the analysis of the data obtained from of the knowledge audit. The analysis raised more questions which warrant more research work. In addition, importing the data into some better statistical tool than the spreadsheet which was used for this research, should be done. Further analysis of the data made produce other findings and it may be easier to link these findings with future research findings.
- Continued work on the web-based application with on-going evaluations, development and awareness.
- The literary review failed to identify any knowledge management initiatives in other places of detention. However, other areas of operation, which are people focussed, and have utilised knowledge management need to be reviewed. In this way some of the best practices may be identified for use.
- To identify other public sector organisations which use knowledge management in the spirit of collaboration, and to learn how they introduced a knowledge management programme.
- Finally, recommendations for future work could address some of the following:

- Training of staff in relation to knowledge management practices and applications. Consequently, this would involve IT training.
- The inclusion of knowledge management in performance reviews. The application of this recommendation with the service suggests that knowledge sharing might be incorporated as an additional core competency within Performance Management and Development Strategy (PMDS).
- Management need to be asked at their appraisals what they are doing to support knowledge management activities in their areas.
- The development of incentives and rewards mechanisms to support KM initiatives.

9.6 Conclusion

This research project has been a worthwhile endeavour. The findings summarised in this chapter have shown that the surface has only been scratched if only to provide a small understanding of knowledge management, why it matters, and how it could be developed in a public sector organisation such as Oberstown Boys School.

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APPENDIX A - THE KNOWLEDGE AUDIT QUESTIONNAIRE

Section A - Demographic Data

1. Name (*optional*):

2. Job position:

3. Department/Unit:

4. Age - Please tick the appropriate box:

Between 21-30 years	<input type="checkbox"/>
Between 31-40 years	<input type="checkbox"/>
Between 41-50 years	<input type="checkbox"/>
Between 51-60 years	<input type="checkbox"/>
Between 61-65 years	<input type="checkbox"/>
Over 65 years	<input type="checkbox"/>

5. Gender - (Please tick the appropriate box): Female Male

6. Number of years and months working for the current enterprise/organization:

7. Total number of years and months working for current and previous organisations:

Section A - Demographic Data

8. Please mark "X" in the appropriate box which rates your working experience in the following topics/process?

Organisation processes are listed in the 2nd column. The level of analysis depends on how well you are aware of these processes. If there are any processes omitted, please do not hesitate to add them to the listing.

ID	Organisation Process	Very Poor	Poor	Average	Strong	Very strong
1	Care Planning					
2	Reporting					
3	Co-ordinating					
4	Health and Safety					
5	Finance					
6	Sales					
7	Purchasing					
8	Case Conferencing					
9	Conflict Resolution (problem solving)					
10	Inter-agency Dealings					
11						
12						
13						
14						
15						

Section B - Basic Knowledge Profile

1. Level of Education:

Level of Academic Education	Yes/No	Details of discipline and award
Leaving Certificate		n/a
Certificate		
Diploma		
Post-Graduate		
Degree		
Masters		
Ph.D		

Level of Professional Accreditation	Details of discipline and award

Other Certified Skills/Training	Details of discipline and award

Section B - Basic Knowledge Profile

2. Language Skills:

Competence in foreign languages should be listed including all elements like written, oral and spoken skills per language. Foreign knowledge skills are considered a strategic knowledge issue to reflect the nationality of clients. The English language is provided as the standard and other languages should be included, where appropriate.

Language	Written			Oral		
	Good	Very Good	Excellent	Good	Very Good	Excellent
English						

3. Level of IT skills:

Basic IT skills are important knowledge elements for most or all organisations in the Knowledge Society.

Please tick the appropriate Yes or No box for each of the following questions		Yes	No
1	Is there a computer in your home?		
2	Do you use the computer in your home?		
3	Have you ever used the internet to search for information, book tickets or flights, order books, perform banking		
4	Do you use e-mail?		
5	Do you use social networking sites at home?		
6	Have you ever written a letter on a computer?		
7	Do you currently use a computer in your workplace?		
8	Have you ever used a computer in the workplace?		
9	Do you use the internet in the workplace?		

Please tick the appropriate box	Dial-up	Broadband	Cable	Wireless
What type of Internet Connection do you have at home?				

Section B - Basic Knowledge Profile

Please rate your computer skills by marking "X" in the appropriate boxes for the following		Poor		Average		Competent User
1	Basic Computer Skills					
2	Word					
3	Excel					
4	Internet Search					
5	Email					
6	Email Attachments					
7	Powerpoint					
8						
9						
10						

4. Please mark "X" in the appropriate boxes which rates the importance of your knowledge, professional experience and personal business networking:

Theoretical Knowledge		Not at all		Average		Very Much
1	To what extent is your knowledge (education, academic or professional training) useful at work?					
2	To what extent do you believe your knowledge (education, academic or professional training) would be useful for the work of other colleagues?					

Professional Experience		Not at all		Average		Very Much
1	To what extent is your professional experience useful at work today?					
2	To what extent do you believe that other colleagues at work could benefit from your professional experience?					

Section B - Basic Knowledge Profile

Personal Professional Contacts		Not at all		Average		Very Much
1	To what extent are your personal contacts (i.e. Colleagues in other agencies) useful to you at work?					
2	To what extent do you believe your personal contacts (i.e. Colleagues in other agencies) would be useful to your work colleagues?					

Personal Experience		Not at all		Average		Very Much
1	To what extent is your personal experience useful at work today?					
2	To what extent do you believe that other colleagues at work could benefit from your personal experience?					

5. Please mark "X" in the appropriate boxes which indicates the awareness amongst colleagues of your knowledge:

Questions	Not at all		Somewh at		Very Much
1 To what extent are your colleagues aware of your knowledge (educational achievements)?					
2 To what extent are your colleagues aware of your entire professional experience?					
3 To what extent are your colleagues aware of your personal business contacts?					
4 To what extent are your colleagues aware of your personal experience?					

6. Do you want your colleagues to know more about your knowledge?	Yes	No
---	-----	----

Section B - Basic Knowledge Profile

7. Please mark "X" in the appropriate boxes which indicates your awareness of the knowledge of your colleagues:

Questions		Not at all		Somewh at		Very Much
1	To what extent are you aware of the knowledge (educational achievements) of your colleagues?					
2	To what extent are you aware of the entire professional experience of your colleagues?					
3	To what extent are you aware of the personal business contacts of your colleagues?					
4	To what extent are you aware of the personal experience of your colleagues?					

8. Do you want to know more about your colleagues knowledge?	Yes	No
--	-----	----

9. Skills and Abilities:

The following question aims to investigate personnel opinion on where they need to improve their skills so as to be better able to do their work.

Please list the skills and abilities, in order of importance, which you would like to improve to meet the demands of your job.	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Section C - Work Analysis in a Knowledge Context

The aim of the following question is to record the average time spent by all staff in **all possible employee actions**. If there are activities not listed which you believe should be included please list them in the spaces provided, in the 2nd column.

1. Try to allocate your work time for a typical working shift (8 hours)		Time percentage
1	I search for information on the internet	%
2	I read and reply to e-mails	%
3	I process electronic files (reading, writing, etc)	%
4	I read printed documents (books, manuals, policies and procedures)	%
5	I read/write client care plans	%
6	I read the master files for the clients	%
7	I read/write the Daily Logbook	%
8	I read/write incident reports (absconds, restraints, assaults, etc)	%
9	I spend time interacting with the clients	%
10	House-keeping chores	%
11	Conflict resolution	%
12	Meetings (Unit, Management, other)	%
13	Inter-agency dealings	%
14	Case Conferencing	%
15		%
16		%
17		%
18		%
19		%
20		%
Total must be 100%		100%

Section C - Work Analysis in a Knowledge Context

Please mark "X" in the appropriate boxes which indicates how often you communicate with others. If there are departments not listed which you believe should be included please list them in the spaces provided, in the 2nd column.

2. How often do you communicate with the following?		Rarely	Some times	Usual y	Very Often	Always	For what reasons
1	Directors						
2	Unit Management Team						
3	Other Units						
4	Administration						
5	School						
6	Medical						
7	House- Keeping						
8	Chaplain						
9							
10							
11							
12							
13							
14							
15							

Section C - Work Analysis in a Knowledge Context

Please mark "X" in the appropriate boxes for the following questions:

3. How often do the following problems occur during YOUR daily work?		Rarely	Sometimes	Usually	Very Often	Always
1	You are not sure about WHAT you should do (e.g. When asked to deal with a client, you are not sure what steps to take or which strategy to use)					
2	You are not sure about HOW you should do something (e.g. Which is the best practice/method for the above activity)					
3	You are not sure about WHO to collaborate with or ask help from (e.g. Which colleague has the relevant experience to give you initial information and guidelines)					
4	You are not sure WHERE to find relevant information (e.g. Quality manuals, web site or other expert knowledge external to the organisation)					

Section D - Knowledge and Information Sources

The following 4 questions aim to ascertain where data and information is recorded and how it is recorded in the organisation

1. By what means do you currently record data and information which relates to the work you do in your organisation?	Computer Input	Handwriting
Please tick the appropriate box		

2. Please list, in the following spaces, the places (computers, journals, log books) where you record the data and information which relates to the work you do in your organisation	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Section D - Knowledge and Information Sources

3. Please list, in the following spaces, the problems which you see with the way you record the data and information; and where you record this data and information

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

4. Please list, in the following spaces, the benefits which you see with the way you record the data and information; and where you record this data and information

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Section D - Knowledge and Information Sources

The following 7 questions aim to ascertain how data and information are archived, why it is done and if it is utilised effectively

5. Please list, in the following spaces, how data and information is archived in your organisation?	
1	
2	
3	
4	
5	

6. Please list, in the following spaces, any problems you see with the way the archive process is conducted in your organisation.	
1	
2	
3	
4	
5	

7. Please list, in the following spaces, any benefits you see with the way the archive process is conducted in your organisation.	
1	
2	
3	
4	
5	

Section D - Knowledge and Information Sources

8. Please list, in the following spaces, any reasons why this archived data and information may need to be accessed and reviewed.

1	
2	
3	
4	
5	

9. Have you ever needed to access the archived data and information?

Yes

No

Please tick the appropriate box

10. If you did need to access the archived data and information, how would you go about doing so?

--

11. Please list, in the following spaces, any benefits you can see with having easier access to this archived data and information?

1	
2	
3	
4	
5	

Section D - Knowledge and Information Sources

12. Please list, in the following spaces, any problems you can see with having easier access to this archived data and information?

1	
2	
3	
4	
5	

These questions aim to rank the usefulness of all possible explicit knowledge resources used in the organisation. Please include knowledge resources, not listed, which you would consider to be important in the spaces provided. Please mark "X" in the appropriate boxes:

13. To what extent are the following knowledge resources used in your place of work?	Not Used		Some-what Used		Always Used	Please comment on its usefulness, where applicable
1 Printed documents (books, manuals, Policies and Procedures)						
2 Electronic files on a computer						
3 Other colleagues' electronic files						
4 Organisation internal files						
5 Organisation Care Plans						
6 Organisation Daily Logbooks						
7 Client Master Files						
8 Case Conference Reports						
9 School Reports						
10 Internet electronic files						
11 Medical Files and Reports						
12						
13						
14						
15						

Section D - Knowledge and Information Sources

The following 2 questions aim to rank the frequency & usefulness of all possible interactions among staff during work. Please include any interactions, not listed, which you would consider to be important in the spaces provided. **Please mark "X" in the appropriate boxes:**

14. How often do you participate in the following at work?		Rarely	Sometimes	Usually	Very Often	Always
1	Internal, formal and planned meetings (with colleagues)					
2	Internal, informal meetings (coffee & lunch breaks, 10 minutes discussions, etc)					
3	External personal contacts (friends, etc.)					
4	External contacts (other agencies, professions, customer/partner visits, etc)					
5	Business events (exhibitions, info days, conferences, workshops, etc)					
6	Supervisions					
7	Appraisals					
8	Coaching					
9	Mentoring					
10	Training					
11						
12						
13						
14						
15						

Section D - Knowledge and Information Sources

Please mark "X" in the appropriate boxes:

15. To what extent are the following methods of communication beneficial to your organization whether you are involved or not?		Not Useful		Some-what Useful		Very Useful
1	Internal, formal and planned meetings (with colleagues)					
2	Internal, informal meetings (coffee & lunch breaks, 10 minutes discussions, etc)					
3	External personal contacts (friends, etc.)					
4	External contacts (other agencies, professions, customer/partner visits, etc)					
5	Business events (exhibitions, info days, conferences, workshops, etc)					
6	Supervisions					
7	Appraisals					
8	Coaching					
9	Mentoring					
10	Training					
11						
12						
13						
14						
15						

Section D - Knowledge and Information Sources

This following question aims to investigate staff preferences for **all possible** communication methods. Please include communication methods, not listed, which you would consider to be important in the spaces provided. Please mark "X" in the appropriate boxes:

16. In your day-to-day work, what is your preferred method of communication when trying to gain knowledge and information from other colleagues?		Rarely		Sometimes		Very Often
1	Orally, during meetings					
2	Orally, on the phone					
3	Orally during the course of work					
4	By using Daily Log Books					
5	By using Client Care Plans					
6	By using several organisation documents and files					
7	By using digital methods (e-mail, internet, etc.)					
8						
9						
10						
11						
12						
13						
14						
15						

Section E – Organisation Culture

The following 3 questions try to assess several cultural elements within the organisation under study.

Please mark "X" in the appropriate boxes:

1. In your opinion, to what extent do the following statements apply to your organization?		Not True		Some-what True		Very True
1	The importance of the human capital (i.e. the staff who work in the organisation) is recognized					
2	Staff are dedicated to the organization					
3	A philosophy of team-working and co-operation exists in the organization					
4	There are barriers and conflicts amongst the organization units and departments					
5	There is confidence / trust amongst staff					

2. To what extent do you agree with the following statements?		Do Not Agree		Agree Some what		Totally Agree
1	My personal aims and ambitions fit well with my current work situation					
2	I am satisfied with my job position in the organization					
3	I am suitably rewarded and acknowledged in my job					
4	I feel secure (long term job security) in the organization					
5	I am satisfied with the working environment					
6	I am satisfied with the relationship I have with my colleagues					
7	I would like to be involved with other organisational activities					

Section E – Organisation Culture

3. To what extent the following statements characterize you personally?		Do Not Agree		Agree Some what		Totally Agree
1	I am afraid to make a mistake or fail at my work					
2	I seek to improve my work methodologies / practices every day					
3	I consider sharing my knowledge with other colleagues as an advantage					
4	I have a personal desire to learn more and gain new knowledge					

The following question tries to investigate the current quality of spaces for meetings and time availability for meetings (informal and formal) amongst staff. Please mark "X" in the appropriate boxes:

4. To what extent do the following statements characterize your work environment?		Not True		Some-what True		Very True
1	There is sufficient infrastructure and good meeting spaces at work for formal or informal meetings					
2	There is time for open and random discussions (breaks, water cooler discussions, etc)					

Section F – Motives and Salaries

The following questions try to support remuneration / salary policy and to identify if financial or other types of motivation should be given to staff so as to improve knowledge sharing. Please mark "X" in the appropriate boxes:

1. In your opinion, which of the following factors should be taken into account in relation to salary levels and to what extent?		Not Important		Important		Very Important
1	Level of Experience (benefit of experience to other employees and organization)					
2	University degrees and qualifications					
3	Achievement of pre-specified targets					
4	Employee initiative					
5	Development or improvement of an employee's capabilities					
6	The organization's financial situation					
7	Level of salaries in the same sector					

Please mark "X" in the appropriate boxes:

2. What kind of knowledge sharing incentives would be suitable for the organization and to what extent?		Not Important		Important		Very Important
1	Financial incentives					
2	Other kind of incentives					

Section G – Knowledge Management in the Organisation

1. If you were in charge of exploiting your organization's data, information and knowledge, which of the following statements / actions would you pursue and to what extent? Please mark "X" in the appropriate boxes:

Communication		Not at all	A little	Extensivel y
1	I would improve the infrastructure supporting communication (meeting rooms, IT, etc.)			
2	I would improve the quality of communication (new ways of organizing meetings and new work flow of meetings, etc.)			
3	I would increase the frequency of organized communication (more frequent and planned meetings)			
4	I would support informal and relaxed meetings amongst the personnel			

Information Flow		Not at all	A little	Extensivel y
1	I would try to ensure that information flowed freely internally			
2	I would try to effectively target and direct the internal flow of information			
3	I would try to organise and classify information			
4	I would improve the information flow coming from external sources			

Electronic Files		Not at all	A little	Extensivel y
1	I would support access for all staff to electronic business files			
2	I would develop an information map which supports the searching and locating of appropriate knowledge, skills, experience which personnel have or in documents			

Change of Culture		Not at all	A little	Extensivel y
1	I would try to change personnel's attitudes in order to exploit organizational knowledge			
2	I would try to change top management's attitudes in order to exploit organizational knowledge			

Section G – Knowledge Management in the Organisation

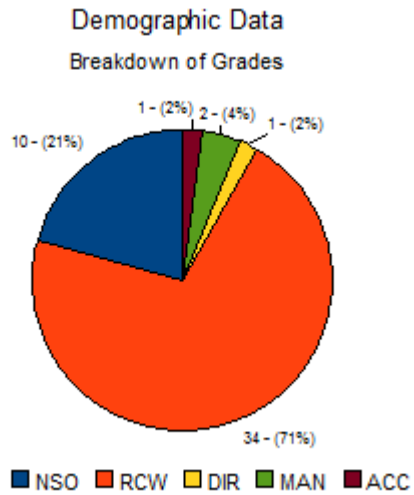
People		Not at all	A little	Extensivel y
1	I would improve internal training			
2	I would give emphasis to the transfer of experience from the most experienced staff to new staff via new methodologies			
3	I would put emphasis on the exploitation of knowledge external to the organization (external partners, external business contacts, professional agencies, etc.)			
4	I would motivate personnel to share knowledge			
5				

2. If there was a Knowledge Management policy in your organization, which of the following possible problems would occur and how often?		Rarely	Sometimes	Usually	Very Often	Always
1	Lack of time for the personnel to share their knowledge					
2	Lack of willingness amongst personnel to spread crucial information, knowledge (fear of decentralizing / giving away knowledge)					
3	Lack of willingness amongst personnel to change the way they work					
4	Lack of incentives given to employees by top management					
5	Lack of team-work and co-operative culture					
6	There are no objective and obvious reasons for knowledge sharing (what is the benefit of sharing knowledge?)					

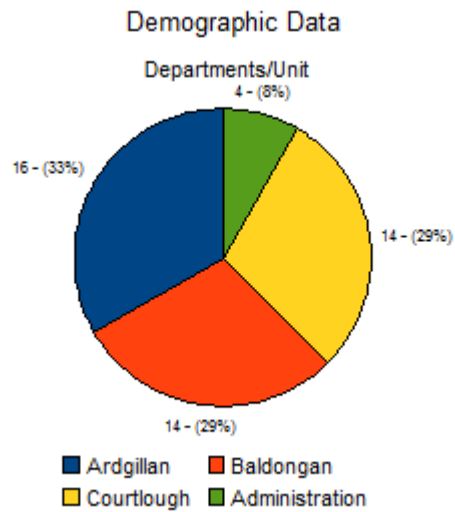
APPENDIX B - THE KNOWLEDGE AUDIT RESULTS

Section A - Demographic Data

Question 2

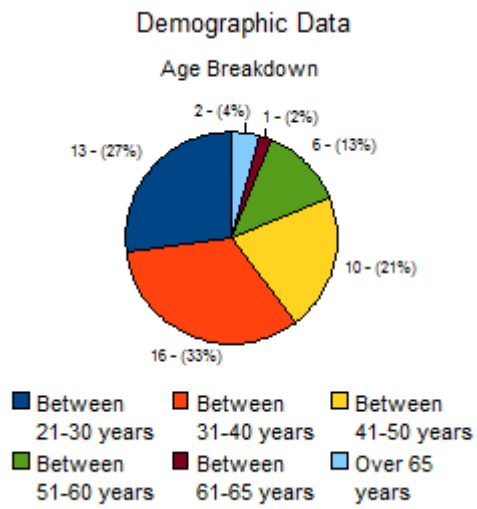


Question 3

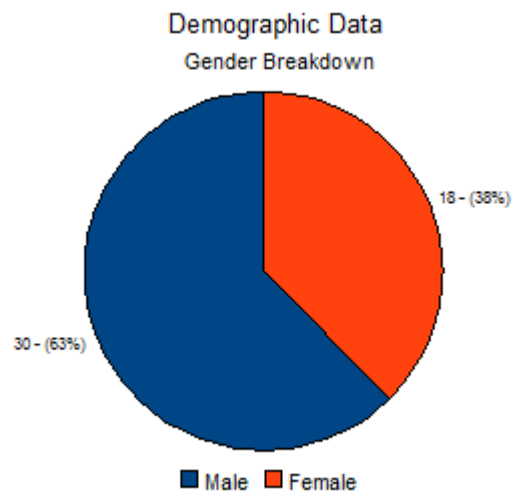


Section A - Demographic Data

Question 4

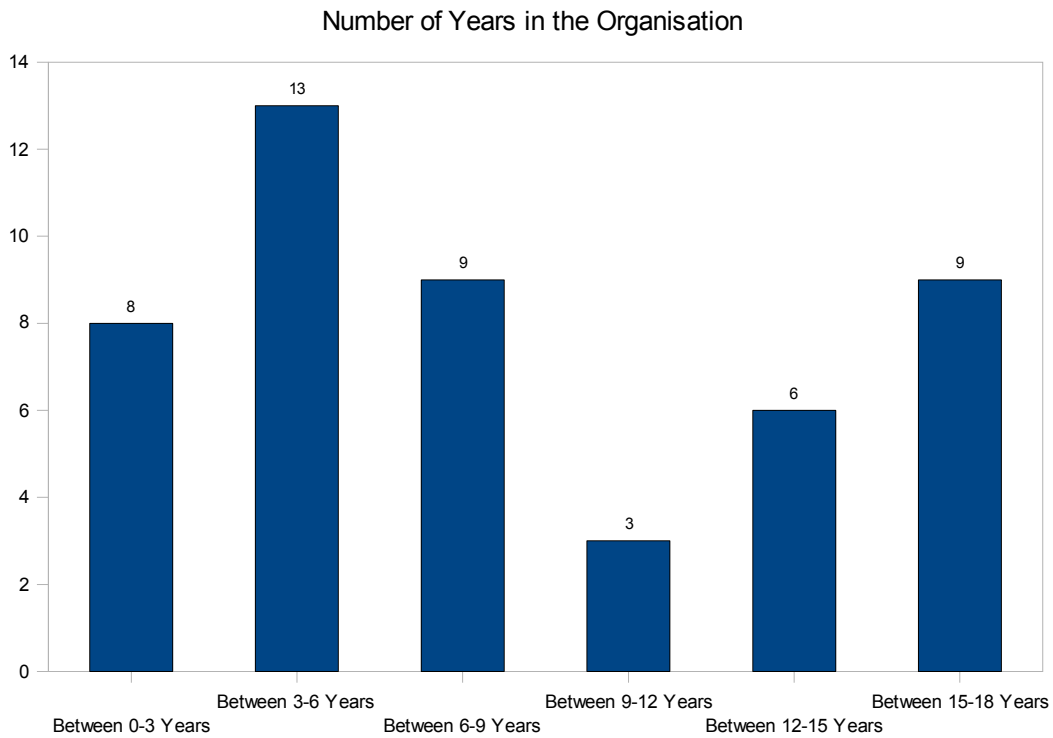


Question 5

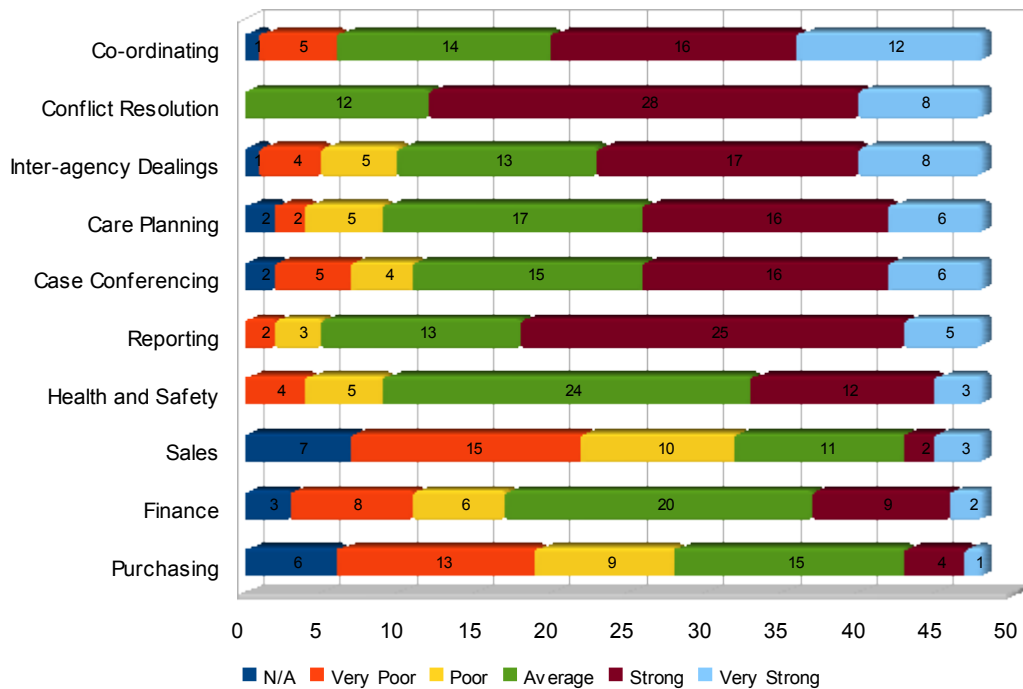


Section A - Demographic Data

Question 6

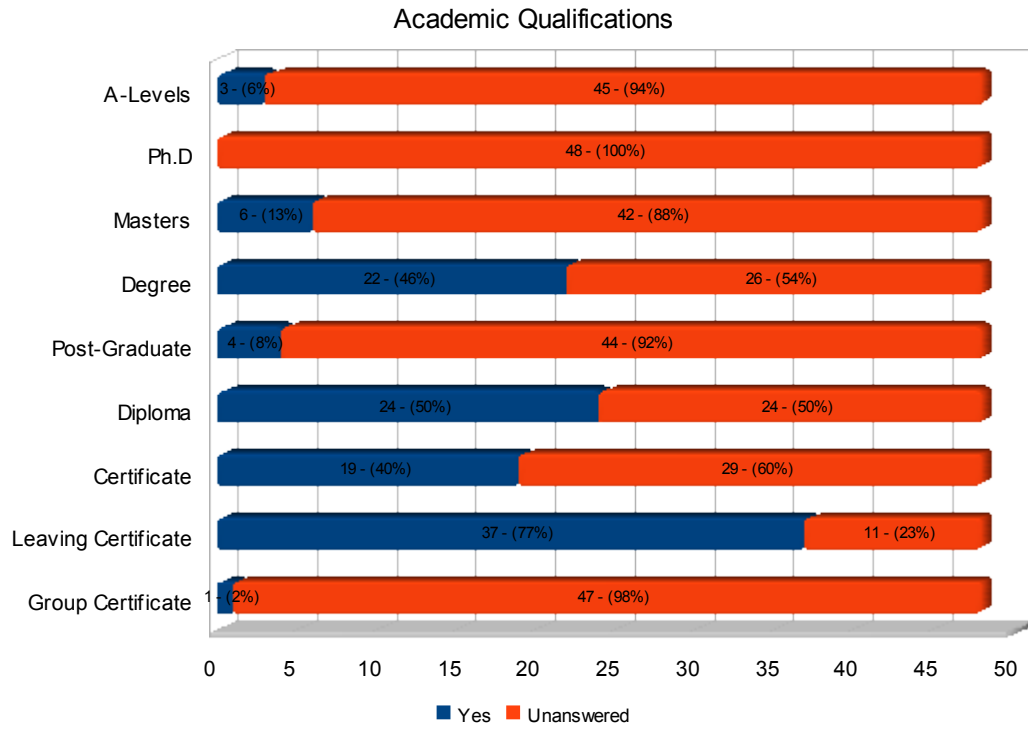


Question 8

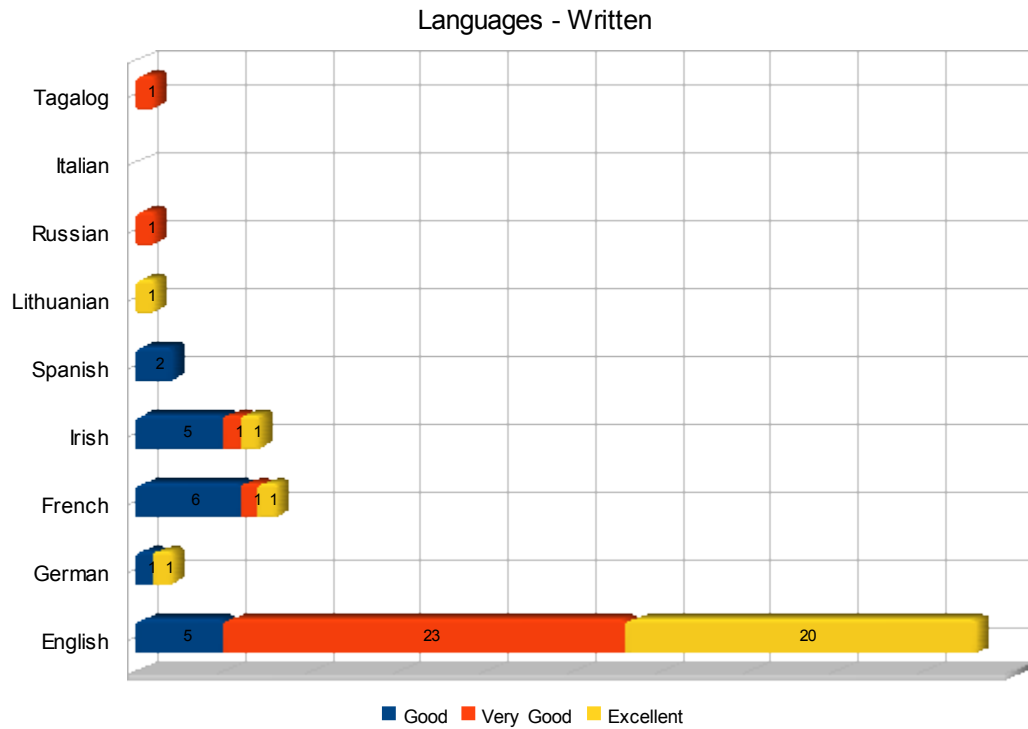


Section B - Basic Knowledge Profile

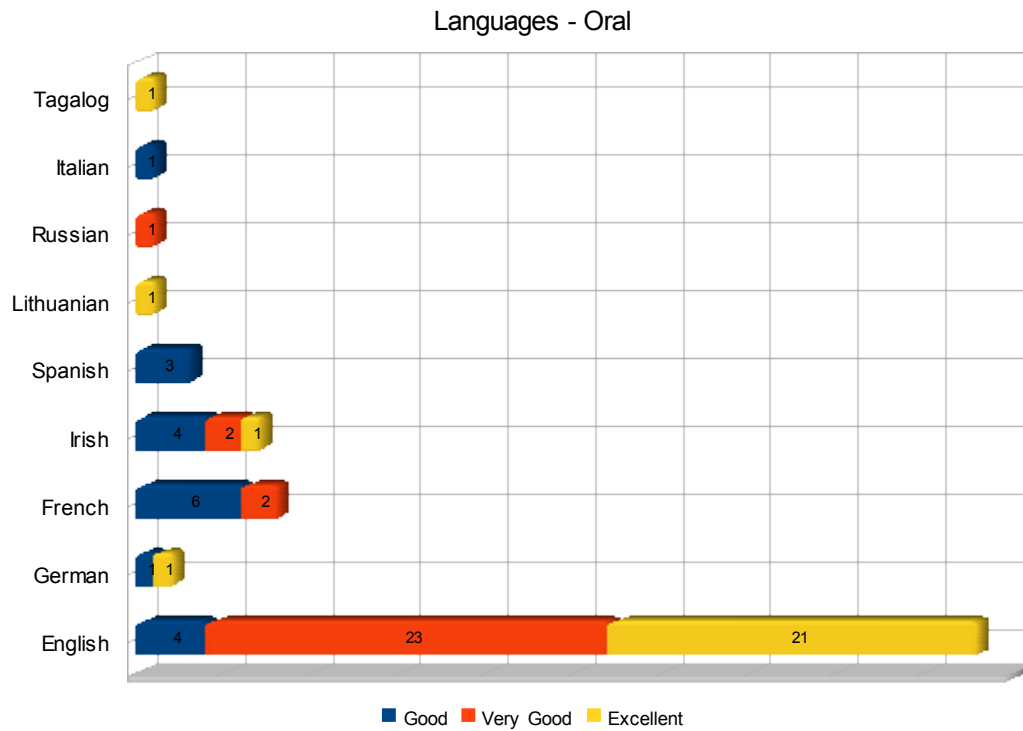
Question 1



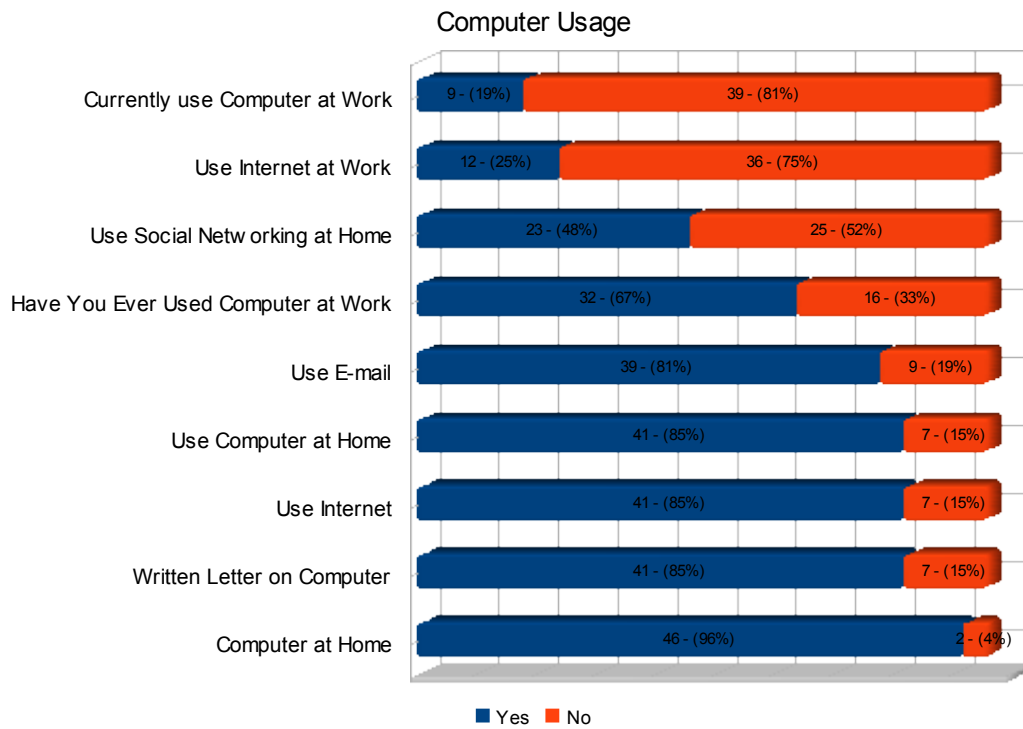
Question 2



Section B - Basic Knowledge Profile

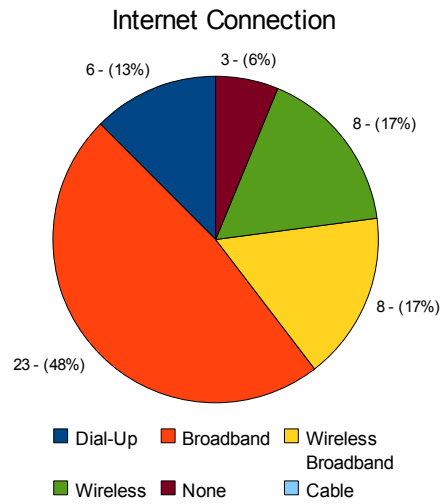


Question 3 – Computer Usage



Section B - Basic Knowledge Profile

Question 3 – Internet Connection

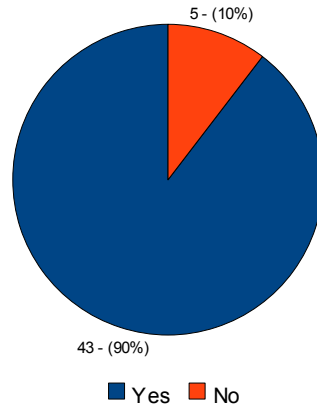


Section B - Basic Knowledge Profile

Question 3 – Benefits

Use of Technology in Workplace

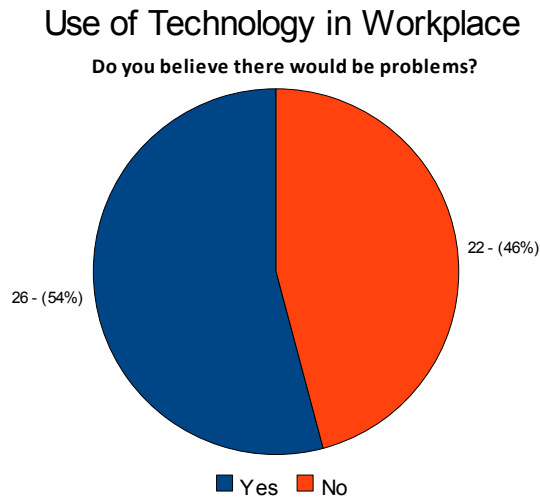
Do you believe there would be benefits?



Category	Total Hits
Access	20
Audit	2
Communication	12
Database	4
Duplication	4
Education	1
Efficiency	14
Information Management	10
Information Sharing	12
Legibility	4
Medical	1
Modernisation	3
Organisation	7
Paper Work	4
Recording	10
Report	8
Research	6
Review	1
Security	4
Sourcing	2
Storage	10
User Friendly	1

Section B - Basic Knowledge Profile

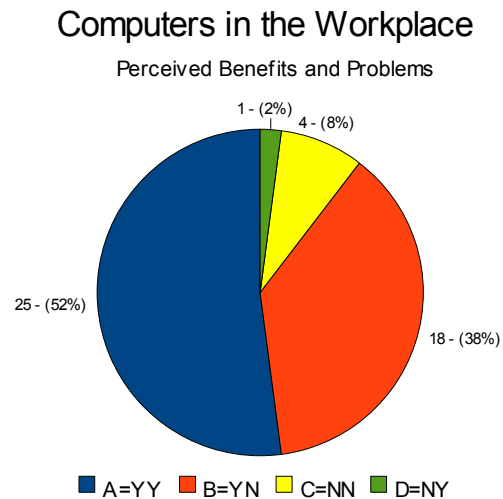
Question 3 – Problems



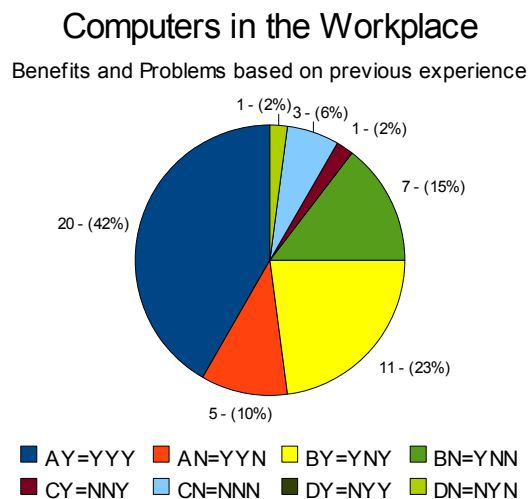
Category	Total Hits
Availability	1
Computer Illiteracy	6
Confidentiality	7
Distraction	1
Efficiency	1
Fear of Technology	1
Legal	1
Location	1
Outages	2
Privacy	1
Scope	1
Security	11
Technical Support	3
Technology Problems	1
Training	7
Trust	1

Section B - Basic Knowledge Profile

Question 3 – Further Analysis of Problems and Benefits, as perceived by the respondents

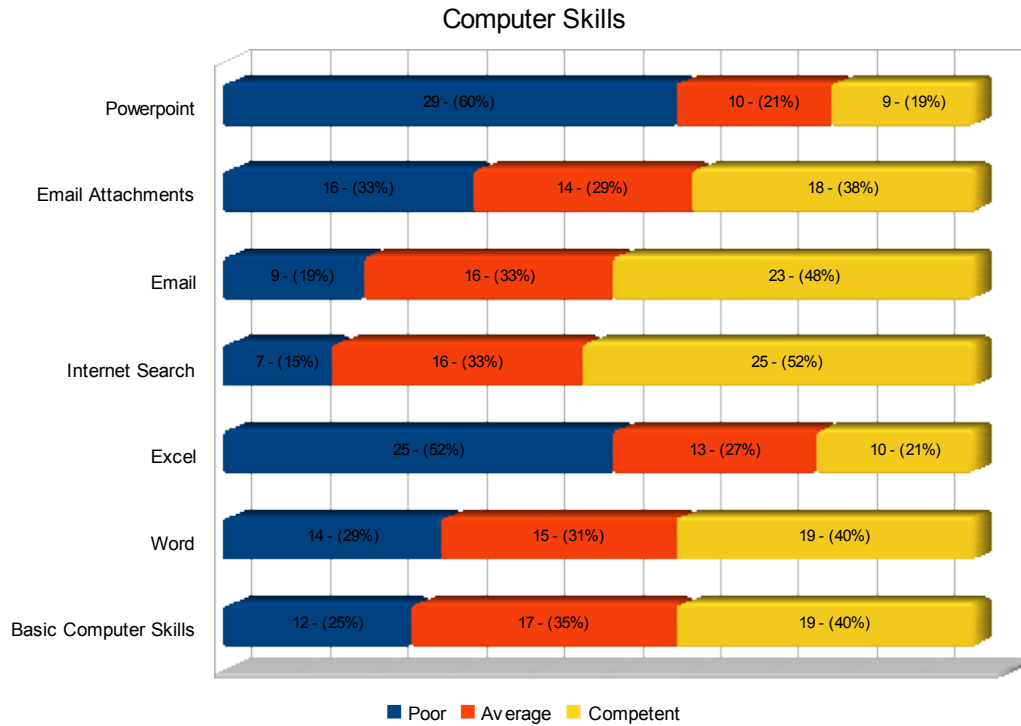


Question 3 – Further Analysis of Problems and Benefits, based on previous experience



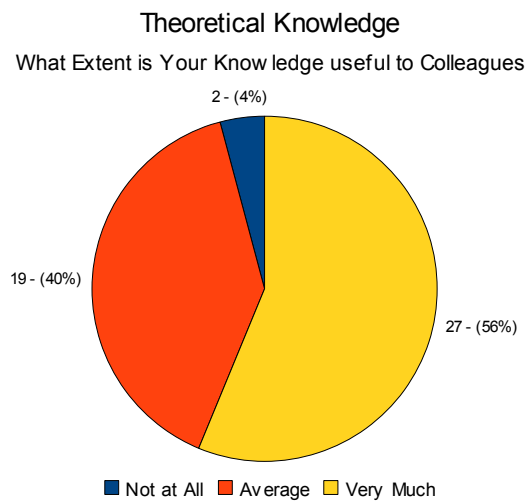
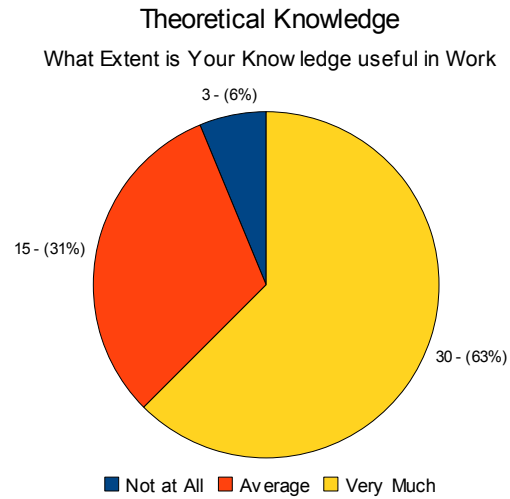
Section B - Basic Knowledge Profile

Question 3 – Computer Skills



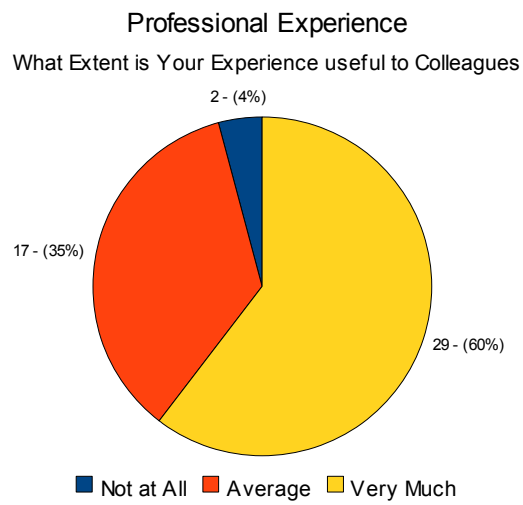
Section B - Basic Knowledge Profile

Question 4



Section B - Basic Knowledge Profile

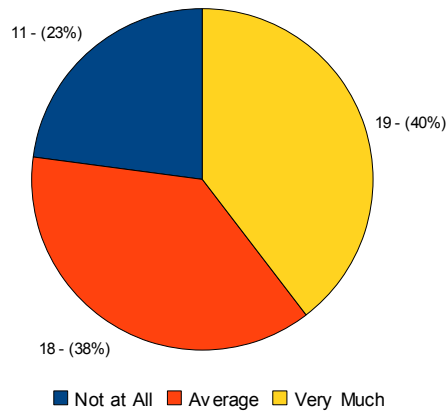
Question 4



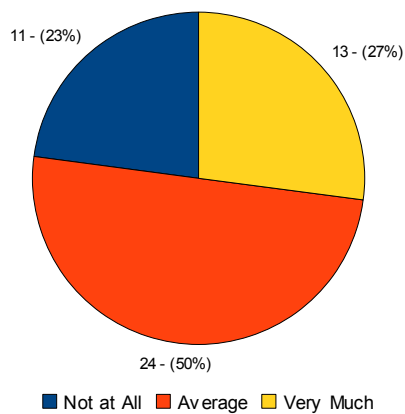
Section B - Basic Knowledge Profile

Question 4

Personal Professional Contacts
What Extent are Your Contacts useful in Work



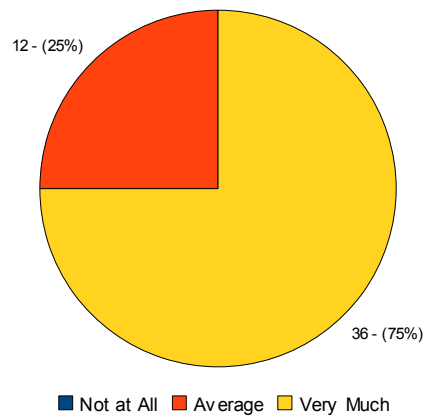
Personal Professional Contacts
What Extent are Your Contacts useful to Colleagues



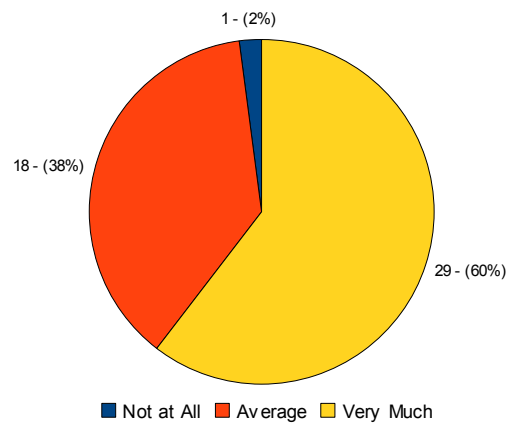
Section B - Basic Knowledge Profile

Question 4

Personal Experience
What Extent is Your Personal Experience useful in Work



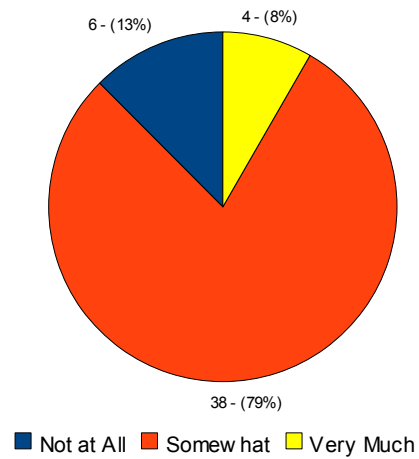
Personal Experience
What Extent is Your Personal Experience useful to Colleagues



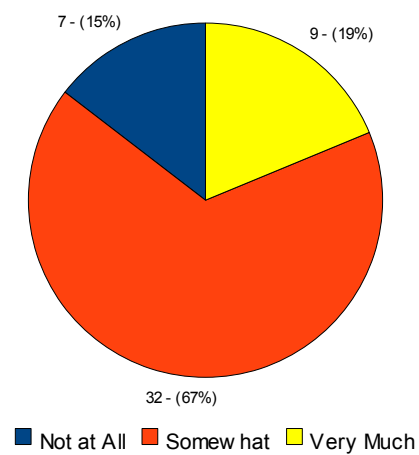
Section B - Basic Knowledge Profile

Question 5

Colleagues Aware of Your Academic Knowledge



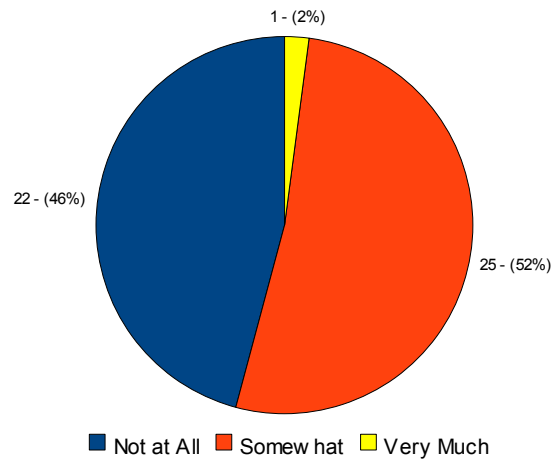
Colleagues Aware of Your Professional Experience



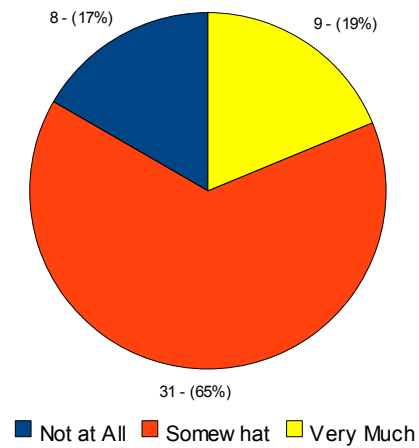
Section B - Basic Knowledge Profile

Question 5

Colleagues Aware of Your Business Contacts



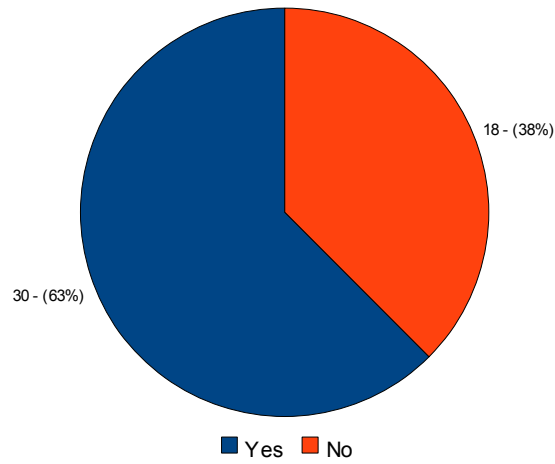
Colleagues Aware of Your Personal Experience



Section B - Basic Knowledge Profile

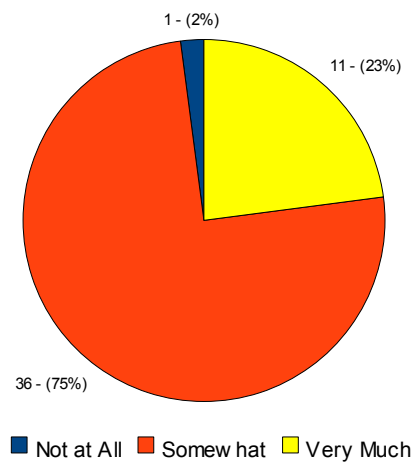
Question 6

Allow Colleagues know more of your Knowledge



Question 7

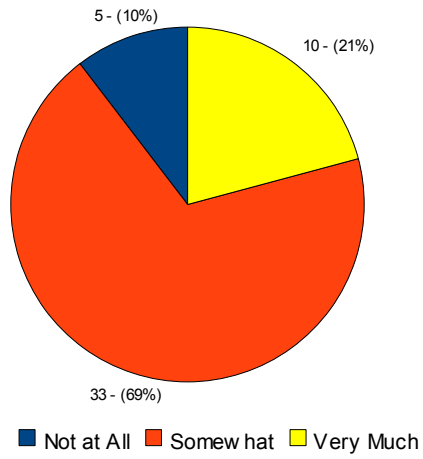
Aware of Your Colleagues Academic Knowledge



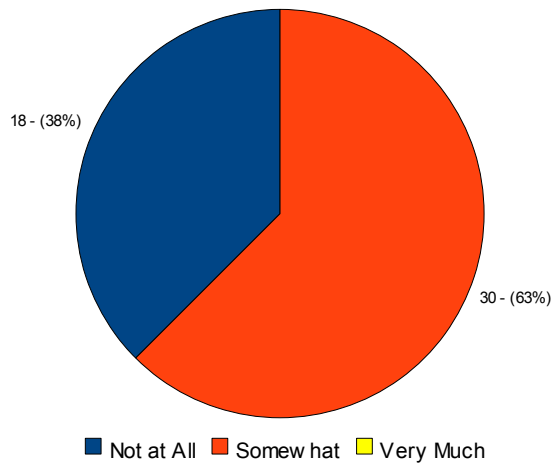
Section B - Basic Knowledge Profile

Question 7

Aware of Your Colleagues Professional Experience



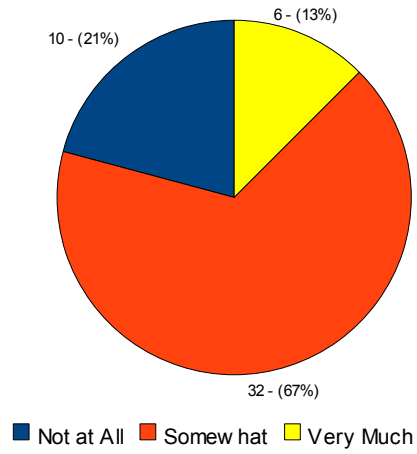
Aware of Your Colleagues Business Contacts



Section B - Basic Knowledge Profile

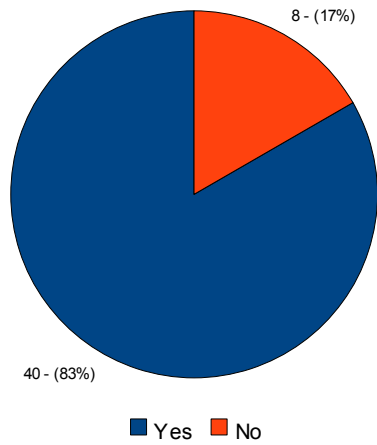
Question 7

Aware of Your Colleagues Personal Experience



Question 8

Want to Know More of Your Colleagues Knowledge



Section B - Basic Knowledge Profile

Question 9 - List Skills and Abilities

Category	Total Hits
Academic	6

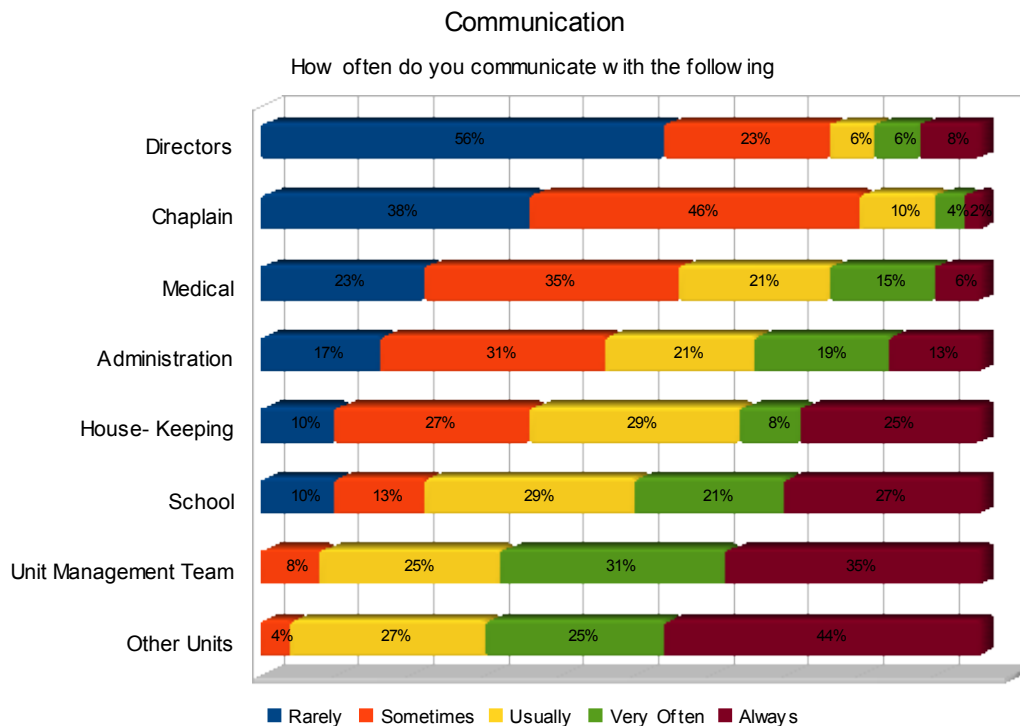
Category	Total Hits
Access	1
Accountability	1
Activity	1
Awareness	2
Challenges	1
Communication	17
Computer Skills	10
Consistency	2
Debriefing	1
Disciplines	1
Enthusiasm	1
Esteem	1
Fitness	1
Information Sharing	4
Interaction	1
Knowledge Sharing	2
Languages	1
Legal	5
Listening Skills	1
Motivation	2
Openness	3
Organisation	6
Policy Review	1
Problem Solving	2
Professionalism	1
Reflection	1
Relating	1
Reporting	14
Resistance	1
Responsibility	1
Specialised Training	12
Stress Management	1
Supporting	7
Training	4
Understanding	2

Section C - Work Analysis in a Knowledge Context

Question 1

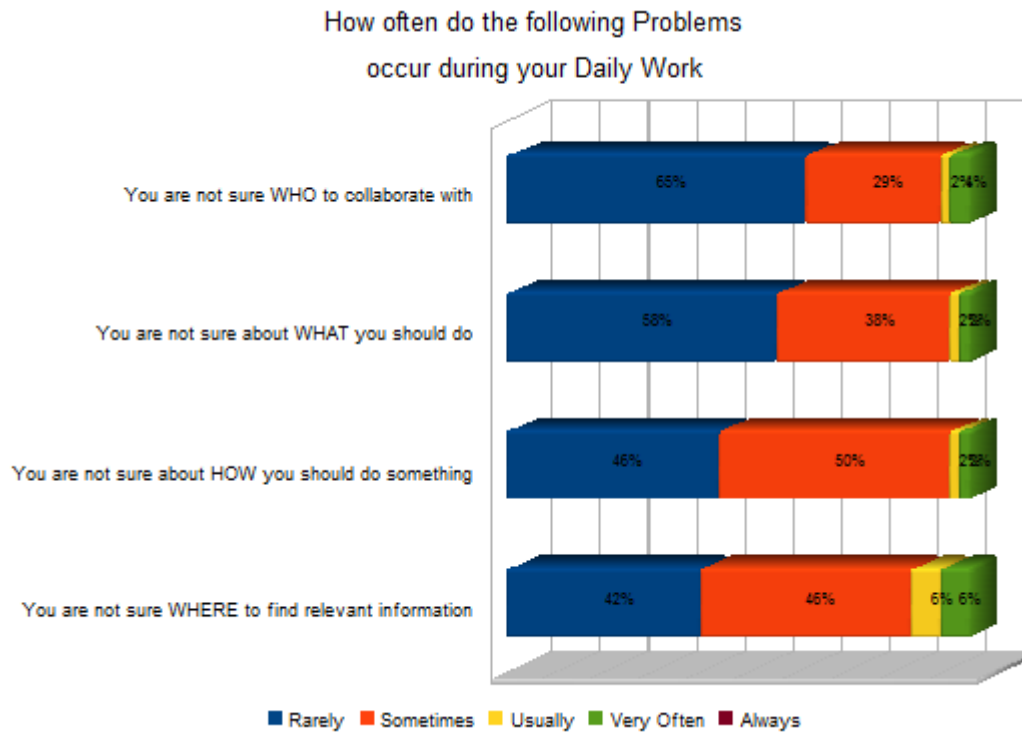
Activity	Percent of Time Spent
I spend time interacting with the clients	43
I read/write the Daily Logbook	11.59
Conflict resolution	8.38
House-keeping chores	6.96
I read/write client care plans	6.25
I read/write incident reports (absconds, restraints, assaults, etc)	5.41
Meetings (Unit, Management, other)	4.82
I read printed documents (books, manuals, policies and procedures)	3.29
Inter-agency dealings	2.77
I read the master files for the clients	2.64
Case Conferencing	1.7
I process electronic files (reading, writing, etc)	1.62
I read and reply to e-mails	0.95
I search for information on the internet	0.62

Question 2



Section C - Work Analysis in a Knowledge Context

Question 3



Section D - Knowledge and Information Sources

Question 1

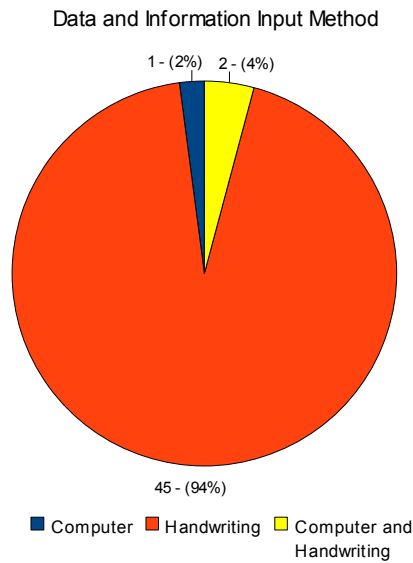


Chart D1 - Data and Information Input Methodology

Question 2

Entry Number	Places where data and information are recorded	No of Hits
1	Unit Log Book	45
2	Care Plan	43
3	Handover Logbook	18
4	Unit Diary	17
5	Medical Log	17
6	Incident report forms	16
7	Co-ordinator Check-list	16
8	Key Logbook	14
9	Separation Logbook	11
10	Money Book/Cash Recording of Unit Float and Boys Pocket Money	11
11	Therapeutic Crisis Intervention Forms	11
12	Unit Roll Call Book	10
13	Unit Meeting Book (Minutes)	10
14	Daily Ratings	10
15	Urine Analysis Book	9

Section D - Knowledge and Information Sources

Question 3

Category	Total Hits
Access	10
Accountability	2
Accuracy	22
Adequate	2
Communication	1
Competency	0
Complicated	1
Damage	2
Duplication	15
Environment	1
Hand-Writing	16
Human Error	1
Inefficient	3
Log Writing	1
Loss	6
No Problems	1
Old	1
Paperwork	5
Policy	1
Preventative Measures	1
Qualification	1
Reference	5
Responsibility	2
Safety	1
Search	4
Security	4
Software	1
Storage	9
Theft	1
Time	18
Training	1

Section D - Knowledge and Information Sources

Question 4

Category	Total Hits
Access	13
Accurate	5
Availability	2
Backup	1
Centralised	3
Chronological	1
Ease of Use	2
Factual	1
Hard Copy	3
Handovers	5
History	3
Legal	3
Linear	1
Monitoring	2
Neat	1
None	1
Organised	1
Protection Issues	2
Record	2
Reference	6
Reliable	1
Safe	1
Security	2
Storage	3
Suitability	3
Tamper Proof	2
Time	1
Unit Specific	1

Section D - Knowledge and Information Sources

Question 5

Category	Total Hits
Administration	43
Backup	3
Care Plans	1
Computers	6
Correspondence	3
Daily Unit Log	2
Medical Log	1
Personal knowledge	1
Records	1
Reports	1
Safe	1
Separation Logs	1
Server	1
Unit Office	5
Various Locations	1

Section D - Knowledge and Information Sources

Question 6

Category	Total Hits
Access	16
Apathy	2
Backup	2
Centralised	1
Confidentiality	1
Cumbersome	2
Duplication	3
Handwriting	1
Hazard	10
Inadequate	1
Information Management	5
Loss	5
Paper Storage	10
Physically Demanding	1
Safe	1
Search	7
Storage	8
Time	6
Tracking	1

Section D - Knowledge and Information Sources

Question 7

Category	Total Hits
Access	4
Apathy	2
Backup	1
Chronological	2
Computer	1
Confidential	1
Hard Copy	5
Inefficient	1
None	7
Paper Trail	1
Research	1
Safe	1
Secure	4
Simple	2
Storage	1
Time	1
Training	1

Section D - Knowledge and Information Sources

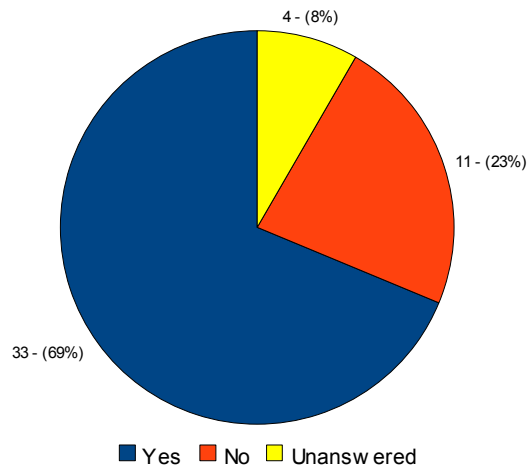
Question 8

Category	Total Hits
Accounting	2
Agency Visits	3
Analysis	6
Apathy	1
Client	3
Contacts	1
Information Sharing	6
Investigations	18
Legal	10
Medical	2
Objectivity	1
Planning	2
Policy Review	2
Protection Issues	3
Reference	24
Report	4
Research	4
Security	1
Staff	1
Training	1

Section D - Knowledge and Information Sources

Question 9

Have you ever needed to Access Archived Data



Question 10

Category	Total Hits
Administration	24
Chronological	3
Colleagues	2
Computer	2
DCPO	1
Management	27

Section D - Knowledge and Information Sources

Question 11

Category	Total Hits
Access	13
Analysis	4
Centralised	2
Communication	1
Efficiency	11
Information Management	3
Information Sharing	3
Investigation	1
Legibility	1
Reference	4
Reflection	1
Reliability	1
Response	1
Search	3
Security	1
Service	2
Speed	19
Storage	3
Time Management	2
Traceability	2
Training	2
Transparency	2
Usability	3

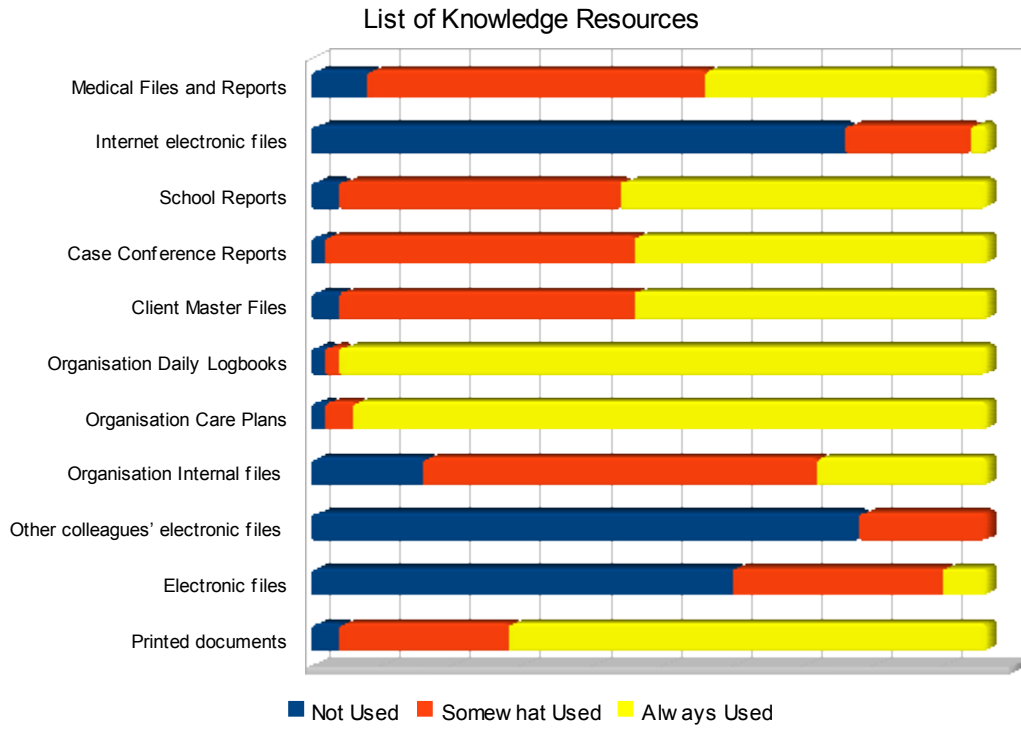
Section D - Knowledge and Information Sources

Question 12

Category	Total Hits
Access	2
Accountability	1
Availability	1
Back Up	1
Confidentiality	7
Importance	1
Mislaid	6
Misuse	1
None	4
Security	9
Technology Problems	2
Training	1
Unauthorised Access	3

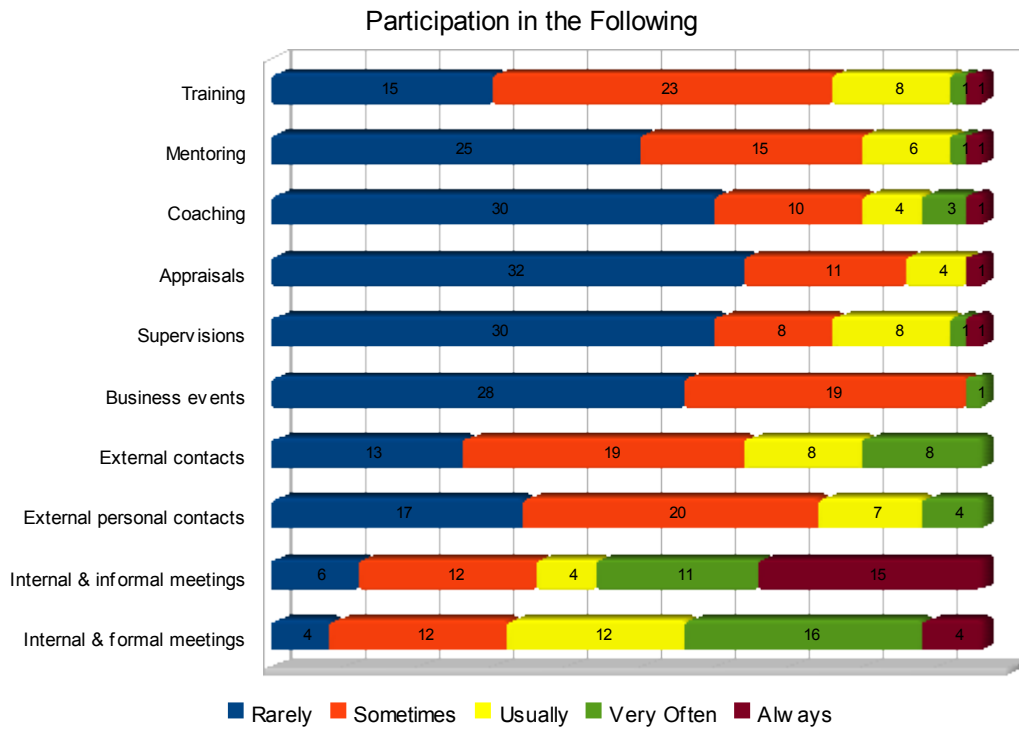
Section D - Knowledge and Information Sources

Question 13

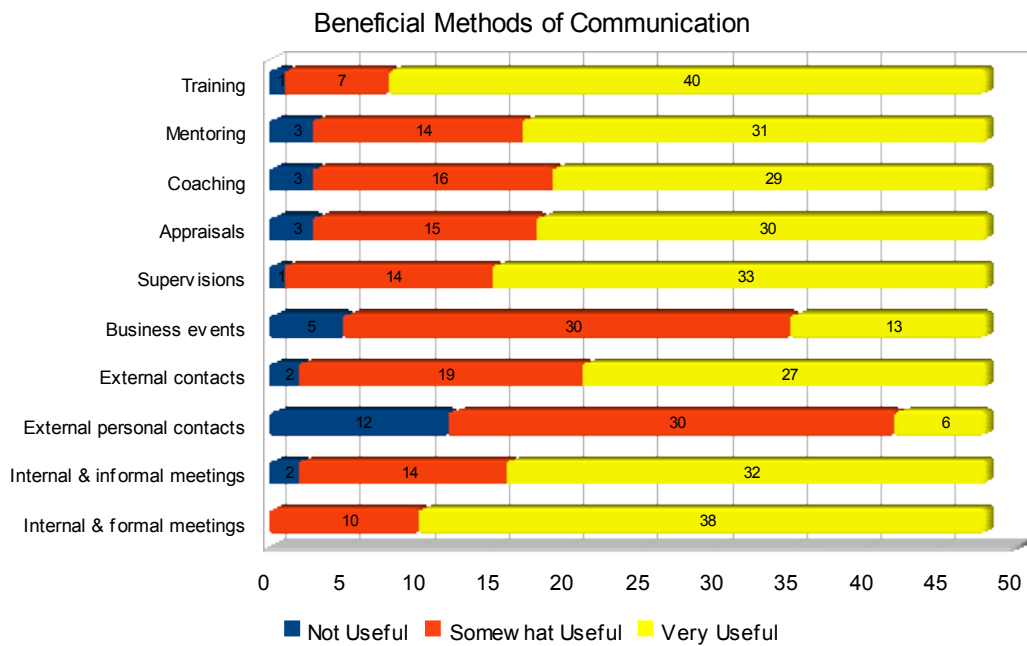


Section D - Knowledge and Information Sources

Question 14

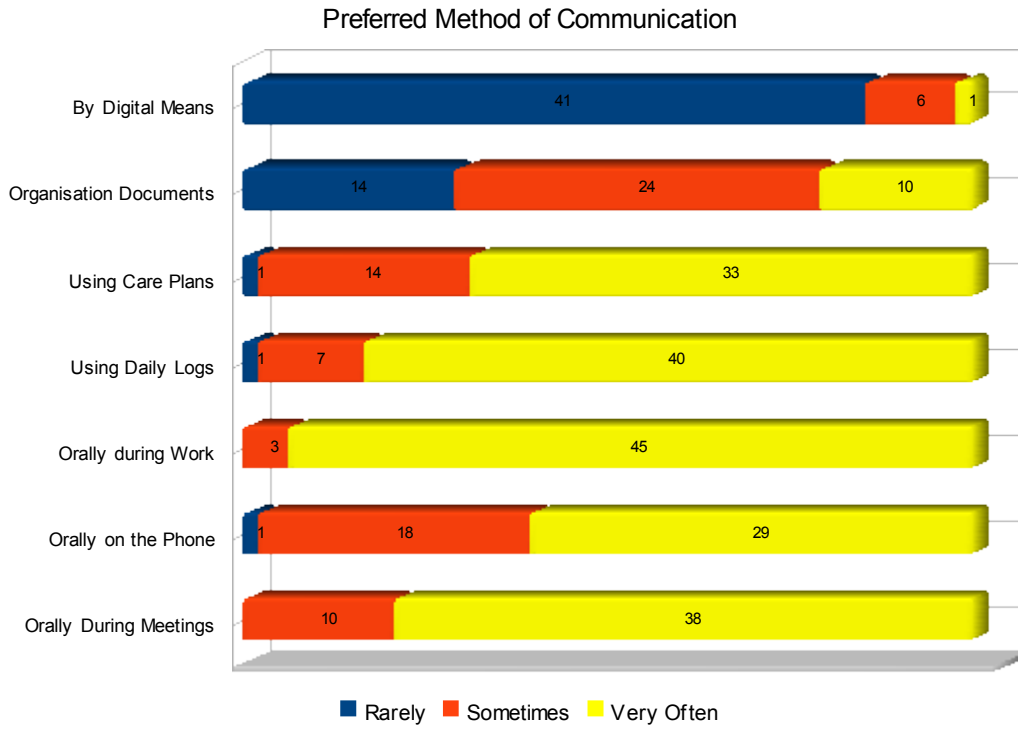


Question 15



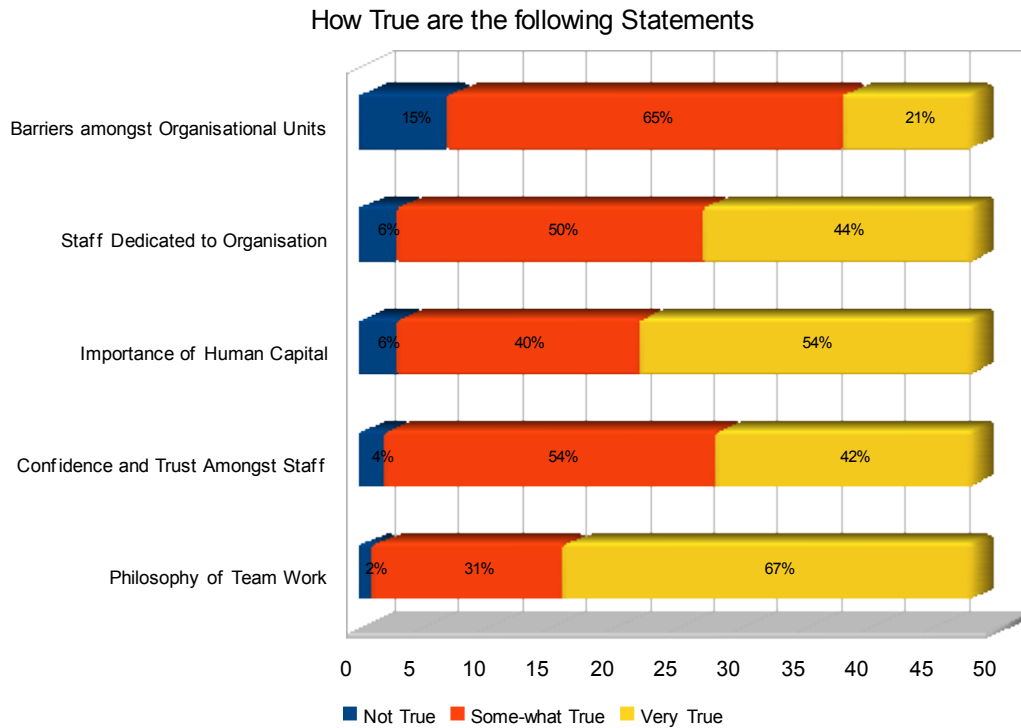
Section D - Knowledge and Information Sources

Question 16

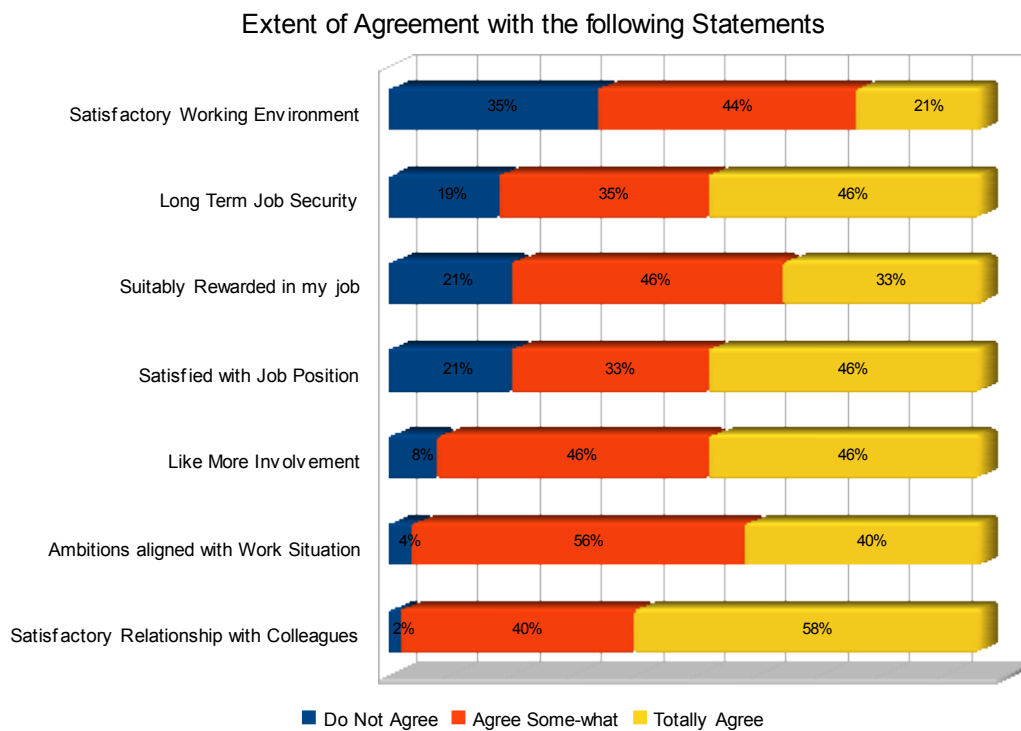


Section E – Organisation Culture

Question 1

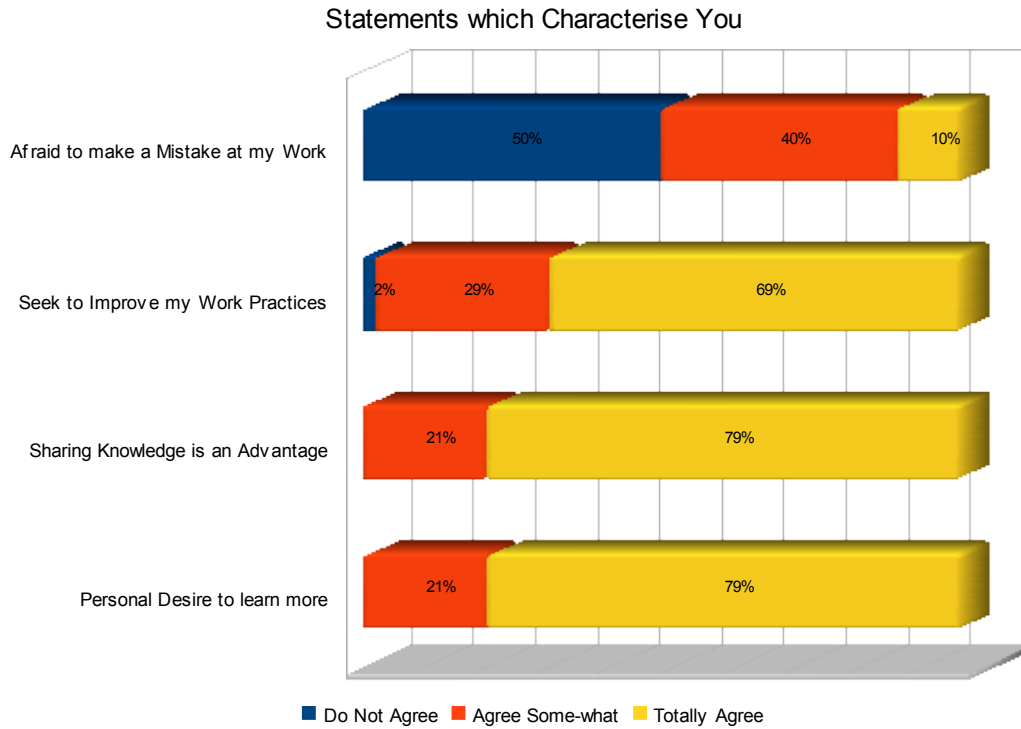


Question 2

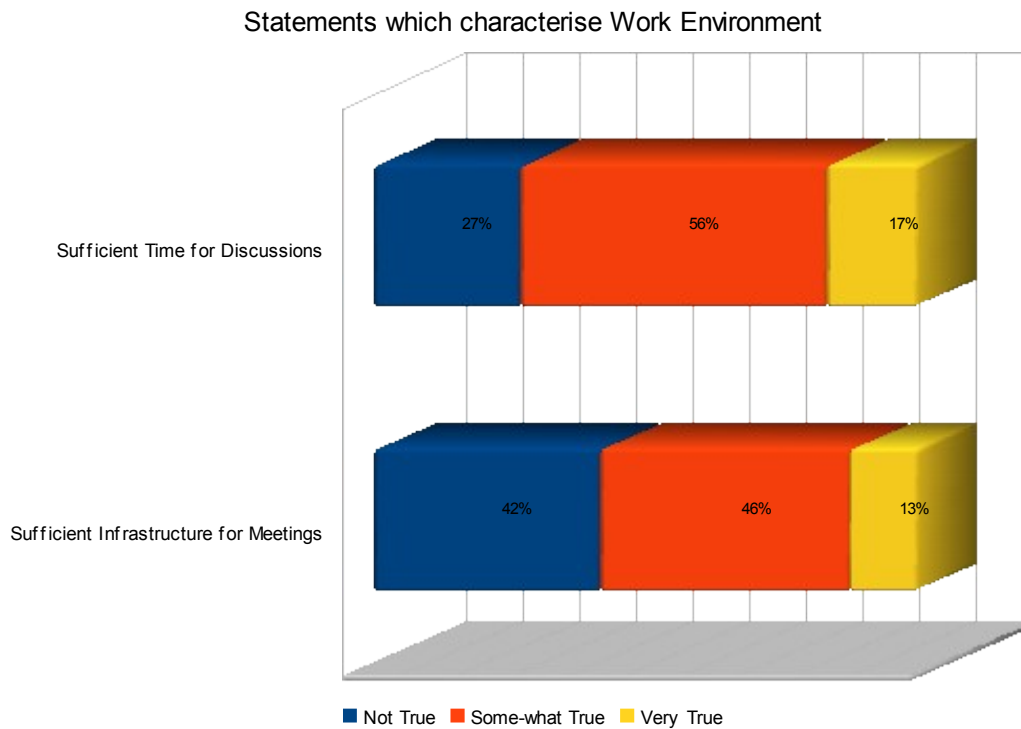


Section E – Organisation Culture

Question 3

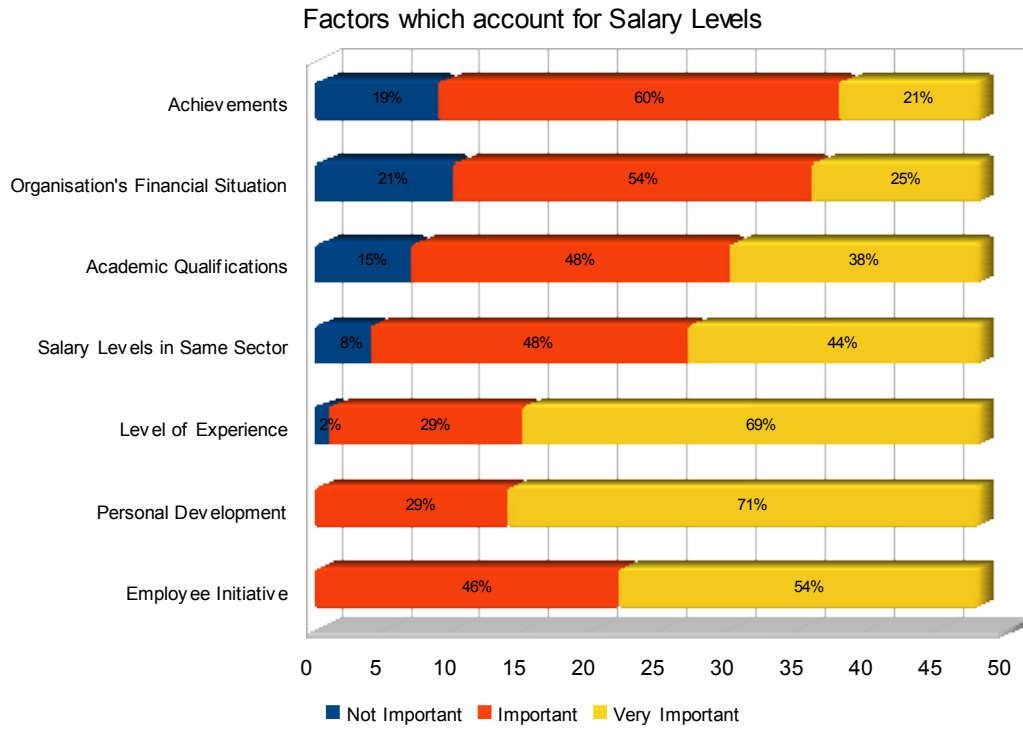


Question 4

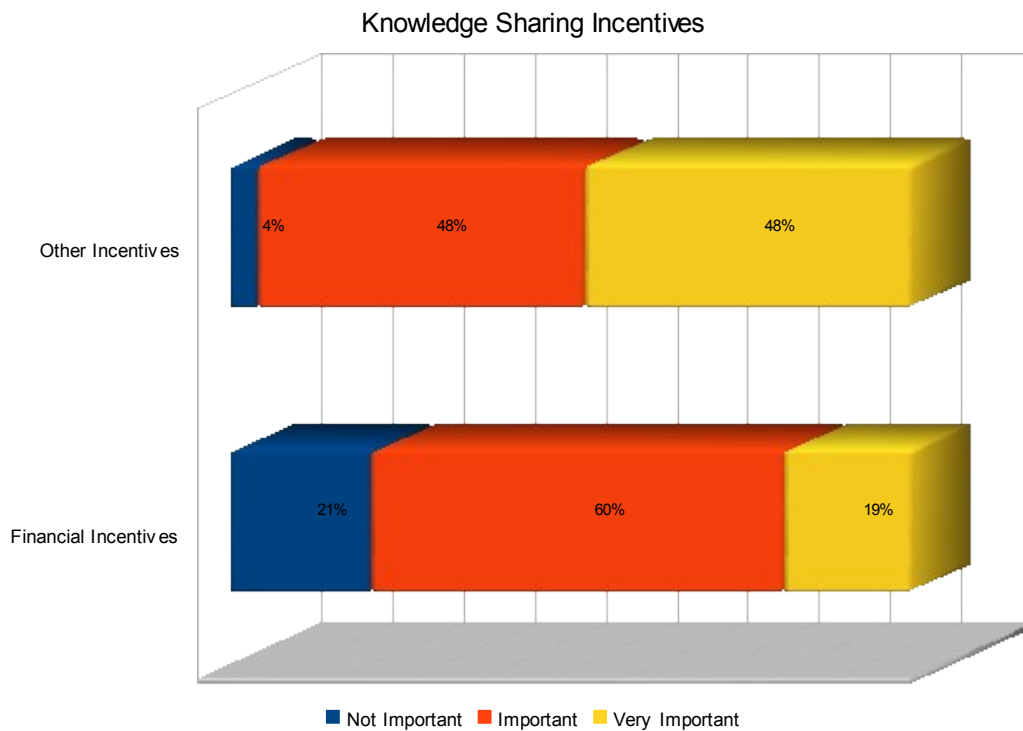


Section F – Motives and Salaries

Question 1

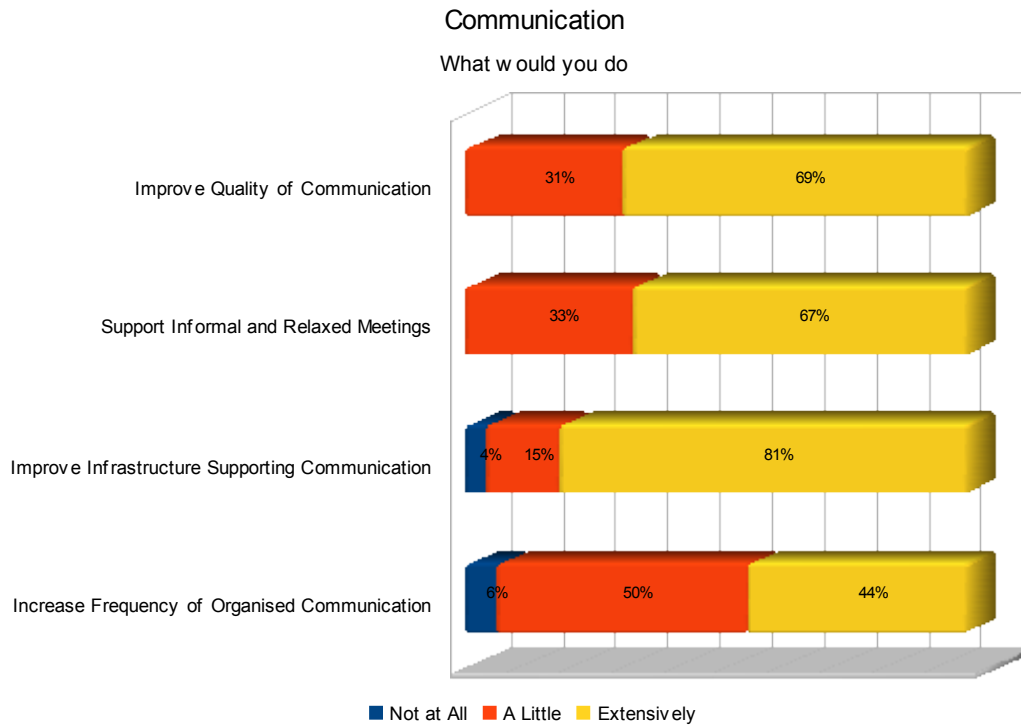


Question 2

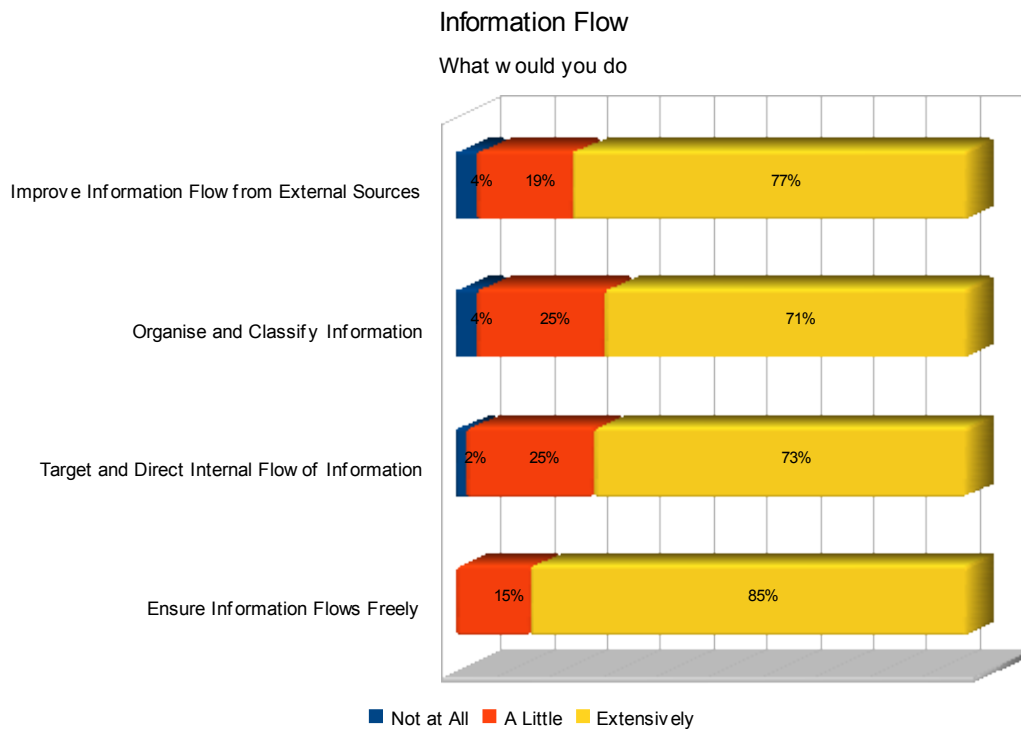


Section G – Knowledge Management in the Organisation

Question 1 - Communication

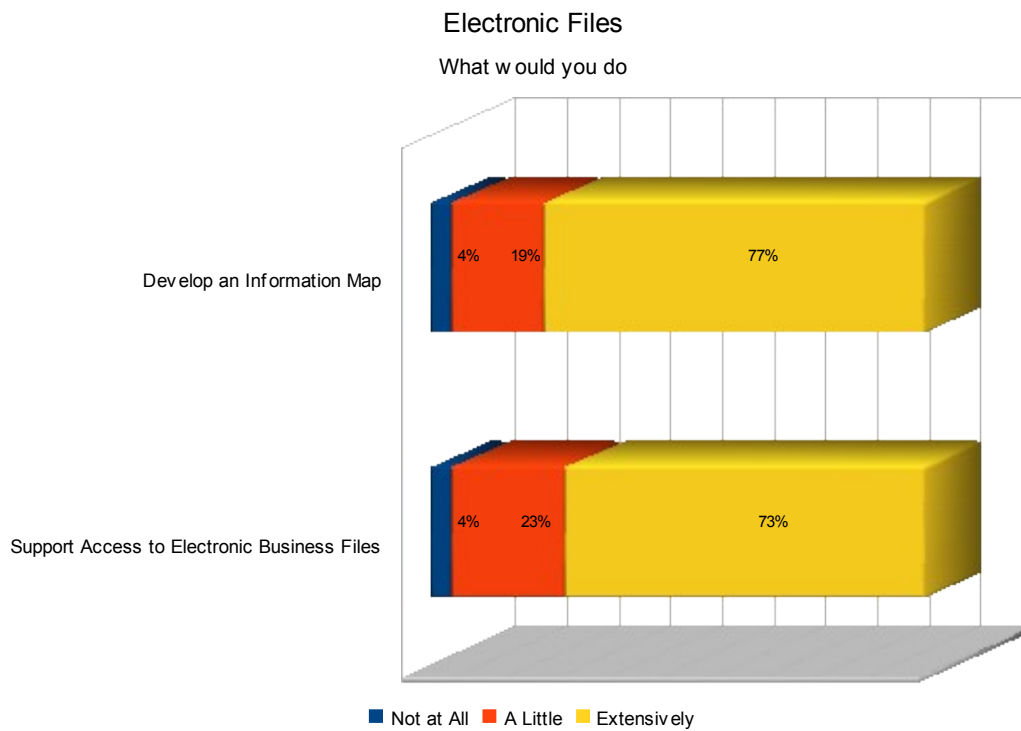


Question 1 - Information Flow

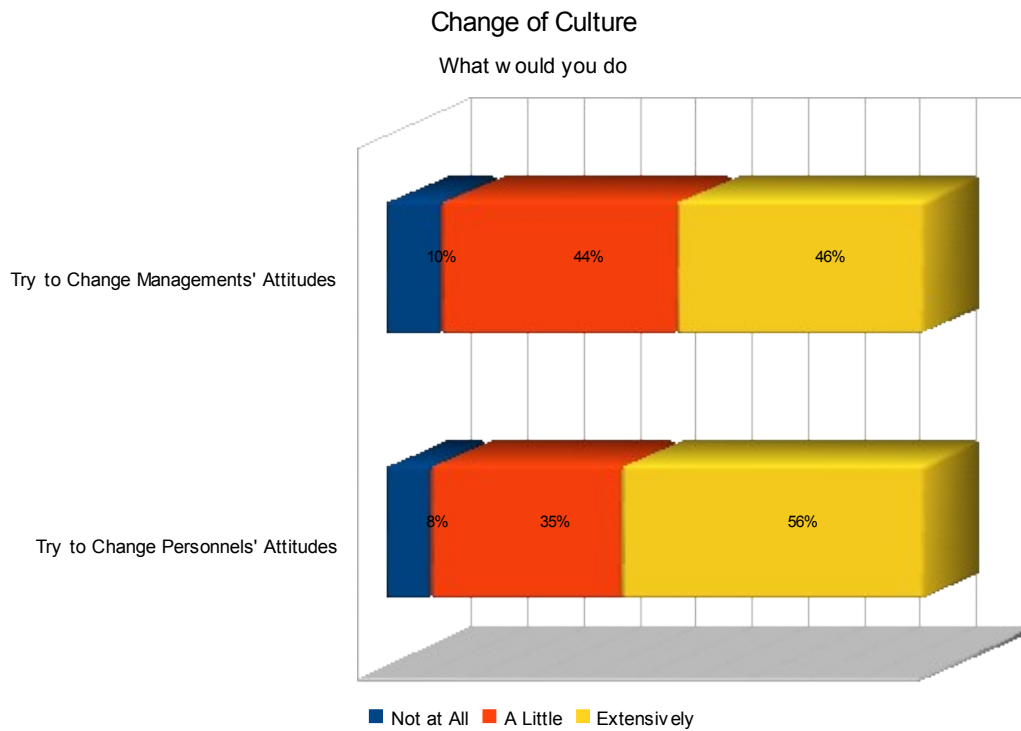


Section G – Knowledge Management in the Organisation

Question 1 - Electronic Files

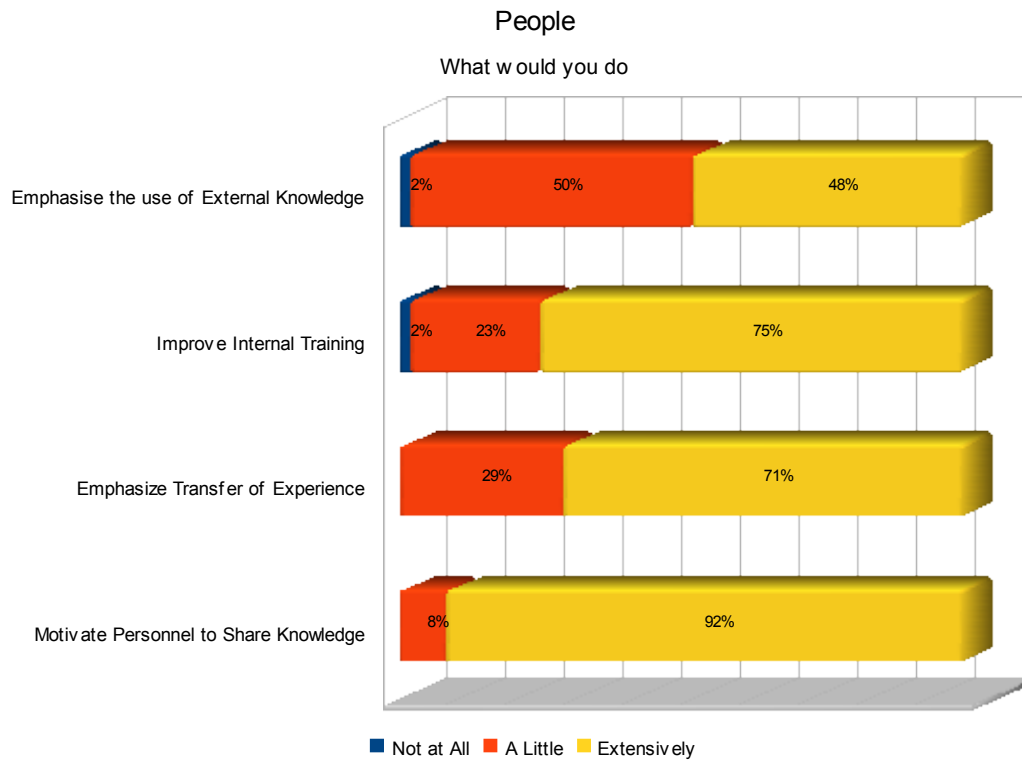


Question 1 - Change of Culture



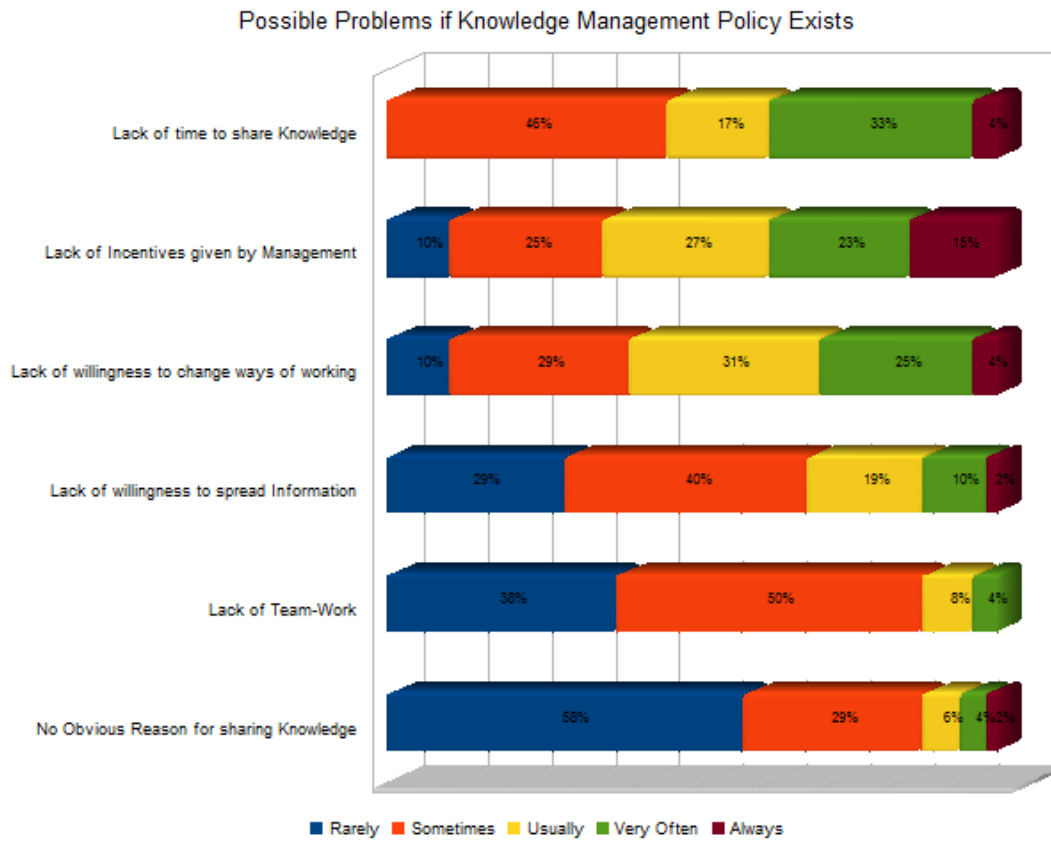
Section G – Knowledge Management in the Organisation

Question 1 - People



Section G – Knowledge Management in the Organisation

Question 2



APPENDIX C – AGILE MANIFESTO

Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it.

Through this work we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Kent Beck
Mike Beedle
Arie van Bennekum
Alistair Cockburn
Ward Cunningham
Martin Fowler
James Grenning
Ken Schwaber
Dave Thomas

Jim Highsmith
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APPENDIX D – MY-SQL TABLES

```
-- MySQL dump 10.10
--
-- Host: localhost    Database: careplans_development
-- -----
-- Server version 5.0.22-Debian_0ubuntu6.06.6-log

-- Table structure for table `clients`

DROP TABLE IF EXISTS `clients`;
CREATE TABLE `clients` (
  `id` int(11) NOT NULL auto_increment,
  `forename` varchar(255) default NULL,
  `surname` varchar(255) default NULL,
  `pps` varchar(255) default NULL,
  `dob` date default NULL,
  `created_at` datetime default NULL,
  `updated_at` datetime default NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;

-- Table structure for table `dailylogs`

DROP TABLE IF EXISTS `dailylogs`;
CREATE TABLE `dailylogs` (
  `id` int(11) NOT NULL auto_increment,
  `client_id` int(11) default NULL,
  `logentry` text,
  `created_at` datetime default NULL,
  `updated_at` datetime default NULL,
  `user_id` int(11) default NULL,
  `username` varchar(255) default NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;

-- Table structure for table `users`

DROP TABLE IF EXISTS `users`;
CREATE TABLE `users` (
  `id` int(11) NOT NULL auto_increment,
  `username` varchar(255) default NULL,
  `forename` varchar(255) default NULL,
  `surname` varchar(255) default NULL,
  `dob` date default NULL,
  `pps` varchar(255) default NULL,
  `hashed_password` varchar(255) default NULL,
  `salt` varchar(255) default NULL,
  `created_at` datetime default NULL,
  `updated_at` datetime default NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

APPENDIX E – EXPERIMENT FORMS

Form 1: Web-based Application Experiment

Background

The recent Knowledge Audit Survey Questionnaire has identified you to belong to a group of respondents who believe there are both benefits and problems with the introduction of technology, particularly Information Technology (IT), and its use in Oberstown Boys School (OBS). In addition, your group indicates that IT has been used in previous places of employment.

Consequently, I would be grateful if you could participate in the following small experiment which is based on the OBS Client Care Plan. The OBS Client Care Plan was selected due to the fact that it has been identified in the questionnaire as one of the most important places where data and information is recorded and continues to be performed by means of handwriting.

Not all of the OBS Client Care Plan is used for this experiment. The experiment looks at attempting to represent Section 9, otherwise known as the Daily Reports Section, with the use of computer software technology. Typically, as a member of staff, you would review previously recorded entries in this section and write new ones into it; and the technology tries to mimic this.

Form 2: KM Experiment – Web-based Application Assessment Form

First Impression of Application	
Does Application represent the procedure you perform	
Benefits	
Problem	
Comment, Suggestions & Recommendations	

Signature
(Optional)

Date

APPENDIX F – SAMPLE HTML CODE

MAIN MENU SCREEN

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
  <head>
    <meta http-equiv="Content-type" content="text/html;
charset=utf-8" />
    <title>Oberstown Boys School : Main Menu</title>
    <style type="text/css" media="screen">
      body {
        margin: 25;
        margin-bottom: 25px;
        padding: 0;
        background-color: #f0f0f0;
        font-family: "Lucida Grande", "Bitstream Vera Sans",
"Verdana";
        font-size: 13px;
        color: #333;
      }

      h1 {
        font-size: 28px;
        color: #000;
      }

      a {color: #03c}
      a:hover {
        background-color: #03c;
        color: white;
        text-decoration: none;
      }

      #page {
        background-color: #f0f0f0;
        width: 750px;
        margin: 0;
        margin-left: auto;
        margin-right: auto;
      }

      #content {
        float: left;
        background-color: white;
        border: 3px solid #aaa;

        padding: 25px;
        width: 700px;
      }

      #footer {
        clear: both;
      }

      #header, #about, #getting-started {
```

```
padding-left: 75px;
padding-right: 30px;
}

#header h1, #header h2, #header h3, #header h4 {margin: 0}

#header h1 {
  color: #000;
  font-weight: normal;
  font-size: 28px;
}

#header h2 {
  color: #000;
  font-weight: normal;
  font-size: 26px;
}

#header h3 {
  color: #000;
  font-weight: normal;
  font-size: 24px;
}

#header h4 {
  color: #000;
  font-weight: normal;
  font-size: 22px;
}

#getting-started {
  border-top: 1px solid #ccc;
  margin-top: 25px;
  padding-top: 15px;
}

#getting-started h1 {
  margin: 0;
  font-size: 24px;
  font-weight: normal;
  color: #000;
}

#getting-started h2 {
  margin: 0;
  font-size: 18px;
  font-weight: normal;
  color: #000;
  margin-bottom: 25px;
}

#getting-started ol {
  margin-left: 0;
  padding-left: 0;
}

#getting-started li {
  font-size: 18px;
  color: #000;
  margin-bottom: 25px;
}

</style>
```

```

</head>

<body>

  <div id="page">
    <div id="content">
      <div id="header">
        <h4>Oberstown Boys School</h4>
      </div>

      <div id="getting-started">
        <h4>Main Menu</h4>

        <p><a href="http://localhost:3000/users/">User
Administration</a></p>

        <p><a href="http://localhost:3000/clientadmin/">Client
Administration</a></p>
        <p><a href="http://localhost:3000/clients/">Client Care
Plan - Daily Reports</a></p>

      </div>
    </div>

    <div id="footer">&nbsp;</div>
  </div>
</body>
</html>

```

CLIENT LIST SCREEN

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
  <meta http-equiv="content-type" content="text/html; charset=UTF-8" /
>
  <title>Oberstown Boys School : Client List</title>
  <style type="text/css" media="screen">
    body {
      margin: 25;
      margin-bottom: 25px;
      padding: 0;
      background-color: #f0f0f0;
      font-family: "Lucida Grande", "Bitstream Vera Sans",
"Verdana";
      font-size: 13px;
      color: #333;
    }

    h1 {
      font-size: 28px;
      color: #000;
    }

    a {color: #03c}
    a:hover {
      background-color: #03c;

```

```

    color: white;
    text-decoration: none;
}

#page {
    background-color: #f0f0f0;
    width: 750px;
    margin: 0;
    margin-left: auto;
    margin-right: auto;
}

#content {
    float: left;
    background-color: white;
    border: 3px solid #aaa;
    padding: 25px;
    width: 700px;
}

#footer {
    clear: both;
}

#header, #about, #getting-started {
    padding-left: 75px;
    padding-right: 30px;
}

#header h1, #header h2, #header h3, #header h4 {margin: 0}

#header h1 {
    color: #000;
    font-weight: normal;
    font-size: 28px;
}

#header h2 {
    color: #000;
    font-weight: normal;
    font-size: 26px;
}

#header h3 {
    color: #000;
    font-weight: normal;
    font-size: 24px;
}

#header h4 {
    color: #000;
    font-weight: normal;
    font-size: 22px;
}

#getting-started {
    border-top: 1px solid #ccc;
    margin-top: 25px;
}

```

```

        padding-top: 15px;
    }
    #getting-started h1 {
        margin: 0;
        font-size: 24px;
        font-weight: normal;
        color: #000;
    }

    #getting-started h2 {
        margin: 0;
        font-size: 18px;
        font-weight: normal;
        color: #000;
        margin-bottom: 25px;
    }
    #getting-started ol {
        margin-left: 0;
        padding-left: 0;
    }
    #getting-started li {
        font-size: 18px;
        color: #000;
        margin-bottom: 25px;
    }
}

</style>
</head>

<body id="CLIENTS">
    <div id="page">

        <div id="content">
            <div id="header">
                <h4>Oberstown Boys School</h4>
            </div>

            <div id="getting-started">
                <h4>Client List</h4>
            </div>
            <p>Click on a PPS Number to view the Client's Care Plan - Daily Reports</p>

            <table>
                <tr>
                    <th>PPS Number</th>
                    <th>Forename</th>
                    <th>Surname</th>
                </tr>

                <tr>

                    <td><a href="/clients/1/dailylogs">1234567A</a></td>
                    <td>Shay</td>
                    <td>O'Reilly</td>
                </tr>

                <tr>
                    <td><a href="/clients/2/dailylogs">1234567B</a></td>

                    <td>Liam</td>
                    <td>Crawley</td>
                </tr>
            </table>

```

```

</tr>

<tr>
  <td><a href="/clients/3/dailylogs">1234567C</a></td>
  <td>Robert</td>

  <td>Smith</td>
</tr>

<tr>
  <td><a href="/clients/4/dailylogs">1234567D</a></td>
  <td>Alex</td>
  <td>Conroy</td>

</tr>

<tr>
  <td><a href="/clients/5/dailylogs">1234567E</a></td>
  <td>Jason</td>
  <td>Rogers</td>
</tr>

<tr>
  <td><a href="/clients/6/dailylogs">1234567F</a></td>
  <td>Vincent</td>
  <td>Brennan</td>
</tr>

</table>

<br />

<a href="http://localhost:3000/">Back to Main Menu</a>

  <p style="color: green;"></p>
</div>
</div>

  <div id="footer">&nbsp;</div>
</div>
</body>

</html>

```

DAILY REPORT ENTRY SCREEN

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
  <meta http-equiv="content-type" content="text/html; charset=UTF-8" /
>
  <title>Oberstown Boys School : Daily Logs</title>
  <style type="text/css" media="screen">
    body {
      margin: 25;
      margin-bottom: 25px;

```

```

padding: 0;
background-color: #f0f0f0;
font-family: "Lucida Grande", "Bitstream Vera Sans",
"Verdana";
font-size: 13px;
color: #333;
}

h1 {
font-size: 28px;
color: #000;
}

a {color: #03c}
a:hover {
background-color: #03c;
color: white;
text-decoration: none;
}

#page {
background-color: #f0f0f0;
width: 750px;
margin: 0;
margin-left: auto;
margin-right: auto;
}

#content {
float: left;
background-color: white;
border: 3px solid #aaa;
padding: 25px;
width: 700px;
}

#footer {
clear: both;
}

#header, #about, #getting-started {
padding-left: 75px;
padding-right: 30px;
}

#header h1, #header h2, #header h3, #header h4 {margin: 0}

#header h1 {
color: #000;
font-weight: normal;
font-size: 28px;
}

#header h2 {
color: #000;
font-weight: normal;
font-size: 26px;
}

```

```

#header h3 {
  color: #000;
  font-weight: normal;
  font-size: 24px;
}

#header h4 {
  color: #000;
  font-weight: normal;
  font-size: 22px;
}

#getting-started {
  border-top: 1px solid #ccc;
  margin-top: 25px;
  padding-top: 15px;
}

#getting-started h1 {
  margin: 0;
  font-size: 24px;
  font-weight: normal;
  color: #000;
}

#getting-started h2 {
  margin: 0;
  font-size: 18px;
  font-weight: normal;
  color: #000;
  margin-bottom: 25px;
}

#getting-started ol {
  margin-left: 0;
  padding-left: 0;
}

#getting-started li {
  font-size: 18px;
  color: #000;
  margin-bottom: 25px;
}

</style>
</head>

<body id="CLIENTS">
  <div id="page">

    <div id="content">
      <div id="header">
        <h4>Oberstown Boys School</h4>
      </div>

      <div id="getting-started">
        <h4>List of Daily Report Entries for Shay O'Reilly</h4>
      </div>

    <table width="100%">
      <tr>

        <th align="left">Time and Date</th>
        <th align="left">Log Entry</th>
        <th align="left">Entered by</th>

```



```

</tr>

<tr>
  <td align="left">July 23rd, 2008 17:29</td>

  <td align="left">got up for a shower had breakfast then over to
school</td>
  <td align="left">nclarke</td>
</tr>

<tr>
  <td align="left">July 19th, 2008 23:42</td>
  <td align="left">very good day. mixwd well and appears to have
turned a corner. played football at lunch and watched dvd before
bed.</td>

  <td align="left">dgarry</td>
</tr>

<tr>
  <td align="left">July 18th, 2008 22:31</td>
  <td align="left">Tablets have seemed to do the rick as shay is
now very placi and almost in a vegetative state. Staff need to wipe
away drool once in a while but is feeing ell through a straw. No
management problems today. Went to bed as per level.
</td>
  <td align="left">chalpin</td>

</tr>

<tr>
  <td align="left">July 18th, 2008 20:51</td>
  <td align="left">well cured now!!</td>
  <td align="left">dandre</td>
</tr>

<tr>
  <td align="left">July 13th, 2008 19:42</td>
  <td align="left">Shay had a good morning. He went to school and
boxed the head of a teacher.</td>
  <td align="left">zhadum</td>
</tr>

<tr>
  <td align="left">July 9th, 2008 23:14</td>

  <td align="left">ADDENDUM.
Was seen by the nurse for a swollen ankle, prescribed nurofen and
cannot play sport for 1 week.</td>
  <td align="left">dcronin</td>
</tr>

<tr>
  <td align="left">July 9th, 2008 23:07</td>
  <td align="left">Excellent all dayprojected a positive attitude
towards staff and eers and particiated sportingly in unit activities.

Phoned various family members.
Diet poor claimed he did not like the food prepared and substituted
with crisps.

```

```

No management prolem.</td>

    <td align="left">dcronin</td>
</tr>

</table>

<br />

<a href="/clients/1/dailylogs/new">New Daily Report Entry</a>|
<a href="/clients">Back</a>

    <p style="color: green"></p>

    </div>
</div>

    <div id="footer">&nbsp;</div>
</div>
</body>

</html>

```

AUTHORISATION SCREEN

```

<div class="careplans-form">
  <fieldset>
    <legend>Please Log In</legend>

    <form action="/admin/login" method="post"><div
style="margin:0;padding:0"><input
name="authenticity_token"
type="hidden" value="8ec7f530ff64d22687d4cf9888e32d1a9cb5bb85"
/></div>
  <p>
    <b>Username</b><br />
    <input id="username" name="username" type="text" />
  </p>

  <p>
    <b>Password:</b><br />
    <input id="password" name="password" type="password" />
  </p>

  <p>
    <input name="commit" type="submit" value="Login" />
  </p>

  </form>
</fieldset>
</div>

```

NEW DAILY REPORT ENTRY SCREEN

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"

```

```

"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
  <meta http-equiv="content-type" content="text/html; charset=UTF-8" /
  >
  <title>Oberstown Boys School : Daily Logs</title>
  <style type="text/css" media="screen">
    body {
      margin: 25;
      margin-bottom: 25px;
      padding: 0;
      background-color: #f0f0f0;
      font-family: "Lucida Grande", "Bitstream Vera Sans",
"Verdana";
      font-size: 13px;
      color: #333;
    }

    h1 {
      font-size: 28px;
      color: #000;
    }

    a {color: #03c}
    a:hover {
      background-color: #03c;
      color: white;
      text-decoration: none;
    }

    #page {
      background-color: #f0f0f0;
      width: 750px;
      margin: 0;
      margin-left: auto;
      margin-right: auto;
    }

    #content {
      float: left;
      background-color: white;
      border: 3px solid #aaa;
      padding: 25px;
      width: 700px;
    }

    #footer {
      clear: both;
    }

    #header, #about, #getting-started {
      padding-left: 75px;
      padding-right: 30px;
    }

    #header h1, #header h2, #header h3, #header h4 {margin: 0}

```

```

#header h1 {
  color: #000;
  font-weight: normal;
  font-size: 28px;
}

#header h2 {
  color: #000;
  font-weight: normal;
  font-size: 26px;
}

#header h3 {
  color: #000;
  font-weight: normal;
  font-size: 24px;
}

#header h4 {
  color: #000;
  font-weight: normal;
  font-size: 22px;
}

#getting-started {
  border-top: 1px solid #ccc;
  margin-top: 25px;
  padding-top: 15px;
}

#getting-started h1 {
  margin: 0;
  font-size: 24px;
  font-weight: normal;
  color: #000;
}

#getting-started h2 {
  margin: 0;
  font-size: 18px;
  font-weight: normal;
  color: #000;
  margin-bottom: 25px;
}

#getting-started ol {
  margin-left: 0;
  padding-left: 0;
}

#getting-started li {
  font-size: 18px;
  color: #000;
  margin-bottom: 25px;
}

</style>
</head>

<body id="CLIENTS">
  <div id="page">

    <div id="content">
      <div id="header">
        <h4>Oberstown Boys School</h4>

```

```

</div>

<div id="getting-started">
    <h4>New Daily Report Entry for Shay O'Reilly</h4>

<form      action="/clients/1/dailylogs"      class="new_dailylog"
id="new_dailylog"      method="post"><div
style="margin:0;padding:0"><input      name="authenticity_token"
type="hidden"      value="8ec7f530ff64d22687d4cf9888e32d1a9cb5bb85"
/></div>

<p>
    <b>Please Enter Details</b><br />
    <textarea      cols="40"      id="dailylog_logentry"
name="dailylog[logentry]"      rows="20"></textarea>
</p>

<p>
    <input      id="dailylog_submit"      name="commit"      type="submit"
value="Create" />

</p>
</form>

<a href="/clients/1/dailylogs">Back</a>

    <p style="color: green"></p>
</div>
</div>

<div id="footer">&nbsp;</div>
</div>
</body>

</html>

```