Managing Knowledge in Times of Organizational Re-structuring

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Copyright Statement

Abstract

This thesis is located within the area of Knowledge Management and focuses on enhancing the transfer of knowledge. The research investigated how organisations manage knowledge in times of major restructuring. The research used Action Research to establish a collaborative partnership with the client organisation and to enable a cyclical approach to the research activity with ongoing involvement that allows feedback to be gathered as the research progresses. There was concern that knowledge was being lost and ways needed to be developed to stem the haemorrhage due to the movement of people to different posts or their departure from the organisation. Consequently the importance of the research for the Post Office was established in the first phase of the research.

The research was based on interviews with managers in the Post Office and other selected organisations. Interview analyses showed differences in approaches to managing knowledge, often depending on their organisational epistemology. Consequently it was possible to build a framework for managing knowledge in times of change. The model was explored further within the Post Office to establish its validity and reliability and practical use for managers. Overall, the research recognises the potential for improved processes that, if applied effectively at the appropriate planning juncture, could result in improved identification and transfer of knowledge during times of major organisational restructuring.

The research contributes to theory by identifying the critical period of transaction when a change or restructuring activity is underway. It also contributes by the exploration of two existing knowledge management process models and development of two ancillary models that enable the working of knowledge processes to be understood in greater detail. The research contributes to managerial practice by the development of a practical working framework enabling an organisation to make practical use of the research. By using the model organisations and those managing change will be able to support their thinking and trigger knowledge assessment, capture and transfer activities in a systematic way.

Key words: Knowledge management; Knowledge processes; Knowledge transfer; Organisational restructuring; Change management.

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Note:

> During the period of this research, the status of The Post Office changed - it became a plc under the new name of 'Consignia' in March 2001 and changed its name again on 4th November 2002 becoming Royal Mail Group plc. For consistency and to avoid confusion I have used the term 'The Post Office' throughout when talking about the client. Also please note Royal Mail was known internally as 'Service Delivery'.

Key:
R= Respondent
L= Line reference

Managing Knowledge in Times of Organizational Re-Structuring

Chapter One

1.1. Introduction

This Thesis is the result of research undertaken over a period of 4/5 years between 1999 and 2003. The majority of the fieldwork for this research was carried out between February 1999 and January 2000 when the Researcher was seconded, by the client organization - The Post Office - to Royal Mail's Partnership with The Business School, Bournemouth University. The research then continued concurrently with the researcher's full time posts in The Post Office.

During the research period, The Post Office, made up of 18 separately managed business units, was caught up in a period of major change. The research would therefore be undertaken against a backdrop of organizational re-structuring that was being phased in: some business units would have already made changes, others were about to implement changes and some were still at the planning stage.

By the time the research had been completed the 18 business units had re-structured into four businesses and the head count for the whole organization had reduced from 230k to 213k, with more reductions expected (approximately 30k). It will be appreciated therefore that the period during which the research was undertaken spans a period of unprecedented change - both in terms of scale and speed - within the organization.

The research followed an action inquiry strategy (Ellis and Kiely 2000), adopting a recurring cycle of action-reflection that captures knowledge through action and revised action. The research strategy was appropriate as the researcher who was working in the organization was able to engage managers in co-inquiry with the intention of enabling change.

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Initially, the researcher explored the literature about Knowledge Management to increase personal knowledge and to identify key writers who have contributed to the debate over the past 50 years. These studies surfaced key aspects of the subject, many of which had particular relevance to the client organization and were explored further.

Methodology was then considered and a research framework was designed.

The first stage of the research was carried out with members of a strategy department of one of the major business units. This cycle of investigation centred on the surfacing of issues, which were critical to their role and to that of the business. Individuals were interviewed and their comments were analysed. The group and the director responsible for the department reflected on the results. The outcome of these reflections provided the input to the next phase.

The study was extended to a group of 15 senior managers, some of whom would be responsible in the near future for directing major business units following a restructuring programme. The group included managers who had been involved in previous change programmes and those who were part of teams planning the new organization. Participants were asked if they would be prepared to take part in the research programme. Interviews were conducted with these managers.

Later the study was extended further to a group of 4 external organizations all of which had been engaged in proactive knowledge management, with the aim of making a comparison with the findings from the client organization.

The findings from the research were analysed, considered and presented to a variety of audiences within the client organization and at academic conferences. Feedback was gathered and shared through the publication of papers and reports.

As a final consequence, a sharper focus is brought to one particular area of Knowledge Management - managing knowledge during times of organizational re-structuring. This became the subject for higher-level research and resulted in the development of a model.

This model is offered in the hope that it adds to both the academic and practitioner debate into how knowledge may be managed.

1.1.1. The Stimulus for the Research

It was the beginning of the final year in a series of research programmes undertaken within a 5-year partnership agreement between Royal Mail, one of The Post Office business units, and The Business School Bournemouth University. Each year a Royal Mail secondee had been appointed as Research Analyst to work on an area of research mutually agreed by both the university and the organization, the ultimate aim of which was to feed informed, fresh thinking into the organization as well as to contribute to academic research. Traditionally, the area of research was agreed by senior managers - not necessarily with wide consultation - but, as The Post Office as a whole was on the brink of a major structural re-organization, a different approach was to be taken this time.

After appointment as Research Analyst, I had a discussion with the Business Strategy and Planning Director who was my key contact for the research initiative. There were decisions to be made around the identification of the research topic, who and how many people to involve in this initial stage, and about my role.

While he had ideas of his own about potential research topics, he wanted to include all members of his team (15) in the decision-making process. Being sensitive to the internal politics, (which might mean that group sessions would not necessarily surface all the issues), I suggested I conduct individual interviews. In order to communicate my aims, and pave the way for future contact with his team members, I proposed attending his next team meeting to make a presentation with the aim of positioning the forthcoming research initiative and proposed approach. I wanted to see whether they would be willing to participate and how much interest would be expressed. The presentation took place during which I had to field questions about how the research topic was to be chosen. I explained I would be seeking their input through individual face-to-face interviews to gather ideas for the research, and that they would be involved in a prioritisation exercise that would follow, after which they would be informed of the final choice of research topic. I was asked to keep them in touch with progress and invited to return to make a further presentation to the team in due course.

Face-to-face interviews seemed the most appropriate method of gathering views, particularly as the manager was keen for his team to understand that their views were important and he was willing to allow them time to give them to me, anonymously if they preferred. It was felt this approach would be more productive than relying on answers to emails or telephone calls.

I considered how I should undertake the role of a Research Analyst. I decided to adopt an approach similar to that described by Schein (1987) who explored many relevant issues concerning the fundamental relationship between client and researcher, the inquiry and intervention process and professional and ethical matters. He described how a researcher could take on a helping role or 'clinical perspective' by playing the role of a development consultant who is invited by the client to work with them to solve a problem or improve an approach. The researcher's role is to be a scholar who spans both theoretical and practitioner worlds and develops new insights and good practice to disseminate appropriately. It is not seen as a pure consultancy role:

> *Consultants can bring the laggards up to best practice but scholars should be determining the next best practice*
> (Wind & Nueno 1999).

This emphasises the dual role of the researcher of contributing to the development of thinking and theories, as well as assisting the client organization, not just the latter.

The organization and the university accepted this approach to my role as researcher. Consequently, I would use a "Self-organized Learning" approach (Harri-Augstein and Thomas 1985), which would involve me in managing the research programme as a project with regular reviews. However, it was understood by the client that exact aims could not be identified in advance as much would unfold as the research was undertaken.

I prepared for the interviews. Consulting the literature, Gill and Johnson (1991) suggested a funnelling technique starting with general questions to establish rapport before narrowing the focus into more detailed questions. I applied this advice and listed some questions aimed at surfacing issues that were critical to my interviewees' roles and to that of the business.

In the semi-structured interviews that followed I gave them the opportunity to think about the future in light of the imminent re-organization and asked if they could identify anything that they felt they would need to know more about, handle more effectively or differently in future. To understand more about their personal working habits I also asked how they keep up with changes and developments in their own professional area, manage their personal learning/knowledge and how they access/use information. I was curious to find out whether they felt valued and satisfied with what happened to their work (output) and the way it was used within and outside the department in which they work. I ended by asking a direct question to see whether they could suggest topics for the research and to nominate a top priority giving reasons for their choice.

The interviews took place over a period of 4 weeks. 15 interviews were conducted and views gathered. A surprisingly high number (29) of different suggestions for research were received which I grouped into related themes (**Fig.1**).

Fig.1. Suggestions for research topics (grouped into related areas) from the 15 people interviewed

Change Management:
Do we help our managers to keep up with changes in the business world? How?
Change Management: deployment is weak and decay rapid: how do we stop the decay?
Team dynamics and preparing people for major change
The dynamics around decision-making and how to speed it up

Knowledge Management
'Under a Bus Syndrome': investigate prevalence at senior level and business risks involved in having key people working at key tasks when no one else knows what they do or how they do it; also people leaving and taking their knowledge with them.
Those joining the Post Office often have skills/experience that is ignored once they join. Why? How could we harness? Knowledge Management generally as a business issue as well as at departmental/team level

Business Strategy:
Strategy tends to be emergent -why? The purpose of Planning: can we change perceptions? Are we here to do content or process?

Project Management:
Team culture vv 'pet project' culture; Implementing a project is seen as an end in itself rather than actually delivering the benefits, how can we change the emphasis? What are the benefits from using PRINCE (project management methodology)

Measurement systems:
Methods to use other than using a Balanced Scorecard? How to validate benefits from a package of projects; proving benefits against targets; concept of understanding the correlation and relationship between what we do and the results we achieve; Diagnosing current state (shortfall against target); need for an analytical tool to aid the Post Office Management Model (Balanced Scorecard approach)

Information management and technology:
Improving information on databases; how to use business information to motivate people; Investigate ways to get rid of more paper and use technology to capacity

Behaviours:
Behavioural change in context of a commercial environment; Team dynamics and preparing people for major change; empowerment; motivation, incentives and franchising; Lack of ownership of figures

Who mentors the mentors? The dynamics around decision-making and how to speed up decision-making and change

Independent Regulator:
What processes will be necessary to put in place? Managing the relationship between Group (HQ) and individual business units, and Group and the Regulator

Competition:
Understanding the competition; developing a structure/process for processing/using information about competitors across the business

The range of subject areas was diverse but overall the list reflected concerns about the current state of the organization. Perhaps because of the impending major re-structuring which encouraged the employees to think critically, the organization was portrayed negatively as one that does not plan effectively, is in decay, is slow at decision-making and not good at analysis. Further, its working practices were viewed as over restrictive - such as project management - and there was little understanding about the competition, how to manage information or engage its workforce. A further major concern was around the lack of the management of knowledge and it was suggested that a more dynamic approach was needed.

I looked at the mix of age range and experience within the team, to see if the views might be considered as generally representative of the management or not. No pattern emerged. There were many different backgrounds, age ranges and a mixture of both males and females. The number of years' experience of working within The Post Office also varied from under a year to over 15 years. Many had worked on the operational side of the business before moving into the Strategy and Planning Department. Although only 15 views had been taken I felt the sample was fairly representative of the management as a whole and that the picture they painted of The Post Office could be accepted as a reasonably accurate indication of the current situation.

The Business Strategy and Planning Director indicated that a consultative prioritisation exercise would be undertaken to consider the ideas that had emerged and to find the research topic. I was encouraged by his approach, as I wanted to involve people within the organization as much as possible. A group within the team was formed to reflect on the results and we met to agree the decision criteria. The chosen topic should be

i) Organizationally independent (i.e. of relevance to all the different business units within the organization)
ii) Likely to engage the key players in The Post Office
iii) Be of interest to members of top management (the Executive Committee)
iv) Topical, new and an area of real value in the current climate
v) Not already being done within the organization
vi) Within the capability/skills set of the researcher
vii) Uncomfortable rather than comfortable to tackle: in other words, the prioritisation would be undertaken honestly and nothing would be ignored purely because it might be unpopular or difficult to investigate.

Six ideas were short-listed as meeting the criteria and were all related to Change or Knowledge Management. As The Post Office was already involved in initiatives around Change Management, managing knowledge was prioritised. The Business School, Bournemouth University had already undertaken some work around Knowledge Management and so the 'fit' was felt to be suitable for both organizations. The final wording for the title of the research was agreed as "Managing knowledge during times of major organizational re-structuring" to reflect the current situation. (Later the 'major' was dropped as it became clear my findings could apply to any size of re-organization or re-structuring activity).

In view of the complexity of the organization and the recent turbulent times it has experienced, a brief historical perspective of The Post Office between 1988 and 2003 appears in the Appendix.

1.1.2. Assessing the current state of Knowledge Management within The Post Office

Prior to beginning the next stage of research, I investigated to see if anything had already been started in the area of Knowledge Management within the Post Office. I was directed to two people - the Head of Organizational Design and Development and the Head of the Knowledge Management Practitioner Group within Post Office Consulting. I hoped to establish through informal meetings and discussions with them how Knowledge Management was viewed for the whole organization and to hear of any work that had been started.

The Head of Organizational Design & Development explained that work had been started to develop a group-wide strategy for Knowledge Management that would fit within the Post Office Management Model (POMM) - a balanced scorecard (Kaplan & Norton 1996) approach to business strategy. She listed some of the pressures for change to which the organization had to respond: the industry was facing regulation and there was increased commercial freedom as many areas of The Post Office were facing competition, competitors were increasing and already showing interest in some of the services previously protected by the monopoly, competing technology was emerging which would offer alternative substitute services, and there was increasing customer demand for higher quality services and increased responsiveness. The Post Office Executive Board had identified weaknesses:

> *We do not make change fast enough, we are not sufficiently commercial, we do things differently all over The Post Office, we swamp people with initiatives - and force them to decide their own priorities; this leads to much of what we do being incompletely implemented, we either don't or can't measure whether we are on track in many areas and we don't analyse performance gaps so that we can understand why things are going wrong.*

Post Office Management Model Workshop 1999, Session 2 Slide 12 ('Areas of weakness. Business Strategy Directors & Post Office Executive Committee View')

Diagnosis of the root causes had been undertaken and poor planning methods were highlighted. However another underlying root cause was identified as a lack of Knowledge Management. The Executive Board decided that using a balanced scorecard approach would help the organization to improve quickly. This was described as:

> *A standard (model) approach to how The Post Office manages itself and is our management process for setting, deploying and managing direction that allows employees to understand and contribute to the breakthrough and incremental improvement necessary to deliver the company's short, middle and long term business direction.*

Post Office Management Model Workshop 1999, Session 2 Slide 24 ('Solution defined')

The desired result from introducing this approach was to facilitate the Post Office being managed as a single, complementary set of businesses with strategic direction being based on detailed commercial analysis and performance gaps subjected to root cause analysis at every level. This was to enable vital few strategies and actions to be identified which would chart the way ahead at every level. The Head of Organizational Design & Development said that none of this could be achieved unless Knowledge Management was also taken seriously as a facilitative ethos.

As we discussed the features of the management model I could see how vital managing knowledge was going to be. It was a thread running through every area. It would only work if everyone engaged in knowledge-sharing, honest evaluation of performance and took a proactive stance towards their work areas. The Head of Organizational Design & Development agreed it was unlikely that any management model applied would come to life without this. We concluded that making it work was the biggest challenge because it would involve each individual worker in making changes to the way they approached and undertook their work, and behaved.

Four main areas emerged from our discussion about desired behaviours, none of which were likely to be easy to achieve (Fig.2):

Fig.2

Behaviours required to achieve deployment of The Post Office Management Model

Managing by fact

- Make data readily available and present it in a manner which is both complete and unobserved
- Focus on understanding performance gaps
- Demonstrate a respect for data…it must not be amended or changed without the permission of its owner

Commitment

- Provide sufficient time and resource, motivate and energise
- Ensure attention to detail and a systematic approach

Delivering the truth

- Create a collaborative environment which encourages honesty and creativity
- Discard personal agendas
- Question and probe, a willingness to challenge
- Ensure individual accountability for the diagnostic data

Identify the key root cause(s) of the performance gap

- Fixing this addresses the cause and not just the symptom
- It will have a direct impact on closing the gap

To achieve these behaviours would require education, training and support. People would need to share information and knowledge. I asked if Knowledge Management was mentioned explicitly in any of the new planning model materials and she said it was not. This had been a conscious decision so as not to present what might be seen as yet another 'fad or flavour of the month' in the wake of a string of relatively recent initiatives such as Total Quality Management, Business Process Improvement, Business Excellence and others. The perception of many of the organization's workers was that each of these had been heralded in with much publicity and attendant expectation but each had been overtaken as changes in senior management had brought along the next, different initiative.

Ending our meeting, she expressed caution around any business unit within The Post Office undertaking Knowledge Management activity when no group-wide strategy or approach had been issued. This approach was in line with many initiatives undertaken over recent years where Group HQ had planned a consistent approach to be deployed across the organization. However, in practice this had not always been successful as each business unit had tended to put their 'spin' or identity on the core material and had sometimes moved away from the framework provided by Group HQ.

She was insistent that until a group-wide strategy was ready to launch, units should not pursue individual paths, although she added a caveat that there was no reason not to undertake some limited activity to pave the way for Knowledge Management. This highlighted the need for me to be alert and sensitive to the internal politics of the organization during my forthcoming research.

She mentioned two units within The Post Office had started Knowledge Management activities - Post Office Consulting and Corporate Clients.

I mentioned I was interested in looking at how knowledge is managed during organizational re-structuring. I asked whether she thought The Post Office had learnt anything in this area from previous change programmes, for example, Business Development. She felt this was a major issue and that The Post Office had a long way to go before it could say it learnt from past experiences or applied any of the lessons that emerged from performance reviews.

We talked about the current programme 'Shaping for Competitive Success' and the issues that The Post Office faces during major upheavals. Our discussion underlined the importance of finding out how we might manage knowledge more effectively in the future both as a normal working practice and when undergoing specific change programmes.

She suggested a few related areas that I might find useful to investigate in due course, for example, the use of and potential reliance on technology to leverage knowledge (see SPICE Fig 3), and how knowledge might be captured about customers and used to benefit our organization. We talked about people within the organization who might be approached as part of my research group. We also discussed how any of my findings might, ultimately, be shared across the business.

Fig.3

SPICE

Securing the Post Office's Integrated Commercial Environment

" The SPICE programme is an important and exciting initiative that will help us to achieve one of the three Post Office Goals - 'to be our customers' leading choice supplier in their chosen markets'. Alongside the re-organization of our business units under SCS (Shaping for Competitive Success), SPICE will give us the tools, skills and culture to be world class in meeting customer needs."
John Roberts
Chief Executive
The Post Office
March 1999

The SPICE Vision

SPICE is a major change programme that will re-engineer the way that the Post Office as a whole manages relationships with its customers. It is about becoming more integrated and sophisticated in the way we use information and market our services so that we can grow more profitable business.

The vision for SPICE is to enable The Post Office to be an organization that -
Is staffed by people who deliver outstanding personal service
Treats information as a valuable asset
Maximises its unique range of channels to give unparalleled access for customers.

Extract from Briefing Note No 3
30th March 1999

My follow-up investigations took me to the Post Office Management Model project team and to one of their experienced senior managers who provided the following comments:

I do see that the Post Office Management Model has a significant part to play in some aspects of Knowledge Management, in the sense of the continuous accumulation and use of knowledge about Business Performance which happens through the planning and performance management processes…it is more about the use of knowledge in the context of the cyclical and day to day decisions which are made about future direction and business performance. In my view the design of POMM (but not necessarily current practice) supports Knowledge Management. Having said the

above I'm not sure that we in POMM need to do anything more to further the Knowledge Management cause other than to make sure POMM is in fact implemented as designed - in other words that the desired state is achieved.
(R 17 BL)

My reading of this explanation is that Knowledge Management is seen as innately present and that it is expected to happen automatically if the POMM processes and behaviours are followed properly. The emphasis is on meeting performance targets, using a balanced scorecard approach (Kaplan & Norton 1996) to ensure plans line up and ensuring accountabilities are monitored. I felt that the phrasing of the reply indicated the view of a small, dedicated Post Office team working solely on, and concentrating on, introducing POMM into The Post Office. The comments gave me the impression that Knowledge Management was seen as integral and there was little interest in further discussion on what was seen as just one element.

Next I met with the Knowledge Manager within Corporate Clients, another business unit within The Post Office - the only one to have a Knowledge Manager post, (with the exception of Post Office Consulting). It seemed significant to me that there was such a post, however it became clear that the emphasis was on the technological management of information. He had not been in post very long and confirmed that Knowledge Management activity was at an early stage and that few knew much about it. He was currently focusing on educating the senior managers to achieve a wider Knowledge Management focus on the sales side of the business and assisting teams in the Solutions Design Process to pull together intelligence gleaned from various sources.

He was preparing a presentation for the Corporate Clients Executive Board to explain his perspective of the relationship between technology, processes and people and to demonstrate how Knowledge Management will bring benefits over time if effort and resources are invested. His suggestion was that 70% of effort is required around people issues and in bringing about a knowledge-conscious culture, 20% of effort needs to be directed to the provision of process support and 10% effort should be directed to the area of tools and technology. He said he had an idea for trying to develop a two-by-two model to show formal/informal ways of sharing knowledge on one axis, and structured/unstructured ways of doing this on the other. He also suggested that a mixture of carrot and stick approaches was likely to be required if he was to succeed in implementing Knowledge Management within his business unit. For example, encouraging knowledge sharing as an agenda item in meetings, and tying in the requirement to share knowledge by making it a way of earning a percentage of bonus payments.

While being a champion of Knowledge Management, he expressed overall doubts that the Executive Board would allow the time necessary to introduce a fully rounded Knowledge Management approach, mainly because of the organization's financial situation: they were seeking strategies that would bring quicker results to the bottom line. Knowledge Management was not, currently, seen as a way of doing this.

I moved my enquiries to Post Office Consulting and met with the Head of the Knowledge Management Practitioner Group. He explained the structure of PO Consulting and that there was a Knowledge Management Practitioner Group - one of 21 practitioner groups all of which concentrated on different fields of activity. John Roberts, Chief Executive of The Post Office and President of the European Foundation for Quality Management had recently stressed the importance of Knowledge Management to the business in his opening address at the 4th World Congress for Total Quality Management (TQM) in 1999:

> *Alongside these changes The Post Office is emphasising innovation and Knowledge Management. The development of Knowledge Management is being 'spear-headed' by our internal consultancy unit, Post Office Consulting, who have been recognised several times over the last few years through awards such as the Economist's Knowledge Management Award and the HR Excellence Award, as well as being a case study for the Open University on Knowledge Management.*

(John Roberts, Chief Executive of The Post Office)

This showed that the consulting group had made a lot of progress but this had not yet been shared with the wider organization due to the forthcoming re-structuring. However, a 2-day pilot Knowledge Management Workshop was going ahead and, because of my work experience and my interest in the area, I was invited to attend and to provide feedback.

The pilot workshop took place the following week and I found it stimulating. It introduced me to the subject of Knowledge Management from another perspective - that of a consultant 'selling' the concept. The workshop provided a mixture of presentations with syndicate exercises and was due to be developed further after the pilot had been evaluated. It was pitched at a high, rather abstract level to achieve buy-in from managing directors of business units. I duly provided feedback which suggested providing a more practical emphasis and the avoidance of theoretical jargon that I believed would be off-putting to many practising managers, whatever level.

1.1.3. Summary and statement of my research questions

From my investigation into the current state of Knowledge Management in the client organization, I could see some strategic thinking was taking place but little else was happening - the re-structuring of the whole organization had pushed Knowledge Management into the background. This was despite acknowledgement of the potential benefits of such an approach.

I had also become more aware of the environment in which my research would be undertaken and the internal politics around which I would need to work. It would be important not to tread on anyone's toes and to be sensitive to gain continued cooperation if I wanted to achieve a high level of involvement and to take a collaborative enquiry approach throughout my research.

....

At this juncture I will state the view that I had formed from my initial investigation and that I would want to explore further:

- That without conscious Knowledge Management the client organization has lost/continues to lose knowledge and therefore cannot capitalize on it for the benefit of the organization
- Further, that the rate at which the knowledge is lost is greatest during periods of change or re-structuring.

My aim is to find ways to collect and identify evidence to support or refute this view. Bound up in this view are assumptions based on my initial investigation: -

- That the client organization, in the main, is not consciously applying Knowledge Management
- That it is losing knowledge as a result
- That, in general, it could benefit from not losing it
- That, specifically, it could benefit from finding a practical method of not losing it when going through a period of re-structuring

These are linked in a causal chain:

> *A causal chain: a set of untested assertions about the relationship between the concepts*

(Gill & Johnson 1991 p28)

It will be necessary to consider the first three assumptions before the final one can be tackled.

Chapter Two

2.1. Literature Review: Knowledge Management as an emerging practice within a business context

Knowledge Management emerged as a management practice during the second half of the 20th Century. Over the past 50 years there has been a growing recognition of the role of knowledge in effective organizations. Initially the focus was on the role of *personal* knowledge that individuals brought into a working situation. This was debated by Polanyi (1962), and Nonaka and Takeuchi (1995), who considered, among other aspects, that there was enormous importance in the role of *tacit* (hidden) knowledge held within individuals. This was a new concept.

Historically, the education system has rewarded those who can demonstrate *explicit* knowledge, often embodied in certificates, diplomas and degrees. These, traditionally, have provided 'proof' of explicit knowledge. This approach has been mirrored by the traditional approach to recruitment into business organizations where individuals' knowledge is tested to see what they know. It was only later that recruitment practices began to understand that it might also be important to test how a candidate might apply their knowledge.

However assessing someone's knowledge remains difficult and knowledge seems intangible. Karl Wiig (1997) was among the first to produce a framework for Knowledge Management - 'Pillars and Functions of Knowledge Management' - that identified and brought together the important, different elements for consideration - the way knowledge is created/manifested, transferred, valued, and used, for example in problem-solving and decision-making. He recognised the support role of procedures and technology and that the whole activity is affected by the overall culture of the organization in which it is set. However, despite the seemingly strong framework with its emphasis on the pragmatic, the innate intangibility of knowledge was also acknowledged. Later this intangibility was recognised as bringing challenges by Sveiby (1997) and Petrash (1996) who described knowledge as an 'intangible asset' which needs to be managed and measured.

Wider views emerged as other writers such as Nonaka (1994) presented further thoughts about how knowledge is created and used within a business context. His 'Dynamic Theory of Organizational Knowledge Creation' was developed with Takeuchi (Nonaka & Takeuchi 1995) and in it they agreed that business organizations could become 'knowledge-creating companies' by consciously viewing and using knowledge from their individual workers as a business asset.

This view demanded a different stance to be taken. Now there was recognition that, not only did an organization require workers who were suitably qualified, but it also needed to persuade them to apply and expand their knowledge in order to create new knowledge to assist the organization's development. This emphasis led to the development of individual workers into 'knowledge-workers' - workers expected to consciously use their specialist knowledge, exploit contacts and networks in order to help them and their organization to stay at the leading edge of their field. Gradually this approach gave rise to knowledge networks and 'communities of practice' (Brown & Duguid 1991) as individuals with similar interests linked together to share their knowledge using various communication techniques including those that can be assisted by technology. As expertise has grown, particularly in some specialist areas - for example newly emerging technology - this knowledge has become highly desirable and has led to the creation of a 'knowledge market', with highly attractive salary packages being offered as lures to the most sought after, knowledgeable individuals.

Cohen (1998) argues that firms who use organizational processes to capture/apply 'objective' knowledge gain competitive advantage. Such views began to influence the strategists, many of whom had previously equated Knowledge Management solely with using technology to record and process necessary information. Organizations, particularly those using business process re-engineering approaches (Hammer & Champy 1993), started to take notice. They wanted to find out if they could value and measure the knowledge they had within their people and organization to prove its worth as an asset. Zack (1999) agreed this was important:

> *Identifying which knowledge is a unique and valuable resource, which knowledge processes represent unique and valuable capabilities, and how those resources and capabilities support the firm's product and market positions are the essential elements of a knowledge strategy.*

(Zack 1999)

In this way strategists were beginning to be persuaded to recognise knowledge as a primary asset that has the potential to bring competitive advantage. In theory the basic argument was understood:

that once an organization's knowledge was identified and harnessed, the value of knowledge could then be applied in the production of products and services (Penrose 1959). Therefore competitive advantage should be possible to gain from knowledge assets, (and the intellectual property associated with those assets), particularly if they are difficult for others to imitate or replicate (Teece 1998). However, in practice, the ability of firms to find ways to deploy such an approach and to measure the value of such an intangible asset as knowledge also began to be questioned.

Consultants too have added to the debate on the importance of managing knowledge within a business context. Wiig (1997) chronicled the period from 1975 starting with a description of one of the first organizations to adopt knowledge-focused management - Chaparral Steel in the USA. He listed various events that he saw as milestones towards the emergence of Knowledge Management as a management concept in the late 1990s. By then numerous Knowledge Management conferences were being held throughout the USA, Europe, Asia and Africa and the subject had been written about, debated and worked on extensively throughout the world of academia and management. As a result of this spread of thinking, some organizations changed to knowledge-based management, overtly valuing the knowledge held within individuals in the workforce and making efforts to exploit this to the benefit of the organization (Davenport and Prusak 1998). Thus the basic concept of knowledge as something to be managed within a business context had emerged.

In summary, the 1990s can be viewed as the main period during which there was rapid development away from a post-industrial economy to a highly technological, knowledge-based economy (Neef 1997; Sveiby 1997; Drucker 1998). The concept of the post-industrial society marks the rise of service-based economies that are dependent on knowledge, understand the place of knowledge, and recognise the need to manage how workers use it. According to Neef (1997) the key reason for the emergence of the 'knowledge-based' economy is the growth of high technology and the opportunities that come with it.

The intangibility associated with knowledge in services is portrayed as *living on thin air* (Leadbeater 1999) or the *weightless economy* (Neef 1997). In the US the weight of the economy's total output has not changed significantly in the last 100 years despite a twenty-fold increase in the Gross Domestic Product (GDP).

Evidence on how widespread the knowledge-based economy had become by the end of the 1990s was provided by a survey published in the Journal of Knowledge Management (Chase 1997). Views were sought from 8,000 executives in Fortune 1000 companies in North America and 1,800 senior executives in Europe. 92% indicated that they worked in 'knowledge intensive' organizations. 97% of respondents said there were critical business processes that would benefit from more employees having the knowledge that was currently within the heads of one or two people, and 87% said costly mistakes occur because employees lack the right knowledge when it is needed.
Three major conclusions emerged from the study:

1. Whilst organizations recognised the importance of creating, managing and transferring knowledge, so far they had been unable to

translate this competitive competence into organizational strategies.

2. Successful Knowledge Management implementation was mainly linked to 'soft' issues, such as organizational culture and people.

3. Most organizations were struggling to use Knowledge Management Tools and Techniques effectively.

Within a couple of years of Chase's survey, Despres and Chauvel (1999) were describing Knowledge Management as being:

> *Clearly on the slippery slope of being intuitively important but intellectually elusive*

They agreed with Quinn, Anderson & Finkelstein (1998) that:

> *The productivity of a modern corporation or nation lies in its intellectual and systems capabilities than in its hard assets*

They also referred to the elusiveness indicated by Alvesson & Deetz (1996) who said:

> *To define knowledge in a non-abstract and non-sweeping way seems to be difficult. Knowledge easily becomes everything and nothing*

Taken together, these statements seem to indicate that Knowledge Management as a concept is understood to be valuable but is still difficult for many to accept, identify, evaluate and deploy because of its complexity and the mixture of the tangible/intangible, objective/subjective aspects. Not only is it difficult for organizations to embrace at a strategic level but they also have to address issues at individual worker level.

Despite all these challenges, strategists are still convinced that knowledge can hold a central role within a business context (Dierickx & Cool 1989) and is worth pursuing as an asset.

Having looked at the emergence of Knowledge Management within a business context and gained a general positioning of it within the business world, I intend to look further at some of the individual aspects of Knowledge Management and their interrelationships.

....

The previous section shows that over the last 50 years there has been growing recognition of the role of knowledge in effective organizations. According to Chase's survey, it is an area that is difficult to manage but from which benefits can be considerable if successful approaches are applied. The aim for the next part of my study of the literature is to explore some of the key aspects in order to plan my approach to the forthcoming practical research within my client's organization:

- The identification and roles of explicit and tacit knowledge
- Collective (social) aspects of knowledge: enhancing knowledge through interaction
- The context for knowledge within organizations: a selection of models and approaches

The concerns around Knowledge Management that were prioritised by the client organization will be covered within these overarching aspects.

2.1.1. The identification and roles of explicit and tacit knowledge

Before I can attempt to discuss Knowledge Management and address questions around what type of knowledge can bring competitive advantage to an organization and how it can be identified (Spender 1994, 1996), there are some fundamental points to make about knowledge, individuals, and how the human brain works.

Much has been written about tacit knowledge. Polanyi suggested that tacit knowledge (that held within a person) only becomes explicit when it is expressed, often being released through an external trigger or agent. In general, we still know very little about the brain's capacity and how knowledge is formed, stored and what proportion is tacit/explicit. We do not fully understand how knowledge is processed or the extent of our knowledge store. Although we are conscious of some of our explicit knowledge - (knowledge that is readily available, easily/openly expressed or recorded/recounted, for example, we know we can count up to 100 and name the letters of the alphabet) - we could not make a list of everything that is stored in our brains, because we are not conscious of everything we know (tacit knowledge)(Nonaka and Takeuchi 1995).

This is a very complex area and cannot be fully explored here, but many questions emerge such as whether the brain is selective about what it chooses to store and, if so, how much consciousness exists around such a decision. Further, is stored knowledge 'arranged' within the brain, does it grow/shrink, what processes have to take place for it to be summoned for use later? etc. As was explored by Polanyi (1967), each individual knows much more than can be expressed in words because the brain continually processes more than facts and feelings.

Although we do not fully understand how the brain functions we do know that different activities are controlled by the mechanisms of the right and left sides of our brains (von Oech 1983). The brain's left side is responsible for the logical, sequential, reactive, verbal, linear, analytical, rational, explicit, specific, systematic and practical processing activities. The right side of the brain controls the creative, inventive, non-verbal, spacial, artistic, intuitive, original, imaginative, humorous/playful and fanciful areas/activities.

In a working situation, the emphasis has traditionally been on the explicit knowledge (knowledge that can be expressed for codification) that a worker can bring to the organization. The assumption is that tacit knowledge is difficult to extract from the human mind, thus limiting the manipulation and transfer of this type of knowledge (Polanyi 1962). Accordingly, explicit knowledge has become associated with information (and information systems), and tacit knowledge linked to models and behaviours that are considered to aid its expression and transfer. There is a debate around information and how it differs from knowledge. For example, do people differentiate between them? Do they, for example, consider information as purely raw data, i.e. facts and figures, which only becomes knowledge when interpreted within a context by a human intellect?

Returning to one of the most basic questions, Despres and Chauvel (2000), presented Earl's (1998) view that introduced the idea that humans can be in a 'state of knowing':

State of Knowledge

State of Knowing	**What you know**	**What you don't know**
Knowing	**Explicit knowledge**	**Planned ignorance**
Not knowing	**Tacit knowledge**	**Innocent knowledge**

Fig 4. Knowledge and Knowing
(Adapted from Earl 1998, p 8,
cited in Despres & Chauvel, Knowledge Horizons, 2000)

This notion, based on Johari's window - a model originally developed by two psychologists, Luft & Ingham (1955) - explores different styles of interpersonal communication. The 'window' shows the degrees to which there is awareness between two people of what each other knows, or how they can perceive the same situation two different ways. This approach surfaces interesting questions around 'knowledge', and suggests there is a 'state of knowing' and consequently a 'state of not knowing', labelled as 'ignorance'. It implies that this ignorance can be 'planned' or 'innocent' which suggests a degree of choice is being made - whether consciously or unconsciously is not documented. This approach to understanding what is happening within individuals demonstrates how complex the issue is, particularly for organizations that may employ a large number of workers such as my client, all of whom will have individual knowledge levels (both explicit and tacit) and attitudes towards the use of their knowledge, as well as being unaware of what they don't know.

Applied to business situations, Earl suggests that knowledge increases by making communications more effective by reducing the blind/private areas and making efforts to become more open/transparent.

2.1.2. Collective (social) aspects of knowledge: enhancing knowledge through interaction

One of the key issues to emerge from the literature is the role of social interaction that results in the creation and sharing of knowledge. This is a fundamental issue that Plato (c 359 B.C.) identified as he believed that enhanced knowledge comes out of the interaction of two viewpoints. Eighteenth Century educational reformers such as Pestalozzi, Frobel and John Dewey also understood this approach and emphasised the benefits of increasing knowledge through interaction with others to gain direct experience, rather than relying solely on using written information. They were the predecessors of learning through multi-media technology-enabled and classroom-based simulated learning environments. So, in addition to recognising the importance of both tacit and explicit knowledge, there is the need for interaction to enable the release of knowledge so that it can be widened, used, integrated, transferred and shared. This notion, developed by Polanyi (1967) in his writings on knowledge, recognised interaction as a necessary step in the capture of both tacit and explicit knowledge.

Nonaka provided a useful model (SECI 1991) that elaborated on the two types of knowledge (tacit and explicit) already discussed and added further dimensions. He demonstrated the need for interaction or 'social aggregation' and showed three levels at which this needs to occur - at individual and group level, and in context. In this way he identified four knowledge-creating processes: socialisation, externalisation, combination and internalisation. Nonaka believed interaction to be critical to Knowledge Management within organizations and that mechanisms need to be in place to enable this to happen. He develops further convincing arguments (Nonaka & Takeuchi 1995) to support the notion that knowledge creation is dependent on the socialisation of individual tacit knowledge which is held in groups operating within organizations and becomes embedded in company routines and culture.

Later, Nonaka (1998) identified the need to recognise that, as interrelations take place, the knowledge changes/re-shapes. He called this re-shaping phase 'Ba' and emphasised that knowledge is context-dependent and cannot be separated from its 'place'. He suggested that this re-shaping phase is paramount as it is here that the most benefits for an organization can be produced.

A further aspect of managing knowledge that relies on considerable social interaction is how knowledge is transferred through informal networks or 'communities of practice' (Brown & Duguid 1991). Communities (and collective knowledge) are rarely discrete so an organization can be considered to represent overlapping communities within and, of course, between organizations (Araujo 1998). Presenting further research in 1998 around the same subject, Brown and Duguid also emphasised links between the knowledge of individuals and the shared understanding of the community with which they are associated. They believed they are so tightly associated that one can modify the other and ultimately lead to a change in the knowledge base of the community. Further, they add a warning that shows there are negative as well as positive aspects to these communities of practice as they can be "blinkered by the limitations of their own world view".

The notion that knowledge can reside at the *collective* level within business organizations has received considerable attention. Brown and Duguid acknowledge that the transfer (learning) of collective knowledge requires extensive social interaction so that, despite the availability of the most sophisticated technology, the indications are that successful Knowledge Management lies with an organization's ability to engage its *individual* workers as well as to provide access to information technology. Such social interaction relies on a willingness to share knowledge, a trait that is not always present. Individuals have always had the choice of whether to share with others what they know and it cannot be forced. Davenport & Prusak (1998) agree there are various motives at work within individual workers and these include the way the prevailing internal 'culture' (the customs, language etc. that have built up within a particular organization over the years) influences their willingness to share knowledge. They suggest some individual workers find knowledge sharing difficult to accept and that they cling to the belief that having knowledge gives them power (Quinn, Anderson and Finkelstein 1998) and that sharing it weakens them as individual workers.

Sveiby (1997) also stresses the importance of knowledge-sharing within organizations and Davenport and Prusak (1998) build on this by saying that a 'knowledge-friendly' culture - where people have a positive attitude to sharing knowledge, are intellectually curious and are not inhibited by the idea of sharing knowledge - is very difficult to create. They conclude their studies by suggesting that effective Knowledge Management is one of many components of good, general management, but the difference between success and failure may well turn on how well an organization manages its knowledge and generates new knowledge. The latter is one of the keys to an organization's long-term viability as well as competitiveness.

Another influencing factor relates to emphasis placed on sociological attitudes within the workplace in the last 20 years - for example, where managers are now viewed as leaders, where open communication is practised, flexible organizational structures exist and the widespread use of empowerment and knowledge-sharing are expected. This movement shows a shift away from the old paradigms where control and enforcement, distorted communication, disempowerment and disinterest in knowledge sharing had been prevalent. It is only relatively recently that some organizations have voiced expectations that their individual workers should not only continue to undertake active personal development to add to their professional knowledge but, further, that they should share and develop that knowledge proactively for the good of the organization.

Prusak, in his work as a consultant (Davenport & Prusak 1998), also investigated the social enablers such as the prevailing organizational culture, connectivity and flexibility of the workers and describes knowledge as 'clumping like red blood cells', drawing attention to the essential part group-work plays. By engaging workers in discussions, brainstorms, networks, teams and communities, social interaction with others is enabled and 'connectivity' established which he sees as very important. He suggests that engaging people is therefore the key to Knowledge Management but acknowledges that this is not easy as people cannot be engineered like machines because there are too many variables. He sees the enemy of Knowledge Management as a pervading lack of trust in some organizations that prevents social interaction.

Cohen (1998) argued that competitive advantage is gained by firms who are able to use their organizational processes to capture and apply 'objective' knowledge. Such views began to influence the strategists, (particularly those using a business process approach), many of whom had previously equated Knowledge Management solely with using technology to record and process necessary information.

Gradually a wider view emerged as these processes were recognised as ways in which individual knowledge could be enhanced and, if shared, organizational knowledge increased.

> *If people want to share meaning, then they need to talk about their shared experience in close proximity to its occurrence and hammer out a common way to encode it and talk about it*
>
> (Weick, 1995: 188)

This quotation shows the importance of clear communication and an understanding of a shared vocabulary if knowledge sharing is to take place. Each individual is unique and their interpretation of life experiences, work and what is happening around them is likely to be different. Also the language they use is unique. If an organization develops a strategy to mobilise the knowledge bound up in the individuals in an effort to use it for competitive advantage, then all those problems of managing that knowledge which resides in individuals - including the use of language - need to be acknowledged: knowledge cannot be fully owned by an organization and is not easy to capture, transfer or imitate. It is 'context-sensitive and observer-dependent' (von Krogh, Roos and Kleine 1998).

If 'intellectual capital' (Spender 1996) is to be realised, Spender suggests this can be assisted by the application of his two by two model that acknowledges both the individual and social dimensions of knowledge. These dimensions are shown on one axis (which differentiates activity taken by an individual to that taken in a group setting) and offers 'explicit' and 'tacit' on the other axis (which differentiates between tacit knowledge which is hidden and unexpressed knowledge within individuals, opposed to explicit knowledge which is known and expressed knowledge). He provides four categories - conscious, automatic, objective and collective knowledge - and offers the model as a way of measuring the proportion of knowledge found in each category.

a) 'conscious knowledge' (explicit/individual) that he sees expressed as facts, concepts and frameworks that can be retrieved

b) 'automatic knowledge' (tacit/individual) that he sees as knowledge which is taken for granted, such as the knowledge that allows an individual to perform through skill or talent,

c) 'objective knowledge' (explicit/social) that is found in a shared body of professional knowledge and

d) 'collective knowledge' that he identifies as embedded, social and institutional knowledge.

This is a helpful way of assessing the state of knowledge within an organization and how much exists in the different categories. Nonaka and Takeuchi (1995) also provided valuable insights into the area of tacit/explicit knowledge.

Another model that attempts to assess tacit/explicit/individual/ social knowledge is provided by Boisot (1987). However he used different terminology, preferring the terms codified/uncodified knowledge (that which is easily translated into communicable information or not) and diffused/undiffused (knowledge which is readily shared or not).

Both these models recognise the roles of explicit and tacit knowledge as well as the individual and social/collective aspects of knowledge sharing. However, they also surface the problem of the use of different terminology and ways of looking at issues around knowledge.

In summary, four key aspects of knowledge have been identified: firstly, that both tacit and explicit knowledge are important to consider; secondly, that if a way can be found to harness individual knowledge within a business context - perhaps through social interaction - an organization's collective knowledge can be enhanced; thirdly, that clear communication and a common understanding of vocabulary can aid knowledge-sharing, and fourthly, that there are important questions around the evaluation of knowledge.

My next task is to uncover whether there are models or approaches that look more widely at Knowledge Management as applied across business organizations.

2.1.3. An exploration of a selection of models designed to manage the wider aspects of Knowledge Management within the context of a business organization

Having identified some key aspects of Knowledge Management, I wish to explore how they interrelate.

Mere acknowledgement of tacit/explicit knowledge, or that interaction is required to bring about the development of collective knowledge, is not sufficient to result in effective Knowledge Management programmes in organizations. The emergence of a knowledge market where intellectual capital has become a valuable asset to be managed, exploited and protected, has raised many questions around how to manage knowledge. As already discussed, it is not a straightforward issue because of different understandings around how to identify, construe and manage it.

Although organizations may gain advantage from applying isolated knowledge activities, my aim in this section is to discover suggested definitions for Knowledge Management and how Knowledge Management might be applied throughout an organization. I will be particularly interested in those using a business process approach as my client has adopted some of the principles of business process management.

In my search for definitions, I found Despres & Chauvel (2000) particularly helpful:

> *Our definition of Knowledge Management is broad and embraces related approaches and activities throughout the organization. Knowledge Management is partly practical, basic, and directly aimed at supporting the enterprise's ultimate objectives. Other parts of Knowledge Management are sophisticated and rely on an understanding of underlying processes to allow targeted Knowledge Management focused on the organization's needs and capabilities. … Consequently, the enterprise's viability depends directly on:*
>
> - The *competitive quality* of its knowledge assets; and
> - The *successful application* of these assets in all its business activities

(Despres & Chauvel 2000)

Their suggestions show that Knowledge Management needs to be a supportive approach that works within and alongside an organization's business processes and underpins them. They suggest the use of a "knowledge management event chain" and clearly indicate that implementing this approach would involve a blend of both technological and sociological approaches.

Their DIKAR model (Data, Information, Knowledge, Actions, Results) shows the chain of development within an organization's processes and complementary approaches.

Fig.5

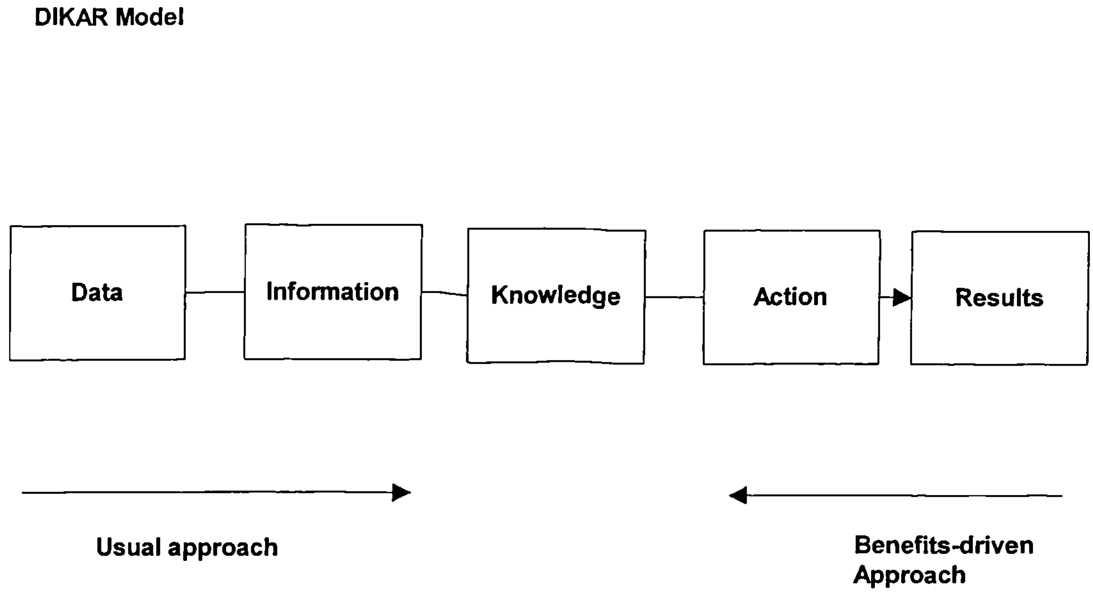


Fig.5 DIKAR model, Despres & Chauvel (2000) p 174 Fig 8.1

In this model the flow from the left starts with raw data that is transformed into information that in turn becomes knowledge. It suggests that only when knowledge has been reached that action is possible which brings results. The model also shows the flow from the right, and depicts that if lessons learned from the action taken and the results achieved are fed back, then knowledge is enhanced.

The activities are shown flowing both ways with knowledge being central to them all. They suggest that technology is heavily relied on to capture and process data to enable it to become information that is suitable for use. This then leads to the formation of 'intellectual capital' - the turning of information by individuals working in an organization into something collectively valuable that an organization can use in a productive way. Further, they suggest that workers' competency might be measured by how they use their knowledge and how effective they are in gaining results.

Although this model does not cover organizational re-structuring, it helps me to understand Knowledge Management in general.

They do provide further clarification in their 'Three Approaches to Knowledge Management' table where Knowledge Management issues are clearly positioned against three areas - knowledge from an individual, team, and collective organizational perspective:

Fig.6.

Three Approaches to Knowledge Management

	Knowledge as Body of Information	Knowledge as Know-How: The Individual	Knowledge as Know-How: The Team
Nature of Knowledge	• Explicit •Codifiable •IS can play a part	• Tacit • Personal	• Tacit • Fluid • Dependent on team dynamics
KM Issues	• Finding it • Validation • Value Assessment • Obtaining at reasonable cost • Integration with own system • Making available to the right population in the right form • Sensible use of technology • Ensuring subsequent beneficial use	• Establishing suitable processes for extraction • Tight ownership • Reluctance to impart • Motivation and reward • Experiential so hard to encode • Trust • Finding suitable way of passing on learning • Limited role for technology	• Formal management of essentially free-form activity • Establishing suitable frameworks and processes • Members' own perception of their role • Mutual trust - need 100% buy-in • Formal learning mechanisms • Dissemination • Creating and using knowledge • Technology has a background role
Common KM issues	• Knowledge about knowledge: knowing it exists and where: its context and hence its importance • Ownership and buy-in to KM processes • Updating and reuse of knowledge • Demonstrating causal link between KM activity and business benefit		

Fig.6. Three Approaches to Knowledge Management, Despres & Chauvel (2000) p 177

This table helps to identify important aspects in each of the three and established the essential starting point with the individual worker. Unless a worker engages in knowledge-sharing the organization is unlikely to benefit from that individual's knowledge. However Despres and Chauvel acknowledge that this knowledge sharing does not happen naturally. The difficulties around tacit knowledge and how to persuade individuals to release their knowledge are recognised, as their phrase "establishing suitable processes for extraction" indicates. They acknowledge there is a need for an organization to use a mix of tangible aspects, such as motivation and reward, as well as to engender less tangible areas such as the creation of trust.

Unless individuals find themselves in an environment conducive to knowledge sharing then their knowledge is unlikely to be surfaced or transferred to teams, and through them, to enhance the organization. The important role that team dynamics play in releasing and capturing 'fluid' knowledge is acknowledged. This is helpful because it indicates the instability of the situation - there is no certainty that this knowledge can or will become available unless favourable team dynamics exist or are created. Again trust is highlighted as a key enabler. It is evident that a 'body of information' will not be built within an organization from their workers unless each individual worker trusts that organization, parts with their personal knowledge and uses it in combination with others in knowledge sharing/creating activities. These are some of the issues that have to be solved before a 'body of information' can be produced.

Once the knowledge is explicit it becomes relatively easy to manage through processes, systems, technology and learning mechanisms, so that it becomes moulded into something that is useful to the organization. However the whole process can never be proved to be complete. Even if an organization seems to be successful in engaging its workers and building its 'body of knowledge' there will always be questions around its extent and value. The search can never be completed - more can always be achieved because the extent of the tacit or hidden knowledge that exists can never be known. There will always be more that could be surfaced or created. Herein lies one of the frustrations of Knowledge Management. All an organization can hope to achieve is a 'body of knowledge' (which will vary in size, type and value) that can be used to enhance its activities in some way.

Despres and Chauvel summarise the common Knowledge Management issues as: the role of knowledge and understanding its context, the importance of gaining ownership and buy-in, finding ways to keep the knowledge fresh and finding ways to measure activity to demonstrate value/business benefit. The latter trait particularly indicates a good 'fit' with my performance-driven client organization.

Another approach, which takes a wide perspective of Knowledge Management, is also based on using business processes and is suggested by Armistead (1999). Seeking to answer the question "how can a knowledge perspective lead to improvement in performance" he acknowledges the difficulties associated with business process management (for example, where mapping can fail where the flow of activity is difficult to describe). However he suggests that knowledge-based processes - in particular, knowledge creation, knowledge transfer and knowledge embedding - can be helpful for organizations to gain a focus on the knowledge in their organizations and help them identify and make use of it. His input-output model provides a vehicle for thinking about these individual processes and shows his belief that processes are no longer only operational but include strategic processes that support the operational, for example Human Resource Management and information systems:

Knowledge creation process

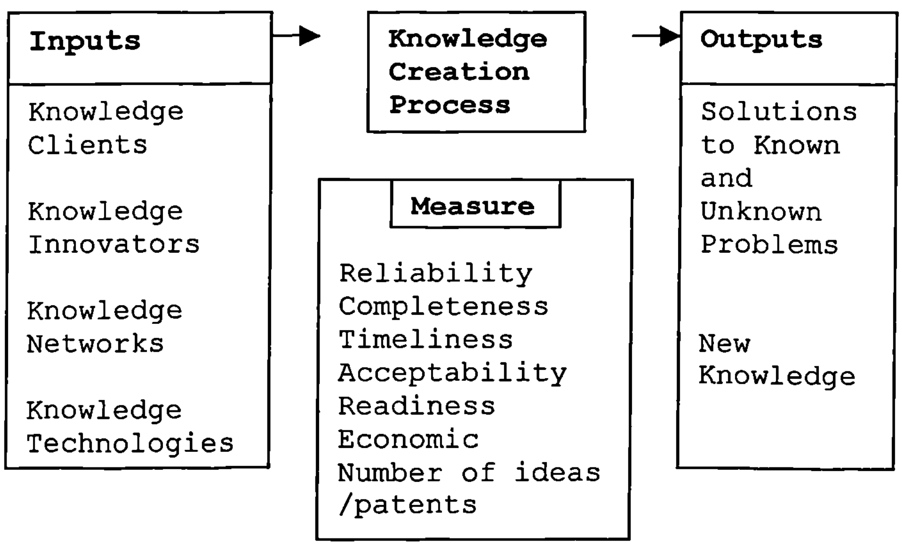


Fig.7. Knowledge Creation Process, Armistead (1999)

Here, Armistead presents a process based on the need to produce outputs for a client. It will be seen that there is much reliance on individuals to be creative and also to work together in teams and networks, sharing knowledge and building/creating ideas.

Knowledge transfer process

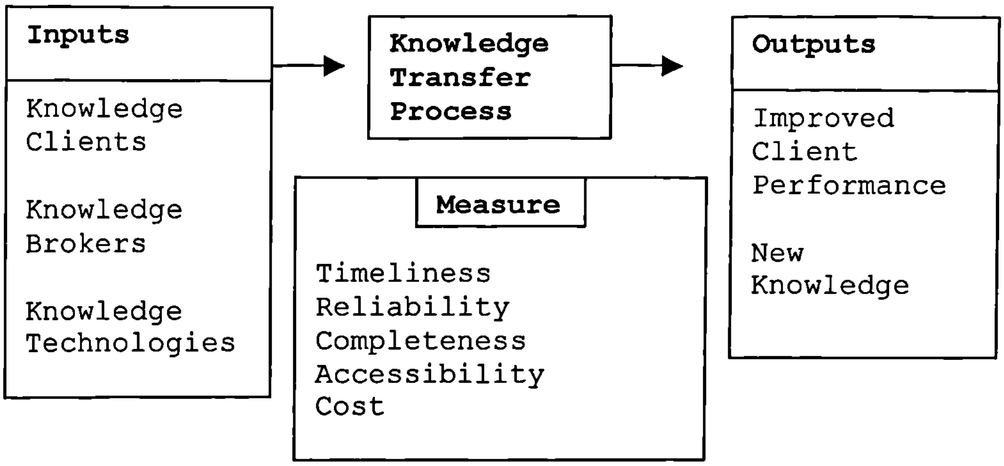


Fig. 8 Knowledge Transfer Process, Armistead (1999)

In his knowledge transfer process, Armistead places emphasis on the role of individuals who facilitate the access and transfer of knowledge. These may have job titles such as knowledge managers, brokers, gate-keepers, or pulsetakers (Stephenson 1998.) Again the desired output is to raise awareness about the place/value of knowledge and to create new knowledge in order to satisfy clients more effectively.

While both the above processes are driven by the need to satisfy external clients, Armistead argues there is a need for the organization itself to manage the knowledge gained through these processes. He presents a further process which he calls a 'knowledge embedding' process and describes this as:

> *A process concerned with organizational effectiveness through the incorporation of knowledge into the fabric of the organizational process and into its products and services*

(Armistead 1999)

Although, ultimately, this process also benefits the organization's clients, it concentrates on showing how the maximum benefit from the knowledge flowing across and through the organization might be gained.

Knowledge embedding process

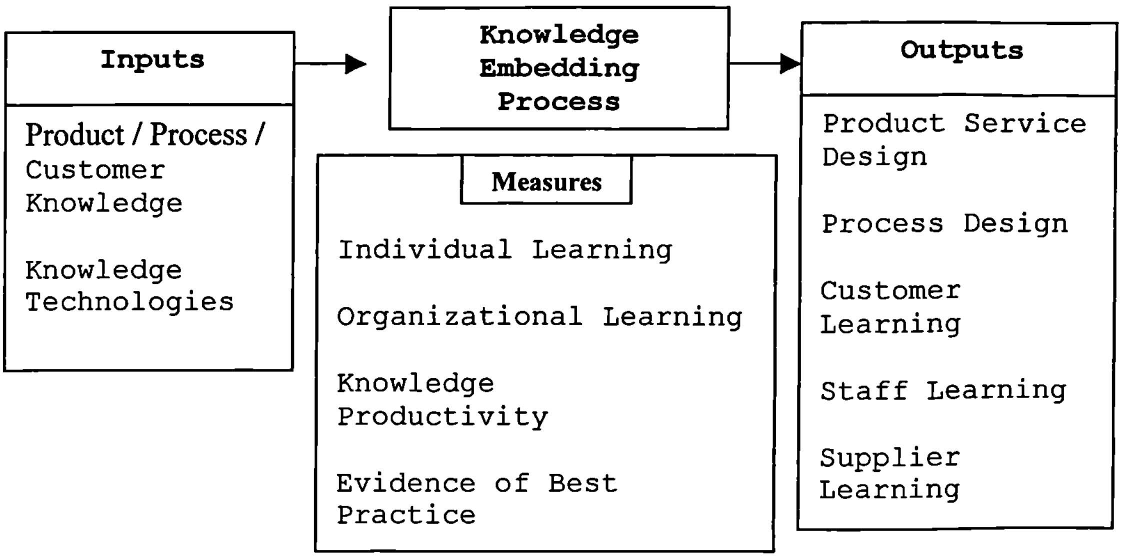


Fig.9. Knowledge Embedding Process, Armistead (1999)

Armistead presents his overall view of Knowledge Management as an emerging discipline that has several academic and management disciplines contributing to it:

Approaches to knowledge management

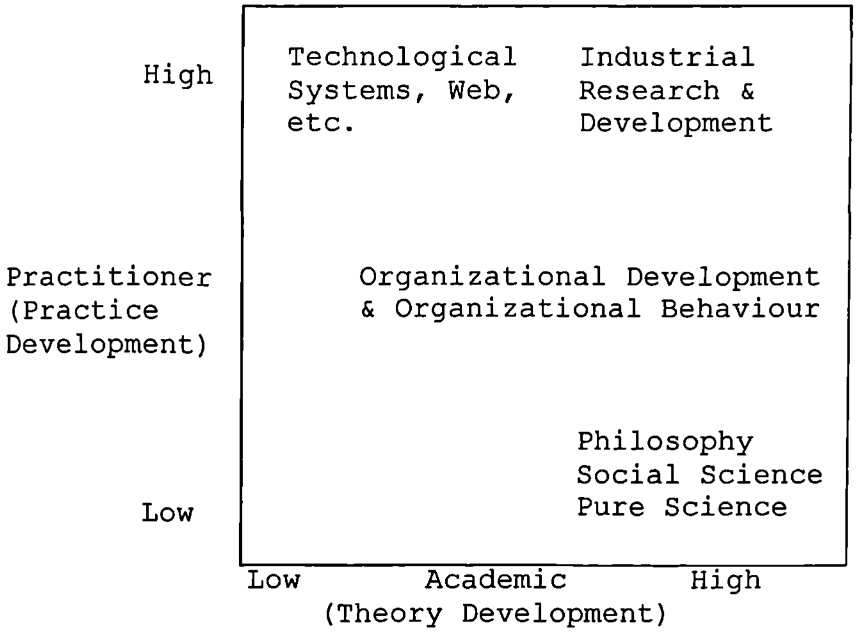


Fig.10. Approaches to Knowledge Management, Armistead (1999)

This supports a view that Knowledge Management can be viewed as a 'holistic' approach (Apostolou & Mentzas 1999). Davenport and co-workers (1998) also found that a holistic approach worked as they researched a number of companies where Knowledge Management had brought both financial gain and an increase in knowledge storage/transfer.

However, it is clear that the key to successful Knowledge Management is through engaging individuals and gaining human interaction. Through his writing on Knowledge Management, Armistead identifies the crucial role of human collaboration:

> *Knowledge processes involve some form of effective collaboration to extract the best from available knowledge.*

He points to the overall potential benefits of Knowledge Management to a commercial organization as:

> *A knowledge approach will inform and guide the design of products and services, and the processes to produce and deliver them will help in the planning and control of the attainment of performance and will enable improvements to be made.*

Taken together, Armistead's view of Knowledge Management and that of Despres and Chauvel - both of which are linked to business process management - have helped me to understand the relationships between the various elements of knowledge. The emphasis in their research on how Knowledge Management might be overlaid onto business processes has been particularly useful.

It will be important to bear in mind the lessons learned by others who have had difficulties in deploying Knowledge Management initiatives. Research carried out by KPMG Management Consulting (1998) reviewed the status of Knowledge Management projects in UK companies and found many weaknesses which had hindered Knowledge Management programmes being fully effective. These hindrances were attributed to elements such as inadequate commitment from senior management and company budgets, poor identification of the kind of knowledge crucial to business, insufficient technical equipment and proper usage, lack of strategic planning, lack of time provided for workers to engage in knowledge-sharing activities.

Outside these process-focused approaches, I found little reference to the specific idea that using a Knowledge Management approach could be helpful when organizations are engaged in re-structuring and major change activities. However, Garner (1999) elicited views from consultants who had taken part in a pioneering conference on Knowledge Management in 1994. He sought their up-to-date views after a further 5 years' experience and some of them identified that it is advantageous to view Knowledge Management as "a perspective for implementing organizational change."

2.1.4. Pluralist, Cognitivist, Connectionistic and Autopoietic Epistemologies

When engaged in searches for definitions of what knowledge is and how we know, philosophical questions arise. It is because the subject of Knowledge Management spans many different disciplines that makes it difficult to grasp.

In this section I aim to provide a brief description of the following epistemologies: *Pluralist,* (Spender 1994, 1998), *Cognitivist,* (von Krogh and Roos 1995 b 15), *Connectionistic* (Zander & Kogut 1995) and *Autopoietic* (Nonaka & Takeuchi 1995). These describe an organizational view of Knowledge Management and present approaches and theories that have been put forward for 'managing' knowledge by academics and practitioners as Knowledge Management has developed over the years.

The *cognitivist* approach equates knowledge with information and data, and views the human brain and the organization 'as a "machine" of logic and deduction' (von Krogh and Roos 1995 b: 14). Here, knowledge is data that is stored in computers, databases, archives and manuals. It suggests that tacit knowledge must be turned into explicit knowledge, and that systems need a high capability in data selection. The theory is that, once the tacit has become explicit, that knowledge is easy to share and access.

The *connectionistic* epistemology is that knowledge resides in the expert links within networks. Models are built up showing the connections between interacting units and organizations where knowledge transfer is facilitated by the identification of key experts in the network, who can then be tapped for their knowledge (explicit and tacit).

Zander & Kogut (1995) state that knowledge is:

> *Held by the individual, but is also expressed in regularities by which members co-operate in a social community.*
> *(Zander & Kogut 1995)*

They argue that to increase knowledge transfer, organizations need to develop processes and use technology to bring the knowledge to a wider circle of individuals:

> *It is the sharing of a common stock of knowledge, both technical and organizational, that facilitates the transfer of knowledge within groups.*
> (Zander & Kogut 1995)

In order to increase knowledge transfer they suggest that organizations develop processes and use technology to bring the knowledge to a wider circle of individuals. Rowse (1999) agrees that sometimes chance enables new knowledge to be created through the use of information databases, which expose users to unexpected stimulus.

Therefore both cognitivists and connectionists consider information processing to be the basic activity of the system but the cognitivists believe the real key to Knowledge Management is held by the relationships and communications within the organization.

The *autopoietic* viewpoint is that knowledge is always private and it is only through using a variety of methods that knowledge can be elicited from individuals and thereby communicated. Nonaka and Takeuchi (1995) describe this transfer as a process of internalisation and externalisation and emphasise that this can only happen with a great deal of effort between individuals. They focus on shared experiences through mainly face-to-face conversations. Therefore, transferring knowledge from organization to organization would be even harder because organizations do not usually work together in such an intensive way. They also believe that knowledge cannot simply be transferred and is always created anew: individuals are affected by each situation and person with whom they are interacting so the interpretation of data is coloured by this and the knowledge therefore newly 'converted' to suit.

Spender (1994; 1998) has developed a *pluralist* epistemology in which knowledge is considered to be multidimensional and inter-relating. He argued that, because of the historical foundations in 'positivist' thinking in Western education, trained managers are attracted to *objective* knowledge (concrete or static issues) and are less comfortable with *subjective* knowledge (issues based on or influenced by personal feelings, tastes or opinions). He suggests four types of knowledge inter-relate in two dimensions: individual versus collective knowledge, and explicit versus tacit knowledge. His thinking raised the profile of the role of tacit knowledge and also established the importance of collective knowledge in an organization.

2.1.5. Technological aspects of Knowledge Management

Because the role of technology is so important and plays a large part in business organizations, in this section I explore the qualities it can bring to Knowledge Management.

> *The information technology industry has also supplied some useful 'solutions', although on occasions their claims to manage knowledge, rather than information, are blatantly overzealous.*
>
> Armistead & Beamish (2000)

Not only does this view present insight into what information technology may or may not be able to do but also acknowledges the debate around terminology: information as opposed to knowledge. The central question is how 'knowledge' is interpreted. Those involved in developing technologies have begun to distinguish between data (sometimes referred to as 'points of reality'), information ('organized data') and knowledge ('information, context and experience') and are developing technical applications to suit different purposes.

The main advantage that technology brings an organization is an ability to handle large amounts of information quickly and to organize its codification for retrieval, transfer and future use, but how successful an organization is at engaging its workers in these processes is often the key to success.

The first efforts to capture knowledge electronically were through the use of databases. The digitisation of data for storage has meant that almost any format (i.e. text, audio, video) is now possible. The increase of information and data has resulted in an increase in analysis software products that assist the retrieval, sorting/sifting processes and speedily present the data in the required format. Sophisticated products are now available such as data warehousing for subject-relevant material. Complex analysis can be undertaken by 'data mining' (Kempster 1998) and 'Intelligent Agents', such as task-specific 'search engines/agents', can be programmed to roam networks and source information tailored to particular requirements.

Accessing this raft of information through networks - whether they are Internets (sources external to an organization) or Intranets (designated communication channels within an organization, sometimes referred to as LAN or WAN - Local/Wide Area Networks)- provide information on a previously unattainable scale to anyone with a computer and suitable connections. This facility has enabled organizations to provide access to information to workers wherever their work base - home or office or in mobile locations.

Talking to each other using computers has opened up not only the opportunity for better communication but also opportunities for more knowledge sharing. Electronic Data Interchange (EDI) led to electronic mail and these led to collaborative systems and 'groupware' - tools to enable organizational co-ordination, communication and knowledge sharing (the leading current example being 'Lotus Notes'). To support inter-activity, two types of groupware tools have developed, the synchronous tools (e.g. calendar and scheduling tools, electronic meeting systems, electronic whiteboards and data conferencing) and asynchronous tools that permit people to work together at different times (example e-mails, knowledge repositories, group writing and document editing tools, and workflow tools).

The technological innovation of the Internet and the world-wide web have changed the nature of organizations and the way people work. As a consequence of all this development and change, Knowledge Management is now understood as the notion that seeks to represent how organizations create, use and protect knowledge (Beamish & Armistead 2002).

> *Developments in computing and communications, and especially the convergence of these technologies, have altered the time and distance parameters of business behaviour.*

(Beamish & Armistead 2002)

Technological tools can replace meetings and make them unnecessary for certain types of collaboration, as, the greater the shared context, the less the need for direct simultaneous communication for effective collaboration. However, studies (Davenport et al 1998) have shown that more exchanges of knowledge take place in direct proportion to increased levels of personal contact. This supports the argument for retaining the level of face-to-face meetings and not relying only on electronic liaison as some knowledge can only be communicated through dialogue, whereas other knowledge can be easily acquired through the exchange of documents. In some cases a combination is appropriate.

Through these technological developments it has become possible to increase knowledge through interaction with others further advancing what the Educational reformers Pestalozzi, Frobel and John Dewey wanted, but in a way none of them could possibly have foreseen.

Organizations have to decide how to weigh the costs and risks involved in investing in technology to support their Knowledge Management: the cost of the necessary technology versus the risk of possibly not realising benefits. High investment is required in hardware, software, connection charges etc. as well as in people issues such as training. Some organizations invest in their own technology while others buy access through subscription. However there are risks - unless there is confidence in the validity of the information and knowledge that is input into the various systems, it is possible that people might act on unreliable data or misinformation, draw false conclusions and make incorrect decisions. Knowledge tools and technologies can facilitate knowledge processes but are not the answer to Knowledge Management on their own - there are unique social, personal and organizational aspects of knowledge, which add to the challenge (Ruggles 1997).

Although those working in information technology systems have been quick to see opportunities for supporting knowledge initiatives, there is still disagreement as to whether knowledge can be managed through the use of technology (McDermott 1999). Those that do embrace the technological approach invest in providing sophisticated information systems and tools (such as search engines and Groupware), and provide access to knowledge networks and databases such as the Internet and Intranets. However, despite increasingly sophisticated technological developments (Ruggles 1997), few are effective at leveraging their knowledge to improve business performance (Chase 1997). Ruggles points to the huge amount of intellectual capital (intangible property that is the result of creativity, for example, patents or copyrights) that is now available through networks and sourced relatively swiftly using search engines. However, this retrieval of data/information does not necessarily equal increased knowledge, although it can be the route to ideas/information. Rowse (1999) has observed that information searches can help researchers to broaden their knowledge and awareness and appraise data and information found in a different context. This could be argued to be knowledge creation and supports a link with the 'connectivist' epistemology. Swanson & Smallheiser (1999) have also noted the potential of cross-discipline analysis: a key finding is the ability of workers to interpret information and use the knowledge gained.

As technology becomes more sophisticated, organizations are looking to find ways to resource new knowledge external to their own organization. They are exploring ways of working with others and how to make 'technology allies' in, for example, institutions with a research mission, such as universities and national laboratories, consortia comprising competitors or non-competing companies, customers and consultants. Some of these alliances may be short-lived but brevity, according to Leonard-Barton (1998a) is not always equivalent to failure as many alliances accomplish important objectives before dissolving. Leonard-Barton points out that accessing new knowledge, through the use of technology, is still based on relationships, which vary in their formality and motives. She points to the need to understand the potential of the technology itself, to be able to assess the expertise of the source in that technology, and identify the true location of that expertise which:

> *May not reside in the most obvious human or system repository.*
> (Leonard-Barton 1998)

Leonard-Barton poses the question:

> *How can potential be evaluated unless someone understands both the new technology and the business it would support - in depth?*

This raises the problem of using consultants who may understand the technology but not whether a new technology could be incorporated or absorbed into an organization. Also, those working within an organization may understand that organization but may not have the expertise to understand which technological solution would be appropriate for their needs or workable by their workers.

Leading consultants Hansen, Nohria & Tierney (1999), have claimed that successful Knowledge Management initiatives are founded in organizations that select <u>either</u> a technological <u>or</u> sociological approach, but Armistead & Beamish (2000) found from case studies that most companies consider both perspectives. They identified some clever sociological practices and novel applications of specific search technologies that have enhanced opportunities for knowledge transfer and creation in organizations. They believe such devices are blurring the edges between the two approaches - technological and sociological.

As discussed in the previous chapter, Despres and Chauvel (2000) also believe a combination of sociological ("the sharing of tacit knowledge between individuals through joint activities, physical proximity" p60) and technological issues are contained within Knowledge Management, and that it is the *combination* of these that has an important affect on the successful implementation of Knowledge Management within an organization.

....

My literature review has helped me to identify many aspects of Knowledge Management and has surfaced accompanying dilemmas that face organizations that try to harness knowledge in individual workers for the collective good.

The challenges of introducing Knowledge Management into an organization are now clear. For example, tackling the intangibility and illusivity of Knowledge Management and achieving common understanding of basic terminology, such as knowledge, information and data.

As my interest lies in discovering whether my client organization can benefit from adopting Knowledge Management, I will be concentrating on using areas that emerged from my literature review that struck resonance. In particular, as my client organization is familiar with a business process approach, I plan to refer to Despres & Chauvel, and to Armistead's thinking to help me to unravel what is happening in the organization. I believe that if I can find a way to explain Knowledge Management (which is unfamiliar to the majority within The Post Office) in association with something that is familiar to the majority, such as a business process approach, that this might prove to be a successful vehicle of communication.

The following are some of the questions that the literature review raised and that I aim to explore in my thesis:

- The concept of Knowledge Management: What do people in my client organization understand by the term 'Knowledge Management'?
- Have they been aware of any conscious efforts to manage knowledge? If so, how was this done and were any particular areas/types of knowledge prioritised?
- Has knowledge been looked at in the recruitment process and, if so, how has it been assessed?
- In previous organizational re-structuring, did the organization experience any 'knowledge-dips' post re-structuring? If knowledge was lost, in what areas was it most problematic?
- Were any learning points, missed opportunities, good practices identified?

- Is the organization harnessing its intellectual assets? If not, what is hindering it?
- If the re-shaping phase of knowledge ('Ba') is paramount, is it felt that the organization is successful in how it learns and makes change? What would help it to become more effective in this area?

Chapter 3

3.1. Methodology

> *Management and business students have been subjected to much controversy over the years about the most appropriate approaches to the study of management as an academic discipline and these dilemmas include issues concerning management research… there is no one best approach…*
>
> (Gill & Johnson 1991 p 1)

> *Currently there are many disagreements in the social sciences regarding what constitutes knowledge and the procedures for gaining it.*
>
> (Rudestam & Newton 2001 p 23)

These helpful statements acknowledge that many different views and methodologies exist and for each there will be as many champions as critics.

Research is said to contribute to the knowledge base of a discipline and the overall purpose is explained by Rudestan & Newton (2001):

> *…what research does contribute is a series of thoughtful observations that support or question the validity of our theories, which are in turn based on a set of largely untestable beliefs and assumptions.*
>
> (Rudestam & Newton 2001)

This statement is comforting because it acknowledges the inexactitude of any research i.e. however thoughtfully research activities are undertaken, the results may be largely "untestable" and based on assumptions. But this is worrying as well as comforting. Every researcher aims to be able to demonstrate how they have reached their particular view by showing supporting evidence and/or by explaining their thinking as a logical progression/argument. If the former is difficult to achieve then the latter can only be convincing if the individual researcher forms and declares their personal framework and philosophy.

The way in which management research and theorizing is performed today is based on hundreds of years of thinking and the development of philosophical ideas. The foundations were built in Ancient Greece where two conflicting views of the world emerged. One philosopher suggested the world was in an ever moving/changing situation which never settles and is always evolving or *becoming* and therefore the process of change/evolution was the important issue on which we should focus. Another took a different view believing the world to have some permanency in which humans function in a state of *being.* In this way they are able to make sense of what is happening around them by judging/identifying changes away from that state and by considering relationships between the usual state and the unusual. This more concrete view is easier to grasp and has been adopted by the large majority in the Western world.

> *A representationalist epistemology thus ensues, in which signs and linguistic terms are taken to be accurately representing an external world of discrete and identifiable objects and phenomena...inevitably orients our thinking towards outcomes and end-states rather than on the processes of change themselves.*

(Chia in Partington 2002 p5)

This is interesting as it suggests humans tend to feel comfortable when they believe they can solve something and bring about a conclusion, and feel uncomfortable with intangibles, trailing ends or when change is continuous. With the former comes the associated need to provide explanations based on precise, accurate measurement in an effort to gain stability, objectivity and credibility.

In the early 20th century this *representationalist epistemology* contributed to the stance taken on knowledge creation in the Western world. William James (1909/96) introduced two theories: *empiricism* - the theory that all knowledge is derived from sense-experience, and *rationalism* - where reason rather than experience is the foundation of certainty in knowledge. 'Rationalists' are therefore seen as those who are comfortable to consider abstract principles and to apply logic and reason, whereas 'empiricists' are those who prefer to use facts and observations to show more concrete evidence. However because both approaches have weaknesses, alternative theories developed throughout the 20th century.

There is a range of alternative theories based on the *being* ontology, the four main ones being positivism, phenomenology (an approach which concentrates on the study of consciousness and direct experience), realism, and hermeneutics (which concerns interpretation). It is not my intention to present them all here in detail but to refer to elements that I feel have had a bearing on building my personal philosophy for this research.

Logical positivism (or logical empiricism) attempts to bring together elements of rationalism and empiricism and is widely supported within the natural and social sciences.

The term 'positivism' was introduced by Auguste Comte (1798-1857) and represented his belief in recognising only that which can be scientifically verified or is capable of logical or mathematical proof. The term was later adopted by a group of philosophers who met regularly together in Vienna in the 1920s/30s. Positivism involves the researcher as an active spectator, engaged in precise recording and classifying of information from observations made within a structured research process, and later, cross-referencing, to provide support for conclusions. This method is designed to minimize any subjective tendencies of the researcher and demands an independent, dispassionate manner.

Although empirical observation is stressed, it is rational analysis that is essential. Positivists use established frameworks (concepts/theories) to measure new ideas and provide the means by which the research is communicated. However they do not generally recognise that the language used can change the impact of the knowledge. This is puzzling as I am interested in the use of language and terminology and believe that its interpretation can lead to changes in knowledge. This area is linked with Hermeneutics and is concerned with interpretation and suggests that, although humans express themselves using language and expressions, these expressions are unique to the individual and therefore not easy to construe. To study Hermeneutics is to wrestle with the basic problem of meaning and intention.

Much has been written about this theory and there are links with other disciplines such as psychology and psychoanalysis and studies have surfaced debates about unconscious and conscious expression. This subject seems associated with my findings in the Knowledge Management literature about tacit/explicit knowledge. Discovering references to Hermeneutics is fascinating as it confirms my personal awareness, gained throughout my career, of communications-related problems that can result from different interpretations of what is said. People do not always say what they mean to express and do not necessarily use the most apt, simple, commonly-used/understood words to say what they want to communicate. The choice of words is personal and unique. It is the result of a person's particular upbringing, conditioning and development. A listener is also coming from a unique position. They too have had an individual upbringing, conditioning and development according to their personal circumstances and this means that how they interpret what they hear will probably be different from another person. This ties up with my discoveries from the literature, which highlighted that communication and the use/interpretation of terminology is important.

Realism: Purist realists accept a situation as it is and deal with it accordingly:

> *For the realist researcher, objects of investigation such as 'an organization', its 'structure', 'culture' and 'strategy' exist and act, for the most part, quite independently of their observers…. Thus atoms, genes, viruses and gravity exist as concrete, stable entities or generative forces even though they may not be ever directly observable.*

(Chia in Partington 2002, p10 & 11)

Other theoretical approaches developed during the 20th century when there was a swing away from Modernism to Postmodernism. Modernism embraced modern ideas, methods and styles and Postmodernism followed during which Modernism was cast aside and there was a general distrust of ideologies and theories. Postmodernism is important when related to management research as it was during this period that the two, ancient, separate philosophical views of the world, that of *becoming* and *being,* seemed to be recognised as linked and the *becoming* view began to prevail. Also other aspects, such as consciousness and unconsciousness, come into play that acknowledge more awareness of psychological forces that exist. Thus the Postmodern approach frees us from the mechanistic, rigorously systematic research ideologies of the past and other theoretical alternatives to positivism, and allows us to consider things to be more 'loosely coupled' (Chia 2002).

In summary, the Postmodern approach provides a more elastic framework for management research in the way it allows us to approach the collection, interpretation and presentation of findings. Instead of being a straitjacket according to scientific research methodology, it embraces creativity, chance and novelty. However, with this freedom, comes a more unwieldy approach to control:

> *...postmodernism seeks to bring practitioner realism back into our theorising and a level of intellectual modesty into our knowledge claims.*

(Chia in Partington 2002, p17)

There are also ethical considerations:

> *Management research requires that researchers explicitly understand their own values, examine and clarify traditions, perspectives, social processes, values and attitudes of self and others. Hence a call for ethical conduct in research.*
> (Korac-Kakabadse, Kakabadse & Kouzmin in Partington 2002, p21)

In addition to understanding philosophical foundations it is necessary for each researcher to understand and decide on their ethical stance towards the research and to consider how ethical considerations are likely to affect their work. Accordingly I have studied some of the literature to help me to unravel my thoughts in this area and to enable me to justify the approach I will be taking. As my research progresses I aim to explain how I came to decisions and how I dealt with dilemmas.

It is essential for a client organization to trust the researcher in their midst:

> *Whenever there is a choice to be made between values, or several ways of doing something, or an issue is deemed to be good, an ethical judgement is involved. In this broad sense, in management research, most judgements, choices and decisions about goals, standards, quality, priorities and knowledge are ethical issues.*
> (Korac-Kakabadse, Kakabadse & Kouzmin in Partington 2002, p22)

Korac-Kakabadse, Kakabadse & Kouzmin's writings on Ethical Considerations in Management Research (Partington 2002) explained egoism and utilitarianism - looking at the outcome of the individual or collective behaviour. They also positioned the place of psychology in research. They show how the researcher needs to be aware of the mental processes they are going through as they attempt to make sense of what they see, hear and read, and interpret it into findings. Their writings, together with those of James & Vinnicombe (2002) moved my thinking forwards as regards my personal stance as a researcher, which I will expand later in a separate section in this thesis (Chapter 3.3).

Moving on to look at practical research approaches I became aware of *grounded theory* and the debate about management research and the creation of knowledge. The concept of 'grounded theory', developed by Glaser and Strauss (1967), highlighted the need to have a rigorous approach to using qualitative data and that a twin approach is essential - that constant comparison and theoretical sampling should be undertaken. The debate discusses whether traditional methods of research are the most appropriate to use.

The traditional approach to knowledge creation was that practiced by academic institutions and was primarily concerned with theory rather than practice and based on rigorous scientific processes. This has been labelled Mode 1 Knowledge (M1K), to differentiate it from an alternative view - Mode 2 (M2K) (Starkey & Madan 2001). M2K places importance on a view that the creation of knowledge is dynamic - the development of management practice happens within a continually changing environment (Gibbons et al 1994). This means that knowledge is viewed as constantly changing and being updated. It also closely involves academic researchers with business organizations in a partnership approach to research, resulting in more relevant activity and better dissemination of results through a widening knowledge network. Partington (2002) looks at the development of grounded theory and shows how later writers, such as Strauss and

Corbin (1990) and Weick (1993), built on this approach. Strauss and Corbin suggests the researcher should show the procedures and techniques used in grounded theory, step by step, and Weick focuses on the role of creativity as the researcher tries to make sense of what is surfaced by the research investigation. Partington highlights that these two views could be seen as conflicting but acknowledges the worth of both approaches. He agrees the need for creativity in 'sensemaking' but also recommends four elements are set out at the start: a clear purpose, one or more research questions, a theoretical perspective and an outline research design. These are all related and need to be reviewed during the research and, also, allowed to evolve. However, he stresses the importance of keeping them aligned throughout the research.

I then looked at Action Inquiry and Action Research. Ellis & Kiely (2000), Raimond (1993), Gill & Johnson (1991), Bell (1996) presented the pros and cons of various approaches under the Action Inquiry umbrella. Action Research enhances efficiency and effectiveness through creating the conditions to solve work-based problems. There are connections with social and organizational psychology and organizational development. Further, Action Research enables the researcher to become involved with a problem that has been identified, to investigate it and potentially to bring about change/improvement. It also requires others to be proactively involved in implementing interventions as the research unfolds. Importantly, this methodology acknowledges that Action Research and the researcher are part of the change process that is continually affecting the organization in which the research is being undertaken. (Easterby-Smith et al 1991).

However there are disadvantages: there is a risk that, because of the high level of involvement from participants, they may display a lack of detachment or bring pressure to move the research in a particular way to satisfy internal/political issues. It may also be more difficult to identify the variables.

Argyris, Putnam and Smith (1985) observed that when some researchers engage in Action Research they sometimes use over rigorous research methods that are not always helpful. In such circumstances they believe the term 'Action Science' would be more appropriate to use. They felt that Action Research involves solving problems for clients rather than with purely testing theory.

Susman and Evered (1978) agree that some conflicts emerge with the use of some research methods:

> *...as research methods and techniques have become more sophisticated they have also become less useful for resolving practical problems faced by members of organizations.*

However, March (2000), felt that resolving practical problems was not the primary aim of management research:

> *..the primary usefulness of management research lies in the development of fundamental ideas that might shape managerial thinking, not in the solution of immediate managerial problems.*

There are many other research methods to consider using, such as the *Experimental* method but this is most commonly associated with research undertaken in the physical sciences. It is considered to be one of the 'purest' forms of research as it tests and proves a hypothesis in a more conclusive way than many other research methods can claim. Those engaging in this form of research endeavour to be as precise as possible to reduce possible variables and to use accurate measurement systems.

The *Ethnographic* method is relevant to use when a researcher aims to study the behaviour of a group of people in relation to wider society. It centres on the detailed recording and analysis of how and why people communicate and how this is related to where they are. There are sometimes conflicts between 'hard' quantitative and 'soft' qualitative approaches and this has led to a complex epistemology (theory of the basis of knowledge) and the development of sophisticated, detailed ways of recording data. It can be viewed as unscientific because ethical questions arise which are not easily measured.

Evaluative research is used to ask people questions about how they evaluate particular situations. It relies on the judgement of the researcher to devise a framework to measure whether the responses received show the evaluation was worthwhile.

3.2. Theory building

Research techniques that are used to build theory vary depending on the type of research and the context within which it is being carried out (Gill and Johnson 1991). Different methods are available and I intend to focus on a few of the methods that I believe will be most appropriate for me to use at some stage in my research investigation. For example, surveys, case studies, focus groups and interviews are all useful way to collect data. Whichever technique is used, it is essential to undertake purposeful sampling and to decide on targeting groups or hand picked individuals. The size of the sample group is also important and to consider the quality versus quantity equation.

Surveys (Gill and Johnson 1991) are enormously useful mechanisms to gather views from either a large number of people or a targeted sample. They can be personally administered to support face-to-face interviews or distributed to gain postal/electronic responses. Surveys can be descriptive or explanatory in their fact-finding. They can be used to quantify i.e. find out how many/much of something, or they can be used to question and qualify why something has happened. They can collect factual information or perceptions/views. They can also assist decision-making often in conjunction with sophisticated mathematics to assist the analysis and, for example, to determine sample size and/or measurement error. Survey responses can also be anonymous or not depending on whether those managing the survey believe more responses will be forthcoming if one or other approach is used.

There are, however, disadvantages to using surveys. Although this looks a straightforward way to gather views, surveys need to be designed carefully and can be very complex to manage. Not only is it vital to phrase the questions suitably to gain the required focus for the responses, but also it is important to choose the sample of people and to be able to substantiate how this choice was made. If attention is not given to these areas, the findings may be dismissed or considered invalid by others. Even if every aspect is considered, the response rate to a survey can still be disappointing and difficult to predict.

For postal/electronic surveys there is also an extra potential problem in whether the responses can be easily interpreted. A large amount of time needs to be invested in the design of such surveys so that respondents are forced to make their responses in a structured way to allow easy collation of replies. Many are designed so that a computer can read the responses and collate the survey results. This saves the labour of hand-marking each individual response and the collation of the total number of replies. However, such an approach may not allow the potential richness and uniqueness of each individual's feedback to be expressed. Judgement is needed therefore about the purpose of the survey and aspects such as quantity versus quality, and for example, whether an overview of an area is desired rather than more detail.

It may seem more thorough to obtain responses using a face-to-face survey/questionnaire, but, despite the investment in time and effort, there is still no certainty as to how to interpret the responses. Face-to-face interviews do provide an opportunity to clarify or test understanding of a given response, but the motivation behind the giving of responses cannot be known. Assurances of confidentiality may help to gain 'real' information, particularly if there are sensitive issues or internal politics to consider, but there is no way of knowing how genuine the responses are. People have different reactions to being asked questions - here is another question that would be interesting to follow up in a separate study looking more closely at links between Research and Psychology.

Case studies (Gill and Johnson 1991) allow the researcher to focus on one particular event and to examine it in detail. The term is used either to describe the study of an individual occurrence, for example, how a particular business project was handled, or, used to look at the whole of a discrete, recognisable area - for example all business projects undertaken in the same subject area. A Case Study can also be used to support a wider research project. However unless the chosen area of focus is dealt with in a systematic and structured way the result may lack definition and substance. Also, the emergence of a hypothesis at the end of a case study is only likely to be taken seriously if the research has been undertaken according to a conceptual framework declared at the outset of the research. The application of any findings from one case study may be difficult to achieve if the area of focus is too unique or if the researcher is too closely involved so that the research is viewed as their 'pet project'. With the latter comes the danger of subjectivity and the difficulty in showing measurements/providing evidence to substantiate any findings.

Focus groups are defined by Powell et al (1996, p499) as:

> *a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research.*

They are used to explore or generate hypotheses and develop questions or concepts. However, because of the small numbers usually involved they may not provide a representative sample, but they are useful to use to evaluate or develop avenues of research. Focus groups are a form of group interviewing and provide an opportunity for interaction, an exchange of views and the building on each other's ideas. However unless a disciplined, organized approach is taken to the capture of the outputs value may not be maximised. No one person can recall exactly how the discussion flowed, the nuances of the contributions and what key points emerged unless a way of recoding the outputs has been agreed on in advance. For example, important discussion points can be listed on a flip chart as they emerge, the discussions can be recorded or a summary can be provided at the end of each section so that testing of understanding is ensured.

Interviews (Rudestam and Newton 2001), are usually undertaken on an individual face-to-face basis with selected participants and can be structured, semi-structured or unstructured depending on which method the researcher decides will best meet the desired outcome.

Often interviews are taped and the words transcribed prior to analysis.

Whatever methods are employed to gather the data, *data analysis* will follow. There are varying methods available to help the researcher to organize, categorise and analyse the data. Approaches involve the codification of data, the grouping of data into common areas or themes and the search for correlations. *Correlational* techniques (Rudestam and Newton 2001) provide a way of finding and implying links between variables. Although not an exact scientific method, this can help to present findings by showing the degree of association between two or more variables and can lead to assumptions being made. Technological solutions are now available for many data analysis procedures and can speed the analysis, but thought needs to be given at the outset to ensure the instructions/software-design is suited to the task.

Triangulation (Gill and Johnson 1991) is a checking mechanism that can provide validation of findings. It can be helpful by showing that conclusions about the data collected and the analysis of it have been thoughtfully arrived at and are soundly based. The exercise can be approached in various ways but basically involves collecting data on the same subject from different, separate areas so that a comparison of the findings can be made to see whether resonances, parallels or common themes/areas exist. This exercise can strengthen the research methodology and the conclusions reached.

The investigative work and analysis will lead to the development and communication of the research findings and may suggest reasons why certain situations have occurred and enable the *proposition of a theory* (Rudestam and Newton 2001). The testing of such a theory can then follow in an attempt by the researcher to achieve ratification or justification of the theory and any recommendations that are made.

3.3. Reflections on Methodology and My Conceptual Framework and Personal Stance as a Researcher.

I have now looked at the emergence of Knowledge Management from a historical perspective and I have also considered various methodologies that are available. My aim is to choose a methodology that I can justify as appropriate and fitting for my purpose. My choice is not to be a purely academic one - I want to find a way of using my experience and preference for involving people within my client organization in an interactive way. My chosen method will therefore need to marry an empirical approach - involving the client so that observations can be made and evidence collected - with a theoretical one - in order to bring relevant conceptual models and academic thoughts to the area under consideration.

In the next section I will present the rationale for my choice of methodology and this will form the basis for my research design that will follow in the next chapter.

....

My starting point is to question the main purpose of my research: What am I trying to do? Do I agree with March (2000) that resolving practical problems is not the primary aim of management research? I am not sure my client would see the point in my research if I do not deliver some kind of 'product' at the end of the research, although this has not been specified as an objective. I know I will be more effective if I can develop a practical solution as a vehicle on which to 'sell' the Knowledge Management concept within the organization. However I will not force such product development although I will be alert to any potential.

I am also keen to add to the thinking around managing knowledge in organizations from a theoretical perspective, particularly now I have found what I perceive as a gap in both the academic and practitioner literature - no-one seems to have considered managing knowledge during times of organizational re-structuring.

The number of managers engaged in any kind of research in the client organization is very small and there might be a credibility problem with me, as a researcher, being viewed as:

> *...remote, ivory-tower individuals working on issues of little practical relevance*
>
> (Gill & Johnson 1991 p6)

To combat this I will need to be clear about my aims for this research, the methods I am going to use to engage people's interest within the client organization and ensure clear communication is used throughout to meet expectations. Those who know of my work within the client organization over the past 10+ years, will know I have had success in facilitating colleagues in grasping new theoretical initiatives through translating them into practical techniques. However I am very aware that I will be working with many people who are not familiar with my work and who may be suspicious of a 'researcher'.

Korac-Kakabadse, Kakabadse & Kouzmin's writings on Ethical Considerations in Management Research (Partington 2002), together with those of James & Vinnicombe (2002) moved my thinking forwards as regards my personal stance as a researcher. They reassure me by acknowledging and explaining many thoughts that I am experiencing as natural for any researcher. Although the research opportunity is the result of a partnership between my client organization and the university business school, I will be bringing my own special combination of skills and experience to the role of researcher that will influence the outcome of the research. This realisation is both a responsibility and a joy - a responsibility because there are expectations from the client, but a joy too because I am passionately interested in the subject of Knowledge Management and here I have an opportunity to develop my knowledge and share it. I can see many aspects of my own education, training and career experience will be used and developed, and I am grateful for the opportunity. For example, my teacher training has provided me with a background in sociology, psychology and philosophy; earlier in my career I have interviewed hundreds of people as a college registrar and, more recently, managed business processes for the client organization, training their leaders and teams in effective management behaviours to attempt to bring about successful group working.

As a senior manager, I also have experience in managing data and analysing information. I have managed several surveys and facilitated countless review sessions over the years. I have designed questionnaires and analysed/interpreted the findings, often being responsible for presenting them back to large numbers of people. The subject matter for these surveys has been varied but the majority aimed to find out from the workforce their perceptions of or confidence level in various work-related situations in order that potential action could be planned or issues addressed. All such personal experience and characteristics will inevitably influence my approach, what I am able to find out during my research and the ultimate outcome.

I am already known by many in the client organization and I realise that those I approach/interview will be reacting to me, and/or what they know of me directly or indirectly, within the context of the organization. I enjoy talking to people and drawing out information from them, and so I am looking forward to my research interviews, particularly to meeting some new people in key positions in the organization.

I want to be useful to my client and to use this research opportunity wisely and appropriately. I acknowledge that, as an employee of some years, I am reasonably knowledgeable about the organization, so I will endeavour to stand back and view the organization from a distance to help me to take more of an independent view while undertaking my research. I realise I must not be moved at any point to 'second guess' the needs of the client through my own knowledge of the organization. Temptation to make my research fit my client's needs - as I see them - will be resisted strongly as I can see from my studies that I, as an individual, can only have a partial understanding of the situation. I am comfortable with taking a realist approach as it encourages me to accept what I believe to be true - that my client organization 'exists' with its particular structure, culture and ways of working.

I understand that philosophy and psychology will come into play during my research activities and I am conscious of the personal values and ethics that I will be bringing to the work. I need to remember that I will be interpreting what I find out/hear in my personal way, because of my personal view of life. I can now guard against misinterpretation by a) using face-to-face interviews and b) testing my understanding of what is being said/meant. Also, I believe it will be important to keep in touch with my interviewees throughout my period of research so that communication and sense checking can be maintained.

I intend to apply an ethical approach, giving careful thought to each step of the research, to the way I deal with the research group, and how I gather information, analyse and represent it. Rather than become distracted into too much personal analysis here, I intend to take a pragmatic approach to enable me to make progress, so, having stated my personal stance I will move onto my choice of methods.

Initially I felt drawn to use a scientific method. This was attractive because it seemed reasonably straightforward to attempt. However, the more I talked to people about the knowledge topic, the more questions I fielded. I began to see it would be difficult to fulfil the requirements of an empiricist approach, as I doubted my research could be undertaken in a purely scientific way. I feel a mixture of approaches is likely to bring the most appropriate methodology and I intend to build my approach on various elements. For example, elements of both empiricism and rationalism: I believe that knowledge is derived from sense-experience to some extent, however the necessity to provide concrete proof every step of the way is not flexible enough for my research topic. I am therefore not wholly committed to empiricism. As regards rationalism - where reason rather than experience is the foundation of certainty in knowledge - I am comfortable to consider abstract principles and to apply logic/reason but I want to be free to use facts and observations as well where possible. I am also drawn towards Postmodernism that embraces chance, creativity and novelty. I liked the following quotation that demonstrates the element of chance in all research:

> *Such purity is rarely found in practice and many great scientific discoveries have been made by accident or serendipity.*

(Swetnam 2000)

I am keen to carry out the research in an organized way and want to achieve credibility. I doubt that my findings will be accepted as worthwhile either by the university or by the client organization unless my method of analysis can be shown to be logical and traceable according to a pre-determined process. I will have to demonstrate how I have analysed the information logically and dispassionately, applied critical analysis, used clear expression to communicate, and judgement to develop my findings.

When I consider grounded theory, Mode 1 (M1K) - the positivistic approach - would lead me to look for gaps in the literature, to design a hypothesis and to test it, using a mathematical, quantifiable approach. As the traditional method of undertaking academic research this would require me to provide 'tablets of stone' evidence to support my research. I know that people in my client organization are very focused on evidence and proof, but I realise that this reflects the results-orientated culture prevalent in The Post Office. This does not mean that I must use Mode 1. The main drawback I see is that it does not require contact with the organization. Mode 2 (M2K) on the other hand fits my situation well as it is more concerned with experiences and involvement.

As I consider my options I have found Johnson and Duberley's (2000) views helpful and it is comforting to read the complex debate around different research epistemologies. This keeps me thinking hard about what I am trying to do and to question myself: will I be tempted to try to make my research fit a methodology rather than accept what is there and deal with it appropriately? The more I consider this and my own natural assumptions and tendencies, the more I feel this is a crucial learning point for me. The ultimate answer is 'no'. I will not allow this behaviour, as I am now aware of the risk. The following quotation perfectly describes this situation:

> *To have knowledge is the ability to anticipate the consequences of manipulating things in the world.*
> (Dewy 1929, cited Johnson and Duberley 2000, p59)

I have emerged from this period of questioning myself with the belief that my assumptions are positivist and that I am becoming a management researcher with positivistic foundations overlaid with pragmatism. I feel more comfortable knowing that I have identified my basic approach as Mode 2 (M2K) while aspiring to use certain values attached to Mode 1 i.e. seeking to provide an organized approach to the collection, recording, codification and analysis of findings. I will work as a catalyst to bring academic and practitioner views together.

Now at the end of my deliberations, I feel I have come through a storm of uncertainty but have found my '*middle way*' (Dewey 1929), and that, in place in my mind, I have the necessary guards on alert to raise the alarm should I begin to move from my middle way.

I am now convinced that Action Research or "*problem centred research*" (Lewin 1946) is the most appropriate methodology for me to use. As The Post Office is currently engaged in a major re-structuring programme (Shaping for Competitive Success: 'SCS'), I will be able to feed in any research findings as they develop and this will enable me to keep the research live and relevant. I can live the research as it happens. In this way I can fulfil the aims of Action Research:

> *Action Research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework.*
> (Rapoport 1970)

Elliot (1991) provides a recommended process for Action Research programmes that I aim to use as a guide. He suggests telling the story of the research topic and how its development unfolds over time. He suggests the inclusion of, for example:

- How the idea was conceived and evolved over time
- How my understanding of the problem and context evolved over time
- How I changed and adapted my action to reflect what emerged along the way
- What was implemented, with reflections on any problems around implementation
- The intended and unintended effects of my actions, noting how they had come about
- Techniques used to gather information leading to a) the identification of the research topic and b) subsequent actions and effects, and any problems experienced relating to the techniques
- Any ethical problems encountered in negotiating access to, or release of, information and my approach to resolving these

- Any practical problems encountered regarding the negotiation of action steps, time, resources etc. which affected the progression of my research

A key aspect of Action Research is collaboration through doing research from the 'inside' of an organization, involving people and maintaining the involvement during the period of the research. I can see that this Action Research approach will enable me to involve the organization in the way I want to, and to construct my research programme to incorporate cycles of reflection with the aim of constructing new knowledge on which action could be based. I now understand that I will use an interpretive/deductive approach. I do, however, want to include the use of questionnaires but only to form a framework for my research interviews not as a way of gathering large quantities of data.

I have already fulfilled some of the initial stages of an Action Research programme and will continue to apply others:

- Contracting (business/psychological contracting & mutual control)
- Diagnosis (joint diagnosis; client data /researcher's concepts)
- Action/Enabling Change (feedback, dissonance; joint action planning)
- Evaluation and Co-inquiry (gaining and using feedback from the client/identifying new problems and solutions which emerge, reviewing findings and developing them with feedback from academics and practitioners external to the client).

* Iterative Cycles leading to New Knowledge: facilitating learning from experience
* Withdrawal (client self-supporting).

These stages will be important for me to consider as I develop my research design.

Action Research demands a partnership approach to the research between all the participating parties. I am intending to use a project management approach that will ensure that progress is reviewed regularly in joint meetings, attended by me as the researcher, the university and the organization:

> *The researchers are not just studying the situation. They are changing it. Action Research must possess an aspect of direct involvement in organizational change, and simultaneously it must provide an increase in knowledge.*
>
> (Clark 1979 p 105)

By taking this approach my Action Research aims should be possible to achieve:

i) To understand the issues and key topics as found in relevant academic and practitioner literature

ii) To become an informed interviewer and enable effective participation by those in the research sample groups

iii) To gather contributions, identify key issues and any areas of special interest

iv) To develop any findings, find appropriate ways in which to communicate and present them, and to gain feedback with the aim of improving the thinking being developed

v) Through feeding back the findings, to act as a prompt for those working in the organization so that they can consider the immediate implications of the research for their own activities

vi) If appropriate, to use the findings to produce something of practical use to the organization

vii) Keep momentum going throughout the research investigation

I have now decided my methodological framework, understood the values I will be applying and have stated my personal stance as an interviewer. I am now moving on to develop my research design.

Chapter Four

4.1. Research design: overall intentions

I have already covered how stage one of the research was achieved earlier in my thesis. This explained how I set about eliciting ideas for the research topic from the strategy group and how the research question was prioritised.

I have also documented some of the key elements of Knowledge Management that exist in a business context and it is my intention to consider some of these as I look into my particular research question.

Having decided my methodological framework I need to make some decisions about the design of my research programme and to state my intentions. I am presenting my initial thoughts in the form of a flow diagram **(Fig.11)** that presents the key steps, some of which may need adjusting as I progress. Against each step I have noted some considerations and raised questions around, for example, process, and many remain unanswered at present. I believe the answers will unfold as I proceed through my programme. I want to be in a position to be flexible and to choose activities that seem most appropriate when the time comes.

Fig.11

Research Design Steps	Considerations
Research question proposed and confirmed	Process for identification of research topic? Key stakeholders identified.
Literature Review undertaken: research question positioned within background of both academic and practitioner literature.	Identification of key writers. Business organization context: key areas relevant to research question identified.
Methodology investigated and decided; research programme designed	Appropriate methodology identified. Personal conceptual framework developed. Research design developed.
Data collection 1.: Interviews within the client organization: selected participants	How many? Who? Process?
Analysis of findings: preparation of interim results; comparison with findings from literature	Methods for analysis? Format for results? What does comparison with literature tell me?
Interim results checked back with participants: reactions gained	Communication method? How to use any reactions received?
Data collection 2. Interviews with a number of external organizations already engaged in Knowledge Management (triangulation)	Which ones? Why? How many? Process?
Analysis of findings and comparison made with results from client organization, focusing on specific research question. Further reference to the	Method of analysis? Format of results? Process for comparison? What are the findings telling me?
Further testing. Data collection 3. Analysis. Findings. Conclusion. Thesis.	Transformation/development of Results? How? Why? Who? Focus/Peer Review? Outcome?

4.2. Data Collection Exercise 1.

Having completed the first three steps, I am now planning the data collection phase.

Initially I plan to undertake investigative, individual, face-to-face interviews to elicit information and views from within the client organization. At some later stage in my research programme I also want to use focus groups. These activities will be evaluative research activities.

I am engaging in purposeful sampling and need to decide how many people to interview, whom to approach and why i.e. what value do I envisage they will add to my research. I also need to decide what type of interview would be right for me to use - structured, semi-structured or unstructured.

My aims for the interviews are to surface issues, question assumptions, identify any underlying causes around those issues by probing behind statements and uncover views. I have decided to develop a list of questions to use to guide my interviews; also to record and transcribe them. This should enable me to gain 'high fidelity and structure' in data recording terms (Rudestam & Newton 2001).

I will be more comfortable using this semi-structured method for, although I am an experienced interviewer, I want to feel free to listen and react rather than simply to take notes of what is said.

Using a tape recorder will enable me to hear the interviews a second time as I transcribe and code their words (Berg 1989), and pick up any nuances missed during the live interviews. Using a set of questions will also help me to cover the same core areas with each interviewee.

My aim is to identify potential interviewees who are operating at very senior level in the different business units within The Post Office. I feel this will achieve a wider view of the organization than if I speak only to a few units. I intend to concentrate on gaining the views of only senior managers as I strongly believe they will be in the best position to influence the organization's development in the future. I also feel that I have already gained the views of several middle managers through my initial interviews with the Business Strategy Team.

I want to ensure 'adequacy of data' (Morse 1998,) but I am not sure yet how many individuals should make up my sample: I am conscious that the more people I include the more material will result, assuming people agreed to participate. I believe that if I am able to engage the interest of several senior managers in key positions in the organization that I will feel confident of the quality of the material gained. This has led me to decide not to aim for high numbers of participants but to employ purposeful sampling in this manner.

So at present I do not have a particular target number of participants, as I want to see what emerges from making some initial enquiries through personal contacts. In due course I will review whether or not I need more interviewees.

Having worked at senior management level in the organization since 1990 I intend to use networking to identify a number of people, some known to me already and others not, but all of whom I believe may have valuable insights. Criteria for choosing them will include a high level of seniority, experience of managing changing work situations and, if possible, a positive approach to the role of management research. I want to include some who experienced 'Business Development' - a previous major change and re-structuring programme in The Post Office. I also want to target some who are currently involved in the 'Shaping for Competitive Success' major re-structuring programme currently underway. Ideally I want to engage a number who will be Managing Directors of the new business units: they will be planning their strategies and may be more open to hearing about Knowledge Management and considering its role in a business organization.

My initial target list follows. I am including a brief synopsis of their experience. Please note that where quotations are used later on in this thesis, that the references given have been changed from this list to protect the anonymity that was requested by some.

1 Head of Products & Services, Post Office Research Group

2 Senior Consultant, Post Office Services Group

3 Director Purchasing Services, Post Office Services Group

4 Services Development Director, Service Delivery

5	Head of Procurement, Service Delivery
6	Managing Director Royal Mail Service Delivery
7	Director & General Manager Post Office Consulting
8	Director, Training & Development Group
9	Strategy & Planning Director, Service Delivery (Royal Mail)
10	Managing Director Cash Handling & Distribution
11	Strategic Organizational Development Manager for Royal Mail
12	Client Director, Corporate Clients
13	Senior Post Office Consultant
14	Managing Director Corporate Clients
15	Managing Director Home Shopping
16	Chairman Post Office Board, Wales, Group Centre

1. Head of Products & Services, The Post Office Research Group

- Currently working within The Post Office Research Group (PORG) on the 'Harnessing Technology Strategic Programme' where Knowledge and Knowledge Management are key areas of activity.
- Joined The Post Office in 1983 and had significant involvement in the separation of BT from The Post Office Corporation, leading a strand of the change programme.
- Prior to joining The Post Office, worked in a pharmaceutical company that underwent a major re-engineering/change programme.

2. Senior Consultant, Post Office Services Group

- Currently involved in aligning Post Office Services Group Purchasing Unit within the new Post Office Services Group. Leading a major strand of the change programme focusing on financial processes among other areas.

- Was a District Auditor during The Post Office's major change programme 'Business Development', managing an 'Empowerment Schedule'

3. Director Purchasing Services, Post Office Services Group

- Joined The Post Office in 1997 as the SCS major organizational change programme started
- Just appointed Director Purchasing Services, Post Office Services Group under the current restructuring programme (SCS) where the Purchasing Services business unit was being moved into the Group unit.
- Had previously led a nationwide team 'The Purchasing Project' which had been set up to prepare for the changes. The aim was to "deliver purchasing excellence across the organization by 2001"
- Involved in a number of change programmes in his career prior to joining The Post Office, the most recent as European Purchasing Director for an international company where he was responsible for changing emphasis from a UK manufacturing unit to a more global organization with manufacturing taking place in a variety of off-site locations across the world.

4. Services Development Director, Service Delivery

- Very experienced in the Royal Mail operations area
- Affected by The Post Office's major restructuring programme 'Business Development' in the early 1990s
- Recent experience of managing the major restructuring of very large area regional operational teams, and downsizing from 9 to 5.

- Affected by current major change programme (SCS)

5. Head of Procurement, Service Delivery

- Head of Procurement & Facilities in RoMEC (the engineering arm of The Post Office) and a member of the Finance Executive Committee.
- Experience of integration of Royal Mail Contract Services to RoMEC (i.e. suppliers, contract details, accommodation portfolio and vehicles)
- The absorption of Royal Mail Divisional procurement to Royal Mail Procurement
- The transfer of Royal Mail procurement to Post Office Services Group

6. Managing Director Royal Mail Service Delivery (Royal Mail)

- Recently appointed to manage the biggest operational business unit within The Post Office
- Previously Board Director responsible for the design and implementation of a large-scale change programme in 1995 when the parcel business within The Post Office was reorganized from a number of areas or regions into eight Parcelforce regions with a lot of de-centralisation.
- Long career rich in examples of other large businesses operating in a number of different business areas that have gone through radical restructuring.

7. Director & General Manager Post Office Consulting

- Currently directing and managing the consultancy services offered within The Post Office.
- Had managed several years of restructuring the consultancy services, as Director and General Manager of Consultancy Services Group (CSG), when the Group became Royal Mail Consulting (RM Consulting) and again when it became Post Office Consulting (defined as a 'Knowledge Business') and began operating under the Post Office Services Group (POSG).
- Had led the incorporation and integration of The Post Office Counters Consultancy.
- Had worked for the Post Office for 30+ years and has experience of many restructurings, large and small scale
- Had worked for different business units within The Post Office at senior level
- Joined the Consultancy Unit at its formation

8. Director, Training & Development Group

- Previously General Manager of Training & Development Group in 1996 to lead a fundamental reorganization of The Post Office Training & Development Group. Managing 3 colleges (Rugby, Milton Keynes & Cardiff) and a unit in London.
- Many years experience as Head of Personnel for a large division of Royal Mail
- Had been Head of Corporate Management Development working in Corporate Centre looking after the top 250 managers in The Post Office at the time of the Business Development (BD) Change Programme

- Just appointed Director of Training & Development Group under the current reorganization (SCS)

9.Strategy & Planning Director, Royal Mail Service Delivery

- Currently working in the Strategic Planning Department of Royal Mail
- Has provided input into the current change programme (SCS)
- Joined The Post Office in 1986 just as Royal Mail was being separated from Post Office Counters
- Heavily involved in Business Development (BD) while working as a Quality Support Manager in South London. Later, was Business Process Manager in a large Royal Mail Division in the North West.

10. Managing Director Cash Handling & Distribution

- Just appointed Managing Director of the Cash Handling & Distribution Business within The Post Office under the current reorganization (SCS)
- Previously Post Office Counters Commercial Director and the director responsible for the design of two new units - Network Banking and Cash Handling & Distribution
- Prior to the above was General Manager of RoMEC (engineering arm of The Post Office)
- Experience of many change programmes including one where a number of discrete engineering sections were brought together into one unit.

11. Strategic Organizational Development Manager for Royal Mail

- Just appointed Head of Organizational Design & Development Group Centre, under the current change programme (SCS)
- Currently managing the Strategic Organizational Development for Royal Mail acting as the interface between Royal Mail and the SCS Programme and change team.
- Previous experience as Organizational Development Manager during a major change programme in Post Office Counters, working to the Counters Board.

12. Client Director, Corporate Clients

- Currently involved in providing input into the current change programme (SCS) as a Client Director (Sales) working within the Corporate Clients business unit of The Post Office
- Previously, Director Operations Royal Mail Cashco, responsible for setting up that business unit by extracting line operations from within all the Royal Mail divisions.

13. Post Office Consultant

- Currently working abroad for The Post Office as a senior consultant with a foreign postal service, specialising in people issues
- Recent involvement in the initial information-gathering for the current restructuring programme (SCS)
- Previously involved in restructuring the Procurement activity across the whole organization - the original POSG Purchasing Services and the Royal Mail Procurement activities where nine divisional teams were merged into one central group.

- Experience of previous restructuring during BD in 1992 working as Head of Personnel (an advisory & executive role) for Royal Mail Road Transport. This business unit was dissolved and the work transferred into Royal Mail's Consultancy Group.

14. Managing Director Corporate Clients

- Just been appointed Managing Director Corporate Clients under the current restructuring (SCS). This new business unit will be responsible for managing the top 50 clients of The Post Office - about a third of the revenue base of The Post office.
- Current Post: Assistant Managing Director Royal Mail
- Previous experience as Divisional General Manager Midlands Division
- Heavy involvement in BD when working in Royal Mail as a District Head Postmaster.

15. Managing Director Home Shopping

- Just been appointed Managing Director Home Shopping under the current restructuring (SCS). This new business unit will be responsible for the development of the Home Shopping service within the Post Office.
- Currently Business Strategy & Planning Director of Royal Mail Service Delivery within The Post Office.
- The key contact point between the current restructuring programme (SCS) team and Royal Mail.
- Leader of the development of the Royal Mail Service Delivery business unit.

- Member of the Executive Committee for the Business Development (BD) restructuring programme in the early 1990s with responsibility to manage the reorganization, both as a provider of functional input and a strategic decision-maker. At the same time fulfilling his role as Business Strategy Director of Post Office Counters.

16. Chairman Post Office Board, Wales, Group Centre

- Responsible for the assessment, selection and recruitment processes within The Post Office during the current restructuring programme (SCS).
- Worked as a member of the Post Office Counters Limited (POCL) Reorganization Team during BD in the early 1990s
- In 1990-1993, heavily involved in the major change programme in London and South East Territory POCL that reduced the number of districts from 11 to 9
- Part of the Senior Management Team that set up POCL in 1986
- In early 1980s was Assistant Head Postmaster in Northern England and took part in the pilot for BD

If I succeed in engaging the majority of this group, I will achieve representation from a number of the different business units within The Post Office and from different professional perspectives according to their particular professional background and areas of experience/expertise. I see this as important, particularly the latter, as I am keen to explore the experience of those bringing views from different disciplines. I want to gain views from those who were, for example, people-orientated, financially orientated, technology-orientated and so on, as I feel this will bring strength and width to my research.

I need to make the most of the time with my interviewees and realise that I will have to drive/control the areas under discussion within a timeframe. When I approach my potential participants I need to explain that I would like about an hour and a half of their time in which to undertake the research interview. I have checked this with my university who consider it sufficient time to aim to achieve good input: less time might be too little in which to set the scene and get to the main part of the interview, and having longer might mean that it is difficult to maintain focus. I feel instinctively that an hour and a half is about right - my interviewees, all of whom are managing at very high level, may not be willing to participate if I ask for more time than this.

To gain the input I need, I will have to design my questions carefully to maintain focus on my area of research so that, later, I can analyse what they have said and organize the data.

I have found some advice on the construction of questionnaires:

> *The first problem is to design the questionnaire. The researcher should resist the temptation to invent his/her own questions. That imposes the researchers' concepts on the respondents. The aim is to discover the potential customers' thinking, not their reaction to questions about the researchers' thinking…A good listener encourages customers to talk…without steering them or leading their responses.*

(Raimond 1993 P67-68)

Despite this warning about not inventing my own questions, I have decided that I do want to use prepared questions as a framework for my interviews. I agree with Wragg (1978) that running semi-structured interviews allows interviewees to express themselves and my framework of questions should help to prevent too many digressions.

I intend to prepare a draft and to discuss it with my university supervisors and a few colleagues to ensure that as far as possible 1) I am using open questions 2) none of the questions is ambiguously phrased or open to misunderstanding or misconstruction 3) the key areas pertaining to my research topic are covered 4) some questions will investigate areas identified in my literature review. Additionally, I plan to ask if they can name any organization they consider as being an exemplar of managing knowledge to establish a) whether they know of any and, b) to gain good practice leads to follow up.

Before approaching my potential interviewees I have identified some useful reminders about undertaking interviews:

> *A skilful interviewer can follow up ideas, probe responses and investigate motives and feelings…. The way in which a response is made (the tone of voice, facial expression, hesitation etc.) can provide information that a written response would conceal. Questionnaire responses have to be taken at face value, but a response in an interview can be developed and clarified.*

(Bell 1996, Doing Your Research Project, p 91)

This raises an important point for me, that it is best to take a holistic approach to each interview and to note, not just what is being said, but also my perceptions about the interviewee at the time they are speaking - that is, if their attitude and reaction to the interview/ interview questions is noteworthy. Later, I will be able to reflect on the manner in which certain words were put across - the tape recordings will also support this - and recall facial expressions or gestures. By doing this I believe I will achieve more insight so that the analysis of my findings will be more accurate and robust.

I intend to talk with them informally at first to establish a rapport, to remind them of my aims for the interview and to find out more about their professional situation. It will be important to position their views within the context of their individual experience and I believe that this will assist me in interpreting what they say. I then intend to narrow the focus straight away onto the management of knowledge and to use my framework of questions. At the end of my questions I will ask if they have any further comments.

I plan to end the interview by explaining what I will be doing with the views they have provided, and by seeking their agreement to using their feedback in my research studies. I will also stress that I will seek further contact in the future in order to keep them in touch with my work, and to elicit further views as my work unfolds. By taking this approach I hope to gain a good level of continuing interactivity during my research over the next few years and to keep the channels of communication open in a two-way process.

Although I had not met all of them personally I used my reputation as a member of the Business Excellence Network to gain access to the senior managers on my list and successfully got past that difficult first point of access - their secretaries.

Because of my knowledge as an insider within the organization, I was able to mention well-known people within the organization who were championing my research and this magically opened many doors. I spoke to all on the telephone to establish whether, in principle, they would be willing to take part, and then followed the guidelines for the design and use of questionnaires of Easterby-Smith et al (1991) and sent out a confirming letter to thank them for agreeing to be interviewed and outlining my aims.

In this letter I explained that I wanted to come and talk to them to find out whether they had any experience of managing knowledge during major organizational restructurings within The Post Office (example Business Development). I also wanted to hear how they were feeling about the management of knowledge during the current major change programme (Shaping for Competitive Success). I decided to tell them that I would be making a sound recording of the interview, that their words would be transcribed and sent back to them for checking and signing off. I knew some people might be reluctant to be recorded and I debated whether to tell them this prior to arriving for the interview, but I decided I would let them know in advance to make the procedure clear and also to ensure a suitable (quiet) venue for the interviews was secured. In the event, no one objected.

Everyone I approached agreed to be part of the research, although one preferred to send written feedback to my questions rather than to be interviewed. In summary, I managed to secure the co-operation of all sixteen on my list including six Managing Directors of new business units. I interviewed a total of fifteen people and twenty-six interviews took place. This number of interviews was necessary, as thirteen of the sixteen agreed to talk not only about their previous experience of major organizational re-structuring but also about their current experiences in the most recent change programme. I decided to gather their views about experience from previous restructurings separately from their experience about the current restructuring programme.

I was delighted to achieve a 100% return.

4.3.Data Analysis: Process Intentions

I will be undertaking qualitative rather than quantitative analysis and aim to show clearly the methods used to record, analyse and communicate the data I have gathered.

I intend:

1. To use a code for each of my interviewees and line numbers for reference
2. To send each transcription back to each interviewee for checking/amendments and to gain informed consent to the use of the material for research purposes.

3. To work on each interview transcription individually, line by line, highlighting key words and noting line references
4. To develop a summary sheet for each individual transcription matching answers against the key questions on the questionnaire and noting line references
5. To re-produce 4. in a table format using key words to give me a quick overview of the balance of contributions over all the question areas.
6. To take each question from each transcript and collate responses for each.
7. To identify common themes and unique phrases
8. To check back through to ensure no important omissions
9. To consider whether I had reached 'saturation' or whether further data needs to be collected
10. To develop case studies following interviews with external organizations
11. To analyse the content drawing comparisons and highlighting key themes and learning points
12. To communicate/share the findings

4.4. Reflections on the data collection interviews

When I look back, I can see how the interviewees reacted to the research interview according to their mood or preoccupation. All took part with genuine interest and good humour but some also let off steam to express irritation/frustration with the organization, others metaphorically wrung their hands over past bad experiences or celebrated when things had gone right. All the interviews took place without the necessity of re-scheduling or changing dates.

Here are the areas that demonstrate the breadth of background experience of my interviewees that would form the backdrop for their views:

Customer Management

Purchasing

Procurement

Personnel

Financial operations

Home Shopping

Facilities Management

Operations: collections, delivery and distribution

Consultancy services (general)

Consultancy (Knowledge and Change Management)

Training & Development

Strategy & Planning

Process Management

Business Excellence

Engineering services

This range was extremely useful as I would be tapping rich veins of experience within many different professional disciplines.

All the interviews went well. I was very interested to hear their experiences and how they felt about knowledge and its management. I succeeded in putting them at their ease with the early questions about their role and responsibilities and I was then able to use my funnelling technique via my framework of questions to draw out views around knowledge issues.

Already experienced from undertaking interviews throughout my career (although not research interviews), I was not surprised when some of my interviewees threw in some red herrings, went off on tangents and started to pursue their own particular hobbyhorses. Often the answer an interviewee gave needed to be followed by a supplementary question, either to get to the bottom of the initial response, or to re-position the question in order to gain the focus required. Whilst I was usually able to bring them back onto the focus on which I needed them to concentrate, I did find that some gave answers to more than one question and areas started to overlap. My mind buzzed as I tried to remember what had been covered in an attempt not to be tiresome by asking questions that they had already answered. It was certainly necessary to be flexible in the way I approached these interviews and how I used my framework of questions (Appendix 3&4). The result of these semi-structured interviews was that, while covering the topics I had anticipated, they also surfaced other issues - and emotions in some cases. For example, one interviewee arrived for my research interview having just emerged from a searching job interview and he used my interview to say all the things he would have liked to have made clearer to the job interview panel!

The comfort of having recordings stood me in good stead. Apart from a couple of noisy environments where separate interview rooms could not be secured, the recordings were clear and I was able to produce the transcriptions with line numbers for reference. Although time-consuming I found the process of transcribing what my interviewees had said was helpful as I could hear again the contents of the interviews and pick up the inflections used in the voices; this added to my understanding of what was being said.

Following each interview, I transcribed the recordings and sent each interviewee a copy requesting any amendments. I also sought formal permission to make use of quotations in my research work.

Chapter Five

5.1. FINDINGS

There was a great deal of data to analyse but my funnelling technique had worked well. Through working on each transcription to identify what seemed important, and then producing summaries, I was able to pick out the common themes and produce key information in table form (Appendix 3.1). This helped me to see the balance of contributions over the subject areas. Having filtered the information in this way, I could now show the information collected against each question area as well as see the differing levels of interest in the common themes. I then undertook a comparison and collation exercise to bring common themes together. It was interesting to see the amount of information given under each theme: it was not that I assumed the importance of quantity but that I felt I might be able to understand more from seeing how many interviewees had mentioned certain things. A prime example of this was the number of times 'baton passing' was mentioned. However, I was also watchful not to miss those unique phrases that may speak volumes even though only one person has voiced them. For example, one person thought that the current restructuring programme was simply "shuffling the pack so the knowledge will never disappear" (R.5 L.38). His view implied that most people would be retained in the organization even if their jobs changed. However he was the only one who thought this - everyone else believed that many people would be leaving the organization and, hence, taking their knowledge with them.

Before I moved forward I checked back through my interviewees comments to see what I had omitted to use. I wanted to make sure I was not blinded by my own sense of purpose and had overlooked something important that didn't 'fit' with my focus. I finished this exercise reassured that my sifting process, whilst focused, had not 'filtered out' any important information by chance. What I had omitted was either irrelevant for my particular area of research or was a point duplicated by another interviewee but not as well expressed.

Having completed my filtering and organization of information I now had to make sense of what each area was telling me.

My process of analysis of the collected data produced distinct themes:

- Understanding of 'knowledge'
- Knowledge loss or knowledge 'dips'
- Knowledge, Technology and Information Systems
- People factors: for example, willingness to share knowledge

Although all my interviewees were business-like, a few allowed their emotions to show through at times. As mentioned earlier, one had emerged recently from an interview for a new post and the fervour of his answers indicated he was still in the same mindset. He talked passionately at times about what he wanted The Post Office to become and how he saw himself as a leader:

For me, if someone was not prepared to pledge in blood, I would take them out now because they can only be damaging …
(R5.519)

Another was critical of the current major change programme and spent some time explaining his concerns and talking of:

A senior management fixation of being 'blinded-in-the-lights-of - an-oncoming-car'
(R7.232)

He explained this by saying that senior management should take the current restructuring programme in their stride while keeping the business going as usual. He felt consultation over the forthcoming changes had not been wide or regular enough and this had led to people expressing concern or dissent as changes were being announced and wanting to debate every detail.

A third wanted to be helpful but was anxious that her comments should be non-attributable and asked that I used any information carefully so that no individuals in the organization would be identified. Once given this assurance, she talked freely and it was clear that she was operating at the most senior level and therefore needed the assurance if my research was going to benefit from her knowledge.

5.1.1. Understanding of "Knowledge"

As the interviewees shared their experiences of previous reorganizations, many were also very focused on the current reorganization that was underway, and the immediate future where they were about to take up new individual responsibilities in the newly structured organization. They welcomed the opportunity to discuss the issue of knowledge in such a context, seeing it as affecting them personally as well as giving them an opportunity to rethink their approach as a team leader. Only one interviewee had a high level of expertise in Knowledge Management, another two had a limited amount of knowledge and all the rest were new to the area.

In 1992, the major organizational restructuring (Business Development) had led to the separation of the business into separate business units. One interviewee who had been working on the design of the new organizational structure expressed their view of how knowledge was positioned:

> *The separation of the business meant that there started to be a competition between them rather than a co-operation, so in areas where knowledge was deemed to be of commercial relevance and give commercial advantage against sister companies (units) this was not shared.*

(R1.82)

This surfaced the issue of competition and power as regards the use of knowledge. It implied there was awareness of the usefulness of it (knowledge) and that it could be used to advantage. The comment also suggested that sharing such knowledge was consciously withheld because of this awareness. But such a view of knowledge was rare.

Most people expressed uncertainty regarding what was meant by knowledge and Knowledge Management and raised basic questions early on in their interviews:

… in terms of Knowledge Management (and perhaps someone will define knowledge for me)…
(R3.155)

Such comments I treated as rhetorical. I felt that it was not for me to provide answers as I was trying to discover their views as they stood, without feeding them possible definitions. I felt that supplying answers to such questions might happen later on in my research, perhaps as I fed back findings and undertook follow up discussions.

Another interviewee considered the same question:

I think I need to be much clearer about what 'managing knowledge' really means. Obviously we can maintain data and keep information but how do you manage knowledge … so what do you do differently? We need a clear set of methods to manage knowledge…what I'm recognising is that I, personally and the team I lead, will need to be a lot clearer about how knowledge is best managed.
(R14.521)

My strategy of not leaping in with possible definitions worked well because quite often, as in the following examples, interviewees posed questions and then voiced their own thoughts in the search for possible answers:

… one way that we would typically think about knowledge i.e. we would call it experience.
(R6.97)

I think Knowledge Management just happens - it's just not a conscious management of it.
(R15.286)

These statements were understandable as there had been neither formal introduction of Knowledge Management within the organization nor in any management programmes. Only one business unit - the consultancy unit - was comfortable with the associated theoretical language and understood why it had adopted a Knowledge Management approach:

There was therefore considerable planning around knowledge because that was the whole purpose of the re-organization … but we felt that we hadn't gone far enough to create the environment where knowledge could flow and be shared … knowledge cannot flow if it goes up and down hierarchies, it gets stopped … so having defined what a 'knowledge worker' was we had to demolish hierarchies, line management and all that nonsense.
(R7.7, 35,44,64)

To the majority of my interviewees the concept of managing knowledge was new and they agreed that they had not been conscious of any focus on knowledge as such but that the focus had been on operational practicalities:

I would say that very little was done with regard to knowledge retention - the focus was on functionality, operations, property and equipment.
(R1/26)

I don't think Knowledge was specifically on the agenda…
(R14.27)

I was amused by the last comment as it implied that unless a topic is presented as an agenda item in a formal meeting, that it doesn't exist in the organization.

I don't think Knowledge <u>has</u> been managed first of all.
(R15.208)

This was a perceptive comment made by someone who took a very thoughtful approach to the research topic. The pervading, overall situation was made clearly by another interviewee who implied there was conscious unwillingness to admit that there was a problem:

Knowledge management is probably our weakest area in the corporation - but no one will admit it.
(R16.92)

Those involved in the current re-organization thought that there was a danger of 'knowledge silos' springing up. 'Silos' was a term that had often been used in the past when describing a tendency for those working in some discrete areas to avoid contact and sharing of knowledge/ information with others in other areas. These had also been referred to internally as 'functional foxholes':

What mechanisms are we going to put into place to ensure our new desegregated organization is glued together and doesn't develop into knowledge silos where expertise and data is not shared across the group either because of laziness or because of feeling that knowledge relates to power?
(R7.514)

To many, managing knowledge during restructuring was immediately associated with 'baton passing' - a conceptually sound process used during restructuring to record tasks and pass them from the old to the new structure via nominated 'passers' and 'receivers'. The association was to be expected, as the process has been used each time the organization has been re-organized. On the whole, 'baton passing' was perceived to have worked well in previous restructurings within the organization.

... the baton passing process was very systematic and was designed to ensure that not only were responsibilities handed over but the information which was necessary to allow those responsibilities to

be taken over and run seamlessly was handed over and planned. So that the element of knowledge was planned … I suspect that the implicit/tacit stuff was missed but people prepared statements of how things were done and what the important issues were, which they handed over with the batons …
(R8. 29/46)

Many further observations around the baton passing process were made and it was not always clear whether the interviewees understanding of managing knowledge was solely about 'baton passing' or whether they equated baton passing as a process through which knowledge was managed. This was difficult to untangle because of the way they expressed themselves. Often the areas seem to blur together:

Knowledge is not managed except through the notion of baton passing
(R15.208)

There is an assumption here that knowledge is managed through baton passing at least to some degree. One person disagreed:

Knowledge Management is not about processes … it is being sensitive to 'have I transferred that knowledge to the person?' as opposed to 'there you are, that's the baton …'
(R15.247)

Another said

I know that it (knowledge) would, in theory get picked up, for example, some of it through the baton passing process...but I am not aware of anywhere where 'knowledge batons' specifically were identified.
(R9.40)

This showed me that there was an understanding within the organization of tangible things such as tasks that could be listed and passed from one person to another, but very little understanding of the importance of some of the intangibles, such as the transfer of knowledge.

Despite this, the majority of my interviewees described 'baton passing' as the way in which some knowledge was managed. One described a military style operation:

> *Handover drills will be based on account plans and on batons being passed …"*

(R14.495)

Some recognised that this very structured approach might meet with some difficulties around codification and resource

> *… the difficulty is identifying what the batons are. If we say there is a baton to maintain X contact that is too simplistic to be of any use. If we break that down and understand how we need to do it in the future then there might be a hundred batons to be passed over*

(R10.362)

However, there was some belief that 'baton passing' can actively facilitate the management of knowledge during times of change - without any loss of quality of service - if individuals are made accountable for labelling and moving (transferring?) it.

> *We are managing it (knowledge) via accountabilities …tagged and moved during the process (baton passing)…* without adversely affecting the service.

(R6.47)

Others spoke about baton passing being associated with the activity of capturing knowledge during exit interviews (undertaken when key individuals are leaving the organization or moving jobs):

... we use things like expert interviews to check the knowledge of people who are moving around the organization ... through this we seek ... to get people to expand their tacit knowledge
(R7.537/546)

But the obvious limitation of the technique was also recognised and questions were raised.

... actually it would be an interesting way of seeing whether I can dump my brain in a way in which it is sufficiently structured to allow it to be of use to the person who is taking over my job
(R6.135)

I detected an underlying cynicism towards what was seen as the next management 'fad':

Everything has its day. Every management tool has its day as a fashion accessory has its moment ... We need to persuade people that we would be better, sexy, more appealing people, or in this case business unit, with Knowledge Management. It is rather a cynical view but it is a fact of life.
(R15. 417)

Probing further, this attitude was easy to explain. The organization had introduced a series of management initiatives/approaches in recent years, each heralded with much fuss. For example, Total Quality Management had swept through the organization in the late 1980s early 1990s closely followed by Business Process Improvement and Business Excellence. All these initiatives had brought benefits to the organization in some form or other but were viewed as separate initiatives by the majority of workers. As each one was announced the previous one was perceived to be a failure. There seemed no recognition within the wider workforce that each had been a building block that had enabled the organization to move forwards, and consequently to bring further refinements.

Knowledge Management comes with good change management … I fail to see why knowledge transfer is seen as something totally separate from good change management … I have concerns generally that if it creates an industry around what is called 'Knowledge Management' and 'knowledge transfer' then we're no better off than before …
(R11. 617-723)

This comment was valuable for me as it supported my notion that there is a need for Knowledge Management to be linked with the processes used to bring about re-structuring/change. This interviewee saw Knowledge Management as a fully integrated part of the process, not as a separate initiative and echoed Davenport and Prusak's (1998) view as already mentioned on pages 44 and 45.

Another reply implied there is no need to even think about managing knowledge because it will happen automatically if the correct organizational structures are introduced:

The attitude seems to be that these issues need a great deal of thought but they aren't really problems if we get the structures right - they'll get fixed.
(R10.257)

This was reflected in another comment made about a previous reorganization:

The approach we were taking to restructuring and the way people were organized must actually preserve that knowledge …
(R8.204)

I found the phrasing of this response interesting. They were trying to make sense of the idea of managing knowledge with hindsight and they had not considered it before in this context. I gained the same feeling when another interviewee said:

> *Managing knowledge is about conserving/reserving information…being prepared to make that change and not use old knowledge as a basis for doing new things.*

(R3.186)

This interviewee introduces the concept of 'old' knowledge. Others referred to 'good', 'bad', 'old' and 'new' knowledge, and debated ideas about evaluation:

> *The real question is to identify which of this information is really important i.e. what are the key points we really need to know about in this area and then assure ourselves they are passed on. What we mustn't do is to clutter it up …*

(R13.479)

However another interviewee felt that the real question was whether to manage knowledge at all:

> *I think that in pure knowledge terms we might be getting a little paranoid. I'm sorry if that's a cynical view but I really believe that we should be having more of a fresh start.*

(R5.58)

There were conflicting views on the need to manage knowledge that hinged on perceptions of the value of knowledge in terms of usefulness. Some were of the opinion that it was vital for the future success of the organization that 'good'/ 'useful' knowledge was identified, transferred and used. Others expressed opinions that managing knowledge risked retaining 'old' knowledge which may be by varying degrees 'bad', 'useless' or 'constraining'

> *… not all knowledge is 'good'. So if you assume that by organizational change you are seeking to change more than the*

structure, you are also seeking to change the culture or make the organization more 'fit for purpose', you don't necessarily wish to transfer all the knowledge … Once again an issue is whether it is harmful for the organization because we are losing old knowledge which was constraining … we mustn't assume that losing knowledge is necessarily bad.

(R9. 72/103)

Here the interviewee raises an interesting issue: whether an organizational re-structuring can or should be used to produce more than a new structure. Further, it suggests that a new culture is automatically produced from introducing a new structure and that part of the reason for having a new structure is to lose knowledge that is associated with the old culture as it is seen to constrain the organization.

Others mentioned both 'good' and 'bad' knowledge:

There is an interesting side to the question of how you sort out what is 'good' knowledge from 'bad' knowledge or indeed what is relevant or essential knowledge.

(R6.83)

The practical difficulty of the identification and evaluation of knowledge is raised here. Also interesting words appear that might be used in a list of criteria for 'good' knowledge, such as 'relevant', and 'essential'. The next quotation is similar and adds to this list using 'crucial', and 'cannot be replicated'. It continues in an unresolved debate on the difference between knowledge and experience:

Some knowledge is crucial and cannot be replicated and some is only in the mind of the retainer - it's not actually valuable knowledge, it's experience but some experience isn't necessarily good/relevant.

(R3.326)

Using the phrase "only in the mind of the retainer" indicates an understanding that tacit knowledge exists as well as explicit knowledge.

One interviewee suggested there might be a need for *'deliberate'* knowledge destruction:

> *… there is another dimension to re-organization which is deliberate knowledge destruction - you set out to remove that to make a difference; to remove inefficient people …*
(R15.80-86)

Here the suggestion was that inefficient people have bad/useless knowledge and that by removing them from the organization a clean start should be possible and only useful knowledge would be left. Surely it is far more complex than that? For example, what would be his definition of 'inefficient'? Isn't inefficiency tied up with more complex matters such as working habits and lack of leadership not necessarily knowledge? Also the knowledge in each person is unique and unlikely to fall into just one category i.e. all good/useful or all bad/useless. Even if knowledge could be evaluated into such categories - and I am not convinced that this can be done - it seems more likely that each person would have a mixture and there would be 'shades' between the extremes. How could anyone therefore evaluate another person's knowledge to be in a position to label them 'inefficient' with grounds to move them out of their job/organization?

While that particular interviewee expressed some definite views, other interviewees found discussing knowledge and managing knowledge extremely difficult because of the intangibility of the subject. However one interviewee made a helpful observation in this area that made a lot of sense. He suggested that knowledge is nothing on its own - it must have a context - and then it can be turned into something useful:

> *Knowledge in itself is of little value and the danger is that we will concentrate on knowledge and miss the really important aspect which is the use of that knowledge, the ability to use it, freedom of action to take that knowledge and convert it into a saleable product, commodity or service … and that's hugely important to us over the next ten years.*

(R3. 464)

This description appealed to me because it translated the intangible 'knowledge' into something that is more tangible i.e. a product. The perception of these interviewees about the nature of knowledge was expressed in pragmatic terms of value and usefulness. With the exception of a few with experience of Knowledge Management, the majority of interviewees did not identify different forms of knowledge except as information and data.

Only one person mentioned that knowledge isn't only created within an organization, which I found extremely illuminating:

> *It is important that knowledge isn't just created within an organization - a lot of it should be transferred in.*

(R14.535)

Perhaps the reason why only one person mentioned the need to look for knowledge outside the organization is because of the traditions of The Post Office. Until the last decade very few external people were recruited, particularly into management positions, as the culture had been to promote from inside. Also, as a Government body with a monopoly, it saw no need for new approaches and therefore did not see the need for new knowledge. In more recent years benchmarking visits to external organizations had broadened the view and management was more aware of the need to seek ideas/improvements from outside.

5.1.2. Knowledge Loss

Having looked at my interviewees perceptions and reactions to the meaning of 'knowledge,' 'managing knowledge' and 'Knowledge Management', and having established that little formal management of knowledge had taken place (except within the consultancy unit), I wanted to discover what implications this had and what situations had resulted. I asked whether they had experienced or observed any loss of knowledge during the periods of organizational restructuring.

There was broad agreement and some evidence of knowledge loss and also of knowledge 'dips' that had occurred in the newly structured units. Several interviewees used the term "knowledge dip". The "dip" was perceived to be associated with a loss of knowledge as people moved or left, and as their knowledge was identified, with hindsight, as required for the new structure. The loss of individuals from the organization during restructuring had been a major factor resulting in the loss of organizational knowledge - knowledge that had been developed and expanded over many years. Many interviewees cited examples of individuals who had left the organization or had taken up new posts and whose knowledge had been lost with the change. There was disagreement about the level within the organization which was most affected by this.

> *... the most problematic level of knowledge loss I would have thought was at a very high level. I think we lost control for quite some time afterwards, after the initial change, because people didn't recognise that they had to take personal accountability for their decisions*

(R2.89/92)

> *... the level of knowledge loss ... usually at the process / tactical level*

(R16.16)

The nature of the knowledge that was perceived to be lost was in two main areas: Knowledge about customers - particularly key customers - and the failure to maintain the link between sales and operations where the knowledge can be complex.

> *... the most problematic area of loss was that of customer relationships, knowledge and understanding of customers in key account type areas*

(R1.132)

Here was an acknowledgement that knowledge about customers was important. Another felt the same and pinpointed the need to use knowledge in order to meet customers' needs:

> *... the way in which you arrive at a particular customer solution ... is very much knowledge based ... and to lose that kind of knowledge is likely to be problematic*

(R6.233)

A further acknowledgement of the importance of considering customers before making changes was graphically provided by one of my interviewees who had been at the sharp end of the consequences of not doing so:

We had some furious customers threatening litigation because they were no longer getting the service they had previously got … in effect what we did was we made an organizational change without anticipating the problems… We removed knowledge … before we put new stuff in
(R10.86,114)

Another interviewee identified the problem as the failure to maintain the link between sales and operations.

… the other kind of knowledge that maybe comes to the fore is the relationship between sales and the operators in the sense of bridging the gaps backwards from the customer into the operations i.e. that's where I think you tend to get a lot of things which aren't written down as well as they should be and perhaps not written down because they can't be because that is a relationship or interactivity which is built up over a period of time and is one which is subtly modified as you go forwards
(R6.233)

Here was an acknowledgement of the amount of useful knowledge that was being collected by those working in the field, in face-to-face meetings between the sales force and customers. It also showed that this type of knowledge was not being formally recorded but stayed in the minds of those involved until such time as it is overtaken by new experiences, events or discussions when it becomes modified or replaced. Thus it is a very transient type of knowledge that, unless shared and acted on promptly, is lost and the potential value of it is never realised.

Other than 'baton passing', which most felt was not truly accepted as a Knowledge Management tool, it seemed that few formal processes/procedures were thought to be in place to ensure that knowledge was identified, captured and used/shared appropriately:

We tend to look at things on a very mechanical level … you go along, meet your opposite number, pass a file across the desk,

tick the box and say "there's a baton passed" … the real 'dip' or omission around that is what was the knowledge that supported it? … we never pick up that information and that is the knowledge gap.
(R5.431-441)

A shocking account of the waste of knowledge that had occurred when practical, physical stocks of knowledge had been discarded was given. These stocks had been contained in the most part in physical storage, for example, in filing cabinets. It transpired that these were moved or thrown out in the haste to bring about the change to the new structure. In this way the 'old' was physically removed without any evaluation of what the files contained. It was only later that the realisation came that some of the stocks contained knowledge that was valuable. With hindsight, the interviewee also identified that the loss of knowledge might have been lessened if the 'preference exercise' (the process whereby workers were asked to state whether they wanted to take early retirement or move jobs to, for example, a different business unit), had taken knowledge into account in some way.

We lost information first, basic information disappeared …all the files got thrown away, so historical performance … was, in many cases lost. We managed people out of the organization entirely on the basis of whether they volunteered for early voluntary retirement. So unless there was correlation between preferences and their knowledge there would have been an approach which failed completely to take current knowledge … there's more evidence that knowledge in the sense of what was sitting in people's memory banks and brains was not managed … he left his filing cabinets behind but the knowledge had gone, and indeed people used to phone him up
(R15. 38,45,53,76)

The latter part of the quotation also shows that the knowledge within people was allowed to walk out of the organization without recognition of the worth of that knowledge. It was only later, after they had left and had to be contacted because they had knowledge that was recognised as needed, that their worth was recognised. This was an extraordinary feature of the situation - not only did such action trade on the goodwill of individual ex-workers but was highly risky as there was no certainty that the knowledge would be forthcoming. Hindsight is a wonderful thing and this interviewee was, only now, acutely aware of the stupidity of such actions and how disorganized it made the organization look.

There was also a view that knowledge was lost between business units as well as within individual business units:

> *A lot of knowledge is lost between business units … we need to use expert interviews to check knowledge of people who are moving around the organization…to get people to expand on their tacit knowledge.*
> (R7.530-539)

These points are of real concern but, as highlighted earlier, there was a feeling that while some experience is likely to be useful to capture - perhaps attached to particular seniority levels or functions - other 'old' knowledge might constrain the new organization:

> *… the knowledge and experience those very senior level mangers that are management casualties have got is vital to capture … that would give new leaders a flavour of how the "old school" would have done it … but … in a time when one is looking for radical change you don't necessarily want to be hamstrung by other people's views or perceptions … however if these people were not doing a good job … why do you want to tap into that knowledge … why not start afresh?*
> (R5.40, 207)

A connection was being assumed here: that 'bad' knowledge and 'old school' are connected. Does this imply that anyone who has worked for some years with an organization is automatically labelled 'old school' and therefore bound to have 'old' knowledge which was, by this interviewee, being construed as not worth keeping? Or was the implication that only those with 'bad' knowledge were classed as 'old school'? The phrase "if these people were not doing a good job" also implied that they had been identified as such but through what mechanism/judgement criteria was not explained.

There were some specific examples of expertise that had been lost in particular skills areas:

> *The personnel processes were lost as far as succession planning was concerned and training records went awry at times ...*
>
> (R2.147)

and:

> *...(Industrial engineering skills) ... whilst it might have been there at one time, the skills had been eroded as time went on and in some cases totally lost.*
>
> (R4/185)

A view given by another interviewee from a different business unit showed clearly that, at the time of change there had been no recognition that knowledge was being lost and it was only after the event that this had been recognised. Again with hindsight, the interviewee was able to point to a definite loss of knowledge and skills that had resulted in considerable amounts of rework to regain lost knowledge:

> *I do not believe that, at the time, there was an identification of the loss of technical expertise ... because of the loss of the human knowledge repository, they just had to do it (work which had been done before) again.*
>
> (R1. 38/108)

There were also some worrying assumptions. Knowledge was assumed to match the new structures even without conscious identification. The assumption was that if you match experience in certain work areas with new job titles, the knowledge will magically be there:

> *… knowledge was assumed to transfer with the people … in some ways we would describe the changes we made as actually about aligning the knowledge transfer better in the organization …*
>
> (R11.32)

It was becoming clear that the organization was at risk in the coming period of radical restructuring if it did not take steps to understand what was happening and to address many of these issues that were surfacing.

5.1.3. Knowledge, Technology and Information Systems

Technology and information processing techniques were strong themes that emerged from the data. The data collected in the context of this research that referred specifically to the role of technology was slightly different from that shown against the other common themes. References were different in character, less in quantity and there was less dissent and debate among interviewees. There seemed to be general acceptance that technology was a concrete mechanism - a tool that was used to do things with data - but there was some debate about the role of technology, the emphasis of human factors and the appropriate balance between these factors. The majority considered the role of technology to be influential but ultimately a facilitator of human knowledge in the organization.

The ability to use information within the organization's information systems effectively, and to change information systems during the period of restructuring, was seen as very important. However, while this was recognised, most interviewees used the future tense indicating that, as yet, the organization has not reached its targets for this area:

> *… We will be using technology through databases … there is a large programme which is about restructuring our information systems and competences so that we manage customer information much more effectively … we are not good at synthesising and taking data and turning it into information let alone knowledge.*

(R14.389/402)

The benefits of having standard systems and ways of working were seen, not only as a way to manage knowledge, but also as a way to enable the organization to make changes faster and more effectively:

> *Companies which have standard databases, systems and ways of accessing things actually mean they've more ability to make change … Once you know how to tap into those standard things, no matter what structural changes they put in place, the way people work doesn't change.*

(R11.630-637)

The final clause "…the way people work doesn't change" raises questions: it implies that if an organization trains its workers to use standard systems/procedures and working practices via technology, then organizational restructuring should be possible without any decay of information. This does not take into account the personal change each individual worker experiences that may affect the way they work in a new situation even if standard working systems/practices remain the same.

I agreed with another interviewee who suggested that the key would always lie with people rather than with technology and systems, although it was expressed rather negatively as a problem to be overcome, rather than as a potential asset:

> *… Unfortunately, whatever systems you set up they are only as good as the people actually using them so that's another big difficulty.*

(R8.345)

5.1.4. People Factors

Approaches to the issue of knowledge loss or dip or the opportunity to create new knowledge for new situations obviously impact on policies, procedures and approaches to the retention, recruitment and personnel issues. The people factors interface with notions of process and the formal management of knowledge as both people and processes change. The organization had been engaged with the European Foundation for Quality Management (EFQM) Business Excellence model (Ghobadian and Woo 1996). Consequently there was a well-established model of the organization as a set of business processes, and interviewees used the language of processes to discuss aspects of knowledge. At times it is not clear whether they are speaking about a knowledge management process or knowledge in other business processes (Armistead 1999).

From experience within the organization I was aware of a degree of frustration with management by process: it had both critics and supporters within the research group as a management approach, but the majority were more comfortable using a process approach. This point had been investigated in a separate research programme (Armistead, Pritchard & Machin 1999) and the conclusion was that The Post Office was not unlike other organizations in taking this view. One interviewee felt very constrained:

> *… There's too much management by process and that will need to change if the business wants to be more reactive … management by process can be frustrating because there are individuals out there with great entrepreneurial flair who would really do things but they don't … because they are not within that process group*
> (R5.612/636)

Most of the respondents tried to relate to knowledge processes in the sense of transferring and sharing knowledge during restructuring activity. One had prior experience:

> *… We transferred the knowledge in blocks and hence had, at the earlier stages, many parallel processes operating that were actually what used to happen in the old organization … what we then did was to move away from that situation into a single way of doing it in the organization by teasing out requirements and best practice and then designing a new process that would be compatible company-wide"*
> (R10.179)

This was interesting as it showed an example where the 'old' knowledge had not been thrown out wholesale because a new organizational structure was being introduced. Another business unit had managed to transfer people across from old to new structure in teams, and this was considered to be another way of facilitating the preservation and transfer of knowledge:

... by and large we had minimum disruption by transferring people to maximise continuity and of course we transferred knowledge at the same time
(R4.46)

Taking this course also helped them to avoid knowledge dips:

... we were very careful to make sure that we were actually husbanding knowledge rather than dipping
(R7. 333)

Those with responsibility for managing change had faith in their approach and took the view that having a process in place would deliver satisfactory results:

... we followed the business process for managing organizational change which we believe is good practice anyway and we think that worked well
(R4.255)

Although this quotation implies only one process, this approach was really a collection of processes under the title of 'managing organization change'. One interviewee explained:

There were two processes, one was the transfer of work...a series of batons and the preparation for these, and the other was the communication process ...
(R13.118)

In addition a further knowledge transfer process was identified through the identification of 'flow through' posts, where the same person continues in post. Here it is assumed that knowledge will transfer, without change, from the old to the new organizational structure. This process and 'baton passing' were referred to by most of the respondents. Some recognised that taking this structured approach had worked well in previous restructuring in the organization particularly as it gave people a measure of confidence during the unstable change period. However major problems were identified around the timing of the restructuring process and the manner in which it was done:

> *Because of the resourcing processes we don't know when what they call the "passers" and the "receivers" will be in place, so you wouldn't know if you were a passer or a receiver or actually whether it is the same person in many instances, for quite some time. And because people are being pulled in different directions, or will be pulled in different directions at different times then it is assumed that the knowledge lives with each individual. So you as an individual have to retain accountability for the batons you have passed. You have to find the right individual to give them to, which is why we are getting assurance on the batons of the names of people who know and understand that information so that they can pass that on to whoever the new person is rather than the job post. Also in terms of knowledge transfer the other thing that is very worrying … is that people will write down the things that they like to do and not the things they don't like doing. We don't have a way to capture both robustly*

(R11.327/552)

This raises many issues - people are not always in post at the required time, which makes a systematic process such as 'baton passing' extremely complex. Whilst empowered to identify their own 'batons', this empowerment can backfire if there is a prevailing negative attitude to the change and can tempt people to focus only on aspects of the work they like and ignore the others. The fact there is "no way to capture both (things liked and things disliked) robustly" points to a gap in the system that could have serious ramifications for the whole exercise and future of the organization.

As regards 'flow through':

> *They have a series of what they call 'flow through' posts: people will flow through with jobs if they are the same as they are now and their knowledge is assumed to just continue.*

(R11.318/320)

However this process involved detailed investigative work to establish tasks against new job descriptions to identify which ones could be tagged 'flow through'. This was not straightforward because the old jobs had almost always evolved away from the original job descriptions that had not been revised as changes had been made:

> *I was involved in collecting evidence … in any organizational change what you change from has always decayed from what it was when it came in … a manager said "this is what the template is but what I do is nothing like that …" and it didn't bear much resemblance to the template or official accountabilities.*

(R13.237/270)

As with baton passing, some respondents were sceptical about the effectiveness of 'flow through' as a method of knowledge transfer:

> *I think the 'flow through' idea is a fallacy … we should have taken a stance: 'everyone changes to a certain level in management'. The fact that we can't specify in advance which areas are 'flow through' highlights to me why I think it is a fallacy. So if we could say 'we will not touch our operational managers' I am more than in agreement with that, but trying to invent as we go along which of the jobs are 'flow through' seems a little tendentious to me*

(R9.240/249)

Despite reservations expressed by the majority, baton passing and flow through continued to be used as key components of the new restructuring programme. One interviewee who had experience of baton passing in the previous reorganization (Business Development 1992) had doubts around the way it was being applied in the current restructuring programme (SCS: Shaping for Competitive Success 1999/2000):

> *The baton passing methodology worked well … Business Development was a well-structured project, well-managed … SCS comes under a lot more criticism for its approach and for being managed in a*

less structured way in reality … involvement is a lot narrower than it was at BD. So … if involvement is significantly less, then knowledge transfer will probably be significantly less.
(R9.146/172)

Here a clear link is being voiced between knowledge transfer and the amount of involvement. Another interviewee also had doubts about the current process and reopens the question of the role of knowledge in recruitment practices:

I'm seeing the SCS's people appointment process being driven by generic people competencies. I believe that is not what we should be doing because it completely ignores knowledge.
(R10.301)

Pressures to make organizational restructuring conform to a speedy timetable also surfaced related problems:

There's always a risk when a major organizational change like this happens that the whole pack gets shuffled … They may be very capable people … but it can take six months to a year for them to get up to speed and an awful lot can be lost in that time-frame
(R12.245)

The speed of the timeframe also brought conflicts between keeping the organization running as usual during the time of changeover to the new structure:

… if someone is moving from my team, who has the power in that struggle between me keeping that person (because there is nobody to pick up that baton) and the new leader who wants to get his team together to rush off and fight in the brave new world?
(R15.255)

Many of these concerns seem to indicate that perhaps lessons learnt from previous successful reorganizations were not being applied.

While baton passing involved aspects of knowledge transfer and some sharing, the majority felt that this would only work if workers were willing to be honest and open. Few spoke about the sharing of knowledge, and those that did indicated this was not widespread giving the prevalent 'blame culture' as the reason.

> *Issues of ownership and being part of a team … encourage people enormously to share knowledge. This doesn't happen by accident. I do think you have to plan for that to happen … the blame culture doesn't encourage people to really get involved and share knowledge and help one another to succeed … It is back to the environment - you've got to make people want to learn things and develop new skills and knowledge so it is the culture and environment that we've got to work on as opposed to the processes.*
(R12.257/270/393)

5.1.5 Shared learning points

Before proceeding further I considered some learning points that my interviewees had offered. Some of these comments were focused on weaknesses that they had perceived in the overall management of the restructuring programme, and others talked specifically about what happened to the knowledge during such periods. There were general comments about the need to give more time and thought to areas such as knowledge before making any changes to organizational structures to ensure that some knowledge was sustained:

> *… need for sustainability over time*
(R2.104)

However, the ownership of knowledge was an issue. The team that was leading the change /re-structuring project and which had the task of making sure all identified batons were passed from the old to the new structure, found themselves moved into new jobs before all the transfers had been completed:

> *... the change project team was disbanded rather early so there was nobody left who really owned this set of problems*
>
> (R10.132)

Another important learning point mentioned by all my interviewees was the necessity to ensure that communication was maintained throughout the restructuring. However by this the majority meant communication about the new structures and how people would be considered for jobs in the new organization, not communication in terms of knowledge about how work was carried out:

> *All that communication helped to oil the wheels of change ...*
>
> (R7.471)

One interviewee recommended using 'expert interviews' but this was clearly not a common practice in the organization and was limited to only a few in the consultancy unit.

I did find it interesting that while not all could suggest learning points or examples of good practice from their experience, they could all point to something they believed should happen in the future:

> *We've got to have a relationship management approach which provides us with the sorts of information about the knowledge that the new units will want as they take up their roles with the customers.*
>
> (R7.480)

Here was clear evidence that realisation was dawning about the need to put the customer first and capitalise on knowledge about them. Another felt that more could be done to benefit from the business process approach already started in the organization but felt this was of secondary benefit to the knowledge within the workers:

> *Documented processes would be a big help, and, where appropriate, knowledge databases … but no matter how hard we try, none of that is a substitute for the inbuilt knowledge we have within the people in an organization*

(R10.383)

Here the focus is now on the workers and the knowledge within them, rather than within processes or technology, and with this focus has come the realisation of the importance of sharing knowledge. If the atmosphere within the organization was already conducive to sharing, the next interviewee would not have needed to stress the word 'genuine' which implies that superficial lip service is being paid at present:

> *… there needs to be a more genuine sharing approach … and a more genuine attempt to integrate.*

(R.13.452)

> *What is it that you are trying to do with the new organization that is different from the old? What are the pieces of knowledge that are salient points that are going to become more important after than before? You can't preserve every piece of knowledge - indeed it wouldn't be desirable to do so - but you ought at least to address the question*

(R15.127)

This last quotation seemed very pertinent to me. I realised this was partly what I needed to address - how could my research help people involved in planning major organizational restructuring to consider and manage knowledge during those times? Here was the evidence that made me feel my focus was correct. I had, on occasions while working on my findings, felt swamped by the breadth of the topic I was investigating. I had wondered how I would do justice to my findings because there was so much to consider. Now a way forward had presented itself and I felt a growing confidence that, although it would be hard to maintain one focus to the exclusion of the myriad of other interesting aspects that had emerged, that I could achieve a very real and helpful contribution to the area of Knowledge Management.

Having made this decision I also took another - to accept that, whatever the ultimate outcome of my research, that I was unlikely to be able to satisfy everyone's needs. I knew I must guard against diluting my work in an effort to produce something 'all singing, all dancing' in an effort to satisfy everyone, for that would surely satisfy no one.

One of my interviewees had drawn a parallel with this disciplined approach when he described his view of knowledge-sharing:

> *It's a question of really being quite rigorous in terms of identifying what knowledge needs to be shared and with whom and then focusing on that, rather than trying to be all singing and dancing and cover everything, because then it collapses in on itself.*

(R8.368)

5.2. DISCUSSION

The picture that emerges from the findings is of a group of senior managers who, as a body, have not addressed the issues of knowledge. There is no evidence of a shared, explicit epistemology. However there is a shared view that knowledge is important even if they cannot say exactly what it is or how it should be considered or used within a business context. They recognise that identifying useful knowledge in their business and knowing how to use it requires increasing attention. It is debatable whether they as a group demonstrate any learning from their previous experiences. The organization has not been subjected to a Knowledge Management initiative and perhaps this allows a greater understanding of the intuitive views of managers who would be regarded as intelligent and able because of the positions they hold.

5.2.1. Understanding of knowledge

There are few indications that the interviewees are sensitive to distinctions in types of knowledge or that they can clearly differentiate between data, information and knowledge. There is little evidence that they share any understanding of the strategic aspects of knowledge as suggested by Spender (1996). The distinction between individual and collective knowledge is not clearly apparent even when they discuss the transfer of the knowledge that is associated with new people or new roles. In this there is a tendency to emphasise the individual over the collective. The terms explicit and tacit knowledge are not used by many of the managers although the approaches to knowledge transfer imply a shared intuitive understanding of tacit knowledge being associated with experience. This can be seen in the operational approaches referred to as 'baton passing' and 'flow through'. These suggest an organization that is mechanistic and tends to view knowledge as being founded on information processing.

The views expressed on valuing knowledge are couched in terms that are judgemental, for example, that "good" knowledge may exist - in the sense associated with Total Quality Management (TQM) as "fitness for purpose" (Juran 1988) - as well as "bad" knowledge. Knowledge is regarded as a cost and this implies recognition of the resource-based view of the organization. This is perhaps not surprising, as there has been emphasis on determining competences for the organization, however it was surprising that there was not a stronger link between these and knowledge (Grant 1996).

A worrying aspect is the failure to position knowledge within a social or cultural context (Probst et al 1998, Kogut and Zander 1992). The language of the organization tends to be concrete rather than abstract and there are aspects of the pervading culture within the organization that are seen as a hindrance to progress.

As a group these managers recognise what it means to address issues of knowledge within their organizations in response to a changing environment. But they do not demonstrate a language and shared conceptual framework that would allow them to develop thinking about knowledge. This finding seems to resonate with the writing on Organizational Learning where a distinction is made between superficial knowledge and deep understanding (Gavin 1993). Also the pressure to restructure quickly is unlikely to leave time to spend on time-consuming, theoretical thinking and the development of alternative approaches.

5.2.2. Managing knowledge

This research had been undertaken because there was a perception that "useful" knowledge may be lost in the forthcoming organizational change. Loss was considered to be both temporary and permanent. The managers did not have a common view. There was agreement that knowledge had been lost in the past and, in consequence, some work had to be repeated, but there were varying views on where this was most evident. Some claimed a senior level being most affected while others suggested the greatest loss was at an operational level within key processes. In the latter case customers who were liable to complain or threaten other sanctions often highlighted the consequences. The loss is often assumed to be associated with a failure to capture or transfer explicit knowledge and, although there is an appreciation of the difficulties of transferring tacit knowledge, no solutions were offered on how this might be done.

The recurring feature of the managers' responses to the questions of managing knowledge in times of restructuring rests on techniques called 'baton passing' and 'flow through'. These were used by many of them in previous restructurings. While some managers were confident of the effectiveness of the baton passing process, several others expressed concerns. Most said that it was a bit of a formality, which had to be gone through, and one to which people often simply paid lip service. However, using it appears to give people confidence that knowledge is being managed/transferred even if the findings also suggest the level of actual transfer is minimal. Therefore confidence may be misplaced if the current process is relied on, even in part. No other method of managing knowledge featured strongly in the interviews and, as some felt it was a successful method of controlling the handing over of tasks, (and therefore its use was likely to be continued in future), it would seem that there is an opportunity to use the research findings to strengthen and broaden the approach and to make the process more robust.

Perceived deficiencies included imprecision in the specification of a 'baton' and the process for transfer. One interpretation of a baton is that it is a list of responsibilities. Another view regarded it as a definition of tasks or jobs. It is not a description of knowledge, which is required to carry out the responsibilities or undertake the jobs or task. One manager did recognise the difficulties of trying to express complex roles in a written form. It is evident that these deficiencies were clear to this group of managers during the last restructuring but their assumptions and approaches do not seem to have changed. Perhaps a more fundamental reassessment of their experiences would have developed the process in ways that would have moved the organization in the direction of the notion of double loop learning (Argyris 1999). As it is, no lessons appear to have been learnt from the post implementation reviews that were undertaken after the previous organizational restructuring.

The 'flow through' approach for locating appropriate knowledge in the new organization perhaps makes sense where managers can be sure there is no requirement for knowledge creation. Where groups are treated as a unit of similar form they might be regarded as "a community of practice" (Brown and Duguid 1998). Here the proposition is that the interaction within the group will transfer knowledge, as it is required, and new knowledge will be created to address new demands. However we may be concerned that assumptions held in the group which are based on their previous experience, may limit their ability to adapt to new situations and, as Leonard-Barton and Sensiper (1998 b) explain, they may be subject to "group-think". A counter view from Brown and Duguid (1991) is that communities of practice are adept at creating practice that is contingent and different from the espoused activities/solutions. So if processes remain similar in a new organization we might expect flow through to work. However there are dangers. Flow through may not pick up all the collective knowledge required in the new situation. Unexpected demands on the process in the new environment may prove disruptive to the extent that knowledge cannot be created fast enough to cope. Communities of practice can be creative through contact with other groups i.e. other processes or customers for example, or through changes in their own make up (Brown and Duguid 1998). Consequently we might argue that if managers are to have confidence in "flow through" in times of change they should consider doing it in a limited way. New members could be introduced into the group to encourage a challenge to the status quo and hence foster innovation and the creation of new knowledge. It is notable that the concept of the 'community of practice' has appealed to practising managers, and has been applied in some recent training programmes (Stamps 1997).

5.2.3. The Organizational Context

The opinions of this group on knowledge and change and which represent senior management in the organization, illustrate some of the issues of path dependency (as discussed by Venzin et al 1998). In seeking to maintain effectiveness in the new structure there is recognition that old competences, knowledge and skills might be lost but that the new environment requires some new competences to be successful. The previous experience in business process management locks and ossifies the ability to break out and create new competences. The managers interviewed seem to wish to preserve this dependence perhaps, as one expressed it, for fear of losing control.

Looking to explore the organizational dimension further I was drawn back to the work of Venzin et al (1998) on epistemological assumptions that might influence the strategic views of groups of managers. Three categories are proposed: cognitivistic, connectionistic and autopoietic, each being distinguished by a view of the organization, a perception of the environment, notions of knowledge and knowledge development and characteristics of truth. My research did not set out to explore in detail the positioning of our managers against each of these dimensions but I wanted to see where the balance lay.

There is the notion of a fixed and representable entity (cognitivistic) as opposed to the idea of knowledge residing in the connections of experts (connectionistic). The prevailing view of the managers is towards the cognitivistic view where the organization is steered from the top management. Knowledge development is through the assimilation and dissemination of incoming information. It would seem that this is the dominant epistemological view held by the managers. Other evidence from the organization would tend to reinforce this view. It might be that the organization would benefit from an understanding of the other epistemologies.

Debate about issues such as organizational epistemology is attractive to theorists but is unlikely to engage the attention of practising managers. Because of this I wanted to develop a framework for strategic action. If I am correct in thinking that the organization is more inclined to see knowledge in explicit and concrete terms, then a starting point for the development of managers' thinking could be based on their methods of 'baton passing' and 'flow through' - processes already understood and accepted.

I would also aim to harness two aspects from the evidence collected that seemed more important than anything else, and which had been referred to in the context of organizational change 1) the extent of change of people and 2) the changes in job/task/process which were being brought about to meet the requirements of the new structure.

Chapter Six

6.1. Making sense of my findings: my knowledge model emerges

I began to develop a draft matrix (two by two) to see if it would help me to make sense of my findings. If I used one axis to show 'people change', I could use the other to show job/task/process change. I looked again at what my interviewees had said and the key areas that emerged and tried to see where they might fit on my grid, for example, flow through, training, job-shadowing, handover-briefings, baton passing and training/recruitment. I marked each quadrant A, B C or D for ease of reference at this stage and I started to consider how to indicate what should be in each quadrant and if I could find a heading for each.

If there was no change in either people or job/task then this could indicate that 'flow through' would happen - if, of course, that particular task/person combination had been identified as being relevant to keep in the new organization and to be transferred from the old. So in 'A' quadrant, where 'flow through' jobs were identified, the assumption would be that knowledge is unchanged and flows through/across the change with no loss of 'value'.

If a person had been identified as moving from the old structure to the new but was facing a change of task/job then they would require training or some kind of briefing to enable them to meet the demands of the new responsibilities. Quadrant 'B' therefore becomes the place for learning. I decided to put training, job shadowing and handover-briefings there. This would indicate that training would be the main way to provide existing staff with new knowledge when they change jobs or are faced with being accountable for new tasks. Arrangements for them to job-shadow someone or be briefed by someone with knowledge of the new job (i.e. handover period) would also fit into this quadrant.

Quadrant 'C' would be where there are new people coming into the organization to take up positions/jobs that have already existed in the organization i.e. not new jobs/tasks. Here would be the place for procedures such as 'baton passing' where information about tasks/jobs and accompanying procedures and knowledge could be useful. There might be an overlap here with 'B' if job shadowing or training was also used.

'C' indicates that in major organizational re-structuring, 'baton passing' or a similar hand-over exercise is the formal method used to transfer/manage knowledge when jobs/tasks are retained from the old structure and moved into the new.

'D' shows where jobs/tasks change and a new situation occurs which demands new knowledge. This would mean that either new people would have to be recruited in order to gain the new knowledge/skills, or existing employees would have to undergo training in new areas in order to be able to cope with the demands of the new jobs.

I was conscious of needing to find an appropriate heading for each quadrant to encapsulate the meanings concisely. Ideally I sought a single word for each and to develop a clear definition of terms for each. However I was also aware of the difficulty I faced in doing so. I did not want the interpretation to be too narrow. For the time being I ran with what I had:

A = Flow through

B = Training/Job shadowing/ handover briefings

C = Baton passing

D = Training/Recruitment

Job/task/process change

People Change: new/different people		NO	YES
	NO	Flowthrough A	Training Job shadowing Handover briefings B
	YES	C Baton passing	D Training/ Recruitment

Fig.12. Knowledge Management Model (draft 1)

I went back to my interview findings to consider them against my model. I discovered that most had concentrated on the left-hand side of the matrix. This seemed to reflect that

- There was only limited discussion of training

- If the knowledge base is considered to remain essentially the same as before and after restructuring then reliance on 'flow through' and 'baton passing' may be appropriate (i.e. say 80% of knowledge needed is unchanged).
- If the knowledge base changes substantially after restructuring, reliance on 'baton passing' may cause problems (i.e. say 20% of knowledge needed remains unchanged).

I continued to wrestle to find single-word headings. I looked for definitions and alternative words and searched back through my interviews for words that might be more suitable.

I took 'flow through' first. It would be important to find a heading that implied that there was no loss of knowledge as the jobs/tasks and people flowed through from the old into the new structure. I recalled one of my interviewee's words about the need to 'preserve' knowledge. Maybe 'preservation' might be used. Another had talked about 'husbanding' knowledge. This seemed more apt as 'preservation' implied something not moving but keeping still or even decaying slowly, whereas 'husbanding' was more dynamic and implied looking after something. I went to the dictionaries to gain both modern and older usages:

Husband: The manager of a household, a steward, a provident man, a saving man, an economist.

To husband: to manage with thrift and prudence, to economize and to save

Husbandable: capable of being economically used, fit for cultivation

Husbandry: good or bad. Good economy thrift or profit or bad. A sin of bad husbandry

This all seemed to fit. In quadrant A, I wanted to see careful stewardship of knowledge, a place where knowledge was saved, used and cultivated. Yes, this felt right.

I moved to Quadrant B where I was using several words. How was I to find just one suitable heading? I considered that if people were not changing but the tasks/jobs were, there would have to be an assessment activity to decide what was needed to fit them for their new roles. I turned to the dictionary again.

Assessment:

To assess and estimate officially the value of (example tax)

Assessor: One who sits beside as assistant or advisor to a judge or magistrate.

An assistant skilled in technical points of law;

In commercial usage: navigation (helping the pilot).

This seemed to fit the activity. It captured the learning by 'sitting beside' element that would cover the training, job-shadowing, briefing etc. However, implicit in this quadrant was also the need to look back to see where the people had come from so that the gap between their existing knowledge and the required level of knowledge that would enable them to fulfil their new role could be identified. It seemed applicable therefore to suggest 're-assessing'.

The original sense of 're' in Latin is back or backwards but, in use, the prefix acquires various shades of meaning…back from a point reached, back to the original place or position or back again, anew, looking again at the original.

I now felt more comfortable with two of my four headings.

Quadrant C was all about ensuring that 'baton passing' or the transfer of information relating to existing tasks/jobs took place into the new structure. I had used the word 'transfer' but I wondered if that was too vague to use as my heading. What did I want to say in this quadrant? Why was the term 'baton passing' used and where had it comes from originally? I couldn't find anyone in The Post Office who could tell me when the term had first been used in the organization but it had been around for many years. Some conjectured that it was used in a pseudo-military way because many people were recruited into The Post Office from the armed services and the disciplined approach of 'baton passing' had come with them.

Baton passing:

Pass the baton, hand over (or take up) a duty or responsibility.

Baton:

to pass

to go from one to another

to handover

to hand round

to transfer

to pass on

to send or hand (anything) on to the next member of the series

to pass (something) without touching it or without remark or notice (particularly in story-telling)

a short stick passed from runner to runner in a relay race

stick carried and twirled by a drum major

staff of office or authority

Relay:

" a relay of"… a set of persons appointed to relieve others in the performance of certain duties. An apparatus or person used to transmit a message.

However although relaying something was happening in Quadrant C, was that all I was trying to convey? I was not comfortable with either 'baton passing' or 'relaying' as, although it was a handover process, it couldn't be one where everything stayed exactly the same - again, it was a dynamic process, something was bound to happen to it as it moved into the new structure because the situation into which it was going was new. Therefore I wanted my heading to embrace that aspect. Maybe I was expecting some sort of *conversion* to take place in this quadrant. However, *conversion* suggested major change so that was not quite right as I was trying to suggest that things did not necessarily change in the transference. I felt myself going round in circles.

In the end, and after a great deal of agonising, I felt that the nearest word that would fit might be 'Assimilation' because the process going on in that quadrant was to move something from one situation, mainly intact so to speak, into a new one that by its very nature was not the same as the old.

The dictionary definition confirmed that this was the appropriate word for Quadrant C.

"Assimilate": take in and fully understand (information or ideas)

: (of a society or culture) absorb and integrate (people, ideas or culture)

: absorb or digest (food or nutrients)

: regard as similar

I was drawn towards 'absorption' as an alternative but decided it was rather a passive word that implied something that might happen naturally. This would not be as strong as using assimilation that suggested activity.

I moved onto my last quadrant 'D' to consider ideas for the heading. Here I needed a word that described the state of flux when both people and jobs/tasks were changing. This quadrant was 'all change' and I needed a dynamic word that inferred this activity. I wondered about 'Interaction':

Interaction:

Pre-fix 'inter' = between, among or amid

To interact: to act reciprocally between two persons or things or to act on each other, to affect.

Interaction: action or influence of persons or things on each other. Reciprocally active.

On reflection this did not seem strong enough to describe the 'all change' element and so I opted instead for 'Interchange':

Interchange:

the action of interchanging

An exchange of words

Put each (of two things) in each other's place

I now had Husbanding (flow through), Re-assessing (training, job shadowing etc.), Assimilation (baton passing) and Interchange (Training/recruitment). Although I was not completely convinced that I had found my final headings I decided to work with them for the time being. Later I could test them out on others and could make adjustments if better words were identified to suit my model.

These became my four knowledge strategies and I proceeded to work up a definition of terms for each.

Job/task/process change

People Change: new/ different people	NO	YES
NO	Husbanding A	Re-assessing B
YES	C Assimilation	D Interchange

Fig.13. Approaches to Knowledge in Organizational Change

6.1.1.Description of terms

Knowledge husbanding is appropriate when there is high certainty that the process will not alter significantly in the change nor will the people in the process. Here the issue is one of ensuring that the knowledge is stabilised. The cognitivistic epistemology may drive the capture of explicit knowledge that obviously helps to give confidence. However the danger in this approach is that while one process may not change, the systemic effect of changes in other processes leads to the requirement for different knowledge. Perhaps the examples given by my interviewees of dislocation between sales as operations are illustrations of this effect. Embracing a connectionist epistemology would encourage the search for knowledge connecting people and processes. This wider appreciation of knowledge would allow an assessment of the value of existing knowledge. Thus 'husbanding' should not be perceived as a state where learning is halted, and the organization should continue to respect the social dimension of knowledge identification, recording, transfer and learning.

Knowledge assimilation is appropriate when there is no significant change in the process or the task but there is a significant change in the people involved. The issue here is of knowledge transfer, recognising the issues of certainty of the degree of change in the process, as above. The cognitivistic approach seeks ways to codify knowledge for transfer, as with the baton passing in the organization. This would also include the use of other techniques to aid rapid learning by the new jobholder such as learning from those leaving, perhaps via exit interviews, and through job shadowing. This recognises that both implicit and explicit knowledge must be addressed. Knowledge transfer also has a strong social dimension and so integration methods to help new jobholders settle into new teams would aid their assimilation of the knowledge required for their new jobs. The introduction of external knowledge might conflict with the established knowledge of the organization ('not invented here" syndrome) (see Probst et al., 1998). The appreciation of 'systemic thinking' might help managers to realise collective knowledge (Johanessen et al., 1999).

Knowledge re-assessment is associated with a change in the process but not the people involved. The issue is to challenge the assumptions that the knowledge currently held would be suitable for the new environment and to explore the need to facilitate the creation of new knowledge appropriate to the new process. A cognitivistic approach would seek to consider existing knowledge in codified form in the context of the perception of the new process, look for perceived gaps in the knowledge and endeavour to fill them. The danger with this epistemological standpoint is the failure to appreciate the power of the social context of knowledge. The process group might be regarded as a community of practice. In reassessing existing knowledge there might be a danger that the creation of new knowledge needed to develop the process might be inhibited.

Knowledge interchange is required when new people come together in new processes as a result of business restructuring or major business process re-engineering. This situation will require significant knowledge creation. This process is likely to start with the individual knowledge and, as the individuals coalesce into groups, collective knowledge could emerge. The managers could still apply their cognitivistic epistemology that would structure existing knowledge. However the approach is perhaps more likely to limit the adaptive nature of knowledge creation contained in the five enabling conditions that Nonaka & Takeuchi (1995) have defined as important to knowledge creation. These are: intention (guidance), autonomy (freedom to think), redundancy (to increase communication), requisite variety (to reflect the diversity in the environment) and fluctuation (to counteract mental models etc).

6.1.2. Interim Conclusions

The objective of this research was to understand managers' perceptions of knowledge when organizations undertake restructuring activities. The managers described their experiences and views of knowledge for the most part without the language associated with knowledge management programmes. As already mentioned, this was not surprising because there had been no introduction of Knowledge Management within the organization. I considered their lack of knowledge/use of Knowledge Management language a strength as it allowed me to arrive at a detailed understanding of their current approaches through their use of usual business vocabulary.

The findings show approaches to knowledge consistent with an organizational epistemology and an attachment to two approaches that are concerned predominately with transferring knowledge while minimising the loss of knowledge that was perceived to be valuable. There was little concern shown in discussions about creating knowledge, which might be needed in new situations. I believe that the findings demonstrate an over-reliance on flawed techniques for knowledge transfer, that emphasise explicit knowledge but fail to consider wider issues.

For The Post Office to move towards understanding approaches to knowledge it would seem necessary for it to consider all of my four knowledge strategies. Understanding knowledge is complex and difficult to present in the concrete and pragmatic terms that practitioners seek. However the model I am beginning to develop may provide a simple knowledge-change framework that will help any organization to understand knowledge transfer/creation more completely. Through this a richer understanding of the issues may result and improve their change processes.

Chapter Seven

7.1. A Comparison with other organizations: exploring knowledge in times of change

I was curious to see whether my findings to date were mirrored in other organizations and I planned to undertake triangulation (Gill and Johnson 1991)and to make a comparison with some that were already experienced in using Knowledge Management.

Before doing this I wanted to consider my progress against my original research design.

Fig.14

Steps completed

Research Design Steps	**Considerations**
Research question proposed and confirmed	Process for identification of research topic? Key stakeholders identified.
Literature Review undertaken: research question positioned within background of both academic and practitioner literature.	Identification of key writers. Business organization context: key areas relevant to research question identified.
Methodology investigated and decided; research programme designed	Appropriate methodology identified. Personal conceptual framework developed. Research design developed.
Data collection 1: Interviews within the client organization: selected participants	How many? Who? Process?
Analysis of findings: preparation of interim results; comparison with findings from literature	Methods for analysis? Format for results? What does comparison with literature tell me?
Interim results checked back with participants: reactions gained	Communication method? How to use any reactions?
Data collection 2.Interviews with a number of external organizations already engaged in Knowledge Management (triangulation)	Which ones? Why? How many? Process?
Analysis of findings and comparison made with results from client organization, focusing on specific research question. Further reference to the literature.	Method of analysis? Format of results? Process for comparison? What are the findings telling me?
Further testing. Data collection 3. Analysis. Findings. Conclusion. Thesis	Transformation/development of Results? How? Why? Who? Focus/Peer Review? Outcome?

7.1.1. Purpose & Plan

With my experience of the first round of interviews behind me, and with some understanding of the wider subject gained from my initial analysis of findings gathered to date and my literature studies, I now felt confident to talk to other organizations. I also felt I could use supplementary questions, should it be relevant to do so, without losing the main thread of my research.

Decisions needed to be made about the number of organizations to approach as well as which ones and why. If I was seeking learning points to feed back into The Post Office and to check against my draft model, I needed to be certain that the organizations chosen had relevant involvement. After taking soundings from various senior colleagues within the Post Office and the university business school, it was decided the following four organizations should be approached to start with. I could always seek further examples if I needed to at a later stage. These four were identified, not for any reasons of convenience as I would have to travel some distance to visit all of them, but because they were four large, international organizations with experience of the different common themes of Knowledge Management that had emerged from my research to date. Although all could be described as belonging to the same sector - technology - this is not why they were chosen. All four organizations had been suggested because of the width of their experience in all aspects of Knowledge Management:

1) Lloyds TSB bank: This bank had recently completed a major, nationwide organizational restructuring in a very short time. This was known to have been painful and I wanted to see how successful they had been in managing knowledge during the changeover and what, if any, learning points had emerged. I wanted to see if there had been any knowledge losses or 'dips' during or as a result of the reorganization and, if so, what the reasons for this might have been.

2) Nortel Networks telecommunications company: This company is considered to be at the top of the telecommunications industry and uses state-of-the art technological solutions to manage information and knowledge. Here I wanted to explore the possibilities of managing knowledge through technology where there were no constraints around the provision of hardware or software.

3) BT telecommunications company: BT was originally part of The Post Office and, since separating, had been operating independently in a competitive market for some years. It also openly advocated using a Knowledge Management approach. Because The Post Office had the same roots and was about to follow a similar route into a liberalised market, it was felt that BT would be particularly useful to investigate. It was still thought to have some similarities, such as a business process approach and some cultural similarities.

4) Quidnunc, a management consultancy specialising in software/e-business and with a working culture based on knowledge.

As the consultancy unit within The Post Office had made efforts to move towards using Knowledge Management I wanted to investigate another consultancy. Quidnunc had started life with a Knowledge Management ethos and successfully built on it. I wanted to look at how they manage their workers and other people-related aspects.

It was crucial to identify the person in each organization that would have relevant knowledge of the area of my investigation (Gill and Johnson 1991), so I made some careful enquiries. The person to speak to in the bank was personally recommended by one of my Post Office colleagues as she knew he had led the organizational change, but I had to identify the other three myself. This took several telephone conversations during which I introduced myself, explained who I was, who I worked for, what I was doing and why. I was amazed that everyone to whom I spoke was immediately helpful and no one tried to avoid taking my call. I had expected much more of an uphill struggle to secure interviews. I think my success was probably due to the fact that I knew what I wanted so I could explain the information I was seeking.

I explained that I wanted to investigate what had led their organization to decide to consciously manage knowledge. Also, I wanted to hear their views, to learn of any useful practical approaches or good practices, as well as missed opportunities.

The following four people agreed to take part in my research. I am including a brief synopsis to position their organization and their personal role:

1) Divisional Head of Transmission Services, Lloyds TSB

- Just appointed as Divisional Head of Transmission Services, a newly set up unit within the banking group
- Experienced in several very large scale reorganizations, mergers and downsizing initiatives in the organization
- Led the 1992 structural changes in the UK which resulted in the downsizing of the organization from 1500 to 900 and a further streamlining in 1996

2) Vice President for the Global Professional Services Division, Nortel Networks

- The organization sells global networks that combine telecommunications and data and internet protocol technologies, and has 75,000 employees
- The Vice President was based in Boston and was currently engaged in creating a Professional Services Business for the organization "to leverage our customers assets to provide the most profit or the most functionality for them"
- Experience of a recent merger with a US network company and of several other significant reorganizations. "I reckon we have a significant organizational change every 8-10 months" (L.54)
- Knowledge Management mainly handled by their Research & Development section

3) Manager for Organizational Learning, BT

- This international organization was government owned until 1984 when it was privatised. Currently it has approximately 125,000 employees in the UK alone.
- The Manager for Organizational Learning had worked for the organization for 21 years and had experienced the change from government ownership to privatised company in 1984 and several major organizational changes since then. A complete restructuring of the company was undertaken in 1991 in order to create customer-facing divisions. A follow up major change programme was undertaken in 1994/5 and further ones followed in 1996 and 1998.
- The Manager for Organizational Learning worked within the Organizational Excellence Department (which covered Change Management activities, Leadership Development, Culture Change, the promotion of Quality, Quality Services, Quality Management Services, Business Excellence) and was currently engaged in leading a campaign to accelerate the introduction of Knowledge Management within the organization.
- Knowledge Management had only been formally identified 3 years previously
- The organization had used a business process approach and a balanced scorecard.

4) Principal, Quidnunc

- His role was one step away from the top level
- The organization had grown rapidly since it started 11 years ago. In the past 7 years it had grown from 15 people working only in London, to its current state where it had 150 working in London, New York & San Francisco in the USA, and Bangalore in India
- Currently involved in the biggest single "step-change" that the company had gone through
- Very fast-moving. People who founded the company had the "personality and culture that embraced Knowledge Management" within overall business processes and a balanced scorecard approach.

If I succeeded in engaging this group of interviewees, I believed that this might enable me to discover whether organizations already experienced in the area of Knowledge Management had identified anything different or if common themes, similar to those that I had identified from The Post Office, emerged.

7.1.2. Data collection exercise 2

Having identified the right person in each organization I made arrangements to visit them. I was cordially received in their respective offices in Birmingham (Lloyds TSB), Apsley (BT), Maidenhead (Nortel Networks) and Hammersmith (Quidnunc).

I had decided to use face-to-face semi-structured interviews as with my Post Office interviewees to record the interviews and to transcribe them later.

I started the interviews off in the same way - by asking some general questions about their organization and their role so I could understand the situation - and then by funnelling them down to more detailed questions about specific issues around managing knowledge. Many of the questions were the same as I had used with Post Office interviewees. Each organization had a different story to tell and I found it was sensible to 'go with the flow' sometimes rather than be too rigid about applying my questions. All four interviews went smoothly and according to schedule and I covered all the points I needed to cover.

7.1.3. Data analysis: process intentions

Initially I decide to make an analysis of each interview to identify key words and issues, and then make a summary sheet. I could then spot areas they had in common and where there were differences. I decided to present the summaries in mini-case study format using bullet points (see Appendix).

7.1.4. FINDINGS Common themes

7.1.4.1. Understanding of Knowledge

When asked whether any conscious management of knowledge had taken place during their first major reorganization in 1992/93, my Lloyds TSB interviewee was very honest about the aims:

> *To be blunt it was a headcount reduction exercise and the game plan, again to be blunt, was to remove the older what we called 'dead' and 'non change capable staff'*

(L 42-52)

The emphasis had been on the speedy reduction of workers to the exclusion of most other things. Although communication had alerted the workers to the forthcoming changes, the scale of the change was not conveyed successfully and the workers went into shock. The workers resented the massive changes as the organization had opted for a centralised approach to provide support services:

> *The most sensible thing for cost control and technical knowledge and training was that it should be in the centre*

(L 67-68)

Because of the speed and manner in which the restructuring was deployed some workers displayed anti social responses, seeing the change as anti-customer and anti-employee:

> *… it was managed in terms of information - we had regular team/group meetings, but, to be blunt, it was bludgeoned through. There was a considerable amount of resistance particularly among the senior management - 'well-poisoners' I suppose you could call them …*

(L 42-52)

However the approach taken rapidly uncovered that there were other problems. Not only were people unwilling to share knowledge but a lack of knowledge was discovered in some areas:

> *People (in the branches) did not like answering the 'phone, responding to telephone enquiries … there was a deep-seated arrogance or fear or a combination … towards those in HQ … There was a degree of ignorance in the branches about International that we should have been able to help them with, but, in fact, it was more a confrontation rather than a support function. 'Leave us to do our work and don't bother up with stupid questions'.*

(L 126-133)

By 1996 when a further organizational restructuring took place, some of the learning points were used. There was better understanding of the importance of knowledge in the workforce, and efforts were made to provide continuity of knowledge at least for customers:

> *… there was a huge rapport with the customer base … and it took us a bit of time to get people to accept a different name and a different voice to the extent that we actually took people from here out to the customers to get people's faces, names and voices known.*

(L164-168)

In BT Knowledge Management had only been openly adopted as such in the past 3 years but they maintained they had always been involved:

> *That is not to say that we didn't manage knowledge before - and I think we did an awful lot of Knowledge Management before - but we wouldn't have labelled it 'Knowledge Management'- this the most convenient label for a lot of people to try to sell tools, primarily technologies that manage explicit information and documentation … So when I look back at it - and we've written down the experiences of how some of these major change programmes were managed - it was about managing knowledge …*

(L136-142 & 157-159)

Here the close relationship between Knowledge Management and technology can be clearly seen, but, more importantly, BT had not realised that they were actively engaging in Knowledge Management until a broader view came with hindsight after later analysis. BT also identified there were different types of knowledge and that there were difficulties around how to value it:

> *A key issue of Knowledge Management is … what is the type of knowledge you are actually trying to transfer and the value of it? There are two or three different types of knowledge: …general knowledge about the company … specific knowledge that*

comes up around task and functions, and a wider knowledge around the executive community that comes with working at that level …
(L374-405)

I found it interesting that there was no explicit mention of the importance of customer knowledge. After 3 years of implementation and focused Knowledge Management activity, BT described the progress it had made on the journey towards Knowledge Management and acknowledged they had only made partial progress. Although their technologists now worked to capture and share knowledge within the organization, they had concentrated on getting the hardware and software in place and now had to consider the more difficult areas such as the evaluation of knowledge that they refer to as 'the best current knowledge':

One level: you actually 'knowledge engineer' your business, engineer knowledge into the way your company does business. The technologists view is you need a system where everybody can communicate and we need to publish all this stuff online, you need to provide search engines for people, automated work processes/flows, drive in best practices and all of this is really the next stage of the process-engineering revolution that says, OK, the next stage is to take the best current knowledge and automate it within the business so that it happens automatically for people.
(L686-694)

The latter phrase "*so that it happens automatically for people*" seems to imply that BT's view is that, if they get the technology and processes right, technology will do everything in the area of Knowledge Management so that the people themselves will have to make few efforts themselves.

In contrast to both BT and Lloyds TSB, Quidnunc had been set up specifically around the ethos of Knowledge Management and their practical implementation and use of terminology was advanced. However like BT they also used a balanced scorecard framework within which Knowledge Management was positioned. They had no doubts about or difficulty in expressing the value of Knowledge Management:

> *Our view of Knowledge Management is the value it brings to us - it helps people to make better decisions that they would have done if they didn't have the knowledge …*

(L159-161)

However they also saw it as an ongoing challenge due to:

> *… we are growing so quickly and our current plans for growth are very aggressive and that is one of the main challenges for us in terms of Knowledge Management and sharing … Whereas before Quidnunc employees were almost all exclusively involved in developing software, we are now employing people who are graphic designers and artists and art directors and people who know more of the management consultancy end of the spectrum example business strategy and e-business strategies … and we've gone through a quite intensive period of re-inventing ourselves to figure out what our organization should look like …*

(L28-29, 34-40)

While the ethos of the whole organization was based on knowledge sharing, there were many practical problems to overcome.

> *… the fact that we're growing very quickly means we have a lot of new people - 70-80% are graduates straight from university, so they have great theoretical experience and they've got a great degree but less practical experience and we've obviously got to get the knowledge trickling down from the senior people to them as quickly as possible so that they can start to go out there and earn fees as soon as possible.*

(L95-100)

Here the message to Quidnunc's workers was very clear and the pressures are great: share the knowledge and apply it or fees are not earned. My interviewee described some of the practical ways in which they had made Knowledge Management work for them:

> *We have a concept that we call 'Design Spirit' which is when you are shaping a solution for a client you have a picture in your head about what this thing is going to be like in terms of its design. Communicating this design is very important.*

(L256-259)

Here emphasis was being placed on communicating tacit knowledge to make it become explicit. The leader of the project who had conceived the solution and agreed it with the client had to communicate it to all team members too. A shared understanding of vocabulary and terminology was clearly important to ensure success.

My Nortel Networks interviewee described his company as having a seemingly disorganized approach to the implementation of Knowledge Management as an initiative:

> *… we are quite a chaotic business … when you ask have we taken a conscious decision (to manage knowledge) … some parts of the business have and some parts haven't … It is not as though we have one person who says 'we will do that' and it ripples down through the organization … The Research and Development people have been involved in Knowledge Management for a long time. They had a project called 'Trillium' which is some kind of US standard about how you actually capture knowledge, how you then manage knowledge and how you skill people up. Trillium was a big initiative. Also we use the web an awful lot - our Intranet is huge, absolutely huge and there's an awful lot of knowledge contained in there. But had we made a conscious decision (to manage knowledge)? No.*

(L68-77)

The ease in which my interviewee described the organization's approach showed a high level of familiarity with Knowledge

Management terminology and the roles of research, development and technology. This description seemed to indicate that knowledge was seen as completely bound up with information systems and databases, however he then added that people were the key to making Knowledge Management work:

> *Frankly we have to run so fast to keep up with our customers that Knowledge Management becomes a pivotal part of what you do, because you haven't got the time to spend on inventing things, you've got to find them. What actually happens in Nortel, probably because we don't have some of these formal processes, is we have a fantastic network environment where people talk all the time, feel perfectly OK about getting on a plane flying to California just to sit down and have a discussion with someone because they know that if they don't have that information they can't do their job. So we've evolved an informal network that drives us and keeps our knowledge current.*

(L135-144)

Here it was clear that the customers are central to all that Nortel does. It was also clear that they don't feel that taking a traditional approach, for example, using business processes and overlaying Knowledge Management, would work for them because of the speed at which they operate. Their understanding of Knowledge Management was of working in an atmosphere of high level energy and low paperwork, where people jumped into planes in search of vital information and followed up leads, networking all the time to keep up with changes. This was so very different from my client organization that was still, in the main, operating slow, methodical, systematic, process driven, bureaucratic working practices in an atmosphere where people had to be encouraged to share their knowledge.

7.1.4.2. Knowledge Loss

The "sledgehammer" approach taken by Lloyds TSB to ensure the 1992/93-change programme was implemented had resulted in considerable knowledge loss:

> *We downsized probably more quickly that we should have done in terms of people who, although they weren't change-orientated had a huge amount of natural knowledge which wasn't actually registered anywhere, and we lost that.*

(L297-300)

When asked where the knowledge was lost it was felt to be

> *More at the pragmatic than the strategic level.*

(L318)

I was curious to know what the attitude was towards effective methods of increasing knowledge:

> *The facts are that a lot of people have a significant amount of knowledge in their processing area i.e. learning from Aunt Sally …*

(L191-192)

This assumed some knowledge was passed between members of the workforce simply by observation or by working alongside the more experienced.

An important side effect of the downsizing had been the need to replace the knowledge lost. Those who had left, particularly those with practical experience, were no longer there to pass on their knowledge and this put more pressure on the staff that remained in the organization to take their turn in training others:

We've got a lot of young people in there who need to be trained in terms of today operations, ignoring their NVQs - and the people who are there either get the work out -because we have terrific deadlines- or sit there and train. And there's a huge problem between what they do first and we haven't solved it …
L324-328)

BT too had been aware of knowledge loss in previous major restructurings and was still keenly aware of this problem. They had instances of people at the top with the most important, difficult-to-replace skills being poached or electing to retire early. My interviewee was currently engaged in some research around how to cope with this situation and to better manage and evaluate knowledge in the future when someone leaves the organization:

We've never deliberately tried to extract and capture people's knowledge at the point of leaving. Now I've kicked off two pieces of research - a piece of research about 'if someone was finishing/resigning, how would you make an assessment of the value of their knowledge and therefore how much investment should you put into capturing that knowledge '… and the other piece of work is around saying that is too late so, 'within our competencies framework how are we identifying the value of knowledge and experience that people have in our organization and are the HR processes geared around minimising the risk of that person leaving?' So, for example, have we got succession plans in place, are we formally capturing and transferring the knowledge from that individual or that team of people, which happens before the point of someone leaving. By doing that we are actually minimizing the risk of losing some people and we have actually got routines in place so it is not a big issues for us.
(L591-604)

This proactive approach went a long way to manage and avoid the 'under-a-bus-syndrome' that other organizations had experienced.

Because of Nortel Networks' rather chaotic approach to managing the organization, they had experienced some knowledge losses or 'dips' in past restructurings although they did not view them as crucial losses:

> *… nothing you'd describe as a major derailment. I've seen numerous occasions where people had left and there's been re-invention … more on the pragmatic level mainly because … we tend not to lose many senior people. Occasionally when people have moved within the company you have actually felt that they've gone, the momentum drops while the new person brings themselves up to speed.*

(L286-287, 290-293)

However, my interviewee agreed there had been quite a lot of duplication of effort when knowledge had obviously not been shared which should have been, and, eventually, this had led the organization to develop an approach to change management for the future which was a more systematic approach:

> *Numerous examples where we've duplicated. Something close to my heart is around organizational restructuring. One of my staff said to me 'Oh, is this back-to-the-future-restructuring?' and I said 'What do you mean' and she said "Well we had this organization 2 years ago.' There is nothing wrong with changing the structure … but basically what we could have done is lifted a load of lessons from the previous time and applied them again and saved a lot of heartache. What has come out of this is a Change Management Programme … to make sure lessons learned previously will be applied.*

(L328-340)

7.1.4.3. Knowledge, Technology & Information Systems

From the first radical restructuring in the early 1990s, Lloyds TSB had learnt that it needed to capture the knowledge that was in their workforce and looked to see how technology might help. In response they introduced a knowledge-capture and monitoring initiative 'Fly' which they expected their staff to use as part of their routine working day. However this was strongly resented at first:

> *When we introduced it, this was seen as another 'cosh' - it wasn't there to help them manage the workflow, it was there to make sure they worked their whatsits off and don't go off for a smoke etc.*

(L235-238)

This initial resentment was gradually addressed through involving the workforce in improving the process used and making the system user-friendly.

My BT interviewee explained that they had experienced technological problems in their efforts to manage knowledge:

> *Much to the disgust of our own IT/IS people, they bought their own server and managed their own IT infrastructure and didn't let our people near it. And it all went 'Mac' which was completely counter-cultural to the way the rest of the organization was going, because we didn't want to mix Macs with various other technologies. They built a server that was the repository of all the information that was generated in that project - a tremendous amount of information … I still see people who carry around CD disks with 'The server' on it as a repository of knowledge that came from that project.*

(L166-174)

However during this time they had also seen opportunities to use technology to develop quicker ways to handle knowledge:

> *At that stage Cap Gemini weren't using Lotus Notes, they were using their Voice Mail system so they broadcast their question our across the world asking for consultants to come back and*

give them a response…opened our eyes as a company. We thought, if the consultants can do this not using the technology we sell, why aren't we developing and selling the technologies to be able to do this for other companies?
(L181- 189)

BT was keen to provide their workforce with communications technology and was currently investigating 'Personal Agent Technology' which supports the creation of information-sharing communities. They were also supporters of the provision of an Executive Assistant for each director (about 60-70) who, among other tasks, were responsible for the sourcing, processing and provision of information:

… presenting it in a way which suits the learning style of the individual director … the EA position is very much a high flyer's position …
(L474-476)

BT's current aim was to accelerate the implementation of Knowledge Management:

Our particular objective is to be a catalyst for the effective implementation of Knowledge Management within BT … we deliberately do not have a resource to run a central Knowledge Management Programme - we run a network, using the web tools that we actually have to maintain a community of interest and practice around Knowledge Management across the company. So primarily our role is to share the learning that is generated within that community and to see particular initiatives and to bring in what people are thinking about Knowledge Management and to make it available to various individuals, to do some work about packaging it in terms of producing articles about Knowledge Management and targeting those, to run 'Knowledge Fairs' so this community can get together physically and talk about it and to showcase some of the best practices in the various areas.
(L516-529)

Quidnunc's technological problems were slightly different:

> *The field we're in is rapidly advancing - something like 30-40% of any of our projects at any point in time are using pieces of technology that we've never used before so we are constantly learning new things and things that we have previously known are getting out of date, so we are constantly having to replenish what people know.*

(L102-106)

He was, however, very aware of the limitation of technology:

> *… you can put the whizziest piece of technology or Knowledge Management system in place but if people aren't willing to actually share what they know then it's not going to get you anywhere.*

This was one of the reasons why they introduced a mentoring system to educate those inexperienced in data modelling techniques. This put them under supervision, working alongside someone qualified, until they were experienced enough to go it alone.

Nortel Networks relied heavily on technology and systems. My interviewee enthusiastically demonstrated the technology he used and the amazing amount of information he could access through his computer. Further, he extolled the merits of the personal search engine that updated itself and was ready to brief him in his particular areas of interest each time he switched on his computer. He described the merits of the video conferencing camera that sat on his desk that enabled his to see his callers. At the end of the demonstration he summarised:

> *The Intranet has been a major, major breakthrough for us.*

(L101)

This seemed to underline his view that, although he acknowledged the importance of people and processes (as described in earlier sections above), on balance, for Nortel Networks, Knowledge Management was still more about technology than people.

7.1.4.4. People factors

Having had a difficult time in their first major re-organization in the early 1990s, in a subsequent restructuring Lloyds TSB decided to prepare their staff for further downsizing and made a policy decision to use the provision of knowledge as a carrot for their staff:

> *Since our change round in 1996/97 we have concentrated a lot more on giving people opportunities to gain knowledge, both within and outside the organization … What we've basically said…there is no longer a job for life and we cannot promise you in five years time you will be working for us … However we will give you the tools to improve your opportunities of getting a job elsewhere … For your part you will … use the knowledge to enhance your efficiencies*

(L192-203)

Although this seemed to be a mutually beneficial stance, the bank knew that some essential knowledge (particularly in technical areas) was bound up inside their staff. It was now acutely conscious of the importance of persuading their workers to share it so they would not be caught out again as in the past:

> *So in terms of knowledge we were very people-dependent and, in fact they could control the situation because they knew it and*

we didn't, and we didn't have any contingency if they went under a bus.
(L208-210)

This uncomfortable position had led them to broaden their training schemes in future and to seek to implement knowledge capture solutions and involve their people in process design:

> *Now in terms of process design and knowledge the staff are actually involved … in mapping and day-to-day first-line improvement information … All staff are involved in that and take part in it and are actually encouraged and rewarded to put in improvements.*

(L204-207)

This people-centred approach emphasised involving the workers in mapping processes and considering what knowledge was needed. In this way they were demonstrating the value they were putting on the workers' knowledge. However, with hindsight, my interviewee was now aware that big mistakes had been made around the handling of people during the previous periods of change and that they should have done better with their communications:

> *… The major lesson is that you cannot have a disconnect between the business unit and your Human Resource Unit when you are going through a period of change …*

(L403-405)

My BT interviewee pointed out that using a Balanced Scorecard approach and a process approach had helped to move Knowledge Management forwards in his company:

> *As a way of surfacing tacit knowledge of the executive community, the scorecard process was ideal. What you are actually doing is trying to surface some of their assumptions and their views about how the industry works, how it is going, what is important, what the points of leverage are, how do we*

actually influence that and therefore what do we measure, and to try to get a degree of consensus where the whole executive will buy into the complete set of objectives.
(L280-289)

Unlike Lloyds TSB, BT had recognised that there was an important role for Human Resources and that knowledge associated with tasks and roles should be specifically considered when assessing existing and future members of the workforce in future:

… specific knowledge comes up around tasks and it depends on the nature of that task, and how important that task is to the investment you want to put in, in terms of how you manage the knowledge associated with that task, around specialists. A lot has been done in terms of our HR processes around the recognition of scarce premium skill areas and competencies associated with those … the skills are at a premium but the know-how about how to apply those within organizations and make effective business propositions is also at a premium …
(L382-387 & 398-400)

Keeping personal knowledge up-to-date and encouraging knowledge sharing were considered important within BT and knowledge mentoring, networking and using quizzes and questionnaire surveys were some of the practical methods used. BT had also started to facilitate the passing on of knowledge by re-employing some of those who had left the organization on redundancy terms to return to work part-time after a year of absence. However the question "how best to harness the Knowledge Management activists?" remained unanswered.

Although Quidnunc had been founded with Knowledge Management at its core and was heavily reliant on technology, my interviewee explained that getting people to share knowledge and use the systems effectively was regarded as paramount and they had processes in place to ensure that no knowledge was wasted. It was not as difficult to implement this in a young company like Quidnunc because the recruitment process had ensured that like-minded people were recruited, and they built on this foundation through a mentoring scheme that had at its heart a tough maxim:

> *You shouldn't make the same mistakes twice - in order to stop that happening you need to pass on lessons learnt when something doesn't go as well as it should have done.*

(L125-128)

Keys to Quidnunc's success were the personalities of the leaders of the organization and the example set by them, as well as the way they recruited to a particular knowledge-emphasis specification:

> ... the people we have are those who are most interesting in learning. This is very important to us because everybody is constantly learning.

(L141-142)

Once in the organization, workers were expected to follow the agreed main process:

Marketing Quidnunc→ Generating leads →Bidding for work →Winning work Running the project→ Delivering something →Supporting afterwards.
(L149-150)

Their performance was monitored and rewarded through the appraisal process, which was also the mechanism through which objectives were reviewed and set.

> *As you get more senior in the organization more of the objectives are related to actual knowledge-sharing.*

(L176)

In this way Quidnunc lessened the chances of knowledge in key senior managers walking out of the organization. Quidnunc also expect their workers to make rapid progress and measure this through a system called 'role-stage-deviation' - a model for the average expected amount of time a person will be in a particular role example Trainee Developer 6 months, Developer 1 year, Senior Developer 2 years - and they measured to see how many people deviate from that model. Through this system they were able to identify those who might have a problem with their learning which might give an indication of how well knowledge sharing is going, although it was acknowledged that this was not a direct measure. One way in which they tried to encourage knowledge sharing was through the use of small groups within the whole organization to support particular communities of interests. They also held away days and weekends to discuss new ideas etc. One of the most interesting points made by my Quidnunc interviewee was around the difficult area of getting at the tacit knowledge in people. Instead of agonising about it, they had taken a philosophical and pragmatic view:

> *We've kind of accepted that 90% knowledge is always going to be in people's heads really and that there is no way to extract all of the useful knowledge … not in an explicit form. Because if it were attempted it would mean that everybody spent all of their time doing that and not actually doing the job! … But right at the core of our Knowledge Management infrastructure is what we call our Knowledge Yellow Pages, which is just a list of everybody in the company and a list of about 150 different skills that we've categorised. So you can go and find an expert in this subject or that and find out where they've got their expertise from, and then you can give them a call or e-mail them of whatever. That's actually as important to us as the actual explicit knowledge that is in our techniques, our proposals or documents.*

(L352-363)

Through taking this practical approach they did not waste time and effort trying to extract tacit knowledge but provided an incentive to ensure workers completed an entry in a knowledge directory instead.

Despite being an international organization Nortel Networks were keen to nurture the people issues even though their work was heavily reliant on technology and many virtual teams and communities existed (via computer assisted communications). They brought people together at conferences, held 'share-fairs' and 'knowledge markets' with the express aim of getting people together to share what they were doing in different parts of the organization and the world. Nortel also used training as another method of getting messages about Knowledge Management across but when asked if they had any mechanisms or processes to help them transfer knowledge during a period of change, my interviewee followed his previous description of a rather chaotic, fast-moving organization as he gave this advice:

> *I would say, do not become too bogged down with process. We had a bit of a dodgy experience … do think about how people utilise knowledge in day to day life …*
(L297, 313)

But later he identified several processes they had used or still used, for example, The Key Resource Process, The Management by Objectives Process, The Priorities Process (to encourage discourse between individuals), and The Talent Management Process. When I described The Post Office's baton passing process, he felt it could not work in Nortel Networks because:

… normally it is not that a job stays the same and the people change but the jobs change completely. So, consequently, what baton are you actually passing is the question? If you've got a completely different or new job it might be 40% from one group, 20% from another, 5 % from another and the rest is made up, actually you'd be barraged with batons! What we try and do if there is a straightforward change is to have an overlap period … There's no formal process …
(L121-129)

The Human Resource approach (called the Key Resource Process) was used to identify employees with the top 15% Scarce Skills and top 15% Critical Skills. 'Critical' was described as 'if that person goes there is going to be a very great hole in that organization and we'd better start thinking about how we're going to manage that' and 'Scarce' is where people have specific knowledge which is valuable to the market place.

So critical is more of an internal judgement and Scarce is a judgement against the market place.
(L186)

In summing up, my interviewee said that the emphasis was now more on the individual:

What you find these days is individuals driving their own development because they have realised that if they are at the cutting edge of an area they will get more pay. If you have a scarce skill we redefine where you are against the market rate so it is in their interest to keep up to date and they know that.
(L376-379)

There was a further crucial observation around the essential need for personal networking:

… without your own network - you'd sink … The problem we have is recruiting, particularly senior people who don't have a network

as it is very hard for them. We've recruited a couple - one from BT who has done remarkably well - he feels he's died and gone to heaven as suddenly he's free and can do stuff and act on it! The other … sat in an office and waited for things to happen and people just walked right by …
(L382-388)

7.2. Discussion

In general, my impression of the four organizations was that, although they all had experience of managing knowledge, they each came at the subject from a slightly different angle. My framework of questions was helpful but I gained more of a mix of information and found I needed to interrupt more frequently or use follow-up questions to gain explanations. However many common themes that matched my Post Office feedback had been identified.

I was struck by the attitude of Lloyds TSB who saw giving their employees opportunities to gain knowledge as a route to a more flexible work force. My perception was that this slant had been used as a 'softener' - almost a palliative initiative - introduced during a period of major organizational change that had caused tremendous upheaval.

Quidnunc impressed me because their whole raison d'etre was to acquire and use knowledge and this had been at the conception of the company and had remained a constant approach even as they had grown in size. Their ability to recruit and integrate new employees speedily into this company culture, and their ongoing knowledge-sharing and review activities were advanced.

I found many familiar aspects when talking to BT. Once part of The Post Office Corporation, BT still had some vestiges that I recognised, particularly in the way descriptions revolved around knowledge in tasks, functions, processes and executive committees. They had also followed a similar journey in organizational development terms to The Post Office, embracing Total Quality, Business Processes, Business Excellence, Leadership Development and were now including Knowledge Management. However, what I found particularly interesting was that they now brought all such initiatives together under the umbrella of one department called Organizational Excellence. This Directorate, within the UK Human Resources organization, covered a whole series of primarily change management activities, and also embraced innovation, creativity, ideas and was a central source of information. Through this central reservoir of knowledge, lessons could be exchanged and learnt to the benefit of the organization but, more importantly, the emphasis was to engage workers in development activities as a way of working rather than to impose programmes of learning across the whole organization.

The offices of Nortel Networks were impressive because of the high level of technology being used by all employees throughout the organization in the UK and abroad. The technology was so advanced that, to them, the world seemed a smaller place, easily and quickly reached with no barriers as far as knowledge collection was concerned.

To summarise:

- All four organizations shared the view that knowledge is important and needs to be managed
- All were aware of how easily knowledge can be lost during periods of change and gave examples where this had led to problems or rework. None had specific ways of preventing this.
- All had sophisticated technological infrastructures in place
- All recognised that the key success factor for Knowledge Management is through engaging the workers. They emphasised the importance of influencing people into effective knowledge sharing and the use of knowledge to add value to business activities.

Apart from the technological aspect, these findings mirrored those found by Chase's survey (1997) as referred to on pages 35 and 36.

The summaries made from the transcriptions of each organization can be found in Appendix 6 and provide a thumbnail sketch of each company.

The feedback had shown me that organizations have different approaches to Knowledge Management and seek different ways to gain different objectives but that many issues are common to all.

Having undertaken explorations into several organizations external to the Post Office and who were already familiar with aspects of Knowledge Management, I was now convinced that there was a need for my model as no other was available to ensure that knowledge was not overlooked during periods of major change. Looking at the feedback, all the organizations would have benefited from using my model if it had been available, and, in some cases, it could have saved the organizations from considerable rework and customer irritation.

It would be important for me to develop my model so that it could work alongside other Knowledge Management models, as a complementary aide.

....

It was at this point that I became involved in the development of a different research project relating to Knowledge Management with some colleagues at Bournemouth University. This work influenced the development of my thinking about my model and this is discussed in Chapter Ten.

Chapter Eight

8.1. Testing my draft model against my findings from Lloyds TSB, BT, Nortel Networks and Quidnunc

When I considered my draft model against the findings from the four organizations I became more convinced than ever that I was on the right track towards developing a model that had the potential to be useful.

I considered each of the organizations against my draft model and analysed where I thought they would sit. I would place Lloyds TSB in the *assimilation* quadrant as their processes had largely stayed the same during their major reorganization but there had been significant change in personnel. The issue they had rightly identified was a major problem over the transference of knowledge and in motivating their workers to share their knowledge. Regrettably the speed of imposed change and the insensitive way in which they had dealt with their workers had reduced the likelihood of securing their workers cooperation.

It seemed to me that Quidnunc was an organization in a permanent state of interchange because of the large percentage of workers who were changing as well as the changes in process. There was also a strong element of re-assessment as existing workers changed processes to meet new requirements or technologies. They had to re-assess whether the knowledge currently held was suitable for the new environment and to explore the need for the creation of new knowledge appropriate to the new process.

BT seemed to have experienced activities that would fall into all four categories of my model. There were examples of *husbanding* to ensure existing knowledge was stabilised and nurtured. Also *assimilation* where new people had been asked to take over existing processes/tasks, and been expected to learn from those leaving, when this had been possible. Knowledge *re-assessment* had come as a result of new technologies that brought new processes that had to be mastered by existing workers. The speed of change in the area of technology meant this was a constant activity within the organization. Not only were there new technologies that had to be mastered by existing workers but also some new workers had to be recruited on a regular basis to bring new skills into the organization. Therefore *knowledge interchange* was also involved and new individual workers would gradually infiltrate the organization sharing their knowledge so that collective knowledge could emerge.

Nortel Networks had a similar profile to BT when matched against my draft model, with the exception of knowledge husbanding for which there was little evidence. This seemed to reflect the high speed of the changing environment in which the organization operated which left little time to nurture knowledge - it was exchanged, used and then overtaken by the next bit of new knowledge. In their situation, the risks involved in not nurturing knowledge seemed to be worth taking as they were having to run very fast to stay at the cutting edge of their market. The husbanding idea had been tried - they started a type of corporate university but the cost became disproportionate and they abandoned it. The only remaining evidence for husbanding was some training they provided for selected workers to reinforce core values, particularly to remind those who have highly transferable, technical skills that the organization does not want to lose them.

Having undertaken my examination of the draft model against these organizations, I am reassured that the model works well and seems relevant to the area of research. Using the model promotes a review that in turn can indicate areas where more attention is needed in order to protect the knowledge within an organization.

....

At this point I decided to see what my research interviewees within The Post Office thought of my interpretation of the findings and my draft model. I wrote an internal report and asked for feedback and sought views from the wider senior management audience within The Post Office by writing an article which was published in 'White Space'- an internal publication for all senior managers in The Post Office, produced by the Training & Development Unit, essentially about learning from colleagues' experience (Appendix 8). I also followed up some leads and solicited comments from further key opinion-formers within The Post Office through informal interviews and meetings.

I knew the Managing Director of the Training & Development Group within my client organization was in the process of planning a reorganization and I was able to suggest an introduction to my BT interviewee. A useful session ensued, that I facilitated, to which she invited all members of her team. This session was instrumental in helping them to formulate their ideas at a crucial point. They were not only able to hear what BT had done but also to clarify their understanding and test out ideas with someone who had experience in implementing a Knowledge Management approach. The session also provided me with insight into the practical support such teams within the client organization might need in the future.

I wanted to gather feedback from the academic world and I attended a large Conference on Knowledge Management at Warwick University where I co-presented my model as work-in-progress with one of my university supervisors (Appendix 7).

As a result of all this activity, thoughts around the model and the thinking deepened.

At about the same time I became involved in a separate but related research project being undertaken by a colleague at the University. I was able to make a significant contribution to this work that addressed a related but different question. I co-edited the article that was submitted for publication in Long Range Planning and this was subsequently published in February 2002. Although important work, I have chosen to report it as a paper rather than work it into the thesis (Appendix 9).

8.2. Further feedback received on my draft model (1): White Space

On 17th May 2000 I received the following comments in response to the White Space article from a Post Office Senior Manager (not one of my research interviewees but someone who had read the article):

> *I found the application of your model interesting, particularly the comments about the dearth of attention to the Right Hand Side. Personally, I see this as unsurprising. In my view our Business is concerned primarily with the efficiency of its operating core. This results in close measurement of what we do, a sort of introspection. We are a centralised organization with managers developing 'knowledge structures' around their functional responsibilities. It is notable those that have external contacts example purchasing, provided some different responses in your research. I think I can see 'husbanding' and 'assimilation' as, in a sense, representative of our feedback systems, an interesting point, rather than looking for opportunities the research shows us as 'monitors'. I suggest the systems are not in place to develop learning and subsequently new knowledge. It will be interesting to see how The Business intends to develop knowledge management within a centralised organization. A useful article with useful references*

Apart from confirming my personal view of the client organization, this feedback provided me with confirmation that my draft model was useful. In particular, it showed that the quadrants were sufficiently well defined to be regarded as separate and different, and could be used by anyone to match against an organization and to make a diagnosis. I found his words helpful, for example he chose to equate a state of 'introspection' with the left hand side of the model that was seen as a passive, monitoring side in general. The right hand side, in contrast, was seen as the more dynamic side that would assist an organization to learn, create and absorb new knowledge.

Although not one of my original research interviewees, this respondent was sufficiently interested in the subject to request further information and I duly kept him in touch with the research as it progressed. I later received a further comment dated 30/01/2001:

> *I find your topic most interesting. If it is of any help to you, the model continues to make good sense to me and your comments on the findings are, in my view, consistent with the strategic outlook of The Business. The organizational structure and strategic orientation of the PO has arguably been operationalised in a stable environment hence a centralised and highly routinized organization, in this environment husbanding and assimilation would be appropriate, achieving consistency (efficiency) in the task. It seems that without learning and subsequent knowledge re-structuring we will continue to problem solve using the only solutions we know (limited cognitive frameworks and so on) with the risk that each problem will be re-structured to fit an existing paradigm despite an increasingly turbulent external environment. The evidence that companies can change their strategic orientation (and thus behaviour) is not good - perhaps only resulting from a crisis situation (BT intrigues me here, I often think of them as precurser). So, it would have been interesting to see where your work is taking us, perhaps there will be further discussion.*

This feedback encouraged me as he re-affirmed that the construction of the model was basically sound. Once again, he used interesting vocabulary in his observations. He talked of the client organization being seen as a 'routinized' organization due to the emphasis given to the left hand side of the model. He also equates this with traits such as 'consistency/efficiency' where, because the organization emphasises this approach it takes less risks. He continues to suggest that risks are necessary if learning and new knowledge are to be encouraged and that, unless the organization shifts its emphasis towards the right hand side of the model, the 'turbulent' external environment will overtake the organization which will be left plodding along making 'old' knowledge and procedures fit whatever comes along. He does not have faith that the organization can change fast enough to survive although he feels lessons might be learned from BT who had a similar style before they were forced to change when it entered the competitive arena.

8.3. Further feedback (2) Original sponsors

Feedback received in response to my internal *progress report from* two original sponsors of the research, Business Strategy and Planning Director, Service Delivery and the Managing Director, Parcels & Express, and from a return visit to the Managing Director, Service Delivery.

The Business Strategy and Planning Director, Service Delivery felt that the research had been very timely and the findings showed that Knowledge Management is a substantive issue that will not go away. He felt the report was contextualised and well put together and that the findings were powerful and should not be ignored. He accepted the model and understood the four quadrants and had no suggestions for improvement.

His focus was solely on how to use the findings to make the organization change. He suggested each business unit needs to consider what is it that desperately requires Knowledge Management to be applied? He felt the climate was changing and that there would be a high level of intolerance for any new management approach that doesn't 'hit the right button'. Any suggestion would be critically examined and justified against the primary aim of the organization of 'getting in control'. An extremely sharp, focused approach was required. He wanted the research to move towards finding practical solutions and how we can engage the organization and convince the business units to become more radical.

He felt that the focus at SHQ (Group) should be to develop not just a Knowledge Management strategy framework but also a clear indication regarding where attention should be focused in each business unit in response to identified systemic weaknesses at corporate level. With the framework, Group should communicate a compelling need to use Knowledge Management to support specifically identified business activities/priorities and use the organization's own vocabulary rather than refer to Knowledge Management overtly.

This was interesting because he believed that to enable the whole organization to benefit from a Knowledge Management approach, a central approach should be provided and cascaded without the use of the terminology that might alienate people.

He acknowledged that getting the whole organization to conform will be difficult because there will be different responses by different business units and because Knowledge Management is perceived to be more important/urgent for some sectors of The Post Office than others, for example, Sales/Customer-facing units. He felt that a 'pull' approach would work, where there was a lot of communication backed up with a central pool of information so that each business unit could pull on this pool for more information as required.

He was concerned that the learning points from the research to date should reach certain people within The Post Office, particularly the person working on Business Excellence issues within PO Consulting, and the Managing Director of Service Delivery (Royal Mail). He also wanted to see the developing Knowledge Model included in The Post Office's developing approaches to Knowledge Management as he believed it to be a beneficial, practical approach which had many potential applications.

Key points and questions raised by the Managing Director, Parcels & Express

The Managing Director said that the feedback received confirmed that the Research Report had arrived at a very good time. The development of the organization needed to take the research findings into consideration as it made organizational changes. However, she felt it would be crucial to find ways to apply Knowledge Management in a non heavy-handed way and to strike a balance between the strategic framework and the provision/formulation of practical tools and techniques. She suggested that individual champions might be identified to assist the spread of Knowledge Management in each business unit.

She felt that requiring each business unit to adopt a central approach ('push') might alienate people and felt there were other ways to bring about the desired change. She saw opportunities to link with the organization's four core competencies, particularly the 'managing people, transactions and places': this is a huge, latent, untapped and unexploited area. The question that needed to be asked was: what can Knowledge Management methodologies teach us?

The example was discussed of the Service Delivery Access Design Team who had recently received a Knowledge Management awareness session where the team leader had been supported by the researcher. She agreed that, through such a focus, there is an opportunity to make a huge difference to the organization as a whole and she undertook to communicate this to the organization's Strategy & Planning Directors' Network. She wanted the research to feed into three strands within the organization:

i. Group level:	ii. Post Office Consulting:	iii. POMM Team:
to feed the strategic framework on Knowledge Management network	to contribute to the development of tools/ techniques	to influence planning and the Strategy & Planning Directors

8.4. Further feedback (3) Service Delivery

Feedback on the research findings to date gathered from a return visit to the Managing Director, Service Delivery.

He felt the report had convinced him that Knowledge Management is important. He went straight to the point - he had no quibbles with the draft model saying that it made sense. He was more interested the practicalities of how the research might be used to trigger action within the organization. He felt that it would be important to 'sell' Knowledge Management through leadership/management but that it should not be labelled as such nor presented as a 'grand initiative'. He also felt any attempts to raise awareness of Knowledge Management should not compete with or 'muddy the waters' around other initiatives such as Leadership or Change Management, although he acknowledged that aspects cross over many areas. His focus was operational and he emphasised that he was keen on practicalities. He identified the key question for himself as:

> *What can we do in Knowledge Management terms to make real improvement around the operational pipeline? (process)*

He believed that the delivery end of the pipeline was the most important area on which to concentrate because this was where he believed the acquisition and maintenance of knowledge is the priority. He summarised his view:

> *It will be particularly important to find Knowledge Management solutions that are simple/easy-to-use, obvious, immediate, sustainable and measurable.*

8.5. Further feedback (4) following from the Warwick Conference presentation

The Warwick conference was a major Knowledge Management conference held at Warwick University. Many delegates were working on different aspects of Knowledge Management and it was stimulating to hear the various discussions and also to have the opportunity to present my work-in-progress.

The presentation went well and a number of questions were raised. Observations were made by fellow delegates, either as part of the formal Q&A session or informally later. I noted down the questions at the time and the answers that I provided. (I also fielded a number of questions about The Post Office generally which I have not included.)

Q: The idea of using 'baton passing' as a term intrigued me. You've mentioned that this process is used to manage changing situations - can you explain more about it?

A: It is essentially a way of recording tasks that are to be transferred from one situation to another i.e. from an old structure to a new one. It is very bureaucratic. Some say this provides the necessary disciplines and audit trail during the messiness of a period of change, others feel it creates work unnecessarily. So there are supporters and critics. The majority of my research interviewees could not think of any other mechanism used in The Post Office that even touches Knowledge Management. My research shows that it is not a Knowledge Management process as such and certainly does not go far enough, but it is systematic and can help.

Q: What key learning points would you say have come out of your research regarding getting people to share-knowledge in The Post Office?

A: At present The Post Office does not overtly place emphasis on sharing knowledge although the concept was introduced into the organization when a Total Quality approach was embraced in the late 1980s with, for example, Quality Improvement Groups. However, even though the practice is not widespread, the importance of having knowledge is becoming a survival issue and managers are beginning to realise they need networks and other knowledge-sharing activities to keep abreast of the rapid changes that are going on. However, it would be fair to say that not much is happening in this area at present.

Q: What kind of networks are you referring to?

A: Personal contacts mainly, and groups of people with similar interests (communities of practice). Gradually access is being extended to tap databases and reach sources outside, for example, via the Internet, as The Post Office's technological infrastructure develops.

Q: How did you identify the people in your research group?

A: I concentrated on experienced people in key positions who had the potential to influence the organization, but I also looked for those who were approachable and were likely to be interested in the research so would give up their time. Some I knew, others I didn't.

Q: I need more time to consider your proposed knowledge model but it would seem to present four separate areas i.e. quadrants. Surely life isn't that straightforward?

A: This is an aspect that I'm still wrestling with and I haven't got an answer yet except to say that we expect to see some areas of overlap. Also, I am not trying to present a model that tackles all areas of Knowledge Management but to bring focus on how to manage knowledge during times of change. I have had some feedback already that confirms the quadrants make sense to people who have looked at it against their organizations and their change situation, but this is an area that I will be testing out further in the next stage of my research.

8.6. Further feedback (5): Original research group members

Comments received from my original Post Office interviewees in response to an internal report summarising the findings at this point in the research

I sent out my report together with a feedback sheet to elicit feedback comments.

A total of 9 feedback sheets were returned to me out of 25. Here is a summary of the responses against the questions followed by some of the comments.

Q1. *Considering the themes that emerged were you surprised by any of the findings?*
A: 9 x No

Q2. *Should The Post Office proactively do more to consciously manage knowledge or do nothing?*
A: 9 x Do more

Q3. *What areas of Knowledge Management interest you most?*

Personal level x 3
Strategic level x 6
Practical level example as a team leader x 3
Around customers/competitors x 2
Processes: for example, knowledge creation, embedding, transfer, intellectual capital etc. x 6
Information systems/databases x 2
As linked to change management (including baton passing) x 5
Other x 0

Q4. *Would you like a follow-up meeting?*
A: 4 said yes

Q5. *Any further information required at this stage?*
A: Majority said not at this stage but wanted to be kept in touch with progress

Q6. *If applicable, how did you feel your research interview was handled?*

	unsatisfactory	satisfactory	very well	professionally
A:		1		7

Comments:

Some of the comments received were supportive of the research findings, but ignored the theoretical side of the research seeming to be more hungry for practical help:

" A good piece of research. The trick (as ever) will now be turning it into practical difference."

Others commented on the diagnosis of the organization as presented in the report:

> *A good and informative piece of work. It confirms my view that we are simply not managing knowledge in any meaningful way. Equally, we are distracted from so doing. I see this as an important medium term issue best dealt with as part of Organizational Development rather than, say Human resources or Information Systems/Information technology functions.*

This feedback supported a central approach and recognised that Knowledge Management was not something that could be introduced in the short term. The next respondent had understood the difficulties surrounding the intangibility of knowledge and accepted more should be done to record, share and transfer knowledge. He was also in favour of having a central, agreed approach to managing knowledge during times of re-organization:

> *We rely too heavily on the formal baton passing exercise and tend to overlook the less tangible aspects of knowledge transfers. Also, both old and new jobholders are usually concentrating on their new roles (or their retirement!) and are not very focused on the past.*
>
> *I will consciously attempt to do more to record learning points arising from projects with which I have been involved, and formally record them in a 'Note for the Record' to accompany the appropriate files.*
>
> *I feel we should have an agreed approach to retention/passing on of knowledge in the event of organizational change.*

Another supported the provision of a central approach. Perhaps this response reflects comfort with the traditional way of working in The Post Office where centrally developed strategy was decreed to be followed in all the business units within the corporation. Alternatively it might simply be showing favour for a consistent organization-wide approach to Knowledge Management.

> *I would like to stay informed of this research and think we should work towards gaining a consensus on a way forward for The Post Office*

Some of the themes that had emerged in the findings prompted related comments, for example around the 'baton passing' process, process management and the role of technology:

> *Having since gone through (and still going through) SCS changes I can relate to many of the comments. Particularly on 'baton passing' where there are too many 'signature seeking' elements…*

Here the bureaucracy around the process was seen as a hindrance, a nuisance. The next comment shows that some had recognised the limitations of the baton passing process:

Baton passing can never do this (manage knowledge) and it isn't intended to do it. It's to pass accountabilities only!

There was a wistful feel to the next comment that showed disappointment that the organization did not seem to have benefited from lessons learned in previous periods of change. However it also showed that this individual has benefited personally from the research and has resolved to make personal changes to the way in which he handles change:

Perhaps it is a little disappointing that SCS changes are not considered to be managing knowledge well - perhaps there is a link between speed of change and knowledge management? Your initial findings are most timely. In contemplating baton passing now I will endeavour to transfer my tacit knowledge to others along with the baton by asking: a) what does the receiver need to know? b) what would be useful for the receiver to know?

Interest was shown in the differing views and emphases as expressed in the feedback:

The themes seemed to be consistent even though people were polarised in their views about some of the big issues (like management by process)

One person was thirsty for more information about future stages of the research and displayed how his thoughts had been successfully stimulated by the research findings:

… Far more effective have been the one-to-one briefings with key players as this not only helps you understand the background to the issues but also helps you to prioritise … I like the idea of people being knowledge sources. If they move jobs they should retain this function until the new incumbent has bedded in (3 months?). During this period the knowledge source or holder would commit time to queries and transfers as required … I would be interested in the final recommendations as the key thing is what are we going to do about it.

However, the research did not go far enough for another respondent who wanted more to be done in changing behaviours and on wider Knowledge Management issues:

> *The idea that by concentrating on the process avoids any need to account for the explicit and /or the implicit knowledge is to over simplify what is going on. We have yet to consider the ability to inspire the exchange of knowledge by the disaffected. A worthwhile piece of work but it should not be allowed to simply focus on managing change driven knowledge - the wholesale management of knowledge and information require a clearer level of understanding within the organization.*

His phrase "We have yet to consider the ability to inspire the exchange of knowledge by the disaffected" encapsulates a very difficult key issue. It is not an issue I can address in this research project in any depth as it would involve a closer study of Psychology, but it is an area that I would be very interested in investigating in future.

All the feedback received to date had been helpful. I could see that all those involved in the research programme within the client organization were beginning to be more aware of knowledge and how it might be managed, particularly during times of change. In general, their feedback focused on the practical application of Knowledge Management within the organization and supported findings already established. However, very few comments were aimed at the construction of the theoretical model that I was trying to develop. This area was to be the next for further, more detailed investigation.

Chapter Nine: Exploring the model
November 2001 - June 2002

9.1. Research design

Looking back at my original research design process, I had now completed two main data collection exercises and was now seeking to undertake a third to collect feedback specifically focused on my draft model. I decided to use some Focus Groups (Powell et al 1996), with more of the client organization's senior managers.

I was very keen to use interactive focus groups if possible as I had found this approach valuable within the organization over the years and it would fit in with my aim to increase involvement. I also saw this as a way to widen awareness about Knowledge Management generally and to encourage the participants in collaborative enquiry i.e. by giving them the opportunity to put their minds to the area of research in a debate-like situation and thereby contributing to it:

> *…learning to learn-by-doing with and from others who are also learning to learn by doing*
>
> (Revans 1980 p 288)

I also believed that as The Post Office was used to using a variety of groups for different purposes - 'focus', 'barometer', 'improvement' etc. - in the past, that such an approach would be understood within my client organization. However, I wanted to make the intention of my focus groups absolutely clear. Firstly, they would be different because they would be used to consider a theoretical model rather a practical or operational area/problem. Secondly, by 'focus group' I meant a group of people coming together willingly, by invitation, neither volunteers nor press-ganged. Thirdly I would make it clear that I had no preconceived ideas or 'hidden agenda' - something that I knew sometimes hid behind the purpose of running focus groups in the organization. In the latter, focus groups would be formed almost to ratify something that a manager had already decided to do and to provide 'evidence' of consultation. This was not the case here.

I also noted Raimond's caveat (1993) that he put around the usefulness of group sessions, suggesting that these can sometimes lead to scepticism. This comes about if someone presents a sceptical view into the discussion and is persuasive enough to colour the whole group's contributions. I knew I would have to guard against this but set about trying to find individuals who were likely to be sympathetic to the concept of my research and experienced enough to approach the sessions in a constructive manner.

I was fortunate. I had worked within the organization at senior level for a number of years and had been part of several cross-business networks that had worked closely on different initiatives, for example on Total Quality, Business Processes and Business Excellence. Through this I had a wide network of contacts and was able to identify a list of likely people to approach, many of whom had undertaken further academic studies to reach the senior positions they now enjoyed.

I made my approaches to the individuals to see if they would participate - some had already taken the trouble to respond to my research findings, but a number were new and would bring a fresh perspective. I explained the special 'added value' that I believed they could bring to the group in a one-off workshop-style session. I emphasised this was to be a single session workshop not a series of meetings. I re-iterated the purpose of getting together was to consider my draft knowledge model, bounce ideas around and consider whether it made sense and could be improved. I hoped this explanation would not put people off as being too 'loose' as the majority operated in a highly process-orientated atmosphere, so I added that the session would be structured, that I would be recording the sessions and that only a very limited amount of pre-work was required.

If possible, to gain a width of views, I wanted to run two separate focus groups. One focus group would bring together representatives from different business units within The Post Office, and a second focus group would consist exclusively of senior managers from within The Post Office's Training and Development Group. From the first focus group I hoped to gain some idea whether my draft model made sense to those working in different areas of business. From the second focus group I was hoping to gain a more academic perspective as they were all engaged in business training and consultancy work and had some knowledge of Knowledge Management already. I also felt it was important to reinforce this channel of communication as even wider dissemination of my research might then be possible through the influence and activities of members of this unit within the whole organization.

I spent a couple of days telephoning, introducing myself to those I did not know personally, explaining my work and inviting them to participate. Once again I was fortunate to secure interest from all I approached. Three people could not attend my focus groups due to previous commitments but two offered to be interviewed separately instead, and a third asked me to send him the pre-reading and sent me his thoughts by e-mail. Once again I had secured 100% interest and participation.

9.2.Data Collection Exercise 3

Participants in Focus Group One:

These senior managers came from different business units and their job titles showed their special areas of responsibility. Although all senior managers they had different approaches, two were experienced in research methodology having taken their own studies to Masters degree level, but the other two came firmly from an experienced but more practical viewpoint.

Head of Managing Direction, Media Markets
Head of Access & Delivery Design, Service Delivery
Business Excellence Manager, Packages & Express
Head of Communications, Sales & Customer Support

Participants in Focus Group Two:

Here all the participants were used to academic research as all were working within the Training and Development business unit where research was an integral part of the ethos. The group contained a mixture of levels of seniority.

Director, Training & Development Group
Head of Professional Development
Professional Development Leader
Project Manager
Product Manager
Professional Development Leader

Additionally, two separate interviews were *arranged* with the Business Planning & Business Excellence Manager attached to the Training & Development Group, and with a Senior Knowledge Management Consultant from The Post Office's Consultancy Unit.

Having secured the interest and promised attendance of the participants I sent them pre-reading to position my research and to show them my draft knowledge model. I explained that I would be taking them through this model in detail in the focus group session and that it would be helpful if they had time to look at it prior to the session.

I structured the sessions into half-day sessions. Both ran according to schedule with full attendance. I had structured the agenda to allow me to introduce the session and to initiate a general discussion to ascertain each participant's first reactions on seeing the model. I then guided them to consider each quadrant of the model in turn, before I moved the discussion back to consider where our thoughts had then left us as regards the whole model, its potential value and usage. I used the same structure for both focus groups and the two follow-up interviews.

The first group session, with four senior managers all from different business units within The Post Office, eventually made headway, although I was concerned at the start that they were taking too much time discussing Knowledge Management in general and exchanging individual views rather than by focusing on the specific purpose of the session. There was some good-natured political gesturing between those who had not met before. One person in particular was keen to demonstrate his width of experience in career and life in general before settling down to participate in the session. This was met with patient good humour by the others, all of whom had equally impressive career experience but who did not see the need to jostle for 'positions' in the group. Through a bit of strong facilitation I was able to help them to establish some common ground and then they settled down as a focus group and started to look at my model.

I recorded the sessions on cassette tape and also took away some doodles they had made on my model as they attempted to illustrate what they had in mind. Later I transcribed the relevant parts of the sessions, highlighting comments regarding where they thought improvements to the model might be made, how and why.

I took the same approach with the second focus group (members of the Training & Development Group). Here the group dynamic was different as the Director of the Training & Development Group had brought along key members of her team and they were used to working closely with each other. The debate was more complex, reflecting the higher level of knowledge about Knowledge Management within some of the group members.

Happily, Raimond's (1993) caveat around how scepticism can ruin some group sessions, was not realised.

Following the group sessions I undertook the two further individual interviews, using a similar approach as for the group sessions i.e. asking for comments on the quadrants as well as on the whole model. My first interviewee was with a Senior Consultant currently engaged in developing a Knowledge Management Strategy for The Post Office as a whole, and my second was with the Strategic Planning Manager & Business Excellence Manager for the Training & Development unit who, at the time of interview, was actively involved in planning and managing the large-scale re-organization and re-structuring of that unit.

I recorded and transcribed the comments from all the feedback gained and began to analyse it.

9.3. Data Analysis

Having transcribed all the recordings from the Focus Groups and the additional interviews, I followed the process I had used previously and worked through each transcription, highlighting key words and drawing together the common themes. Two strong themes emerged as suggestions for improving for my draft model. These were concerning the terminology used, and whether there should be an indication of time or movement.

During my analysis of the data I put aside general comments that had no direct impact on the model as they would not add to the development of my model - the desired outcome and purpose of this part of my research.

9.4. FINDINGS

The suggestions that emerged from the deliberations often developed after considerable debate. To illustrate this I am using quotations and, in some cases, I have included follow-on comments to demonstrate how the discussion grew and individuals built on each other's ideas.

9.4.1. General supporting statements

To start with, I am presenting some of the general supporting statements for the model, all of which encouraged me to believe I was developing something worthwhile.

> *If I had had this model 18 months ago when I was managing a change project I would have actually used it, because we had some people changing, some not, some processes changing and some not, some new people were coming into the unit from outside etc. - just thinking about this - if I'd had the model I could have used it to remind myself about what to look for and what some people might need to hand over to other people.*

(1/L122-127)

This was a very positive comment that showed that the model made practical sense and was not off-putting at first sight.

> *Looking at the positive side of the model, it is a very clear and systematic way of looking at what is in fact an impossibly difficult-to-capture notion because of the connectivity and facts like experience. I can write down what I do but the judgement I make and the way I make those judgements and the relationships that develop are based on a huge raft of experience that, in a personality, you bring to a point of focus when you make a decision. So the idea that you can chop it into little bits - to take a digital analogy - and apply it to what it is an organic process: what is a person's knowledge, that is why I'm going on about the collectivity aspects of it. So looking at it in organizational terms, this model is helpful because it gives us a handle of patterns of use.*
>
> (1/L136-145)

Again, I felt this to be very encouraging because the model had made sense to someone on first sight, and, even after they had thought through what it was trying to do, the model was still considered to be a useful way of looking at a change situation. This participant was also well aware of the unique way in which every individual interprets his/her ontology/view of the world.

Others agreed:

> *The more I look at the model the more it makes sense and I can see how each quadrant would apply….*
>
> (2/L62)

> *I still feel this model, as it stands, would be useful to use at the front end of a project to check against. It could be used as part of 'Leadership' training.*
>
> (1/L269)

This last comment reflected the growing realisation that perhaps all team leaders should be briefed in this area of Knowledge Management and its implications.

Although good managers know how to do it - know how to manage change - they can be provided with this as a useful model as a checklist. Of course, those who are not good managers would need it more than the others … but we don't have any of these … do we?!
(1/L275-278)

Although this comment was made tongue-in-cheek, it clearly showed the need for the Model, as did the next comment that reflected the problems of working in a very large organization:

Certainly anyone leading a project should use this model but it also needs to be used by those who are managing teams. As a team manager I wouldn't have a clue who to contact for any help of this kind, so this model will really help managers of teams, like me.
(1/L281-282)

9.4.2. The debate on terminology and whether a time/movement element would improve the model

The issue of terminology surfaced right at the beginning of both focus groups:

When I first saw the model I thought, from my point of view fine, I understand it, but if I was someone locally trying to manage a unit I'm not sure I would get to grips with the words.
(1/ L.27)

and a similar viewpoint was expressed at the start of the Group two session:

I think the words themselves are difficult for certain levels and would need too much explanation particularly to those who work at an operating level. The words sound too academic.
(2 /L91)

I was encouraged by these remarks as I felt the participants were beginning to do exactly what I needed them to do, that was, to consider how to make the model really useful to people whatever their level of experience and education. The debate was bound to revolve around words and their usage and meaning. I wanted my model to be easy to understand and to use. I welcomed this approach although I resolved not to make it too simplistic in an effort to appeal to the widest audience. It was, after all, more likely to be managers who would be steering organizational change and so that was the level I needed to target.

One participant (Focus Group Two) homed in straightaway on the word 'husbanding':

> *I'm not sure about the Husbanding box though. Thinking about how dynamic organizations are … it's probably not that relevant to our organization is it?*

(2/L70)

Whilst I thought I knew what was meant about the client organization not being dynamic, I was not sure why the participant had doubts about the 'husbanding' quadrant. The organization was known to be slow to change and had been identified as being mostly left hand side of the model by my other research interviewees. I realised that the participant was going through a period of testing his understanding of the model and another participant intervened and raised the level of the discussion:

> *… you need to be careful not to change the meaning by changing the wording. It might be better to come up with a definition of what is meant by the heading. If I was going into it I'd want some guidance about what I'm looking for in my organization … a*

checklist - then it would put you in one of these boxes. Then you'd look to see what you have to do to carry this through correctly i.e. what roles were in the boxes … It doesn't matter what the box heading is, it is getting the end result that's important. I think the boxes themselves are right - it's a question of providing a way for people to interpret it and use it. It then becomes a very practical tool. It may be that different organizations would need to use different words to explain the headings and put them into their own company language. But, as I say, I think the boxes themselves are right.
(2/L104-114)

This comment surfaced the complexity of what we were discussing and positioned it very well. The final point regarding different organizations having different company languages was useful and it underlined the importance of the need to make the model relevant to all organizations, not just to the client organization.

Following the suggestion of trying to find some key descriptive words that could usefully be given as suggested activities against each quadrant, various words were bandied about. For example, against the 'Husbanding' quadrant:

What about using 'recording' *because isn't 'husbanding' the place we're recording the knowledge?*
(1/L34)

In the 'husbanding' quadrant, I think there should be a requirement to audit *the existing knowledge even if you are staying static - otherwise there is never a health check. That would be valuable to add.*
(1/L131)

The idea of using the model as an aide to auditing knowledge was a helpful, common sense idea. The discussion continued:

It occurs to me just describing 'husbanding' in knowledge terms you could say that this is a 'steady' *state or* 'static' *state. This would introduce the dynamic state to the model I feel it needs and would bring a sense of potential movement or change.*

Maybe choosing words that imply movement would be helpful, such as 'steady' for husbanding.
(1/L156)

This suggestion was challenged by another in the group:

Sorry, but can we go back to 'husbanding' again … I still think 'Husbanding' is the right word because it describes a caretaking *state that is* growing, *so, as it is* evolving *the word 'steady' is not appropriate.*
(1/L192)

As the discussion took hold of the group, thoughts were aired to help to visualise which words would be the most appropriate:

…So maybe 'reactive' *is another word you could use to attach to 'husbanding'. If you think of an analogy of a copingstone - although it looks like a static entity it is actually holding the bridge together and it would fall over if it was taken away. You could say that in any organization model you need to have that coping stone or steady state presence which is the core of what keeps things going.*
(1/L197-208)

This debate ended with agreement that the word 'husbanding' was, after all, a perfectly acceptable overall term for this quadrant where such activities as 'caretaking' and the 'recording/auditing' of knowledge would take place.

The notion of movement and time had also emerged and it was as if the group had difficulty in considering the headings for the quadrants without some additional qualifying words. In this instance, 'steady/static' was suggested. However the debate was not resolved. This need for an adjective was developed later across the whole model by Focus Group One in order to respond to their agreed concern that:

What doesn't come through from the model is the 'time' element: all change takes time.
(1/L319)

Focus Group Two had a similar view on terminology but used slightly different words:

'Husbanding' I see as the preserving/saving bit but when you're doing some of the other things, you are going to want to save some of that knowledge, so we aren't dealing with separate boxes, there is interchange between them. This needs to be built into the model to indicate that you will have bits of the model applying to different bits of your knowledge.
(2/L122-126)

Here the notion of movement *between* the quadrants emerged and this single comment acted as a pivot for the rest of the discussion in Focus Group Two who built on this idea and developed it across the whole model. Here movement was seen not as discrete within each quadrant (as suggested by Focus Group One) but flowing across the model.

The 'Re-assessing' quadrant provoked the least discussion. Some limited testing of understanding took place in Group One as they did not seem too sure of this area:

I think Re-assessing is a 'learning' quadrant
(1/L171)

Is Re-assessing about development or challenging? I would have thought the Interchange is where you're actually into knowledge creation?
(1/L168)

Focus Group Two continued to blur the edges between the quadrants in their discussion about 'reassessment' so their comments were difficult to look at in isolation of the one quadrant:

I'm looking at the Re-Assessing quadrant where you haven't got a change in people but you have got process and task change - but often we have change in the task and we have the same people, so the people would change.
(2/L24-26)

Another member of the group built on this idea:

… Perhaps they'd be between the 2 quadrants. The model doesn't reflect that there could be changes on the borders. Yes, I agree it needs to be reflected in the Re-Assessment Box somewhere. I had problems with the Re-assessment box because it doesn't talk about anything new coming in from outside. It may be implicit there but what you're looking for there is fresh knowledge and not just re-assessing. This is very much a closed box isn't it?
(2/L28-35)

The final comment did not tie up with the description I had given of the quadrant as one which recognised 'the need to facilitate the creation of new knowledge appropriate to the new process' so I saw it differently. Had I not made my intentions clear enough or had the individual not read and understood the model?

The 'Interchange' quadrant seemed more straightforward to both groups. Again, useful suggestions were made regarding words that might bring greater clarity to the way the model was interpreted:

Interchange: That is certainly 'knowledge creating'
(1/L178)

Yes I agree. 'Creativity' *or possibly* 'synergy' *- that being where different interests come together to create something more than the sum of its parts…maybe not synergy on reflection.*
(1/L181-183)

I think 'Creating' *is the moving word we need here.*
(1/L186)

It was the final quadrant, 'Assimilation' which caused the most debate. To illustrate the debate I will show the way the exchange of views developed between the four members of Focus Group One:

> *Is this the 'learning' part?*
> (1/L214)

> *Or 'transferring'?"*
> (1/L217)

> *Yes, as it's transferring new knowledge to people*
> (1/L220)

> *I had 'Interactive' down but I'm not sure….*
> (1/L223)

> *The transfer of knowledge can sometimes be almost by osmosis so it isn't active as such but just happens.*

(1/L226)

I liked the idea of the transfer of knowledge by 'osmosis' - (a biological term used to describe a process of automatic absorption, often against gravity) - and this tied in with some of my thinking around how tacit knowledge is often mistakenly thought of as static knowledge but how it really continues to develop even though no one can see it happening or is necessarily aware of it.

The discussion continued around 'Assimilation' and sources for knowledge assimilation:

> *There's something here about plugging into networking which is key to making an impact in a role. So that's the person changing into a new role who needs a new network of contacts which was the bit that isn't provided and has to be done!*

(1/L230-233)

This was refreshing to hear. At last there was acknowledgement of the need to consider knowledge from new sources and the need to build new contacts and networks. However this point was not picked up and developed by the next person, who, instead, brought the focus back to the internal process of knowledge sharing:

> *The big issue for me is around the informal knowledge sharing, the power of networking. For example, if I didn't know Magda I wouldn't know about this model and I'm not convinced the mechanisms exist in our organization to transfer/share knowledge.*

(1/L305-307)

However the focus then switched to debating the terminology, the overlaps and the implications:

> *How about using the word 'development' or 'incremental'?*

(L236)

Here was the notion that a step-by-step process was being recognised, and was countered by another member of the group who felt that it was more related to the activities around planning change:

> *Wouldn't this be part of creating skills to manage the processes?*

(1/L239)

For a while the discussion was not clearly focused until the following comment was made:

> *Another word in the Assimilation quadrant box might be 'transformation' to acknowledge their acquisition of knowledge.*

(1/L251)

> *But wouldn't 'transformation' be applicable across the whole model?*

(1/L254)

This was an important point and one that seemed to satisfy all in the group. A supportive comment was made and the group member was moved to show what he had in mind by drawing on the flip chart:

> *Yes. Actually in the dynamic model you could have an arrow cutting right across* **(Fig.15)**

(1/L257)

The result of Focus Group One's deliberations was strong agreement that they wanted to see a time/movement/dynamic element reflected in the model. One of the group members had put his viewpoint quite strongly:

> *I did have some problems with this model - on the face it is very static. It's clearly coming from a deterministic point of view rather than a relativistic point of view and by doing that what it misses is words like 'insight, creativity, synergy, connectivity - the 360 degree approach, thinking outside of the box' etc. which are all relativistic things where one bit of information and another bit of information come together to create a third more powerful entity … as I said, it looks static and I think it should look dynamic. It's got to be a moving feature. There has to be an inter-flow and I think you could improve the model by drawing it in 3 dimensions and not 2.*

(1/L 46-61 & 105-107)

I liked his summary of the ideas and felt that if I could reflect the thinking in some way on the model it might bring the model more alive. Later, another member of the group agreed with this and it was clear that he had been considering the matter while the discussion developed:

> *The more I think about it, the more I think in any change at any one time all these things are in play - you are not going from one box to another, all these elements are going to be there.*

(1/264-266)

The way this comment emerged underlined the importance of giving people time to think. Not everyone thinks at the same rate and some need more time to develop their thoughts before voicing them. However, what he said was problematic. If he felt "you are not going from one box to another" because "all elements are going to be there" he was suggesting there was no need for 4 separate quadrants. But would this make the model clearer to use or more confusing? However he was in the minority, and the eventual result of Focus Group One's deliberations was that they did feel the quadrants were correct and the model was useful. They felt that it needed to be enhanced by the addition of a way of showing movement either by an arrow (**Fig.15**) plus some activity words (**Fig.16**) or by placing the model on 'bubbles' (**Fig.17**) to show it is susceptibility to adjustment/movement/change.

Despite his persuasive delivery, the one member of the group who had suggested the model could be drawn in 3 dimensions rather than two, was not supported by the others who preferred the simplicity of the 2 x 2 model. This probably reflected their closeness to, and his distance from, the operational workforce and their understanding of that audience.

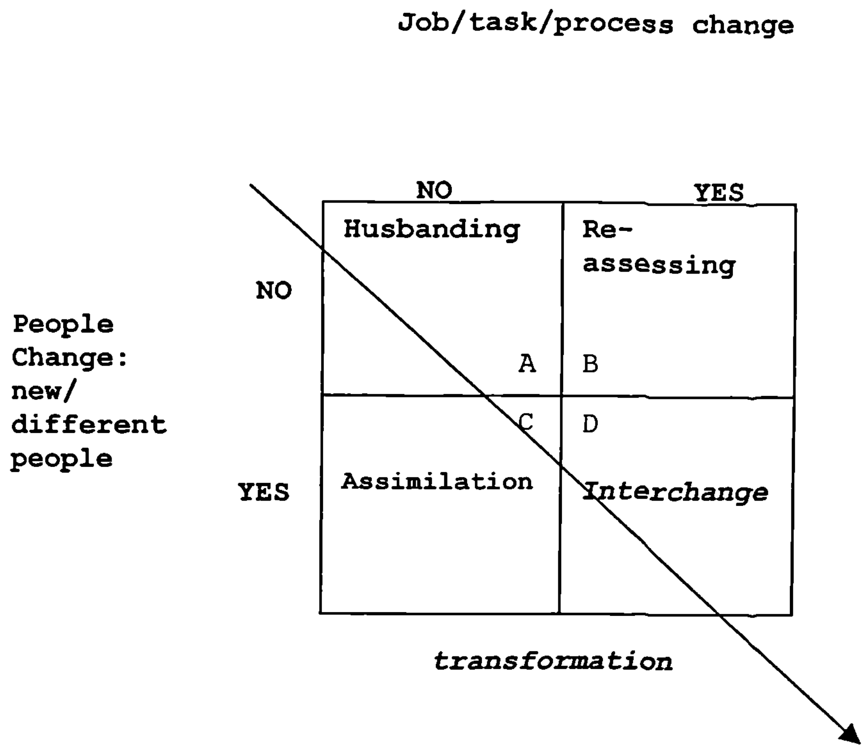


Fig.15. Managing Knowledge During Change
(arrow/transformation)

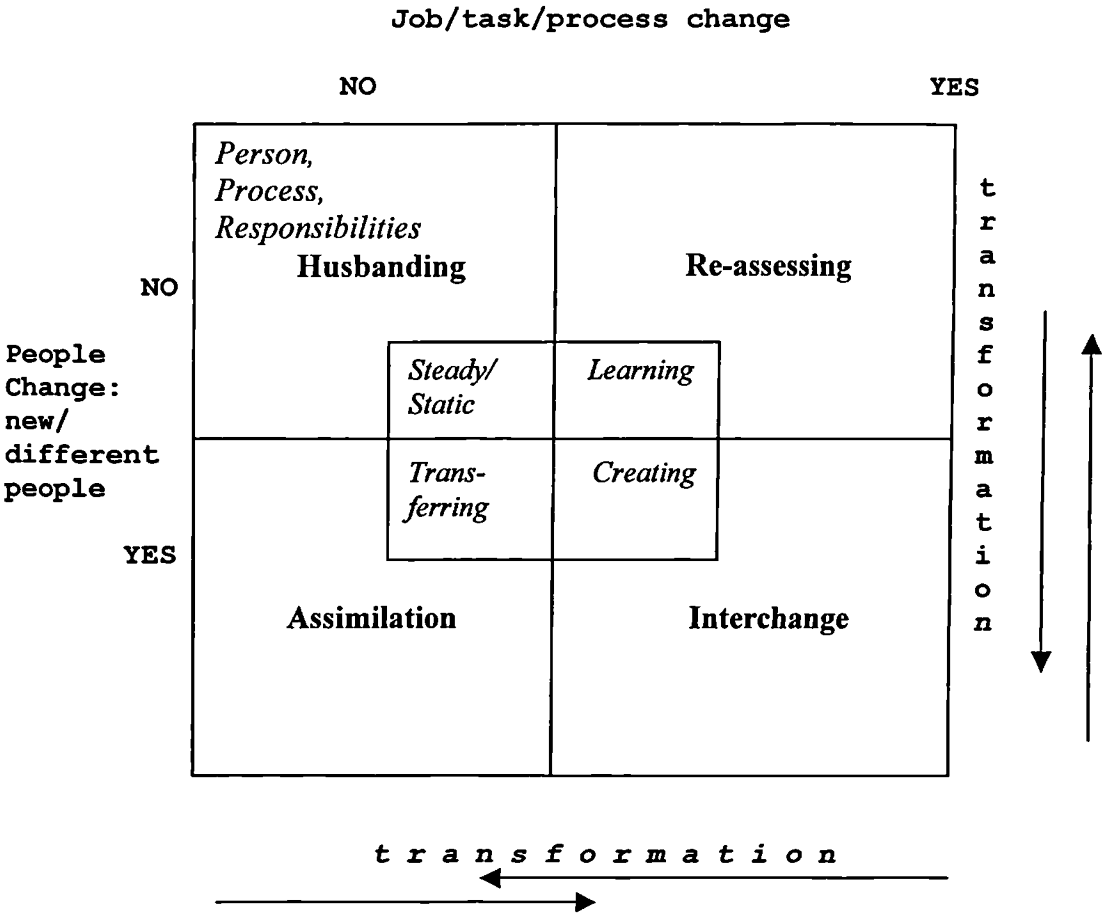


Fig. 16. Managing Knowledge During Change (activities)

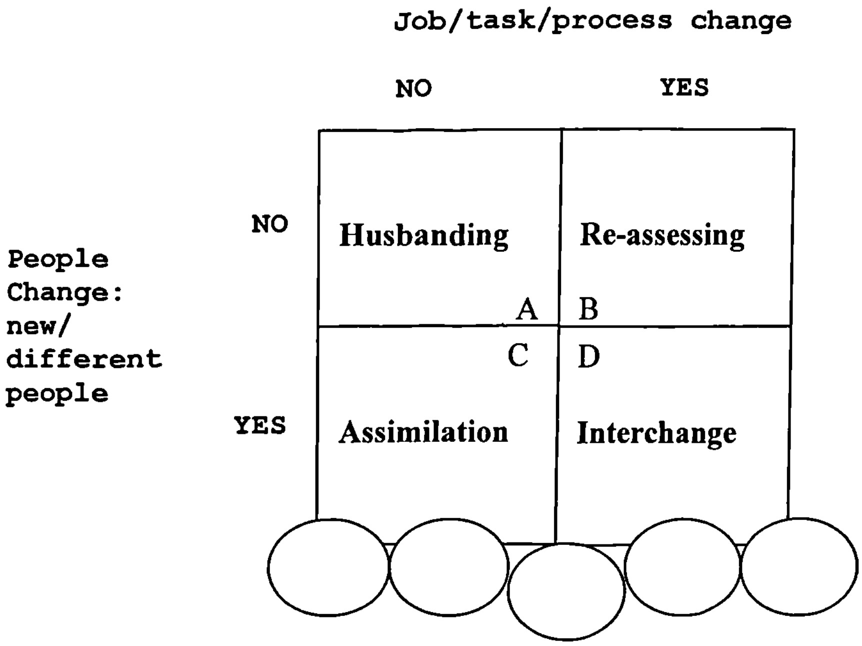


Fig.17. **Managing Knowledge During Change (bubbles/movement)**

Focus Group Two also suggested an arrow was needed together with more words to expand on the activity that would happen in each quadrant i.e. sharing, checking, finding and learning.

> *You could add a diagonal line to present it differently. (drew on flipchart)*
(2/L38-39)

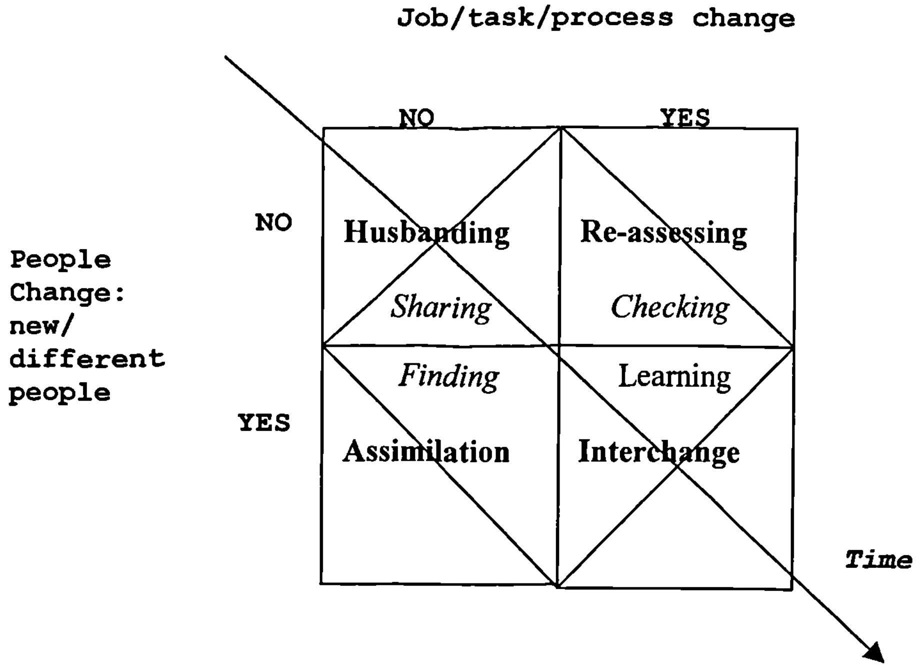


Fig.18.Managing Knowledge During Change (different levels)

As their ideas developed they jotted down on a flip chart some points they thought would be important to consider when using this model: -

- *A focus could be gained on valuable knowledge (internal and external).*
- *We must not forget to look at both positive/negative knowledge and to consider issues around archiving/disposal of knowledge*
- *It will be important to relate this model to other tools that are being used*
- *It may help to consider actions from the perspective of the different stakeholders*
- *It will be important to identify and recognise overlaps*
- *We would need to identify the state of readiness i.e. ready to manage knowledge here? Yes/no.*

They then developed their ideas more creatively:

If you're moving from one box to another you might move in different directions and at different levels and retain some bits and let other bits go.
(2/L132)

This comment suggested movement of different elements within the boxes and that different elements might move at different speeds. Again, using a 3-dimensional model instead of a 2 x 2 matrix was expressed, but this time the suggestion gained more support from the majority:

You've used a Boston Matrix 2 x 2 design but I wonder if you're trying to oversimplify Knowledge Management to get everything on one matrix?
(2/L42)

This comment was followed by another and some creative excitement was displayed as he warmed to his idea and drew on the flipchart:

Yes, you could construct a computer 3-D model to show it's flexibility and how it might be applied differently by different people in different situations. A bit like a Rubik cube - that might be a way to communicate it effectively.
(2/L136-141)

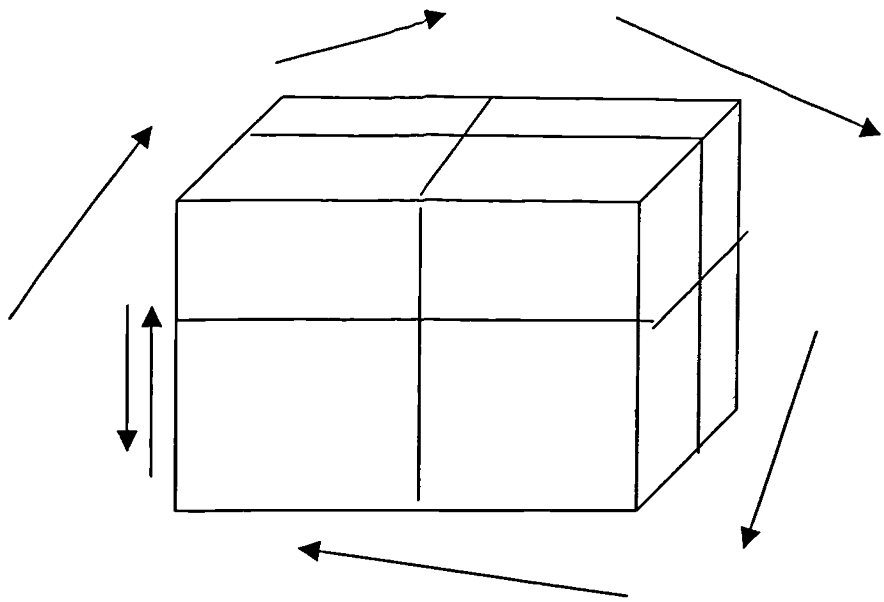


Fig. 19. Rubik cube idea for Managing Knowledge During Change model

While not wanting to suppress the enthusiasm, I said that I was not trying to reflect the whole of Knowledge Management process on my model but was trying to bring focus on one aspect: that of managing knowledge during times of major change.

A word of caution was struck by one of the group, notably the person who spent a lot of time training the operational workforce.

> *… I think there's a risk that it might frighten people off and make it more complicated than it needs to be.*

(2/L160)

Despite this comment, the majority wanted to continue to consider how to ensure the model covered every point thoroughly. The following exchange shows how quickly people were building their ideas:

We shouldn't forget the fact that the knowledge in people who are leaving the business needs to be garnered, saved, preserved for future use. This isn't reflected in the model and perhaps should be.
(2/L178-180)

This comment surprised me as this was what my model was supposed to be about - if it did not reflect this aspect then I needed to consider making a change to it.

So do we need some arrows coming into the model from outside to show this?
(2/L183)

The 'word of caution' participant interrupted again with a further word of caution:

The trouble is you could give people a lot of negative knowledge that way.
(2/L186)

This comment temporarily dampened the discussion but, at this point, one of the most experienced members of the group suggested a way forward and proceeded to make his views clear:

I would find the model personally useful to use as a checklist but I'd like to see three overlays: 1) a series of questions about the people for each box: are they open to change or not etc. 2) another overlay about the knowledge itself whether it is archived or disposed of or still waiting to be gathered or…and 3) a third overlay could raise questions about where we need to raise any new knowledge from.

If I was responsible for driving the change I'd want to capture those three elements.
(2/L193-199)

The whole group rallied behind his comments and there was general assent. They agreed that this suggestion would enhance the model. The first requirement was similar to Focus Group One who had wanted some accompanying notes. The second point was a useful addition that could be used to identify the status of knowledge, and the third would trigger people off to consider issues around new knowledge, a very important aspect of Knowledge Management.

9.4.3. Summary of findings from the two Focus Groups

At the end of each Focus Group I attempted to summarise what had been said and the key issues that had emerged. For Focus Group One, these had been around adding a time/dynamic dimension to the model and, for practical usage, some self-explanatory accompanying notes to help facilitate its use. The latter gained wide support from all the members of the group:

To use this model in a practical way I would need an accompanying sheet to use against each quadrant to use as an aide memoire / checklist which I could fill in while I was using/applying the model.
(1/L299-301)

If this is going to be used in The Post Office I think you could consider giving examples in each quadrant, for example, during SCS these are the sorts of things that happened in this quadrant.
(1/L110-112 R)

I suggest you could put in each quadrant a checklist of questions, for example, where is the knowledge, who has it? - the person, the process, the responsibilities etc.
(1/L151-152)

Focus Group Two had similar ideas:

It might be a good idea to have a questionnaire/checklist to go with this model so that as you use it and work through the different stages, you can be alerted to what might need to be considered.
(2/L57-59)

Yes, with some further clarification under the headings I think it could become a diagnosis tool - something to use to check to

see what might need to be done, what does need to be done and the criteria you need to use to decide where you are.
(2/L117-119R)

Throughout both focus groups I gained the strong feeling that through techniques such as openly testing understanding and exchanging views they were often trying to come to some kind of consensus view. I had not voiced (and did not) this as an intention but I noted it. Later I decided this was probably an unspoken expectation from a focus group within The Post Office. Those who set up focus groups usually expected results and sent people off to cogitate and then deliver a recommendation within a defined timescale. As this had happened naturally in some parts of the discussion, I did not intervene, as it was certainly helpful for me to hear arguments for and against suggestions or points of view. I did not guide the discussion nor give my views except when I was asked for clarification or moved the discussion onto the next area in an effort to keep within the agreed time. As the discussion unfolded, I was beginning to gain a deeper understanding of my model and the way in which it might be used in a practical way.

At the end of each focus group I asked the participants about the value of spending time inputting to my research and how they felt the session had gone. Their views were favourable. They had been pleased to be asked and felt their knowledge and experience had been valued, they had enjoyed the opportunity to put their minds to something outside their 'day job', bounce ideas around with others and make new contacts etc. They also appreciated that I facilitated the sessions, kept the focus and the pace moving and kept to time.

I was generally encouraged by what was said by both groups. However a comment that really excited me was made by one of the participants as the session ended:

> *It has just occurred to me that I will be using this model because I'm just about to go through a period of change with my own team. I've had several consultants from Post Office Consulting working for me in the past but now that unit is changing, I will be employing them as members of my team. I will have to consider how best to integrate them and consciously manage them, and I can use this model to check the different skills/states. I shall need to integrate them into working alongside existing members of my team and everyone will experience some change. I'll need to consider how best to manage the knowledge during this period.*

(1/L240-248)

This gave me a lead to follow through and I asked if I could keep in touch and find out how things progressed.

9.4.4. Further feedback (1) on my knowledge model from a Senior Knowledge Management Consultant

This senior consultant was working within The Post Office on developing a Knowledge Strategy working closely with the Head of Organizational Design & Development. He agreed to be interviewed and spent some time considering my model in advance before meeting to discuss it.

The following quotation provides his views of my draft knowledge model.

Now I started to draw on your model, and it struck me as something we could use in the Toolkit for Integrated Change. Because when we (Post Office Consulting) start off a programme or a project we say, put together a Knowledge Map and decide where your value chain is. Now using your model as a tool would be quite useful to help people to focus on what it is we need to map

Here was reference to using the model as part of a business process approach - an approach that had been introduced into the client organization a few years ago.

… Also to use it to think about what your knowledge strategy is to be for that particular knowledge project or programme. Because if you can put your project or programme into one of those quadrants that gives you some idea of what it is you need to capture and map. It won't drive the programme but would be a useful tool to enable someone to, very quickly, think well actually, I'm going to move some people here therefore I need to understand what tools and techniques we have got for transferring knowledge or backing the movement of knowledge. So to fit tools under those quadrants would be very useful to help people to think where are we going to make this change…

I was particularly pleased to see that he had felt the model was of practical use. Although he was used to looking at theoretical models, he was also used to working with all levels of people within the client organization. He described my model in everyday language and felt it was easy to understand and use. His observations continued:

Whether within the model you could put the implications for ***individuals*** *and* ***teams*** *and whether even a third dimension of* ***the organization****…so you are asking things like: are you changing a process, or people in one place, is it one person, or people in a team, and is the whole team going to move? Or is it a whole business unit, in which case it is a wider organizational change, - whether there is that 3rd dimension - the organizational impact, are we going to move the organization into a completely new business area? How you fit it on there I'm not quite sure but I think it could be used like that…*

Here I felt he was getting carried away and trying to make my model encompass the whole of Knowledge Management. He seemed to realise this, and that he was trying to make the model all things to all people, and checked himself. However his comments had indicated that my model could be used to look at situations of different sizes, for example, small changes within a team, or large-scale restructuring of the whole of a large organization. He ended with the following summary:

> *Your model is a nice simple thing. It will help compartmentalise the knowledge activity that project managers and programme managers need to undertake, and it will help their initial thinking about what is the impact of that change in the context of the knowledge, people and processes affected*

(P5 219-242)

I sounded him out as regards general progress towards Knowledge Management within The Post Office and he confirmed that The Knowledge Strategy for The Post Office had failed to gain funding in the last planning round due to the current financial climate. However he pointed out that this does not stop individual business units from starting work on knowledge activities. With the Head of Organizational Design & Development, he was currently working on integrating Change in The Post Office that will have three components - Programme Management, Change Management and Knowledge Management. Currently different tools, techniques and methodologies were being brought together and the aim was to develop a complete set of processes, tools, techniques and ways of working. He asked me to keep him in touch with the development of my model.

9.4.5. Further feedback (2) on my knowledge model from Head of Business Planning & Business Excellence Manager, Training & Development Group

My interviewee had not been able to attend one of my focus groups but was keen to be involved and he had suggested that I interview him separately following Focus Group Two when his boss and other colleagues had participated in my research.

There seemed to be an additional opportunity here - that of asking for his immediate reaction to my draft model and then, afterwards, sharing with him what his colleagues had suggested and gaining his reaction to their ideas.

It was interesting that he started the session in rather a negative way but then a more positive note emerged quite quickly:

> *My first reaction when I saw the model was that I didn't think it would have any immediate use and I wasn't sure I could relate quickly to it. I'm not sure why that was … On my second look, my reaction was, yes, I can see each of those four strategies actually as being very relevant. I guess I felt originally it was too compartmentalised in the 2 x 2 model, as there's some degree of fuzziness around it because of the nature of the change you're in, and the amount of people and process change going on … The model did start me thinking about knowledge and made me give it more thought than I have previously done.*

(L22-29 &79)

He moved onto the topic of terminology straight away but he made it clear that the terminology *"didn't strike me as wrong at all" (L73)*. This perhaps reflected his position within the Training & Development Group and that he was accustomed to the use of academic words and looking at theoretical models. He was also well prepared for the interview having given some time and thought to the pre-reading I had sent. Because of this his comments flowed easily as he described his reaction to my model:

> *I was particularly taken by the Knowledge Interchange which is where you've got both new people, and process and tasks changing as well, which happens during business re-structuring and major re-engineering. I thought this might be more typical of what goes on. Perhaps some of the others, like the steady state, we'd never get anyway: there are always new people coming in and you're always looking at processes and structures and tasks that are changing. That's why I think Interchange is the most significant of the strategies.*
> *(L31-37)*

I noted his use of 'steady state' a phrase that had arisen in the first focus group when they were searching for adjectives. He explained that the arrival of my model was very timely as he was currently engaged in a large scale organizational restructuring:

> *I started to think about how I might use this model during this present change we're going through: I could see that the Knowledge Re-assessment is valid because there is going to be massive change in our processes but not too many people involved. We will have to challenge our assumptions about certain things and create new knowledge that will be appropriate for the new environment …*
> (L42-46)

Yes, I thought, here was another person who was aware of the need for new knowledge. My interviewee was also able to look at my model from a different perspective from all my other interviewees, by applying it when considering joint ventures. I have not split up the following quotation as I felt it was important to see his thoughts as they were expressed:

> *... Whereas if we come up with a joint venture type solution then we will be looking at knowledge creation and knowledge exchange with our partners and that will be the predominant area we'll have to focus on. Through all that internal change our people are still going to be carrying on providing training development and assessment products and projects to the Business. So the Husbanding element is about sharing the knowledge that comes from those activities so that we can continually offer better products to our customers; by sharing knowledge I mean, for example, that we developed X for Sales & Customer Unit and understanding whether that knowledge is relevant/not relevant to Service Delivery or Corporate Clients or another unit. We need to share that professional content/knowledge and husband it and share it around. But, actually, about the way we operate - I think it's more in the Re-assessment or Interchange*
>
> *(L48-59)*

He was also able to highlight the importance of recognising the need for new knowledge in the new environment and the difficulties around identifying valid versus invalid knowledge:

> *I guess there's one more point on Knowledge Re-Assessment - something about expanding on the creation of knowledge. In a sense I can picture Knowledge Transfer, but facilitating the creation of new knowledge seems something rather different. Establishing and knowing what you know, coding that and passing it on is a challenge, but the creation of new knowledge appropriate to a new process - there are lots of dangers around the new knowledge and they might be inhibited. It's a fascinating thought.*
>
> *Also to consider what environmental/individual factors can help so that the new knowledge is generated appropriately. It immediately makes you think how difficult it is to decide what knowledge is valid and what isn't. Trying to develop knowledge in an uncertain environment is where knowledge creation is very difficult. You are going to make mistakes. You are going to get things wrong - how do you sift out what's valid and invalid? It's a whole area that's fascinating. It does need us to get 'out of the box' and think creatively. Understanding the implications of the creation of knowledge would be helpful, although I'm not sure how relevant this is to your research and this model - it's probably a separate issue*
>
> *(L98-112)*

Here was proof that my research was triggering off some very useful thoughts within the client organization about the whole area of the creation of knowledge. He also acknowledged the complexity of managing knowledge and was aware of its inexactitude as a science as, through trial and error, mistakes are bound to happen, as there are no 'right' answers as such. He continued:

> *I think most organizations for most of the time will be in the box 'Knowledge Re-Assessment' because they are changing things with existing people, process or tasks. Typically organizations have so much inertia that they can't create anything new from where they are now. If you look through what you're saying about organizational change, those things should come about because there is a response to the competitive environment.*

His use of the word 'should' indicated that he knew this was not currently happening in the client organization.

> *Lots of the language used in the model seems to focus on the internal environment example re-structuring, re-engineering, but perhaps there should be more to include signals from the external environment - should that be reflected in the model? Perhaps things like behavioural change, changing mindsets or culture should be included. Would this model apply to that?*

(L114-125)

Here was another example of someone wanting to over complicate the model. However, I found his thoughtful approach refreshing and I appreciated the clarity with which he expressed his thoughts. We discussed his ideas and agreed that he had raised important issues that were related to general ways of working that need to be considered by an organisation alongside the planning of a structural change.

Having expressed his personal viewpoint I then told him of the views from his colleagues and asked what he thought about their suggestions. What, I asked, did he think about showing some kind of movement in the model? He agreed it might be worth considering and that, additionally, I could show that overlaps can exist between the quadrants. He suggested it might be helpful to consider using a computer to show the model as multi-dimensional with complexities (overlays).

He wanted to see examples put into each quadrant and a whole toolkit built up around the model:

> *In terms of Knowledge Assimilation, you've got the example of baton passing but the other 3 don't have a similar example as to how those things could be done. So presumably if you aim to make the model more useful to organizations, each of those parts of the matrix could have a series of tool kits attached, including tools/techniques - anything that might help motivate people.*
> *(L64-68)*

Having started on a slightly negative note my interviewee had changed to a positive stance during the course of the interview. He made a very positive statement, which supported the need for my knowledge model:

> *It would be tempting to think if an organization has got Knowledge Management strategies in place that it will have covered all areas, but now I can see that's not necessarily right at all - without this model which is specifically about managing knowledge during times of change some things could well be overlooked.*
> *(L86-89)*

I took away my interviewee's jottings made on the flip chart during the interview. He had suggested the following could be considered although he was not sure whether all would be useful or could be reflected in the model or whether they should be dealt with separately:

- Internal change and attitudinal change
- Importing knowledge from outside
- Looking outwards

- Make it dynamic
- What do I have to be careful of in knowledge transfer
- Questionnaire to check on leadership
- Align to SWOT (strengths, weaknesses, opportunities, threats) analysis
- Definitions/criteria against each box
- Different bits of boxes in each
- Explicit and Tacit Knowledge Management: check in all boxes
- Put own spin on for different business units?
- Show that overlaps can exist between the quadrants
- Demonstrate use by giving an example?
- Could use computer to show the model as multi-dimensional with complexities (overlays)

9.4.6. Further feedback (3) An example of practical usage of my Knowledge model

This member of Focus Group One had followed his intentions to apply my model (original draft form) in his team situation. Here is his description of what was done, why and the result:

....

Access & Delivery Design in Service Delivery:
The process of change

In August 2001 the decision was taken to merge the access design and delivery design teams within Service Delivery into one unit with the aim of producing a consistent approach to all Customer facing operational activities and initiatives. Rather than keep activities discreet to either the access or delivery they were deliberately brought under combined management in the following strands:

- *Specification, planning and performance*
- *Operational development*
- *People, methods and environment development*
- *Planning Systems*
- *Performance Systems*

To facilitate this change, I decided to use Magda Meakins' Knowledge Management Model to which I had been introduced as a member of one of her research groups during 2001. This model proved extremely useful and helped me to check aspects of Knowledge Management that needed to be considered during this period of major change.

When this 're-assessment' of roles had taken place the effect of this was that various areas of knowledge changed significantly, for example the lead on Specification, planning and performance had previously led on people development, which was now part of a separate group. This was the case with many activities. In order to successfully manage this change the knowledge management model was used to identify how we could systematically manage the change (in terms of the knowledge) rather than go through the risky process of informal knowledge exchange. This instigated identifying what skills and knowledge each role would now need and there were instances where no change had taken place though the potential impact of process change around these roles and the different individuals in those roles meant that the 'husbanding' approach was appropriate.

The next step was the 'assimilation' of people into their new roles and with their new line managers and we used job shadowing and joint activity sessions to ensure that we didn't lose knowledge or where we weren't in a state for transfer, where we could retain that knowledge in the interim.

Finally the 'interchange' step took place over around two months ensuring that necessary knowledge, contacts, background and plans were fully understood by recipients.
All the knowledge has now formulated itself into the Access & Delivery design plan.

Head of Access & Delivery Design - Service Delivery January 2002

....

I was very pleased to see how he had applied the model and the positive results of the exercise. I rang him to discuss whether, as a result of the trial, he felt any further changes should be made to the model. He said no, and reiterated that it was a logical, sensible approach to take, and that the model had supported his efforts by being both a good trigger of things to consider as well as a reminder of necessary process steps.

Bringing all the views on my draft model together

At this point therefore, my model had received many supportive comments, but the feedback also suggested possible areas for improvement. These were around the terminology, whether movement should be reflected in it, and the provision of additional materials to aid practical application.

Chapter Ten

10.1. The influence on my model of separate research:

'A Framework for Practising Knowledge Management' (Armistead & Meakins 2002, Long Range Planning).

At this point it is appropriate to explain how my model was influenced by the thinking from another strand of research in which I was engaged. The work contributed to a project under the leadership of Professor Colin Armistead and it resulted in the publication of the paper 'A Framework for Practising Knowledge Management' (Armistead & Meakins 2002, Long Range Planning). As this was a separate strand of research I have referred only to those parts that informed the debate around my own model. However, the full text of the published paper can be found in Appendix 9.

The thrust of the 'Framework' research was to take a wide view and to investigate how managers can identify knowledge and options for approaching Knowledge Management. Being involved in this research provided me with a greater understanding of Knowledge Management as a whole and enabled me to consider how to position my own specific area of research within the whole framework.

The research investigated seven organizations that spanned the service and industrial sectors. They included the four external organizations that formed part of my own research. After analysis of all of the findings, it was found that organizations have different views on and approaches to knowledge, its role and how to manage it. Some have a vision of what they are trying to achieve whereas others view knowledge management as purely a way of enhancing operational performance.

The eventual result was the drawing up of a theoretical matrix, presented as a four-quadrant model. Here imposed/empowered approaches to knowledge are presented along one axis. The other axis represents the individual/organization, as knowledge within both individuals and in organizations needs to be considered.

The 'imposed/empowered' axis reflects the managerial paradox of whether it is best to improve performance through tight or loose control systems. 'Imposed' practices are those associated with bureaucracy, structured systems and attempts to codify all aspects of knowledge. The emphasis is on explicit knowledge and on capturing/recording knowledge in explicit forms. Using an 'empowered' approach would shift the emphasis onto the potential in the individual for knowledge creation and sharing through social interaction or a self-driven concern for personal development. This approach draws more on tacit knowledge than the 'imposed' approach, although there is as much emphasis on the use of explicit knowledge.

The different permutations were considered and four different approaches to Knowledge Management emerged: these were identified as prescribed, compliant, adaptive and self-determined.

	Imposed	Empowered
Organisational	Prescribed	Adaptive
Individual	Compliance	Self-determination

Fig.20. Framework for Knowledge Approaches (Armistead & Meakins 2002)

As this research was developed with colleagues I feel it appropriate to use the words 'we' and 'our' in the following section to indicate joint research.

Prescribed

Prescribed suggests a formal approach to knowledge and Knowledge Management at an organizational level, and technology is likely to be deployed widely to capture, store and protect knowledge. This quadrant is where evidence of knowledge approaches being imposed at the organizational level might be seen, possibly represented in the way groups and teams operate in business processes. Formal structures and bureaucratic systems are likely to be used and, similar to information systems, where there is a heavy reliance on the capability of technology, there may be demands to measure the value of knowledge through formal measurement systems. As our investigation developed, several features emerged as associated with this quadrant:

- Formal structure and procedures
- Knowledge as information
- Knowledge identified by mapping
- Technology has a strong role in Knowledge Management (capture/re-use of knowledge and information)
- Recognition / Measurement of Intellectual Capital
- Knowledge Management driving a sharing culture for knowledge

To summarise, the managers contributing to features in the prescribed quadrant seem more at ease using structure and procedures to address the way knowledge is captured and shared between the individuals in the social context of the organization and its business processes. The language they use point to a formal, controlling approach and demonstrates their trust in more mechanistic systems. They are comfortable if they have rules around ways of working as they see them as a way to ensure that the increasing power of technology delivers their goals for Knowledge Management. However their descriptions of Knowledge Management, and the way knowledge is handled, can be difficult to distinguish from those that might be associated with information systems. We see the strengths of the prescribed quadrant as being:

- Formal processes and systems ensure knowledge is captured and accessible
- Explores the potential of technology in Knowledge Management

Compliance

Compliance requires individuals to engage in knowledge activities through contract and regulation. Resources are allocated through formal performance management processes. In this quadrant for imposed knowledge approaches at the individual level, we might expect to find evidence of people being subjected to formal rules and 'rituals' for knowledge capture and sharing, and being linked to formal performance measurement systems. The way individuals as learners acquire knowledge, is more likely to be associated with formal approaches to training. There are four main features in the organizations that support the compliance quadrant:

- Knowledge sharing as (part of) a formal work contract
- Knowledge sharing as formal ritual
- Formal access to knowledge
- Programmed learning

In summary, it is not surprising that having found evidence for organizational imposed approaches, we should also see now this reflected in the way individuals are treated. We see the strengths of the compliance quadrant as being:

- Individuals understand what is expected
- Reward can be tied to individual performance contracts

Adaptive

Adaptive engages with the informal within the social fabric of the organization in the sense of communities of practice and the self-management of teams. In this quadrant, where empowered approaches to knowledge are employed at the organizational level, we would expect to find evidence of the recognition of informal networks and the social context of knowledge. We would expect that the limited role of technology in Knowledge Management be recognised, especially in interacting with aspects of social and tacit knowledge. There would also be an emphasis on the cultural environment for knowledge activities.

Knowledge strategies associated with the adaptive organization were infrequently observed in some organizations (example RM Consulting or BT), but clearly apparent in others (Quidnunc and Nortel Networks). Both the latter organizations were in a dynamic business environment at the time. We found five features that align with the adaptive quadrant:

- Informal Networks (& Communities of Practice)
- Technology has a limited role in Knowledge Management
- Knowledge identified conceptually
- Measurement encourages awareness/use of knowledge
- Collapsing barriers to knowledge sharing

Whereas programmes to encourage or demand sharing are a feature of the imposed organizations, they are less evident in the adaptive quadrant. The flat structure of the organizations, and the emphasis on the collaborative working, mean that knowledge is freely shared.

In summary, there is strong evidence that in Quidnunc, Nortel Networks and the Management Consultancy, managers are engaging in activities that fit within the adaptive framework. In many respects they are acknowledging the complexity of knowledge and not diminishing the problems that are faced in trying to improve the way knowledge processes operate. The emphasis on the social level is reflected in the recognition of the importance of informal networks. The strengths of the adaptive quadrant are:

- Accepts and encourages informal networks
- High levels of informal knowledge sharing

Self-determined

Self-determination encourages individuals to take responsibility for their contribution to learning in the knowledge creation and sharing processes. This quadrant, for empowered knowledge approaches at the individual level, is associated with specialist management roles (such as the Management Consultants, and specialist teams in other organizations). The approaches for individuals are supported at the organizational level. We might anticipate that the features in this quadrant relate to greater autonomy in the creation and use of knowledge with value placed on informal sharing of knowledge in an atmosphere of trust. It is the hardest quadrant to explore as we found less direct evidence of activity in the organizations in our study. However we have identified four features aligning with this quadrant:

- Knowledge sharing motivated by trust
- Complexity of knowledge accommodated
- Adaptive learning
- Informal access to knowledge

Again in contrast to the compliance quadrant, and somewhat by inference, the sense from the organizations associated with the self-determination quadrant such as Management Consultancy and Quidnunc is that individuals have more informal access to knowledge. The study did not uncover direct evidence of this activity, although it might be anticipated that empowered organizations that recognise informal networks will, by inference, demonstrate strong informal access to knowledge.

In summary it is perhaps not surprising that we found less evidence of activity in this quadrant given that it requires the greatest degree of trust on the part of managers. Where we have found empowered activity at the level of the organization, we infer there would be activity at an individual level, although this has not always been the case. The strengths of the self-determined quadrant could be seen as:

- High levels of knowledge sharing and problem solving (knowledge creation)
- Advanced understanding of knowledge

A summary of the levels of activity for each organization in the four quadrants is shown in the following Fig.22.

Fig.21 **Classification of Knowledge Approaches**

	RM Consulting	BT	Jaguar	Quidnunc	Management Consultancy	Nortel Networks
Organizational Imposed Prescribed						
Formal structure	X					
Knowledge as information	X	X	X			
Knowledge written in map	X	X		X	X	
Technology for capture/reuse	X	X	X		X	
Cultural change programmes	X	X				
Individual imposed Compliance						
Work contract	X	X		X	X	
Knowledge sharing ritual	X	X				X
Formal access for Knowledge						
Classroom learning	X	X		X	X	
Organizational Empowered Adaptive						
Informal networks				X	X	X
Knowledge in social context		X				X
Knowledge identified conceptually				X		
Technology facilitates Knowledge reuse	X		X	X	X	X
Collapsed barriers in Knowledge market						
Individual Empowered Self - determination.						
Psychological contract						
Knowledge sharing as natural				X ?		X
Informal access for Knowledge						
Practice based learning						
Complexity of Knowledge accommodated		X			X	
Trust for contingent Knowledge						
Autonomy for Knowledge creation						

This results in the following collective levels of activity for all the organizations:

- Prescribed quadrant: 26 instances
- Compliance quadrant: 14 instances
- Adaptive quadrant: 13 instances
- Self-determination quadrant: 3 instances

The reasons why there is greater activity associated with the imposed dimension over the empowered and the organizational dimension over the individual is now discussed in the context of possible trade-offs.

The recognition of 'trade-off'' in the matrix

The questions we raise about our "knowledge approaches" matrix are: can organizations simultaneously address all four quadrants with equal capability, on the assumption that there are positive aspects associated with each quadrant? Or are there inherent aspects of some quadrants that make trade-offs inevitable and lead to compromises being made? The concept of trade-offs in performance terms is that it might not be possible to achieve more than one goal simultaneously, so managerial choices are necessary. It is recognised that trade-offs may be conscious choices perhaps affected by access to resources or unconscious because the benefits of each option is not fully appreciated. Also it is possible that what had been seen to be "immutable" trade-offs in practice can be eliminated or greatly reduced. For example, cost and quality were traditionally regarded as trade-offs until Japanese manufacturers demonstrated it was possible to produce reliable products at low cost.

The findings in Table 2 clearly show that all of the organizations in our study demonstrate they are engaged in more than one of our categories of knowledge approaches. Some indication of the degree of engagement is given by the number of features recorded for each organization in each quadrant. This is done without making any comment on any relative weighing of importance of the features.

It is clear all of the organizations in the study are adopting more than one approach and that there is a slight indication that the majority is engaging the prescribed and compliance approaches to a greater degree than the other two. Could this be because there are trade-offs being made either explicitly or implicitly by the managers? Some possible trade-offs are examined to look for evidence of this happening.

- *Imposed versus an empowered approach*

Imposed approaches to Knowledge Management suggest formalised procedures for knowledge processes. In contrast the term empowerment within the approach suggests involvement, elements of self-management and decision-making. However there are risks that empowerment creates expectations in individuals which cannot be realised. So imposed approaches to knowledge may stifle autonomy for individual creativity whereas empowerment might encourage creativity. Other evidence that the ability to maintain simultaneous managerial control while allowing degrees of empowerment suggest that for many organizations a trade-off is inevitable as the approaches to knowledge in the two domains require different attitudes to the way people work and share knowledge.

Organizations which have a strong bureaucratic tradition are perhaps more likely to be associated with the imposed quadrants, corresponding to the 'cognitivist' perspective of organizational knowledge. RM Consulting and BT share a public sector history and might be more likely to demonstrate such characteristics. We are suggesting that the history of an organization influences the quadrant(s) they are more likely to be associated with.

- *A focus on the individual versus the organizational*

If managers focus on the knowledge held by individuals, they will encourage opportunities for individual learning but potentially at the expense of the needs of the collective knowledge. A concentration mainly on the latter could restrict the creative learning of individuals especially in an accompanying imposed domain. Our findings suggest that managers do not perceive a trade-off between the individual and the organizational approaches to knowledge to the extent that they also correspond to the imposed dimension. This could be because they recognise that knowledge sharing and creation in the notion of communities of practice address both the individual and the organizational dimensions. We might infer this is because they do not see any conflict of interest between the two.

- *Focus on explicit/codifiable versus tacit/uncodifiable knowledge*

If managers become overly obsessed with the collection and management of codifiable, explicit knowledge they clearly exclude the richness contained in the other domain. However ignoring the explicit knowledge to manage the tacit could run the risk of loss of control through the lack of ordered management of knowledge needed in key business processes. Here we are at the heart of the Knowledge Management debate because a concentration on the codifiable in any knowledge approach may simply, at best, lead to improved information systems. Whereas high levels of integration of explicit and codified knowledge can also lead to a richness itself for knowledge creation. Managers in the study recognised the difficulties in "managing" the tacit dimension and so might tend to start with the explicit. This was not because they saw an inherent trade-off between the two, but rather the difficulty of execution of the tacit knowledge processes.

- *Technological versus people knowledge*

The technology versus people argument is about the means of managing knowledge processes. The question inherent in the trade-off is the extent to which technology can be used alone or in combination with people at an individual or organizational level. Managers do not believe technology could wholly replace people, or that there is no place for technology in approaches to knowledge. Trade-offs in performance of knowledge processes are thus most likely to occur because of uncertainty by managers about how to get the best from the people/technology mix. This could arise because the expertise about technology lies mainly with information systems experts such that the users in the business processes are unable to get the best from what is installed. The discussion of the technology and human factors above demonstrates that managers in this study do not have a common approach to getting a balance between these factors. Consequently we can infer that trade-offs are occurring.

We have shown there are distinct strengths for each of our knowledge approaches. Consequently we would expect organizations to be trying to engage with each in order to maximise the effectiveness of their approaches to Knowledge Management if they were aware of the potential of the different approaches. This is not the case as we see in Table 2. We suggest trade-offs of the type we have identified are occurring to varying degrees either by intent or by default. If this is the case they restrict the potential to be gained from a holistic approach to knowledge management that engages with all of the approaches.

The challenge in knowledge management programmes is for managers to understand the strengths of the different approaches to knowledge and to endeavour to understand the consequences of each for the performance of their business processes.

Practising managers do not find it easy to develop common languages for organizational knowledge. However they recognise in the changed business environment that knowledge can be a source of organizational advantage and would like to be able to encourage knowledge creation and sharing. We have shown that among the organizations that have developed knowledge management projects, there are differences in objectives and approaches. Success of these projects for organizational effectiveness is difficult to judge because of the limitations of measurement regimes. Nevertheless we have been able to draw from each case, evidence of activities that might contribute to better ways to address knowledge in organizations. The Knowledge Management Approaches Framework should also help managers in their understanding of other Knowledge Management models. The notion of trade-offs in approaches we believe is a powerful antidote to complacency.

The Developed Knowledge Approach Framework emerges as follows:

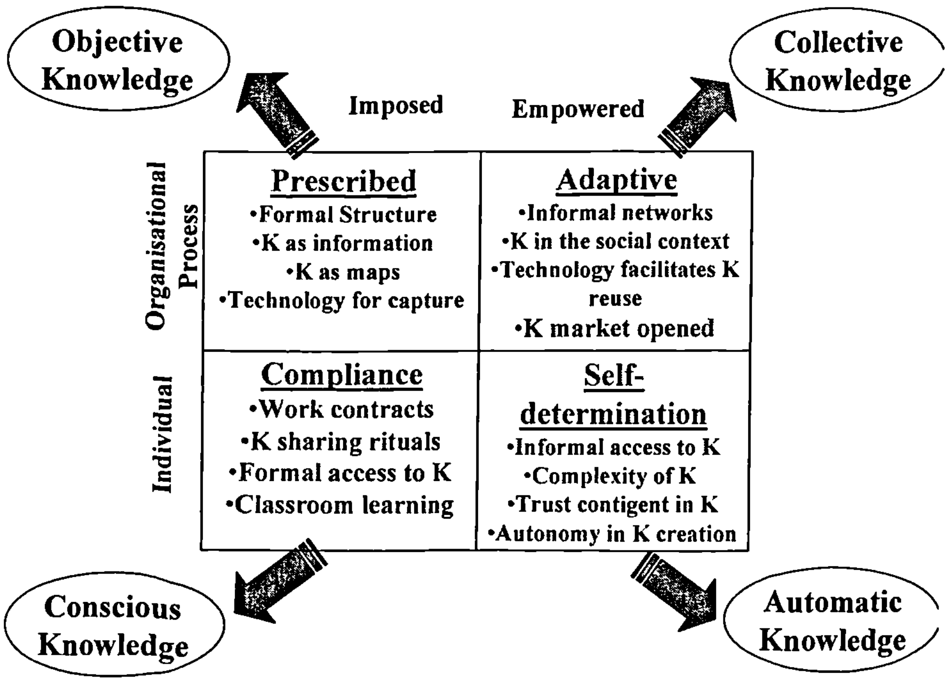


Fig.22 Developed Knowledge Approach Framework (Armistead & Meakins 2001)

This Framework for Knowledge Approaches helps to inform users of my model (Managing Knowledge During Change) on what might work best.

Through my research it is clear that The Post Office does not have a fully developed Knowledge Management Strategy although there is evidence of pockets of activity in some of the different business units and teams. As an organization, it has a long history of using bureaucratic, highly structured and controlled approaches to management, and this would bring expectations that it is likely to take a mainly imposed approach to Knowledge Management where it will try to prescribe and make workers (collectively and individually) conform to working procedures and rules for knowledge-sharing, etc.

However, since the late 1980s when a Total Quality initiative was introduced, awareness has grown within the organization of the power of empowerment, and the recognition of the worth of individuals. Total Quality also emphasised the importance of leadership and positive management behaviours. Gradually a more enlightened approach to management is emerging and, currently, there is evidence of instances of all four knowledge approaches - and mixtures of them - being practised to some degree by a proportion of the management.

With the emphasis on improving leadership skills has come more awareness of how best to use teams and the individuals within them. This has placed more focus on each individual worker and more responsibility on each team leader to get the most from their team's knowledge collectively and individually. This focus has, inevitably, led to a closer interest in measurement systems to understand levels of effectiveness of performance. Whilst this focus might be seen negatively as too controlling, it might also be viewed positively as being the trigger for encouraging team leaders to think more about how to make workers more effective, which in turn brings focus onto knowledge related issues in general.

The relationship between the two models - Framework for Knowledge Approaches (Armistead & Meakins 2001) and (Managing Knowledge During Change, Meakins 2003) is complementary. Once a decision about organizational restructuring has been made, managers have the responsibility of moving the organization/unit or team from the current state to the future desired state. To be able to identify what they need to take from the old structure into the new, they need to assess many aspects of the organization, one of which is knowledge.

The 'Framework for Knowledge Approaches' is designed to assist understanding about various approaches to Knowledge Management and, once they have understood the tendencies of their own organization, my change model can then help them to consider, in detail, knowledge issues that need to be managed during the transition (Moorhead & Griffin 1992).

In the literature I found a useful quote on 'task redesign' given by McKenna (1994):

"it is critical to evaluate the organizational structure … quite apart from specific changes to the jobs concerned"

She lists interventions that might be selected, and suggests that when change is planned, the first job is to look at existing jobs and make sure they are producing the outcomes that are consistent with the overall goals of the organization. If not, then the jobs need to be re-designed or new jobs need to be designed. She goes further to say that if the desired outcomes are to materialise, then the actual behaviours required of the jobholders need to be identified and people with matching qualities recruited. This is all sound advice although 'managing' and 'knowledge' are words that do not appear together, and nowhere is any reference to the need to consider existing knowledge and how to ensure valuable, relevant knowledge is not lost during the period of change. Nor is there reference to checking whether any new knowledge may be required in the new structure.

To summarise, as my model 'Managing Knowledge During Change' has developed, I feel it has become something slightly set apart from the Knowledge Management framework as it is a practical framework, independent of the Knowledge Management system. However it is clearly linked to those activities, to the management of change and specifically to the transference of knowledge. It could therefore be seen as an enhancement of Armistead's Knowledge Transfer Process (1999):

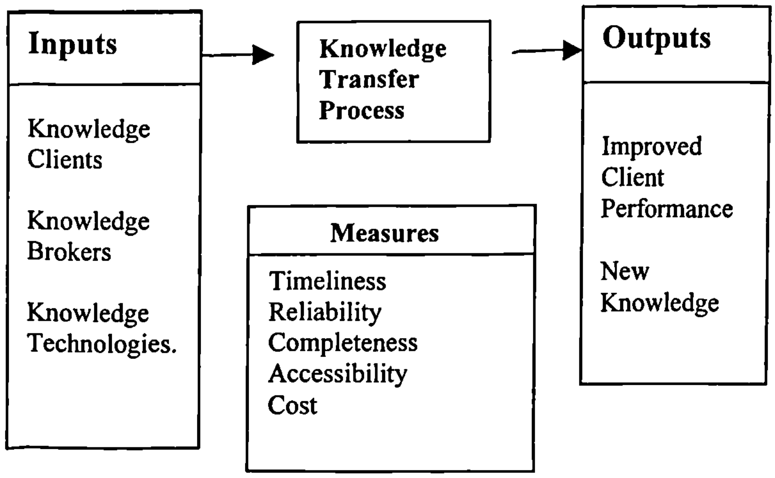


Fig.23. Knowledge transfer process (Armistead 1999)

During the planning stage, my model is designed to act as a tool to focus activity around the knowledge that will be required in the new organization. Through its use, knowledge could be assessed and activities developed to bring about the desired future state. These activities would assist the transference of existing knowledge as well as with the diagnosis of any knowledge gaps.

Looking at the implications for organizations that favour an imposed approach to Knowledge Management (*prescribed/compliance*), there are likely to be more examples of *husbanding* and *assimilation* (Quadrants A & C). However it is clear that the qualities essential for releasing potential in individuals and teams (and which can lead to the creation of knowledge, and the learning of new knowledge) are only likely to develop if a more empowered (adaptive/self-determination) approach is taken.

The Post Office today remains an organization that continues to favour an imposed approach even though there are signs of movement. It would therefore benefit from considering activities associated with *re-assessing and interchange* (Quadrants B and D) which would help to address this imbalance.

10.2. Final decisions around my model

To return to the proposed improvements suggested for my model, the question that remains is whether to change it in any way to reflect the feedback.

I feel the debate around the terminology was useful but I remain convinced that the main headings reflect the relevant quadrants appropriately. However I do feel some 'doing' words would help users to grasp more quickly the intentions of each quadrant. This would bring about a more dynamic feel. I found a reference to the need to acknowledge the dynamic situation, which exists in change situations given by Bridges (1991). In a section on change versus transition he suggests that change involves shifts in external situations, and that transition (composing endings, neutral zone, new beginnings) is the psychological reorientation people have to experience when a significant change takes place. He presents change as an event - a gain - and transition as a process - a loss - and says that it is that which people resent not always the change itself. His thinking reinforced the feedback I gathered from my research groups regarding the need to add a dynamic aspect to my model. Consequently, I have decided to add in a word into each quadrant to show that movement. I have settled on 'stabilizing' for Quadrant A, 'learning' for Quadrant B, 'transferring' for Quadrant C and 'creating' for Quadrant D. These now reflect the transformational aspect.

As regards providing some notes to assist practical usage of my model, I remain convinced that the more straightforward my model, the easier it will be to understand and use. I therefore do not want to add any further words to the model itself but will be producing some practical guidelines for using the model.

I have decided to change the title *of* my *model from 'Managing* Knowledge in Times of Organisational Restructuring' to 'Managing Knowledge During Change'. This reflects my greater understanding of the ability of the model to be applied in many change situations, not only that of organisational restructuring. I had not appreciated this at the start of my research.

Here is my model as it now stands at this point in my research:

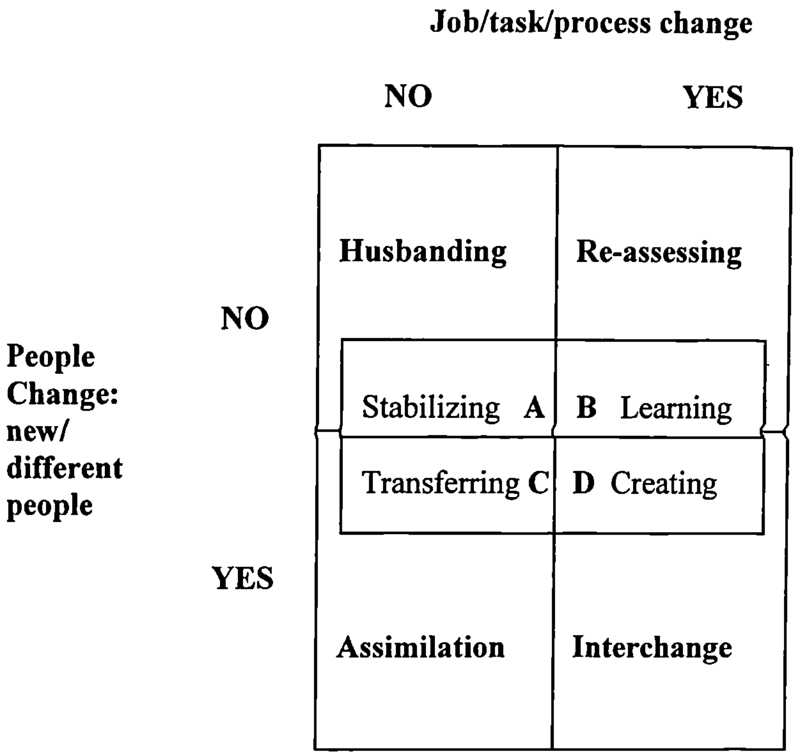


Fig.24 Managing Knowledge During Change (Meakins 2003)

Chapter Eleven
Assessment of contribution to the practitioner and academic thinking around Knowledge Management

11.1. Introduction

The purpose of this chapter is to summarise the research conclusions and to suggest ways in which a contribution has been made to knowledge (theory) and knowledge (practice).

The evidence assesses the reasons why knowledge has been and is being lost in The Post Office. It looks at existing models that deal with the management and transfer of knowledge, and how they do not go far enough, and suggests an additional model.

I set out my aims at the beginning of my research and I have succeeded in collecting evidence to support the following assertions:

- That, within my client organization, there is no consistent understanding of what Knowledge Management is or what benefits it can bring to an organization in a business context
- That the value of knowledge per se within each individual is not assessed during recruitment, as the emphasis is on trying to match experience with the organization's set of competences
- That there is no conscious application of Knowledge Management and therefore the organization cannot capitalize on its knowledge (intellectual assets) for the benefit of the organization
- That the client organization has lost/continues to lose knowledge
- That it could benefit from not losing it
- That the rate at which the knowledge is lost is greatest during periods of organizational re-structuring
- That, specifically, it could benefit from finding a practical method of not losing it when going through future periods of re-structuring
- That, there is no consistent approach to learning from previous mistakes or good practices identified from within or from external organizations
- That the re-shaping phase of knowledge ('Ba') is not recognised by the organization that is therefore slow to learn and apply lessons.

My research journey led me to search both the academic and practitioner literature in order to understand more about my client organization and why it was suffering knowledge loss at crucial times of major organizational restructuring.

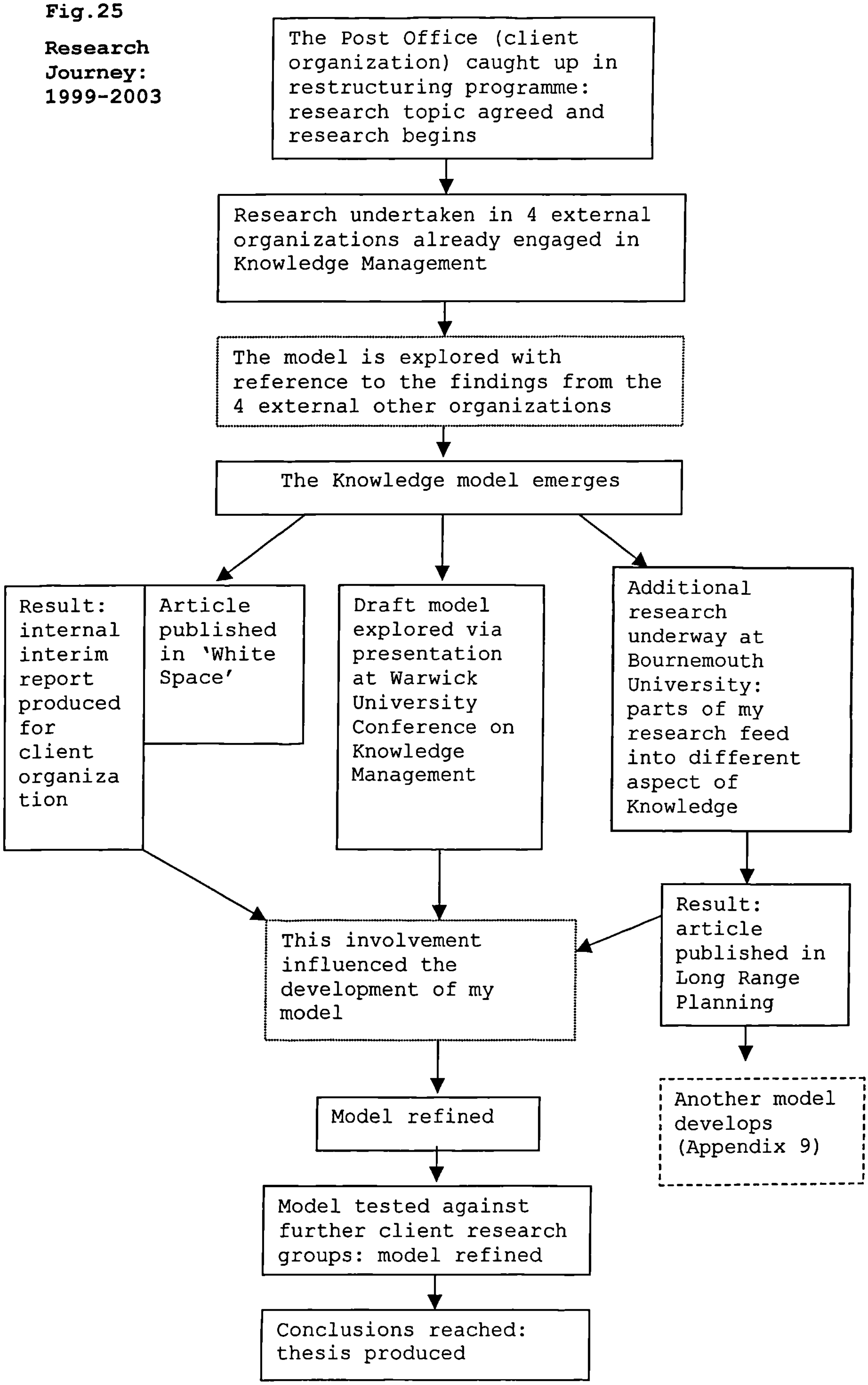
Through studying the academic literature and the writings of practitioners I found a gap that had not been previously addressed in the area of Knowledge Management. Further I discovered that the problem was common to other organizations. This led me to believe that if I was able to help my client organization to understand what was happening and why, that we could work together on developing a potential solution. This I did with reference to practitioner literature, to other practicing managers in other organizations that I visited, and through parallel research in tangential aspects of Knowledge Management that was continuing with colleagues at Bournemouth University (concurrently I was exploring how academic thinking was developing around Knowledge Management). All these activities had a significant influence on my thinking.

The eventual result was a model that adds a new dimension to managing knowledge in that it concentrates of issues that arise when managing knowledge during times of change.

The following flow diagram shows my research journey:

Fig.25

Research Journey: 1999-2003

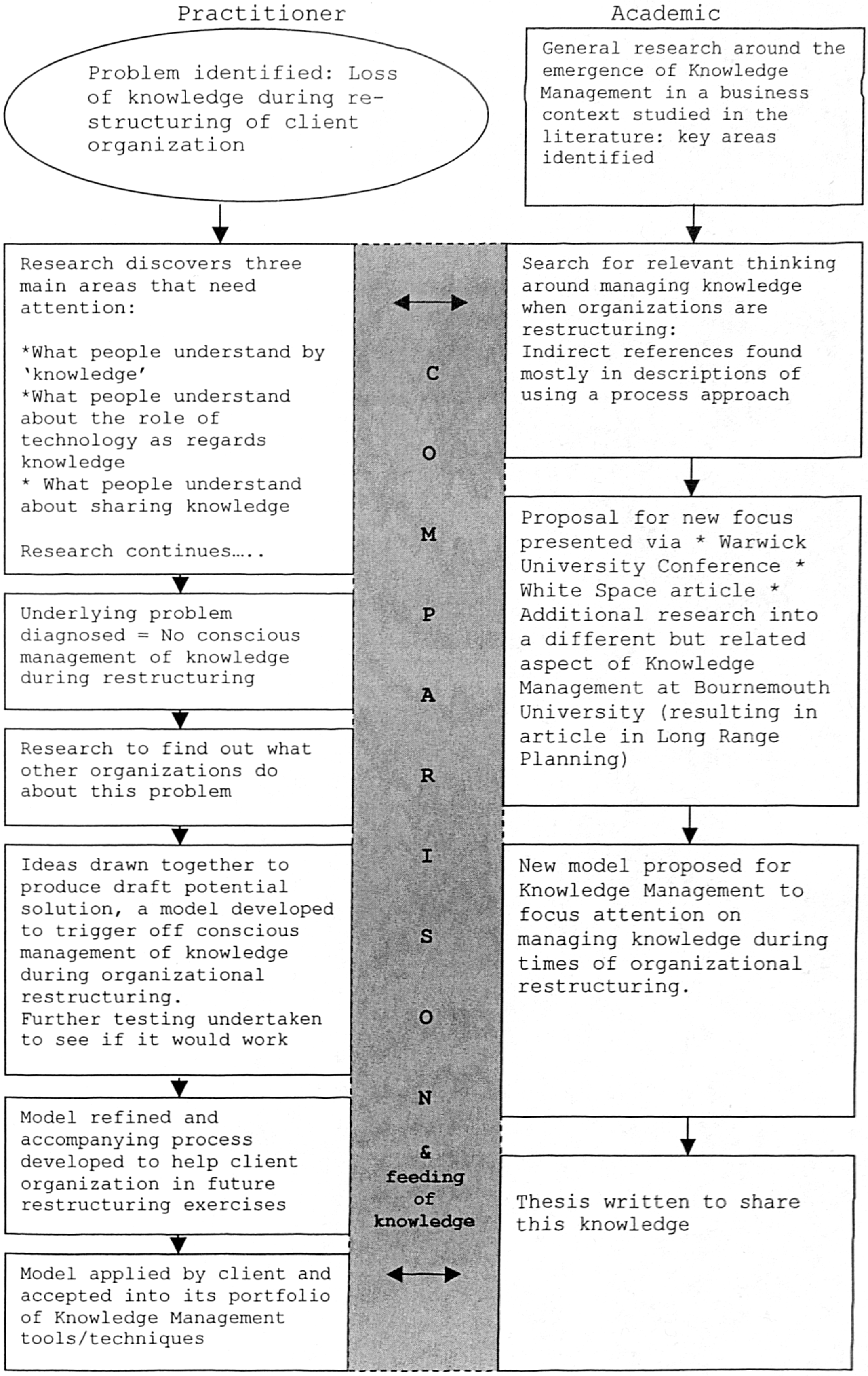


The involvement of my client organization throughout my research was crucial to building their understanding of Knowledge Management in general and in the facilitating the collection of their feedback. It was when I took my developing model back to the client research group that their comments enabled the model to be critiqued and considered. This led to changes in the way it looked and might be applied. My aim was to make it more useful, more meaningful and a really helpful practical tool for the client. The eventual result was a model that will be used in the future. Another result was that the client organization became aware of the importance of the need to identify and share knowledge much more effectively during times of organizational restructuring.

The following flow diagram attempts to show how I developed both practitioner and academic thinking during my research:

Fig.26

Diagram to show how both Practitioner and Academic thinking developed



11.2. Contribution to knowledge (theory)

My research is an example of classical Action Research Methodology. Throughout the period of this research I was fortunate to be able to continue working with the client organisation and to implement all stages of my research cycles as originally planned. The research was undertaken against a backdrop of dynamic change but the research methodology was followed faithfully throughout. It was fortunate that the majority of participants in the research programme remained in the organisation and contact with them continued throughout the five years of the research.

In my studies of the literature, I had started by looking at existing Knowledge Management models and, additionally, by identifying process models for dealing with different elements of Knowledge Management (for example, those of Despres & Chauvel, and Armistead). Included in these was Armistead's Knowledge Transfer Process that was part of a set of processes aimed at the general application/introduction of Knowledge Management within an organisation.

In their 'Three Approaches to Knowledge Management' (2000) (also see Fig.6), Despres and Chauvel identified the need to demonstrate a causal link between Knowledge Management and business benefit. My research uncovered evidence that a considerable loss of knowledge had been experienced by organisations during periods of transition that accompany organisational change, and this had lead to wastage, rework and loss of competitive advantage in varying degrees.

This loss was experienced by organisations that had embraced a Knowledge Management approach as well as those who had not (such as my client organisation). This showed that even if existing models were being applied, a gap existed. In response I developed my model (Managing Knowledge During Change, Meakins 2003) to address this gap and I offer this as my contribution to knowledge (theory).

The evidence suggests that organisations are largely unaware of the extent of the knowledge that may be being lost during periods of change. Because of this, they do not have a strategy in place and do not plan to avoid it. The intention to bring about change, by default, heralds a period of instability and risk. Unless planning includes the detail involved in the transfer of knowledge from the current structure to the new, there are opportunities for knowledge to trickle away unnoticed. The evidence shows that sometimes the trickle can become a torrent if nothing is put into place to consciously manage knowledge as the changes of structure are implemented and people leave the organisation or move jobs. Without awareness, necessary planning will not be put in place and such losses will continue.

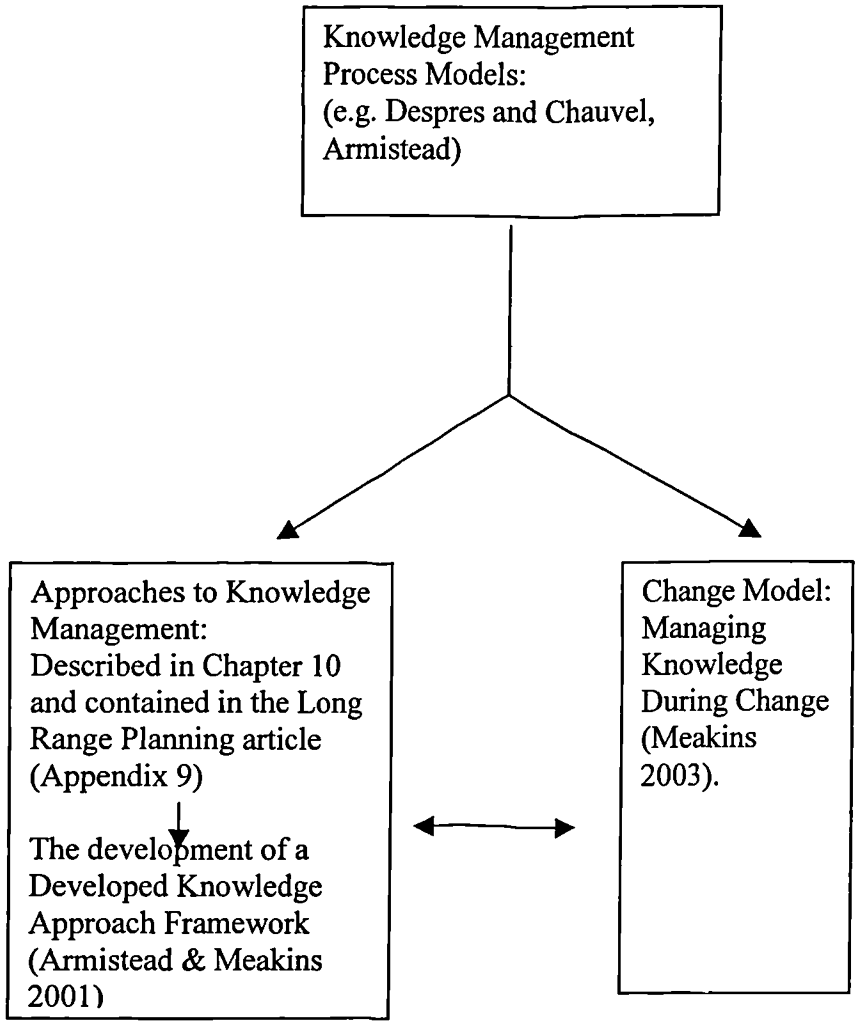
In large organizations it is possible to think that if knowledge loss occurs, the money/effort wasted in rework can be absorbed. However this depends on how essential the knowledge is considered to be and whether a) there are people still left in the organization after the restructuring who are capable enough to reproduce it and b) if it can be produced quickly enough before the competition overtakes the organization c) if people are available to be recruited from outside the organization to bring in the knowledge required. For smaller organizations, such knowledge loss may prove disastrous. All the evidence suggests that knowledge must be consciously managed at this crucial planning stage.

My model draws attention to this area and brings that specific focus. While it aims to provide the triggering framework, it cannot guarantee success as it depends on how effectively it is used. The model also cannot answer difficult questions that will always be of concern to those leading the change activity. For example, how do we know what knowledge we will need in the new structure? If we don't know this, how can we manage the knowledge?

It is quite easy to get bogged down with such imponderables with the result that people may give up thinking about it altogether. However, I believe that the strength of the model is that it raises awareness so that some of these areas can be surfaced and faced. It triggers thinking around the areas of tacit/explicit knowledge, the need to harness individual knowledge through social interaction, the potential of building collective, organisational knowledge, and to the need to develop a sympathetic knowledge environment in which workers can share knowledge. It raises important issues such as how to evaluate knowledge and the need for a shared vocabulary to assist communication.

The model works alongside other Knowledge Management models and through triggering the necessary thinking it enables conscious planning. My theoretical framework is also immensely practical. Consequently, it brings a greater understanding of the importance of knowledge transfer and knowledge approaches in times of change. Those organisations that seek to make the most of their workers' individual and collective intelligence, and are open to learning, will benefit the most from applying my model.

Fig. 27. Contribution to Theory: How the research resulted in the identification of a gap in the area of Knowledge Management, and a model being developed to reflect this need



11.3. Contribution to knowledge (practice)

Bringing about change in organizational structures is a major and complex task that has to be managed carefully and I believe my model will provide positive assistance in this area.

When I began my research (see Fig.26) it was clear that many organisations do not consciously managing knowledge. As I collected evidence by visiting a number of organisations that acknowledged that they *were* engaged in using a Knowledge Management approach, it emerged that, even so, they were not consciously managing knowledge *during times of change.*

The evidence shows that organisations that use existing Knowledge Management models and processes - as well as those who do not - are losing knowledge during times of change and are unaware of the extent of such loss. In future therefore, through the use of my model, it should be impossible for an organisation that seeks good practice in the area of managing knowledge during change, to be unaware of the issue. So, firstly, my model acts as a communication vehicle by drawing attention to this previously unidentified key area of Knowledge Management.

Secondly, my model provides a practical tool to help practitioners to facilitate the thinking required about the different but related issues around managing knowledge during a changing situation. The four quadrants help to bring focus on the possible permutations that may exist. Through this, decisions can be made to enable effective planning around the people/tasks/processes concerned with the knowledge needed for the new structure based on the old.

Thirdly, my model has wide application and works at different levels. It can be used to trigger knowledge assessment and transfer activities whenever a forthcoming change is identified - it is not only relevant to use in times of major organisational restructuring, but can be applied when change is being planned as part of day to day activity, large or small.

> *... what research does contribute is a series of thoughtful observations that support or question the validity of our theories, which are in turn based on a set of largely untestable beliefs and assumptions.*
>
> (Rudestam & Newton 2001)

During my research I have been able to test some of the assumptions around the use of the model. It has already been trialled by a practising manager who was engaged in forming a new team by integrating new team members with existing ones. His feedback showed my model was practical and straightforward to use. This trial also showed there was strength in keeping the model uncluttered and the terminology straightforward.

My model therefore forms part of a chain of activities within the overall frameworks of both Knowledge Management and Change Management processes, although it is mostly associated with the transition stages. My model adds an additional dimension and, because of this, I suggest my research has contributed to the world of the practising business manager.

11.4. Conclusion: Reflections on my personal journey

I have reached a certain point in my research and it is time to take stock of what I set out to do at the beginning, where my five-year journey has led so far and what I feel I have achieved. The research has taken me on many explorations into the literature and has opened up new areas that I had only heard about when I started.

The interactive stance I took for this research has been enjoyable as well as successful in engaging many key players within the client organization. The level of involvement and interest has been higher than I expected and people seem genuinely fascinated by the subject of Knowledge Management. This is possibly because, as we start to talk, they become aware that they are already practising it to a degree, even if unconsciously, and so want to understand it to gain the most benefit from it, on a personal as well as on an organizational level.

The research topic, though specific, was within the much larger sphere of Knowledge Management and connected to some other areas such as Change Management. Along the way I have been tempted to explore many adjacent subjects, such as psychology, and to look deeper into the question of why some people are happy to share their knowledge and others not. I could also have looked at more sociological issues around organizational culture and power, all interesting offshoots related to my work. Maintaining focus will always be difficult where topics for research span many areas, and when one is curious. I have been well guided by my professors at Bournemouth University who helped me to focus on the research topic while keeping a balance between becoming too distracted into other areas and a healthy amount of necessary investigation.

I am more aware than ever of the need to use research from academic institutions in the world of business. Whilst change is often prompted by purely economic factors that cause a reaction, there is a need for business organizations to be more proactive and to look ahead to see what they can learn from academic thinking and development and then plan accordingly. Feeding into and encouraging research, using secondees from academic institutions or benchmark companies, listening to external consultants or using internal coaching methods such as mentoring or shadowing are all methods that can help to stimulate thought and share knowledge and bring about benefits through future development.

Facilitating change through methods such as Action Research, which demands the collaboration between the researcher and an organization, has particular value in the right circumstances as it can aid the development of solutions to problems or challenges that are facing the organization. I can appreciate that to gain entry to and commitment from some organizations and employees might be difficult to achieve and I know I have been fortunate in my special position to gain wholehearted support. However I am also aware that even when this happens, a considerable effort is still required to keep communication and involvement going to ensure momentum is maintained. This is doubly so when the researcher is working full time and experiences several job changes during the research period.

On reflection I believe the Methodology I chose - that of Action Research - was wholly appropriate and enabled me to undertake the research and fulfil my aims. Being a cyclical form of self-reflective inquiry the methodology was a helpful vehicle to move my research along and enabled me to keep a sense of direction. I was amused to read Dick (1995) where he refers to Action Research as *"moving from fuzzy questions through fuzzy methods to fuzzy answers to less fuzzy questions, methods and answers"*. By now, at the end of this research, I can understand what he was alluding to. But I can also see that, through all the fuzz, comes understanding.

Day (1993) examines the use of collaboration and social interface to make reflective learning meaningful:

> *… the importance of the discursive, dialogical dimension of learning which can only emerge from processes or confrontation and reconstruction*

(Day 1993 p86)

He disagrees with Griffiths & Tann (1991) who suggest that *'rapid reaction and repair'* stages of reflective practice are sufficient for learning to take place. I would agree with Day. Having experience of working in The Post Office for some years the emphasis has been on 'fire-fighting' to keep the operation going rather than on taking time to reflect on root causes and consider potential alternatives before action is taken. Pollard and Tann (1993) neatly expressed the value of group activity, which seemed to me as relevant to apply to a business setting as to an educational one:

> *The value of engaging in reflective activity is almost always enhanced if it can be carried out in association with other colleagues … Collaboration produces discussion and action together. Aims are thus clarified, experiences are shared, languages and concepts for analysing practice are refined, the personal insecurities of innovation are reduced, evaluation becomes reciprocal and commitments are affirmed. Moreover, openness, activity and discussion gradually weave the values and self of individuals into the culture and mission of the school or course …*
>
> *The aim of reflective practice is thus to support a shift from routine actions rooted in common sense thinking to reflective action stemming from professional thinking.*

(Pollard & Tann 1993 Reflective Teaching in the Primary School. Cassell p 21)

A question that remains is: will The Post Office proactively apply the lessons learned from this research? Is it a 'learning organization', one that facilitates the learning of all its members and continuously transforms itself? Although I have evidence that at least some of the individual managers involved in the research programme have already used my model and are applying the thinking that has emerged, I do not yet see evidence of a fully coordinated, consistent approach to learning across the whole organization. It is still weak at adequately applying conceptually sound processes such as 'baton-passing'. However, there is a lot of evidence in the literature to suggest that it is only learning organizations that will survive in the future within the highly competitive business environment. Argyris (1993) believes only organizations that are involved in a 'double-loop' approach to learning, that involves deeper inquiry and questioning to get to root causes, reasons and motives, will achieve lasting improvement. He also believes learning cannot take place in an organization unless its leaders establish an open/sharing environment. Zack (1999) says the only way to increase an organization's knowledge is most effectively achieved by continual organizational learning. Senge (1999) agrees that the key to organizational learning - and thus development - is through the individual workers who have to participate in five 'disciplines': (i) ongoing development, (ii) the sharing of their vision, knowledge and thinking (iii) willingness to participate in team learning, (iv) ability and willingness to integrate (systems thinking), and (v) to work interactively.

> *Organization learning is driven by the need for organizations to respond to rapidly changing technologies, increasing competition, pressure from customers and suppliers, an changes in the environment which include regulatory effects.*

(Dogson 1993)

To me, this quotation sums up the challenges currently facing The Post Office (Royal Mail Group plc). My diagnosis at this stage in my research programme is that unless it develops rapidly into a 'learning organization', its ability to apply useful thinking from both the academic and practitioner worlds is severely limited.

Although some senior managers had suspected that some loss of knowledge was happening in past restructurings, it was not until the first 2 cycles of this research had been completed and feedback provided to the client organization that the extent of the loss was acknowledged. Using Action Research meant that there was ongoing involvement of participants in the research groups and through this, and the feedback gathered, it is possible to say that a great deal has been learnt.

The responsibility that remains is to find ways to pass on and share what has been learnt. One mechanism that has already emerged which should help is that members of the research group have begun to talk more about the importance of knowledge within the organization and how to make more use of it.

A second mechanism is that my model is to be included in the Knowledge Management pack of tools and techniques that has been developed to support endeavours in this area within the client organization.

A third is that there is evidence of a much more effective 'baton passing' procedure in the current major organizational restructuring that now includes an explicit emphasis on managing knowledge.

And fourthly, I have just been appointed 'Information Manager' - a newly formed post in the new structure of Royal Mail - that has Knowledge Management at its core. There are now high expectations in the client organization and I will relish the challenge of personal involvement in this area as well as facilitating others in finding ways of putting the lessons learnt into practice. In particular, there is much to do to understand what happens in the re-shaping phase of knowledge ('Ba', Nonaka 1998). This will be important for the newly formed 'Customer Insight Team' within the newly structured client organization as we will be grappling with the challenge of how to turn information into knowledgeable insights that can be used for advantage. I am now in a position to influence Royal Mail - I hope that ripples of further influence will continue to emanate from members of my research groups who work in other areas within The Post Office.

In conclusion, I feel my research has benefited from the involvement of a good number of people. Using reflective cycles of activity has helped my research to gain depth and credibility. Hopefully the result will be that managing knowledge during times of major organizational re-structuring - or during any change activity, large or small - will be more effective.

I intend to accept the offer to include my model in a pack of tools/techniques that is currently being collated by The Post Office in accordance with its approach to knowledge and learning. I have ongoing debates to complete and/or develop with individuals in The Post Office and in other organizations, and I want to identify and exploit opportunities to share my research with others in the academic world. However, for the present, I have decided I should draw a line under the work I have completed to date and present my Thesis, even though it is my intention to continue to develop thinking in this area.

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APPENDIX

1. A brief background history of The Post Office against which to position the research programme

2. Investigation of research topic: question framework

3. Question framework 1
   3.1 Q1: Key point summary table (example)

4. Question framework 2

5. Question framework 3

6. Case Study Summaries from:

i. Lloyds TSB
ii. Quidnunc
iii. BT
iv. Nortel Networks
v. Example of using the models 'Framework for Knowledge Approaches' (Armistead & Meakins 2001) and 'Managing Knowledge During Change' (Meakins 2003) for initial diagnostic purposes against the four organizations: Lloyds TSB, Quidnunc, BT and Nortel Networks.

7. Warwick Conference Paper

8. Article: White Space April 2000

9. Long Range Planning article

1. A brief background history of The Post Office against which to position the research programme

The Post Office has a long history, having been in existence for more than 350 years. For substantial periods over that time, the way it operated was largely unaffected by the changing world around it because it had no competitors and was a government bureaucracy. However, over the latter part of the 19th Century, throughout the 20th Century and into the 21st Century, changes in the business world were rapid and far-reaching and, eventually, it became inevitable that The Post Office would have to change.

As an old institution, The Post Office was influenced by the early history of organizational development between 1895 and 1905, where the emphasis for management was to be orientated around work and task (Child 1988). This happened in Germany and was copied in America. Twenty years later further changes happened with Pierre S.du Pont's restructuring of his family company and the trend continued with Alfred P Sloan's redesign of General Motors a few years later. These individually introduced the command-and-control organization. General Electric in the 1950s refined and perfected the approach. Their example was copied by big businesses around the world (including Japanese businesses) and The Post Office followed. The third period of change then brought a shift from command-and-control - where people were largely told what to do - to the information-based organization where people were encouraged to think for themselves and become information specialists, sourcing and using information/data themselves via supporting information systems. The shift to the latter working ethos was probably the most difficult for organisations to achieve. Not only had customers begun to voice their expectations but workers wanted a different way of working. So, from the original wealth-creating industrial activities which had produced products at the cheapest rate (labour and materials) for the greatest profit, the balance started to shift in the second half of the 19th Century as the buying public influenced the market by expecting more choice, competitive prices and better standards of customer service.

Bennis (1966) predicted the death of bureaucracy and by 1983 a further anti-bureaucratic view emerged from Kanter (1983) who suggested how an entrepreneurial spirit - which produces innovation and a creative approach to problem solving - can realise integration within an organization which otherwise would be bound by compartmentalising actions, events, and problems.

In 1988 Child was writing:

> *It has become an accepted truth of our times that organizations have to adapt to a fast-moving world in order to survive. As circumstances change organizations respond by considering whether organizational reorganization is required.*
> (Child 1988)

This shows how competition forces change and that, as circumstances change, organizational re-structuring often follows. Haeckel (1999) recognised the situation clearly:

> *When customer needs are stable, predictable, or controllable, businesses can afford to look inward but when customer needs become unpredictable, firms, to survive, must move their centre of attention to understanding those changing needs… Like*

> *athletes in the ready position, sense-and-respond firms must excel at sensing subtle change earlier (anticipate and pre-empt, not simply listen and comply), and adapting it faster than their competitors*
>
> (Haeckel 1999)

This is an interesting observation. It could easily be applied to The Post Office, for until the late 1980s it was very inward looking until it was forced to reconsider how it was operating by fast changing customer needs. The inclusion of the word 'unpredictable' is interesting as it acknowledges that the world is not stable or static and therefore organizations have to find ways to manage the unpredictability using whatever methods are available. These views that span the past forty years show a slowly emerging pattern, that of organizations in some sectors of business, gradually being forced to respond to the rapidly changing world, to embrace new technologies and to find the courage to free themselves from the shackles of bureaucracy and over control, to enable them to move faster and smarter and to allow creativity and innovation to develop.

By the end of the 20th century the spotlight had descended on all organizations even those not previously market led (such as The Post Office), and competition and the economic climate had forced them to consider embracing major change. Although Bennis (1966) predicted the death of bureaucracy, he could see that certain elements of a bureaucratic approach might be useful to retain and on which some change activity could be based. He argued that organizations needed to retain some element to provide stability otherwise they would simply not be able to cope with such things as rapid and unpredictable change, the increasing size and complexity of modern organizations, the diversity of specialised skills required and the acceptance of humanistic, participative management styles.

Initially, The Post Office was a reluctant player and clung to bureaucracy: as a monopoly it was not under any *commercial* pressure to change, and so it did not play a leading role in business development, only making changes when it found it had to, responding mainly to Government requirements. Until the 1980s, The Post Office was a bureaucracy operating a command-and-control management system organization. With the outside world beginning to be more aware of the shortcomings of The Post Office and expecting improved services, things had to change. The chain-of-command structure was inflexible and too cumbersome to provide a flexible service to the customer and the quality of its service was suffering as a consequence. It was only in the late 1980s that The Post Office realised that it would have to change radically to improve its customer services.

Although there was thinking and experience available in both the academic and practitioner worlds on change and restructuring on which The Post Office could draw - and those who were involved in designing the new Post Office structure may have been in a position to see why change was needed and what needed to be done - the perception of the workers was that it was unnecessary upheaval. There were objections and these were voiced by many including the Trade Unions when the scale of change was realised - a scale that shook the organisation's roots.

The first of many decisions was taken to introduce change on a scale hitherto unknown to The Post Office. This resulted in the splitting away of the telephone/telecommunications (British Telecommunications: BT) part of the business separating it from the mail and Post Office Counter activities. The main reason for this was a practical step to divide a giant organization into more manageable units. However the effect on the workforce was very negative as they had enjoyed total stability for so long and had expected this state to continue indefinitely. Their frustration was reflected in the following quotation that was widely distributed by anonymous hands at the time:

> *I was to learn later in life that we tend to meet any new situation by reorganizing, and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency and demoralization.*
> (Gaius Opetronicus Arbiter AD 66).

There was plenty of experience to explore in the world of business generally about re-structuring, but benchmarking, as an activity from which to learn from others, was not widely appreciated at that time by The Post Office. Plenty had been written about organisational restructuring too, for example, Lupton (1965) suggested that major re-organizations bring two main problems for management: firstly, how to minimise potential disturbance during the reorganization, and secondly, how to move quickly to the new organizational structure and stabilise it so that performance is maintained or is satisfactory. The Post Office had a difficult time with both. However, The Post Office 'bit the bullet' and, having split BT away from its other activities to plough an independent furrow, it began a programme of organizational change that was to continue throughout the 1980s, 1990s and into the new century. The pressures grew at the same time - economic and political - and searching questions were asked about the quality of its services, its size and organizational structure. Strategic decisions were taken in preparation for potential deregulation and to engender a flexibility and responsiveness within the organization towards the customer.

The Post Office began its transformation by embracing a drive towards Total Quality (TQ) in the late 1980s and, as a consequence, people were recruited from industry leaders such as Xerox. This was a serious attempt to communicate to all employees a need to adopt a 'Customer First' attitude. A team of Quality Support Managers provided training and improvement groups were facilitated to explore areas of work and improvement opportunities inside the organization and externally with the customers.

In 1992, it became clear that the way in which the organization had been re-structured initially was still hindering development and a further major organizational restructuring was undertaken across the whole of corporation. This was called 'Business Development' and this major change programme resulted in many experienced people leaving the organization, jobs being cut or being changed, and other jobs with new emphases being introduced. Further initiatives followed during the later 1990s using Business Process Management (where all the steps in work-flows were analysed and streamlined) and Business Excellence approaches (using the Business Excellence model of the European Foundation for Quality Management against which to examine different parts of the organization for effectiveness). Having been personally involved in all three change programmes, firstly as one of a team of Quality Support Managers, secondly, Business Process Managers and thirdly Business Excellence Managers, I felt that only partial implementation had been achieved before the next focus was introduced. The philosophy was admirable but the deployment weak and patchy across the business.

By the late 1990s, it was evident from a review that still more would have to be done in order to develop The Post Office. Another major re-structuring was planned to improve customer responsiveness, the flow of information, the increased use of technology, the integration between functions and business units and to widen the market through strategic alliances and partnership, in the UK and abroad. Importantly, at this time it was recognised that the effectiveness of any change would depend on the people within the organization and their ability to change the way they worked. The aim was to help them to become more involved and accountable. Consequently, in 1998/9, a special Change Management project team was created, (using many existing employees together with consultants), to develop and implement an initiative called 'Shaping for Competitive Success' (SCS). This initiative was focused on changing the organizational structure, reducing the size and the layers of hierarchy but this time with a higher level of involvement from workers. The old structure of the organization was replaced and new names were given to the different Business Units. A new Planning Model was adopted called

'The Post Office Management Model' (POMM) which was based on the model used by Xerox and incorporated the 'Balanced Scorecard' Approach (Kaplan & Norton 1996). The latter was seen as the route to bring about more focus and involvement on the identification of root causes, better forward planning, accountability and performance management.

Two years later more mergers took place between some business units and, after only a further year, another radical change period was introduced with the appointment of Allan Leighton as Chairman of The Post Office. Yet another major restructuring programme was launched which, once again, resulted in many employees being moved to new/different jobs or opting to leave the organization through Early Voluntary Retirement (EVR). As a consequence large numbers of experienced managers left or changed jobs, some jobs disappeared and new ones emerged. The overall headcount of employees dropped considerably.

In summary, whilst this chapter can only provide the briefest of overviews of what has happened in the past 25 years to The Post Office, it will be appreciated that it has experienced a period of unprecedented change, which is continuing.

2. Investigation of research topic: question framework

1. What is your role in Business Strategy?
2. What do you do?
3. What are your priorities for the year ahead?
4. Are there any particular areas that give you problems where new thinking/ a different or new approach might help?
5. Is there any area that you believe to be important to the future that you want to know more about?
6. What do you think should be done differently from the way it is being done at present in the following areas: the way you, personally, keep up-to-date with changes/ developments in your professional area and manage your personal learning/knowledge; the way you access/use information; the way your work (output) is used within the department/ outside the department
7. If the aim of these initial enquires is to identify an area of research that is important and has real value for the future (preferably something not already done - maybe something that needs improving, that, through the research, could lead us to doing things differently in the future), have you any suggestions to make?
8. Of your ideas, which do you see as top priority any why?
9. Anything else you'd like to say?

3. Question framework 1 for senior managers who have previous experience of major restructuring in the Post Office (example Business Development)

From your experience of major organizational re-structuring.........

1. Was any attempt made to consciously plan how knowledge was managed?
(If so how?). If 'yes', which types of knowledge were addressed example customer, competitor, process etc.? & how was it done? (method)

2. Was there an attempt to associate k with core competencies? (If so, how & who was involved?)

3. What was communicated about it and did it work (was the communication effective?)

4. Did organization experience a 'knowledge dip' or lose knowledge? If so, at what level/in what areas?

5. Did the organization's performance suffer because of lack of Knowledge Management?

6. Any learning points /Good Practice/ missed opportunities?

7. Have you noticed any new practices/processes relating to Knowledge Management that are now in use as a result of the review of the re-structuring you have described?

Appendix 3.1.

Was Knowledge consciously managed?	**Learning points, Good Practices, missed opps?**	**Anything learnt from the experience? New practices now in place?**
Were you aware that knowledge was being consciously managed? *Yes but not consciously done as Knowledge Management….* *Baton-passing was very systematic....not only were the responsibilities handed over but information necessary to allow them to be run seamlessly was handed over at same time.* *I suspect the implicit/tacit stuff was missed…* *I'm not aware of any attempt to tap into (people who were leaving)…this was a new beginning…people would be required to take up new mind-sets and not bring too much baggage with them from the past.* **Was knowledge associated with core Competencies ?** *No.* **Was there any communication during the period of change that mentioned managing knowledge?** *No, only implicitly through the baton-passing process* **Was a knowledge dip experienced?** *Yes, in Personnel team, at pragmatic level* **Did performance suffer?** *Difficult to say*	*Baton-passing was very effective.* *Time taken to plan the changes and identification of the new teams sufficiently in advance really did help to make things run smoothly…it was planned over a very long period and really every 'i' was dotted and 't' crossed in terms of process* *Missed opportunity to get people to share that stuff that isn't explicit - the knowledge people have built up over a period.'*	*Baton-passing and very structured approach to the management of current projects.* *Huge amounts of increased communication.*

Questionnaire 1. Key point summary table (Respondent 8)

4. Question framework 2 for individual in senior positions who are responsible for/involved in structuring the new business/units under the 'Shaping for Competitive Success' reorganization

As you are currently involved in a major organizational re-structuring.........

1. Views on managing k?

2. What types of knowledge are important and why?

3. To what extent is knowledge reflected in core competencies?

4. As you are currently involved in moving into a new organizational structure, what is/will be your approach, who will be involved & why and what problems do you envisage?

5. What would help you to confirm your approach/help with implementation?

6. Which organizations do you think are exemplars of managing k in times of major organizational re-structuring?

5. Question framework 3: for senior managers working in companies that have consciously managed knowledge during times of major organizational restructuring (external to the Post Office)

1. General Introduction:
Please confirm your name, job title and the organization for which you currently work. How long have you worked for them? Please give a brief thumbnail sketch of your organization covering what it does, approximately how many employees, how many sites and where they are.
2. Positioning the area of research with your organization's experience: Can you say when
was the most recent period of major organizational restructuring? Can you give the main reason for that change example merger, changes in size etc? Did you take a conscious approach to managing knowledge during this change?
3. Detailed questions:
   a. What led your organization to decide to consciously manage knowledge?
   b. Do you feel that you do this effectively?
   c. Have you developed and used specific Knowledge Management processes? (any examples available?)
   d. Have you used any specific tools / techniques, if so what were they and would you recommend their use by others?
   e. In the Post Office, during restructuring, knowledge transfer is supported by a recording process called 'baton passing', - do you use anything like that? If yes, how do you make it effective?
   f. Does your organization consider sharing knowledge to be important? If yes, please say how you get this message across to your employees?
   g. How do you encourage a knowledge sharing culture?
   h. Do you train your team leaders in knowledge management generally and do you have any tips to pass on?
   i. Is there an agreed approach to the retention/passing on of knowledge when organizational changing are being carried out?
   j. Do you have particular ways of extracting tacit knowledge from people?
   k. How do you identify value of the knowledge people have who are about to leave/change jobs?
   l. Have you found any way to measure the value of Knowledge Management?
   m. When changes are made, do you have any 'flow through' jobs? If so, how do you manager the knowledge around these?
   n. Did the organization still experience a knowledge dip post restructuring?
   o. If knowledge was lost, can you say at what level the loss of knowledge was most problematic (strategic/pragmatic)
   p. Can you say if the organization's performance was worse/better than if nothing had been done to try to proactively manage it?
   q. Any learning points that emerged: negative/positive.
   r. Were any opportunities missed?
   s. Was any Good Practice identified? Where from? Was it emergent or from external sources?

Any other points?

6.i. Case Study Summaries from: Lloyds TSB, Quidnunc, BT and Nortel Networks

i. CASE STUDY : LLOYDS TSB

Bob Long, LloydsTSB:
" Since our change round in 1996/97 we have concentrated a lot more on giving people opportunities to gain knowledge, both within and outside the organization through the NVQ programme and MBAs and whatever. What we basically have said to the staff is that there is no longer a job for life and we cannot promise you in five years time you will be working for Lloyds TSB Transmission Services, or indeed Lloyds TSB. However, we will give you the tools to improve your opportunities of getting a job elsewhere, within the group if we downsize further or outside of the group. For your part you will use the knowledge you are gaining…"

Positioning: Between 1992 and 1997, LloydsTSB International Services imposed a large-scale, major change to rationalise the operation. The number of sites was dramatically reduced and employee numbers went from 1500 to 900. The focus was on the removal of 'dead management' and 'non change capable staff'. After the first imposed change, further reduction and streamlining followed using more co-operative methods.

How knowledge has been/ is being managed:

- by careful staff selection: everyone had to re-apply for their own jobs. The key driver for the selection of the top 29 operational manager slots was the way in which they answered a question slanted towards living with change
- by reducing spans of control from 7 to 4 (this proved too great so now back to 5) which assisted the flow of information/knowledge
- by consciously selecting staff in two knowledge categories: Operational Managers for their awareness of staff and change awareness and Technical Managers for their knowledge about how to solve technical problems
- through using knowledge of certain customers: understanding customers' expectations about some of the forthcoming branch closures
- by using exit interviews, but these were mainly for discussing alternative job opportunities or to give counselling. There was a view that those employees not being kept were 'not up to it' and therefore knowledge they had about example customers etc. was not worth having. However, a 'knowledge dip' was suffered, mainly at practical level, because of this and, in retrospect, this area should have been managed better. Problems arose because a huge amount of natural knowledge which wasn't registered anywhere was lost. Also customer liaison suffered as it took time to get customers to accept a different name and different voice. After some people were allowed to go, it was found that they were the only ones who knew how to 'put the fuse in the box.' "So keen on hitting a headcount figure that we lost sight of what the business wanted."

- by giving people opportunities to gain knowledge, both within and outside, through NVQ programme and MBAs etc.
- by communicating a clear message: " there is no longer a job for life...however we will give you the opportunity and tools to gain knowledge and opportunities of getting a job elsewhere while you are with us"
- by capturing knowledge through a knowledge-capture process: staff are involved in mapping, process design and improvement. The information is monitored throughout and employees rewarded for improvements. Before this was done the company were very people-dependent because the people had the knowledge and could therefore control the situation. Now with broader training and the use of knowledge-capture, the company knows much more and is less vulnerable.
- through open communication about forthcoming changes: telling the bad news as well as the good and telling people early: people were more inclined to work through the problems. The 'well-poisoners' were still evident but at least people knew what was going on.

Other learning points offered:

1. get the staff involved in the change and recognise their efforts
2. recognise that a leaner organization may mean staff are placed under more daily stress, and stress-related absences may increase
3. still tempting for the Operational Managers to "take their jackets off and do the work rather than work out what the problem is" so they still hit their targets
4. make sure there isn't a disconnect between your Business Unit and the Human Resource Unit: make sure the right people do the telephoning to staff to tell them that they've been successful/unsuccessful in gaining jobs and follow up straightaway, at speed: don't leave people in limbo for weeks - over-communication is the name of the game: it helps stop wild rumours.

6. ii. CASE STUDY: QUIDNUNC

> *Martin Cheesebrough, Quidnunc*
> *"The reasons why Knowledge-sharing is important to us are: the fact that we're growing very quickly which means that we have a lot of new people… The other reasons are that the field that we're in is rapidly advancing - something like 30-40% of any of our projects at any point in time are using pieces of technology that we've never used before…"*
> *" Our view of Knowledge Management is the value it brings to us - it helps people to make better decisions than they would have done if they didn't have the knowledge."*

Positioning: Quidnunc is a software consultancy, moving from being a pure software consultancy into the e-business arena. It is 11 years old and growing rapidly - seven years ago there were 15 staff and one small office, now there are 150 staff in total, spread between a offices in London, New York, San Francisco plus a software development centre in Bangalore, India. Current plans for growth are very aggressive and that is one of the main challenges in terms of Knowledge Management and knowledge sharing.

How knowledge has been/ is being managed:

- by supporting the intensive period of re-inventing the company into an e-business consultancy, through careful recruitment to bring in the new knowledge Quidnunc didn't have
- by using the following definition of e-business, which Knowledge Management fits into: " using technology to effect some kind of change in the way an organization works to bring benefit to that organization. "
- by hiring/finding partner-organizations to work with, changing the way the approach marketing/bidding for work
- emphasising the need for knowledge sharing: 70-80% are graduates straight from university who have great theoretical experience but less practical experience: " we've got to get the knowledge trickling down from the senior people as quickly as possible ". Also to keep up with knowledge of the new technology "something like 30-40% of any of our projects at any point in time are using pieces of technology that we've never used before so we are constantly learning new things…. constantly having to replenish what people know."
- through the culture within the company: "If you haven't got the culture where people are willing to share knowledge and ask other people for help and what they know, then you can put the whizziest piece of technology or Knowledge Management system in place but it's not going to get you anywhere."
- through measurement: example using a Balanced Scorecard; also by checking to see if same mistake been made again and looking at why the lesson wasn't learnt after the first time; measuring role-stage-deviation: whether people are

developing their knowledge according to expected periods of time in the job

- using process analysis to pinpoint where decisions are made, then figuring out how people can be helped to get the right information and knowledge at these points: "Our view of Knowledge Management is the value it brings to us - it helps people to make better decisions than they would have done if they didn't have the knowledge ".
- by having objectives related to actual knowledge-sharing and rewarding people for helping the organization to share knowledge through undertaking initiatives example taking part in end-of-project reviews, figuring out if any mistakes were made and why, deciding how best to communicate lessons learnt, involving random groups in task analysis/scenario planning and getting them to look up lessons learnt on previous projects etc.
- quality control by using internal supervisors with specific knowledge to train others. They only allocating work to people who are qualified in those skills or if they are being supervised by someone who is. They have an internal accreditation scheme: each technique has an 'owner' responsible for deciding what the qualifications procedure is and for running vivas etc. In this way the core of Quidnunc's distilled knowledge is managed and knowledge is passed on at the required level.
- by keeping the members of project teams together and making sure there is sufficient handover if any member changes
- by continual checking of knowledge at important points throughout a project example so that what a client wants is accurately identified, outlined and communicated in a clear picture ("Design Spirit") and understood by all so that a different route isn't pursued by any team member at any time

Other learning points offered:

1. not to think that if you put a set of procedures and processes in place to help manage knowledge, and maybe throw some technology at it as well to capture ideas, that it will work - it won't unless you have got some kind of culture in place to help you do that.
2. keeping the culture, because it dilutes as the organization grows
3. using networking - use the divide and conquer rule " grow smaller groups within a larger group "
4. use named people as 'Practice Leaders' to head up areas of interest and have 'discussion folders' within the e-mail system.
5. use video-conferencing
6. bring interested people together: use 'awaydays' and weekends to discuss new ideas and specific knowledge areas
7. accept that 90% knowledge is always going to be tacit - in people's heads and that there is no way to extract all of the useful knowledge into an explicit form, but build example Knowledge Yellow Pages (lists of 150 skills/knowledge areas with everybody in the company cross references to their area of knowledge). So experts can be found and tacit knowledge, focused on particular areas, tapped.

6. iii. CASE STUDY : BT

Steve Lakin, BT.
" There are different types of knowledge: general knowledge about the company and how it operates and a lot of that is embodied in the culture... Then there is specific knowledge that comes up around task ... There is the knowledge that grows around functions within organizations and how you manage that functional knowledge...... And then there is a wider knowledge around the executive community that comes with experience of working at that level within organizations..."

Positioning: BT's vision is to be the world's most successful communications company. It was Government owned until 1984 at which date it was privatised. It offers the whole range of communications services to consumers and businesses in the UK- from an 'access' product which is subscription to telephone services, the rental of a line, telephones, telephone equipment and calls - local, national and international calls. It has a mobile operation which it now wholly owns in the UK, it provides a range of basic and advanced communication services, sophisticated outsourcing solutions for large companies who want to outsource the whole of their communications management, it offers Internet access services, advanced data services, integration of services, solutions and various parts of consultancy as well (primarily in the UK).

Since the late '80s /early '90s BT has expanded through a series of alliances and joint ventures to offer similar services primarily targeted on the large multi-national corporations through its arm which is 'Concert'. It also has a large interest in joint ventures in most of the major European markets and many worldwide markets as well, so in terms of alliances, partners, joint ventures, distributors it probably has over between 50-100 associate companies.

BT has approximately 125,000 employees - 118,000 in the UK, 6000-8000 in terms of its joint ventures (not including people employed by the joint ventures). Turnover is in the order of: profits = just over 3 billion and turnover in the region of 15 billion. There are about 6000 operational sites within the UK - some unmanned (telephone exchanges) and about 2000 major operational sites in the UK and more in Europe. There have been major change programmes in 1991 (Sovereign Programme), 1994/95 (Project Breakout), 1996 (Internal Markets) and in 1998 (towards a more functional approach which mirrors the Value Chain).

How knowledge has been/ is being managed:

- through a department called Organizational Excellence, a Directorate within UK Human Resources organization, which covers a whole series of primarily Change Management activities for BT UK example Leadership Development, Culture Change, the promotion of quality, Quality Service, Quality Management Services, Business Excellence and a campaign that accelerates the introduction of Knowledge Management within BT which also embraces innovation, creativity and ideas

- by having leaders who promote a knowledge sharing collaborative working culture (Twelve Leadership Styles include collaboration/knowledge-sharing and devolving experience) and are measured on how they do via assessment frameworks, 360-degree feedback, appraisals systems, job descriptions etc.
- by recognising technology is there to be used: search engines can be provided, work processes automated, best practice driven in and the best knowledge automated it within the business so it happens automatically for people (tangible benefits realised in terms of efficiency) and decision-making improves, particularly in the planning process
- by linking behaviours with recognition: they have a system for nominating someone for recognition of the fact that they have worked across organizational boundaries
- through organising divisions around 3 competitive arenas: Sales & Service, products and Networks
- by recognising that we've been managing knowledge for some years without the 'label' of 'Knowledge Management'
- by using project teams, and getting people to work together collaboratively, in close proximity, thereby forming 'creative hotbeds'
- by using technology available to record information and create repositories of knowledge
- by recognising the inter-relationships between major change programmes and Knowledge Management
- by learning from consultants who used their Voice Mail system in a very disciplined, effective way
- by seeing the potential for BT to offer Knowledge Management solutions to customers
- by benchmarking with leading edge companies example consultancies, which feature at the top of surveys that ask " How good a Knowledge Management company are you?"
- by understanding that people react differently to Knowledge Management: some feel "there is no argument about this, let's just go do this" and others who say " this is just another initiative - I will pick and choose between the various elements of Knowledge Management and I will do it on the basis that the business case will have to demonstrate or provide me with confidence that this is going to provide me with a return".
- by accepting that Knowledge Management is one of these issues where trying to measure the results of an action and to map it to a measurable benefit further down the line is very, very difficult.
- by using the Business Excellence Model and also going through the process of developing a Balanced Scorecard. This helped to introduce terms like 'Knowledge Management' and 'Knowledge and Organizational Learning' into the bloodstream of the company and, that, in turn, helped to change the culture. Individual interviews with senior managers were

used to create a draft set of objectives for discussion in a joint workshop.

- through development of a robust succession planning programme which aims to minimise the risk of losing someone with vital knowledge; also trying to keep those people rather than having to buy them back as consultants after they've left and at inflated fees because of that knowledge.
- through the identification of different types of knowledge: general knowledge about the company; knowledge about tasks; knowledge around functions; knowledge around the executive community and the quality of decision-making.
- poaching knowledgeable senior employees is rife: BT recognises that there is a need for high-level executives who demonstrate in-sight and have a track record of being able to second-guess where the market is heading.
- through managers use of personal networking and mentoring inside and outside the company
- through directors developing 'communities of interest' around particular subjects
- looking at the potential use of Personal Agent Technology to help peer groups have virtual contact even if they don't have physical contact
- through special attention being given to the role of the Executive Assistant Network (EAs shadow Directors, write speeches, prepare documents/briefings, do research and act as a filter for the information, summarise it etc.)
- by using their Technology Awareness Unit and Market Intelligence experts to give directors initial briefings and then expecting the directors to prepare/personalise briefings/presentations to give themselves so they share the knowledge.
- by deliberately not having a large Knowledge Management Support Unit but providing a small team whose role is to promote the sharing of knowledge that is generated within communities of interest and to bring what people are thinking about Knowledge Management and make it available to others, to produce articles about Knowledge Management, run 'Knowledge Fairs' and showcase some best practices, run Knowledge Awareness sessions, training courses, surveys and facilitate knowledge audits in teams/units.
- through using Yellow Pages to list people and their knowledge areas so others can get hold of them
- investigating knowledge tools example Hyperknowledge (a knowledge capture tool)
- by understanding that measuring Knowledge Management is difficult: " If you look back at how people sold the quality revolution it was around addressing the cost of quality. The same issue is in Knowledge Management - there will be an opportunity cost of not fully exploiting the knowledge.."
- by recognising that links and relationships are important to maintain: those broken during major change typically take 9 months to repair and performance suffers as a consequence .

Other learning points offered:

1. must deal with knowledge Management at an individual level - you have to be able to explain to people what is personally relevant to them so they can see a benefit.
2. using a Personal Knowledge Management Questionnaire /competition can help draw attention to the issue (prize to be knowledge-related example CD with Encyclopaedia Brittanica or Microsoft Encarta etc.)
3. Don't try to get across the difference between 'Information' and 'Knowledge': somebody's information is somebody else's knowledge and somebody else's information - the distinction is blurry - better to get people thinking about what it is they know and to form their own examples.
4. Try and find ways of harnessing the 'activists' - people who are out there actively scanning for information and having an interest in Knowledge Management. Provide a web site with Knowledge Management on it and build the facility for people to drop their business card and declare their interest and benefit from the thoughts/knowledge/information contributed by others. This is excellent because all of a sudden the community is interested and learning from each other rather than waiting for someone from on high to say what to do. Run this within the small Knowledge Management Department.
5. There are important issues around identifying barriers that make knowledge sharing difficult and how to best promote a knowledge-sharing culture.

6. iv. NORTEL NETWORKS. CASE STUDY

Geoff Lloyd, Nortel Networks.
"Do think about how people utilise knowledge in day to day life…I think the break came for us with our Intranet that is absolutely huge and there's an awful lot of knowledge contained in there… we use the normal search engines… People now use the Intranet as a matter of course, not because they are told to use it."
" We have a lot of conferences where people meet…'share-fairs' and 'knowledge markets'."
" What you find these days is individuals driving their own development because they realise that if they are at the cutting edge of an area they will get more pay…"

Positioning: Nortel Networks is a global technology company selling networks that combine telecomms and data and internet protocol technologies. The raison d'être for Nortel is to provide the networks that then provide the infrastructure, either for PTTs (Public Telephone and Telegraph example BT), alternative operators, and also enterprises. They sell through a variety of different channels and one of those is BT. Networks are created for huge global networks through to small networks for small and medium sized enterprises. Currently Nortel is creating a Professional Services to provide a range of services to leverage customers' assets to provide the most profit or the most functionality and to optimise investment in their network.

Change is constant. They merged with Bay Networks, a Californian/Boston based company just over a year ago but they have had one or two significant re-organizations since then. Significant organizational changes happen every 8 - 10 months. They have 75,000 employees globally. Nortel's origins are Canadian but now most of their revenue comes from the USA. In the UK they have major centres in Maidenhead (2000 people), North London, (1000) and Harlow (1600), with 2000 in the rest of Europe. In North America they have 6000-8000 people in Dallas. Other centres are in Toronto, Raleigh in North Carolina, as well as Boston.

How knowledge has been/is being managed:

- "What drives Nortel is not the dynamics of Nortel but the dynamics of the market place. Frankly we have to run so fast to keep up with our customers that Knowledge Management becomes a pivotal part of what you do, because you haven't got the time to spend on inventing things, you've got to find them."
- The Research and Development team have been involved in Knowledge Management for a long time. They had a project called 'Trillium', a US standard used for capturing knowledge, managing knowledge and skilling people. Things are written down and Trillium is quite directive.
- They use the Web an awful lot. Their Intranet is "absolutely huge and there's an awful lot of knowledge contained in

there". "It is all there and that is how we are managing that knowledge".

- There are also a lot of User Groups on the Intranet and they use it for Video Conferencing and Training. Global training programmes are offered, run out of North Carolina and people just log on and use audio links or small desk-top video conferencing cameras so they can see people.
- They hold lots of conferences where people meet. The real purpose is like a 'share-fair' or 'knowledge market', where people will get together. There are booths so people can share what is being done in different parts of the organization and the world.
- Search engines are used example Alta Vista, Yahoo "You have to have search engines or you are going die from too much information".
- Networks: They have " evolved an informal network that drives us and keeps our knowledge current. There are very few formal networks but we are just about to create one now - a computer system for Professional Services."
- "What we find is more important now is continuous communication around core themes. So John Roth our Chief Executive Officer, will communicate on a monthly basis with every single employee - sometimes we get three in a week from him - around the core themes. What we have striven to do is to confine our values with the activities very strongly, so rather than say 'here's your Values Statement' we have said 'Here are our Values, but look at how they are actually going to be utilised'. That embeds it a lot more."
- They "don't get worried about such things as headcount so if you need three people on a job for a period of time, then you have three people."
- They have a Key Resource Process where they identify the top 15%, and also Scarce Skills and Critical Skills listings. Critical = if that person goes there is going to be a very great hole in that organization and they need to plan how they're going to manage that. And Scarce Skills = when somebody (or a group) has specific knowledge which is valuable in the market place. *Critical* is more of an internal judgement and *Scarce* is a judgement against the market place. These are looked at and analysed every 6 months. It is done through peer group reviews, using a Peer Group Model (a levelling process) - the managers talk together about the people who work for them, they submit their thoughts to their manager and so on right to the top of the corporation to the Chief Executive Officer. "The managers do it and the managers do the work themselves. It is their job to know their own people. If you can't spend half a day or a day every six months talking about your team then something has gone very wrong. It is only two days a year ".
- Process Management: "We don't do everything by process, we do what we think is right for us at that moment in time.." "Don't get too tied up in the processes and the Quality Awards and all that sort of stuff ".

- Their Performance Management System is called 'Priorities'. They used to use 'Management By Objectives' process but dropped it because the objectives changed too often. Now they talk around behaviours, what has been achieved and the way in which it has been achieved. This is a different spin and links into their 'Talent Management Model'.
- They used a company called Saratoga looking at metrics and measurement but feel benchmarking is more effective. May use 'Balanced Scorecard' in future but concerned 'initiative overload' so not pursuing this at present.
- Recommends speakers on Knowledge Management: Dave Ulrich from The University of Michigan, Mark Huselid, and Professor Linda Grattan from The London Business School.
- They operate a Talent Management System, challenging their managers to think about who is going to be succeed, who needs to be promoted, who needs to be removed. "What I've discovered is that if you challenge them on that level a lot of other things get sorted out. When someone leaves they've got a successor and there isn't a dip."
- They did have a type of corporate University at one time but the cost became disproportionate. They still do in-house training - reinforcing the core values on the new entrant programme or when people are promoted. Individuals are now driving their own development because they have realised that if they are at the cutting edge of an area they will get more pay. " If you have a scarce skill we redefine where you are against the market rate so it is in their interest to keep up to date and they know that."
- They regard their Talent Management and Priorities Processes as a critical competitive edge.
- Networks and networking are considered vital: "Internally you can't live without your own network - you'd sink without one. The problem we have is recruiting, particularly senior people, who don't have a network as it is very very hard for them ".

6.v. Example of using the models 'Framework for Knowledge Approaches' (Armistead & Meakins 2001) and 'Managing Knowledge During Change' (Meakins 2003) against the four organizations Lloyds TSB, Quidnunc, BT and Nortel Networks.

It may help here to provide an example of how these models might start to be used for diagnosis purposes. Having gathered feedback from the four external organizations (Chapter Eight & Appendix), I undertook an assessment of the findings to diagnose their approaches to Knowledge Management and considered them against my own model.

Lloyds TSB

Their approach to knowledge: organizational imposed prescribed moving towards some empowerment.

In past years Lloyds TSB had not made attempts to capture knowledge in their workers with the result that it was vulnerable and did not know what knowledge it had in its workers or in the organization as a whole. It could therefore not benefit from nor control knowledge. There had been a recent shift towards a knowledge capture process and workers were involved in mapping and monitoring, with workers being rewarded for improvements. Some 'exit interviews' were used to transfer knowledge but only to a limited extent. Continuous learning and opportunities for personal development were provided to workers in a mixture of imposed and empowered approaches, as some training was arranged by the organization and some left for individuals to take up if they wished.

Currently therefore the organization was imposing their knowledge approach, although there were signs that, in time, a more empowered approach might be adopted. During the restructuring it had chosen to husband and re-assess some knowledge but had consciously allowed some knowledge to be lost as some workers left the organization.

Quidnunc

Their main approach to knowledge: Organizational empowered adaptive together with individual imposed compliance

The whole organization had been conceived and built around knowledge and its use. It therefore had expectations of all its workers to embrace the requirements that were clearly laid down (prescribed) but it also expected each individual worker to develop and share knowledge as a natural way of working (empowered). Here was a fully-fledged approach to knowledge that embraced all approaches with a fluidity that integrated all approaches to good effect. As such it made use of all methods of dealing with knowledge - husbanding, assimilation, re-assessment and interchange as appropriate to suit different situations.

BT

Their main approach to knowledge: Organizational imposed prescribed and individual imposed compliance. Some moves towards empowerment.

Because the organization is so large, and although there is an overall prescribed knowledge approach, the organization takes different knowledge approaches for different work areas, and activities operate at different levels of intensity. For example, those working in key areas to develop new technology will have a different requirement to share their knowledge than those working in their sales department. This organization was very aware of the power of knowledge and also of the intensely competitive arena in which it operates. They have understood that they cannot control all aspects of knowledge, nor all their workers, and have chosen to communicate a corporate message about the importance of knowledge sharing and knowledge development (prescribed) while providing opportunities to empower workers towards self-development and creativity. They have a small central support team (Organizational Excellence) that monitors and measures various initiatives to facilitate improvements and which puts emphasis on the behaviour of team leaders within the organization (compliance). On an individual level, workers are expected to log their knowledge in a 'yellow pages' register, but they are also empowered to learn and share/transfer knowledge through 'communities of interest' around particular subjects.

This organization works at the cutting edge of technological development and, as such, a proportion of the workers are involved in the creation of new knowledge. The organization is certainly aware of the need to husband knowledge and use/develop what they have but is also alert to the fact that knowledge creation (interchange) and transfer is vital so they can use it before it slips away into other, competing organizations.

Nortel Networks

Their main approach to knowledge: organizational empowered adaptive

This very large, international organization operates at a tremendous pace to keep up with their customers. They see Knowledge management as pivotal and believe in the heavy use of search engines because there "isn't time to invent things". Nortel's approach is to rely on its individual workers and there was plenty of evidence of informal networking and knowledge sharing in a social context. Not surprisingly there was heavy reliance on technology to facilitate various aspects of knowledge management. Individual workers were expected to share knowledge (individual imposed compliance) however most workers who are employed by Nortel are recruited because they consider knowledge sharing to be a natural way of working (self-determination).

7. Warwick Conference Paper

Knowledge Management: Concepts and controversies. Conference, February 2000

Managing Knowledge in Times of Major Restructuring in Organizations

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Abstract

This paper examines the perceptions of senior mangers of knowledge in times of major organizational restructuring in a large network organization. Some had experienced major restructuring in the past and were preparing to take leading roles in a current programme. The managers were questioned about previous experiences and their approach to managing knowledge in their new managerial positions. The results indicate a reliance on approaches, which reflect the epistemological assumptions prevalent within the organization. Suggestions are made to improve their knowledge effectiveness within a knowledge framework for organizational change

(Key words: knowledge management, strategic change, organizational learning, organizational epistemologies)

1. Introduction

The word knowledge has come to the fore in the academic and practitioner literature over the last year or two. It is found not only in the context of knowledge management which has a strong focus on information technology. Interest in knowledge is also prevalent in writings on economics, strategy, organizations and research for the creation of knowledge. Consequently this preoccupation with knowledge is not confined to one discipline within the business and management sphere. We must understand these various perspectives from different disciplines in order to be able to make sense of the way managers think about, discuss and act on issues of knowledge.

The generation of wealth in developed economies has shown a significant shift towards high skill product manufacturing, especially, high skill service functions, and this change has been stoked by technological developments such as communications computing. Neef (1997) has adopted the term 'weightless economy' to aptly describe the situation in the US, in which the weight of the country's total output in tons has not apparently changed significantly in 100 years, despite a twenty-fold increase in GNP value. Such striking comparisons should help managers to gain a proper perspective of the new economy and the importance of the 'knowledge worker'. In this market low-skill labour is abundant but specific expertise can be scarce, and knowledge thus becomes a source of competitive advantage. Hence the context for the organizational focus on knowledge is the emergence of knowledge economies. In the past, management specialists have been reproached for failing to respect some of the broad issues that are located in the macro-economy. Such a criticism is currently unfair since it is apparent that business schools, consultants and government agencies are aware of the development of the 'knowledge-based' economy. According to Neef (1997) the central levers in this new economy can be found in the growth of high technology and high skill services, and their expansive opportunities. A number of authors (Drucker 1993, Stehr 1994, Burton-Jones 1999) have highlighted a move to economies based on knowledge in industrialised societies. Governments have more recently taken up the theme in their policy making (UK Government White Paper 1998)

Strategists have accordingly presented a novel perspective of the firm, in which the theoretical source of competitive advantage has shifted from, for example, the relative position of the firm in the market, to an internal appraisal of the firm's resources (Peteraf 1993). This 'resource-based' view of the firm has proved attractive to strategists in part because the strategic review of capabilities is an established function of management. In developing this contemporary stance, strategists have discussed the nature of the critical resources and, aided by the concept of 'non-tradeable assets', they have agreed that knowledge could hold a central role (Dierickx & Cool 1989).

One of the pivotal issues for strategists is the identification of that type(s) of knowledge that could infer competitive advantage to the firm (Spender 1994; 1996). A popular framework for organizational knowledge, outlined below, considers the dimensions of explicit versus tacit knowledge, and individual versus collective knowledge (for review, see Spender 1994). Thus tacit knowledge, which is learned through experience and is difficult to codify and transfer, could satisfy the conditions outlined by Peteraf (1993) and provide competitive advantage. Explicit knowledge is unlikely to hold the same concern for strategists, apart from the issue of appropriation (Spender 1996). The matter is further complicated by the discussion of individual and collective knowledge. There are convincing arguments to support the notion that knowledge creation is dependent on the socialisation of individual tacit knowledge (Nonaka & Takeuchi 1995). It is also apparent that some tacit knowledge is created and held in the collective (group) dimension, and can be embedded in the firm's routines and culture. Moreover, the transfer (learning) of such collective knowledge requires extensive social interaction (Brown & Duguid 1991). The culmination of these observations is that the strategists who support the knowledge-based view of the firm are forced to consider issues such as internal organization, boundaries, networks, resource investment decisions and path dependency.

Von Krogh and colleagues (Venzin et al 1998) have developed the debate about epistemology and organizations. These authors have correctly stressed that strategists and managers should be attentive to this perspective, since it can assist with the elucidation of organizational knowledge. Thus strategists should be aware of the 'cognitivist' epistemology, in which knowledge and understanding is dependent on an up-dated and organized mass of information. This epistemology is frequently portrayed in technological treatise of Knowledge Management. The 'connectionistic' paradigm draws attention to the knowledge and understanding that can stem from relationships and networks. This is an intriguing epistemology for strategists to consider since it has also been applied in technological appraisals (Kempster 1998), yet has been discussed within process models of knowledge creation (Koestler 1962, von Krugh and colleagues, Venzin et al 1998) have also argued the significance of the concept of the 'autopoietic' system, in which an entity is defined by the generative power of its component relations. On the other hand, the development of this contemporary epistemology is not without criticism (Scheper & Scheper 1996).

The transfer of knowledge has a central role in issues of organizational knowledge. The subject has a broad academic base since it can be located in the framework of human communication. However, the concept of the 'community of practice' should be mentioned because it gained increasing attention from management practitioners.

Brown and Duguid (1991) have considered that organizations contain formal and informal groups that can be recognised by their members *and* their shared understanding in working practices, interpretations and perspective. These 'communities of practice' (Lave & Wenger 1991) often use explicit formal or 'canonical practices' during the course of their work, however they will also resort to 'non-canonical practices' that are informal, contingent and improvised. This latter type of knowledge is collective, contains a tacit component, and is possibly 'embedded' in the history and routines of the community. According to Brown and Duguid (1991) this type of knowledge is remote from an external member, and its transfer is dependent on learning as a 'situated activity' (i.e. social acceptance). These observations have been echoed in a study of apprenticeships by Lave and Wenger (1991), which emphasised the significance of a 'learning curriculum', in distinction to an (teaching) instruction curriculum. The concept of the community of practice has invited management practitioners to consider alternative methods of training, especially during periods of organizational change (Stamps, 1997). Moreover, it has proved so popular that researchers have debated as to whether it could have a broader role in the structure of the organization (Wenger & Snyder 2000).

For many, the knowledge management debate features the use of information technology and the possibilities, which arise of increasing connectivity, capacity and capability. The technological platforms on which this performance is built are the Internet, intranets, GroupWare, data and information analysis through the use of document management, data warehouses and data mining, intelligent agents and artificial intelligence. Although some manufacturers have redefined the role of pre-existing technologies largely to position their products in the new 'market' (McCampbell et al 1999), there is evidence to suggest that the most recent technological advances deserve the Knowledge Management label (Frappaolo & Capshaw 1999). It is apparent that some authorities are becoming more sensitive to the distinctions between data ('points of reality'), information ('organized data') and knowledge ('information, context and experience'), and are starting to take care in the classification of technical applications. Accordingly, the most stringent authorities do not presently consider that 'knowledge' can be truly managed by technology (McDermott 1999).

The literature on organizational learning contributes to the knowledge debate. The themes of individual and collective learning, of systems approaches and organizational memory illustrate the point. The application of these to management practice is seen in the representative writings of Gavin (1993), Argyris (1999), Senge (1996) and De Geus (1997)

2. Methodology

The research has followed an action inquiry strategy (Ellis and Kiely 2000), adopting a recurring cycle of action-reflection that captures knowledge through action and revised action. The research strategy is appropriate as one of us works in the organization and was able to engage managers in co-inquiry with the intention of enabling change.

The first stage of the research was carried out with members of a strategy department of one of the major business units. This cycle of investigation centred on the surfacing of issues, which were critical to their role and to that of the business. Individuals were interviewed and their comments were analysed. The group and the director responsible for the department reflected on the results. The outcome of these reflections provided the input to the next phase.

The study was extended to a group of 15 senior managers, some of whom would be responsible in the near future for major business units following a restructuring programme. The group included managers who had been involved in previous change programmes and those who were part of teams planning the new organization. Participants were asked if they would be prepared to take part in the research programme. Interviews were conducted with these managers. Two sets of questionnaires were used; one investigated the managers past experiences and the second their future intentions. In addition, in order to provide a strategic context to the research, other artefacts were available which recorded the future state of the organization through documentation and briefing notes as the research progressed. Interviews were open and flexible within a semi-structured framework and driven by a broad interest in the way in which knowledge was conceived and managed. All the interviews were taped, transcribed and coded (Berg, 1989) in order to elicit themes from the data. The inductive qualitative approach allowed the research to explore the subjective aspects of knowledge in times of restructuring.

3. Findings

When asked many managers reflected that in previous re-structuring in the organization, there had appeared to be a dislocation in knowledge. Several respondents used the term "knowledge dip". The "dip" was perceived to be associated with a loss of knowledge as people moved or left or as new knowledge was required for new situations. The outcomes were discussed with the strategy department as a group and individually with the strategy director. The outcome was an agreement that the organization was at risk in the coming period of radical restructuring if they did not managing knowledge effectively. This formed the theme of the next cycle.

The respondents in the second cycle were, as a group, very focused on the immediate future where they were about take up their individual responsibilities in the new organization. They welcomed the opportunity to discuss the issue, seeing it as affecting them personally and giving an opportunity to rethink their approach. One senior director was candid enough to declare:

… Knowledge management is probably our weakest area in the corporation - but no one will admit it
R16 (92)

The other respondents demonstrated varying degrees of confidence in their ability. As they spoke about their previous experiences and expectations, the level of confidence seemed to relate to their perceptions of the success of previous restructuring which they had experienced in this or another organization. As might be expected with an issue as complex as knowledge, there were differences in the way individuals spoke about knowledge and this influenced their confidence in the method they perceived to be available to them for approaching the management of knowledge. Analysis of their reflections produced five distinct themes.

3.1 Understanding of "Knowledge"

No formal knowledge management programme had been instituted in the organization. However one business unit providing consultancy services had some time previously taken a decision to present itself as a knowledge provider. The understanding of its director of different approaches to conceptualising knowledge in organizations was more developed using language from within the knowledge management domain

> *… There was therefore considerable planning around knowledge because that was the whole purpose of the re-organization… but we felt that we hadn't gone far enough to create the environment where knowledge could flow and be shared…knowledge cannot flow if it goes up and down hierarchies, it gets stopped.. so having defined what a "knowledge worker" was we had to demolish hierarchies, line management and all that nonsense*

R7 (7,35,44,64)

Elsewhere uncertainty was expressed about what is meant by knowledge as opposed to experience and information. Respondents wanted to know more about the substance of terms that they were aware of like knowledge management and organizational intelligence.

> *… in terms of knowledge management (and perhaps one day someone will define knowledge for me)…*

R3 (155)

> *… I need to be a lot clearer about what "management of knowledge" really means. Obviously we can maintain data and information but how do you manage knowledge … so what do you do differently? …. We need a clear set of methods to management knowledge….what I'm recognising is that I, personally and the team I lead, will need to be a lot clearer about how knowledge is best managed*

R14 (521)

There were conflicting views on the need to manage knowledge that hinged on perceptions of the value of knowledge in terms of usefulness. Some were of the opinion that it was vital for the future success of the organization that "good"/useful knowledge was identified, transferred and used.

> *… Knowledge in itself is of little value and the danger is that we will concentrate on knowledge and miss the really important aspect which is the use of that knowledge, the ability to use it, freedom of action to take that knowledge and to convert it into a saleable product, commodity or service…and that's hugely important to us over the next ten years*
>
> R3 (464)

Other expressed opinions that managing knowledge risked retaining "old" knowledge which maybe by varying degrees "bad", "useless" or " constraining"

> *… not all knowledge is "good". So if you assume that by organizational change you are seeking to change more than the structure, you are also seeking to change the culture or make the organization more "fit for purpose", you don't necessarily wish to transfer all the knowledge…Once again an issue is whether it is harmful for the organization because we are losing old knowledge which was constraining …we mustn't assume that losing knowledge is necessarily bad*
>
> R9 (72,103)

> *… What mechanisms are we going to put in place to ensure our new desegregated organization is glued together and doesn't develop into knowledge silos where expertise and data is not shared across the group either because of laziness or because of feeling that knowledge relates to power*
>
> R7 (514)

The identification of knowledge with information and data was a strong theme. The respondents were concerned with some key aspects: the ability to use information held within the organization's information systems effectively and to change information systems to accommodate re-structuring.

> *... we will be using technology through data bases ... there is a large programme which is about restructuring our information systems and competences so that we manage customer information much more effectively ...we are not good at synthesising and taking data and turning it into information let alone knowledge*

R14 (389/402)

The perception of these respondents about the nature of knowledge was pragmatic in terms of value and usefulness. With the exception of a few "informed" respondents in knowledge management, respondents were not concerned with identifying different forms of knowledge except as information and data.

3.2 Knowledge Loss

The investigation asked respondents to discuss their perceptions of knowledge loss in previous major restructuring. There was agreement that there was some evidence of knowledge loss and that the notion of a knowledge dip had some validity. There was some disagreement about the level within the organization which was most affected.

> *... the most problematic level of knowledge loss I would have thought was at a very high level. I think we lost control for quite some time afterwards, after the initial change, because people didn't recognise that they had to take personal accountability for their decisions*

R2 (89/92)

> *... the level of knowledge loss ..usually at the process / tacticallevel*

R16 (16)

The nature of the knowledge that was perceived to be lost was in two main areas. Knowledge about customers, particularly key customers

> *… the most problematic area of loss was that of customer relationships, knowledge and understanding of customers in key account type areas*

R1 (132)

> *… the way in which you arrive at a particular customer solutions …is very much knowledge based …and to lose that kind of knowledge is likely to be problematic*

R6 (233)

> *… we had some furious customer threatening litigation because they were no longer getting the service they had previously got…in effect what we did was we made an organizational change without anticipating the problems….we removed knowledge…before we put new stuff in*

R 10(86,114)

It was felt that these problems were exacerbated by failure to maintain the link between sales and operations where the knowledge can be complex.

> *… the other kind of knowledge that maybe comes to the fore is the relationship between sales and the operators in the sense of bridging the gaps backwards from the customer into the operations i.e. that's where I think you tend to get a lot of things which aren't written down as well as they should be and perhaps not written down because they can't be because that is a relationship or interactivity which is built up over a period of time and is one which is subtly modified as you go forwards*

R6 (233)

The loss of individuals from the organization during restructuring led to loss of organizational knowledge

> *… we lost information first, basic information disappeared ..all the files got thrown away, so historical performance ..was, in many cases lost. We managed people out of the organization entirely on the basis of whether they volunteered for early voluntary retirement. So unless there was correlation between preferences and their knowledge there would have been an approach that failed to completely to take current knowledge there's more evidence that knowledge in the sense of what was sitting in people's memory banks and brains was not managed .he*

left his filing cabinets behind but the knowledge had gone, and indeed people used to phone him up
R15 (38,45,53,76)

While these points are of real concern again the counter view of the benefit of new ideas (i.e. new knowledge) in time of major change was voiced.

… the knowledge and experience those very senior level mangers that are management casualties have got is vital to capture.. that would give new leaders a flavour of how the "old school" would have done it …but…in a time when one is looking for radical change you don't necessarily want to be hamstrung by other people's views or perceptions…however if these people were not doing a good job ..why do you want to tap into that knowledge ..why not start afresh?)
R 5(40, 207)

Who to keep and how to guard against loss of knowledge that might be important are very real considerations. They raise questions of the processes that the organization might follow to minimise the disruption while allowing the opportunity for creativity.

3.3 People and Processes

Approaches to the issue of knowledge loss or dip or the opportunity to create new knowledge for new situations obviously impact on policies, procedures and approaches to the retention, recruitment and personnel issues. The people factors interface with notions of process and the formal management of knowledge as both people and processes change.

The organization had been engaged with the EFQM Business Excellence model (Ghobadian and Woo 1996), Consequently there was a well-established model of the organization as a set of business processes and respondents used the language of processes to discuss aspects of knowledge. At times it is not clear whether they are speaking about a knowledge "management" process or knowledge in other business processes (see Armistead 1999). From previous engagement with the organization the researchers were aware of a degree of frustration with management by process. Here this organization was not unlike others (Armistead, Pritchard, & Machin 1999). This was reflected strongly by one respondent.

> *… there's too much management by process and that will need to change if the business wants to be more reactive…management by process can be frustrating because there are individuals out there with great entrepreneurial flair who would really do things but they don't … because they are not within that process group*
>
> R5 (612,636)

Most of the respondents talked about knowledge processes in the sense of transferring and sharing knowledge in the restructuring activity. Some built their approach on prior experience.

> *… we transferred the knowledge in blocks and hence had, at the earlier stages many parallel processes operating that were actually what used to happen in the old organization…what we then did was to move away from that situation into a single way of doing it in the organization by teasing out requirements and best practice and then designing a new process that would be compatible company-wide*
>
> R10 (179)

However the notion of transferring people and sharing their knowledge is strongly held in this organization

> *… by and large we had minimum disruption by transferring people to maximise continuity and of course we transferred knowledge at the same time*
>
> R4 (46)

and success is claimed in respect to notions of knowledge dips:

… we were very careful to make sure that we were actually husbanding knowledge rather than dipping
R7 (333)

Those respondents with responsibility for managing change had faith in their approach and seemed to seemed to take the view that a process in place would deliver satisfactory results

… we followed the business process for managing organizational change which we believe is good practice anyway and we think that worked well
R 4 (255)

Two ways to ensure the transference of knowledge within the organizational change process were established. One, "baton passing" is the process used to identify and record jobs/tasks that are required to be handed over from one person to another, from the old structure into the new. The other involves the identification of "flow through posts", where the same person continues in post and it is assumed that knowledge will transfer, without change, from the old to the new organizational structure. These approaches were referred to by most of the respondents some recognising that it was a structured approach which was perceived to have worked well in previous restructuring in the organization.

… the baton passing process was very systematic and was designed to ensure that not only were responsibilities handed over but the information that was necessary to allow those responsibilities to be taken over and run seamlessly was handed over and planned. So that the element of knowledge was planned.. I suspect that the implicit/tacit stuff was missed but people when handing over batons prepared statements of how things were done and what the important issues were, which they handed over with the batons…
R8 (29/46)

Others spoke about baton passing being associated with the activity of capturing knowledge when individuals are leaving by way of exit interviews

> *… we use things like expert interviews to check the knowledge of people who are moving around the organization…through this we seek…to get people to expand their tacit knowledge*

R 7(537/546)

but the obvious limitation of the technique was also recognised.

> *… actually it would be an interesting way of seeing whether I can dump my brain in a way in which is sufficiently structured to allow it to be of use to the person who is taking over my job*

R6 (135)

Some recognised that this very structured approach might meet with some difficulties

> *… the difficulty is identifying what the batons are. If we say there is a baton to maintain X contact that is too simplistic to be of any use. If we break that down and understand how we need to do it in the future then there might be a hundred batons to be passed over*

R10 (362)

Other problems that arise as a result of timing came from one of the respondents concerned with planning the restructuring process.

> *… because of the resourcing processes we don't know when what they call the "passers" and the ""receivers" will be in place, so you wouldn't know if you were a passer or a receiver or actually whether it is the same person in many instances, for quite some time. And because people are being pulled in different directions, or will be pulled in different directions at different times then it is assumed that the knowledge lives with each individual. So you as an individual have to retain accountability for the batons you have passed. You have to find the right individual to give them to, which is why we are getting assurance on the batons of the names of people who know and understand that information so that they can pass that on to whoever the new person is rather than the job pos. Also in terms*

of knowledge transfer the other thing that is very worrying .is that people will write down the things that they like to do and not the things they don't like doing. We don't have a way to capture both robustly
R 11(327/ 552)

Respondents described the transfer process called flow through

… They have a series of what they call 'flow through' posts: people will flow through with jobs if they are the same as they are now and their knowledge is assumed to just continue.
R11 (318/320)

However this process could require detailed investigative work to establish accurate job descriptions and to identify which jobs should be tagged 'flow through'

… I was involved in collecting evidence…in any organizational change what you change from has always decayed from what it was when it came in … a manager said ' this is what the template is but what I do is nothing like that…' and it didn't bear much resemblance to the template or official accountabilities.
R13 (237/270)

As with baton passing some respondents were sceptical about the effectiveness of the method of knowledge transfer.

… I think the 'flow through' idea is a fallacy…we should have taken an 'everyone changes to a certain level in management' stance. The fact that we can't specify in advance which areas are 'flow through' highlights to me why I think it is a fallacy. So if we could say 'we will not touch our operational managers' I am more than in agreement with that, but trying to invent as we go along which of the jobs are flow through seems a little tendentious to me
R 9(240/249)

Despite these reservations baton passing and flow through were being used as key components of the new restructuring programme.

Clearly the transfer process being described as baton passing involved aspects of knowledge sharing but would only work if there was willingness to be honest about a job. It is perhaps surprising that respondents did not speak more about the sharing of knowledge

4. Discussion

The picture that emerges from the findings is of a group of senior managers who as a body have not addressed the issues of knowledge. There is no evidence of a shared, explicit epistemology. However there is a shared view that knowledge is important. They recognise the importance of knowledge in their business and reflect that this aspect of management requires increasing attention. It is debatable whether they as a group demonstrate any learning from their previous individual and shared experiences that are of value in the new situations they are facing. The organization has not been subjected to a knowledge management initiative and perhaps this allows a greater understanding of the intuitive views of managers who would be regarded as intelligent and able because of the positions they hold.

4.1 Understanding knowledge

There are indications that the mangers are sensitive to distinctions in types of knowledge. As might be expected there is awareness of differences between data, information and knowledge. However there is little evidence that they share any understanding of the strategic aspects of knowledge as suggested by Spender (1994:1996). The distinction between individual and collective knowledge is not clearly apparent even when they discuss the transfer of the knowledge that is associated with new people or new roles. In this there is a tendency to emphasise the individual over the collective. The terms explicit and tacit knowledge are not used by many of the managers although the approaches to knowledge transfer imply a shared intuitive understanding of the tacit knowledge that is associated with experience. We see this in the operational approaches referred to as "baton - passing" and "flow through". These suggest an organization which is mechanistic and tends to view knowledge as being founded on information processing.

The views expressed on valuing knowledge are couched in terms that there might be "good" knowledge i.e. in the sense associated with TQM as "fitness for purpose" (Juran 1988) and "bad" knowledge. Knowledge being regarded as a cost implies recognition of the resource based view of the organization. This is perhaps not surprising, as these groups have been involved with the determination of competences for the organization. We might have expected them to make a stronger link between these competences and knowledge (Grant 1996)

A worrying aspect is the failure to position knowledge within a social or cultural context (Pobst et al 1998, Kogut and Zander 1992). The language of the organization tends to be concrete rather than abstract, a point which we will discuss in more detail later. We might see an expression of cultural differences in the description of a disaggregated organization in "knowledge silos" leading to an unwillingness to share knowledge.

As a group these managers recognise what it means to address issues of knowledge within their organizations in response to a changing environment. But they do not demonstrate a language and shared conceptual framework which would allow them to develop their thinking about knowledge. This finding seems to resonate with the writing on organizational learning where a distinction is made between superficial knowledge and deep understanding (Gavin 1993)

4.2 Managing knowledge

This research had been undertaken because there was a perception that "useful" knowledge may be lost in the forthcoming organizational change. Loss was considered to be both temporary and permanent. The managers did not have a common view. There was agreement that knowledge had been lost in the past but varying views on where this was most evident. Some claimed a senior level being most affected while others suggested the greatest loss was at an operational level within key processes. In the latter case customers who were liable to complain or threaten other sanctions often highlighted the consequences. The loss is often assumed to be associated with a failure to capture or transfer explicit knowledge and although there is an appreciation of the difficulties of transferring tacit knowledge. No solutions were offered on how this might be done.

The recurring feature of the managers' responses to the questions of managing knowledge in time of restructuring rests on techniques called "baton passing" and "flow through". These were used by many of them in a previous restructuring. While some managers were confident of the effectiveness of the baton passing process, several others expressed concerns. Perceived deficiencies included imprecision in the specification of a "baton" and the process for transfer. One interpretation of a baton is that it is a list of responsibilities. Another view regarded it as a definition of tasks or jobs. It is not a description of knowledge, which is required to carry out the responsibilities or undertake the jobs or task. One manager did recognise the difficulties of trying to express complex roles in a written form. It is evident that these deficiencies were clear to this group of managers during the last restructuring but their assumptions and approaches do not seem to have changed. Perhaps a more fundamental reassessment of their experiences would have developed the process in ways which would have moved the organization in the direction of the notion of double loop learning (Arygris 1999).

The "flow through" approach for locating appropriate knowledge in the new organization perhaps makes sense where managers can be sure there is no requirement for knowledge creation. Where groups are treated as a unit of some form they might be regarded as "a community of practice" (Brown and Duguid 1991; 1998). Here the proposition is that the interaction within the group will transfer knowledge as it is required and create new knowledge to address new demands. However we may be concerned that assumptions held in the group which are based on their previous experience, may limit their ability to adapt to new situations and, as Leonard-Barton and Sensiper (1998) explain, they may be subject to 'group-think". A counter view from Brown and Duguid (1991) is that communities of practice are adept at creating practice which is contingent and different from the espoused activities/solutions. So if processes remain similar in a new organization we might expect flow through to work.

However there are dangers. Flow through may not pick up all the collective knowledge required in the new situation. Unexpected demands on the process in the new environment may prove disruptive to the extent that knowledge cannot be created fast enough to cope. Communities of practice can be creative though contact with other groups i.e. other processes or customers for example or though changes in their own make up (Brown and Duguid 1998). Consequently we might argue that if managers are to have confidence in "flow through" in times of change they should consider doing it in a limited way. New members could be introduced into the group to encourage challenge to the status quo and hence foster innovation and the creation of new knowledge. It is notable that the concept of the 'community of practice' has appealed to practising managers, and has been applied in some recent training programmes (Stamp 1997).

4.3 The Organizational Context

The opinions on knowledge and change of this group representing senior management in the organization, illustrate some of the issues of path dependency (as discussed by Venzin et al 1998). In seeking to maintain effectiveness in the new structure there is recognition that old competences, knowledge and skills might be lost but that the new environment requires some new competences to be successful. The previous experience in business process management locks and ossifies the ability to break out and create new competences. Our managers as a whole seem to wish to preserve this dependence perhaps, as one expresses it, for fear of losing control.

Looking to explore the organizational dimension further we are drawn to the work of Venzin et al (1998) on epistemological assumptions which might influence the strategic views of groups of managers. Three categories are proposed: cognitivistic, connectionistic and autopoietic, each being distinguished by a view of the organization, a perception of the environment, notions of knowledge and knowledge development and characteristics of truth. Our research did not set out to explore the positioning of our managers against each of these dimensions. However examination of one dimension helps. The notions of knowledge in two of the three categories seem useful. There is the notion of a fixed and representable entity (cognitivistic) as opposed to the idea of knowledge residing in the connections of experts (connectionistic). The prevailing view of our managers is towards the cognitivistic view. Looking at descriptors of the other dimensions of the epistemology reinforce that view. For instance *the organization works like a mainframe computer: it is open for information…action is steered from the main frame of top management.* Knowledge development is *through the assimilation and dissemination of incoming information.* It would seem that this is the dominant epistemological view held by our managers. Other evidence from the organizations would tend to reinforce this view. We might consider that the organization would benefit from an understanding of the other epistemologies.

Debate about issues such as organizational epistemology is attractive to theorists but is unlikely to engage the attention of practising managers. Accordingly we should attempt to provide a framework for strategic action. If we accept that the organization we have studied is more inclined to see knowledge in explicit and concrete terms a starting point for the development of managers' thinking could be based on their methods of "baton passing" and "flow through". There are two dimensions, which are referred to in the context of organizational change, the extent of change in people and in process and task, Figure 1. Four knowledge strategies emerge which we refer to as husbanding, re-assessment, assimilation and interchange.

Approaches to Knowledge in Organisational Change

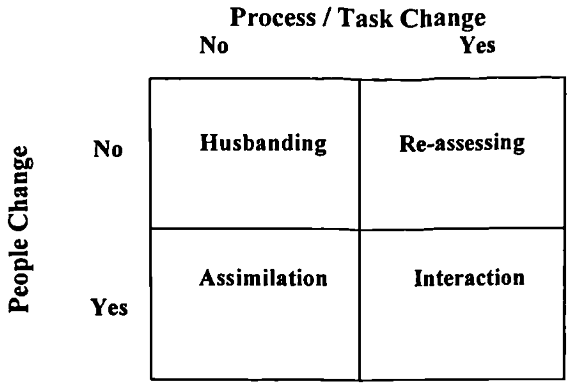

Figure 1

Knowledge husbanding is appropriate when there is high certainty that the process will not alter significantly in the change, nor will the people in the process. Here the issue is one of ensuring that the knowledge is stabilised. The cognitivistic epistemology may drive the capture of explicit knowledge that obviously helps to give confidence. However the danger in this approach is that while one process may not change, the systemic effect of changes in other processes leads to the requirement for different knowledge. Perhaps the examples given by our managers of dislocation between sales as operations are illustrations of this effect. Embracing a connectionist epistemology would encourage the search for knowledge connecting people and processes. This wider appreciation of knowledge would allow an assessment of the value of existing knowledge. Thus 'husbanding' should not be perceived as a state where learning is halted, and the organization should continue to respect the social dimension of knowledge transfer and learning.

Knowledge assimilation is appropriate when there is no significant change in the process or the task but there is a significant change in the people involved. The issue here is of knowledge transfer, recognising the issues of certainty of the degree of change in the process, as above. The cognitivistic approach seeks ways to codify knowledge for transfer, as with the baton-passing in our organization. The introduction of external knowledge might conflict with the established knowledge of the organization ('not invented here" syndrome) (see Probst et al 1998). The appreciation of 'systemic thinking' might help managers to realise collective knowledge (Johanessen et al 1999). The use of other techniques such as exit interviews and job shadowing moves in the direction of recognising that implicit and explicit dimension knowledge must be addressed As noted above, knowledge transfer has a strong social dimension.

Knowledge re-assessment is associated with a change in the process but not the people involved. The issue is to challenge the assumptions that the knowledge the group holds will facilitate the creation of knowledge appropriate to the new process. A cognitivistic approach would seek to consider existing knowledge in codified form in the context of the perception of the new process, look for perceived gaps in the knowledge and endeavour to fill them. The danger with this epistemological standpoint is the failure to appreciate the power of the social context of knowledge. The process group might be regarded as a community of practice. The underlying assumptions in the process could act as an inhibitor to the creation of the knowledge that is required to develop the process.

Knowledge interaction is required when new people come together in new processes as might result in a business restructuring or major business process re-engineering. This situation will require significant knowledge creation. We see the process perhaps starting with the individual knowledge and as the individuals coalesce into groups, collective knowledge could emerge. The managers could still apply their cognitivistic epistemology that would structure existing knowledge. However the approach is perhaps more likely to limit the adaptive nature of knowledge creation contained in the five enabling conditions that Nonaka & Takeuchi (1995) have defined as important to knowledge creation. These are intention (guidance), autonomy (freedom to think), redundancy (to increase communication), requisite variety (to reflect the diversity in the environment) and fluctuation (to counteract mental models etc).

4.4 Conclusions

The objective of this research was to understand managers' perceptions of knowledge in times of restructuring of organizations. The managers described their experiences and views of knowledge for the most part without the language associated with knowledge management programmes. We see this as a strength in that it allowed us to arrive at a detailed understanding of their current approaches. The findings show attachment to two approaches that are concerned predominately with transferring knowledge while minimising the loss of knowledge that was perceived to be valuable. There was little concern shown in discussions about creating knowledge, which might be needed in new situations. We consider that for this organization a move towards understanding approaches to knowledge might be by extension of their existing approach to consider all of our four knowledge strategies. Understanding knowledge is complex and difficult to present in the concrete and pragmatic terms that practitioners seek. However the approach we suggest could lead to a richer understanding of the issues and help to improve the effectiveness of their change process.

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Magda Meakins & Colin Armistead report the results of a research study in The Post Office

Managing Knowledge

During Times of Major Organisational Restructuring

Research Analyst — SERVICE DELIVERY

Professor — BOURNEMOUTH UNIVERSITY BUSINESS SCHOOL

This subject has been researched by Magda Meakins, Research Analyst, under the auspices of the Royal Mail/The Business School Bournemouth University partnership, supervised by Professor Colin Armistead. The quotations featured are from 16 senior managers from within The Post Office, some of whom are now heading-up new business units. Thanks are extended to all those who took part in the research programme.

Terms of reference for the research

The study aimed to explore the manner in which knowledge had been managed in the past during major organisational restructurings, and to establish the extent to which it was being done during current organisational changes. Also to consider academic and practitioner literature and undertake a number of external case studies.

Methodology

It was agreed that the most relevant research methodology to use would be one that would allow ongoing participation, so that, as findings were uncovered during the year, these could be shared with those in the research groups, some of whom were actively involved in making changes. Consequently, an 'Action Inquiry' method was used within the approach to Organisational Learning' Action Inquiry strategies seek, by cycles of reflection and action, to construct new knowledge on which forms of action can be based. It is felt that this proved a successful approach as it resulted in thoughts and actions being triggered as organisational changes were underway. For the second part of the research, case studies of external organisations were undertaken.

1. Findings

Half-way through the year, an analysis was undertaken to establish findings from within The Post Office. Several key themes emerged:

1.1 Understanding of 'knowledge' and 'knowledge management'. Some expressed uncertainty about what is meant by 'knowledge' as opposed to 'experience' and 'information': "*...I need to be a lot clearer about what 'management of knowledge' really means. Obviously* *we can maintain data and information but how do you manage knowledge? ..'*

There were differing views about whether attempts should be made to consciously manage knowledge and, indeed, whether it was possible to do so. While most felt it was essential: *"Knowledge Management/ retention is probably our weakest area in the Corporation but no one will admit it is!"*, a few felt this shouldn't be attempted on the grounds that old knowledge may be 'bad/useless or constraining': *"...the knowledge and experience those very senior level managers have got is vital to capture ...but ...in a time when one is looking for radical change you don't necessarily want to be hamstrung by other people's views or perceptions ...why not start afresh?"*

The complexity of managing knowledge and turning it into something of value to the business was acknowledged: *"Knowledge in itself is of little value and the danger is that we will concentrate on knowledge and miss the really important aspect which is the use of that knowledge, the ability to use it, freedom of action to take that knowledge and to convert it into a saleable product, commodity or service ...and that's hugely important to us over the next ten years"*

Also mentioned was tacit versus explicit knowledge and the need to find ways to extract tacit information. One business unit had already made use of 'expert interviews'. The key to capturing tacit knowledge generally was felt to be by forging and maintaining effective personal relationships and networking links *"...the relationships that are formed one with another ...that is very important ..and will become a growing aspect for success by which you judge how well a person does their job"*

General interest was shown in other areas such as 'Organisational Intelligence', 'The Mobilisation of Collective Intelligence' (as discussed by Gordon Lackie in White Space August 1999), and 'Knowledge Management'[3] and needs surfaced as requests were made for practical methods to help turn theory into practice.

1.2 Knowledge as in information, databases and systems. There was agreement that there was a huge amount of information everywhere. In fact there was so much available via computer, in paper form and through talking to colleagues, that it was easy to become overloaded and overwhelmed. Some even admitted to not using databases and other sources of information (a) because it was too time consuming to do so: *"You can learn a great deal if you take time out to read and analyse various information that exists, but because there is so much of it, you lose that which is important and maybe waste time looking at something that isn't."* and (b) because of concern about the quality of the information, the 'rubbish in, rubbish out' concern. It was widely felt that individuals needed help to sift *"We are not good at synthesising and taking the data and at least turning it into information, let alone translating it into knowledge."*

1.3 Practical methods, e.g. 'baton-passing', used to transfer information about jobs, tasks and associated knowledge, and 'flow-though' posts. The majority of interviewees cited the use of 'baton-passing' as one mechanism by which knowledge had been consciously managed in the past. This was also being used in current changes. There was some agreement that this systematic approach was useful although it was recognised that it only partially helped and was overly bureaucratic. Many concerns about the process were voiced: *"We do sometimes drop batons or assume things are OK when they are not and then we find out in due course that it is too late – the people that had the knowledge have left the business or have got other jobs in unrelated areas"* and *"I am about to inherit a baton ...which has no plan associated with it and no resources and the individuals who have the knowledge are all walking off to other jobs."* – *"Because of the resourcing processes we don't know when what they call 'passers' and 'receivers' will be in place..."*

Apart from 'baton-passing', identifying 'flow-through' posts, i.e. posts considered to stay largely the same in the new structure as in the old, was also mentioned.

"...people will flow through with jobs if they are the same as they are now and their knowledge is assumed to just continue." Not everyone agreed the identification of 'flow-through' posts was worthwhile: *"I think the 'flow-through' idea is a fallacy ...we should have taken an*

"the area of Knowledge Management generally was one which had not yet been grasped by the majority."

'everyone changes to a certain level in management' stance. The fact that we can't specify in advance which areas are 'flow-through' highlights to me why I think it is a fallacy..."

1.4. Knowledge lost. There was agreement that the notion of a general knowledge dip' had some validity but there was some disagreement about the level within the organisation which was most affected: *"...the most problematic level of knowledge loss ...was at a very high level"* and *"... the level of knowledge loss ...usually at the process/ tactical level."*

The nature of the knowledge lost was in two main areas: knowledge about customers, particularly key customers and knowledge lost within employees.

"...the most problematic area of loss was that of customer relationships, knowledge and understanding of customers in key account type areas."

"... the way in which you arrive at a particular customer solution ...is very much knowledge based..." Major problems were cited by one business unit *"... we had some furious customers threatening litigation because they were no longer getting the service they had previously got ...in effect what we did was we made an organisational change without anticipating the problems ...we removed knowledge ...before we put new stuff in."*

It was felt that these problems were exacerbated by failure to maintain the link between sales and operations where the knowledge can be complex: *"... the other kind of knowledge that maybe comes to the fore is the relationship between sales and the operators in the sense of bridging the gaps backwards from the customer into the operations, i.e. that's where I think you tend to get a lot of things which aren't written down as well as they should be, and perhaps not written down because they can't be, because that is a relationship or interactivity which is built up over a period of time and is one which is subtly modified as you go forwards."*

The way in which people were managed-out of the organisation was considered to be one reason why knowledge had been lost: *"we lost information first, basic information disappeared ...all the files got thrown away, so historical performance ...was, in many cases lost. We managed people out of the organisation entirely on the basis of whether they volunteered for early voluntary retirement. So unless there was correlation between preferences and their knowledge, there would have been an approach which failed completely to take current knowledge ...there's more evidence that knowledge in the sense of what was sitting in people's memory banks and brains was not managed ...he left his filing cabinets behind but the knowledge had gone.."* This lead to duplication of work in some cases: *"...because of the loss of the human knowledge repository, they just had to do it again."*

This area was mentioned again by several people in the context of the current changes and the way in which people were being appointed to posts: *"I'm seeing the people-appointment process being driven by generic people competencies. I believe that is not what we should be doing because it completely ignores knowledge."*

Summary of current state

All the senior managers interviewed were experienced individuals who described their experiences of, and views on, knowledge, for the most part, without the language associated with Knowledge Management. This was seen as a strength in that it allowed a detailed understanding of current approaches to be analysed. However, it also indicated that the area of Knowledge Management generally was one which had not yet been grasped by the majority.[3]

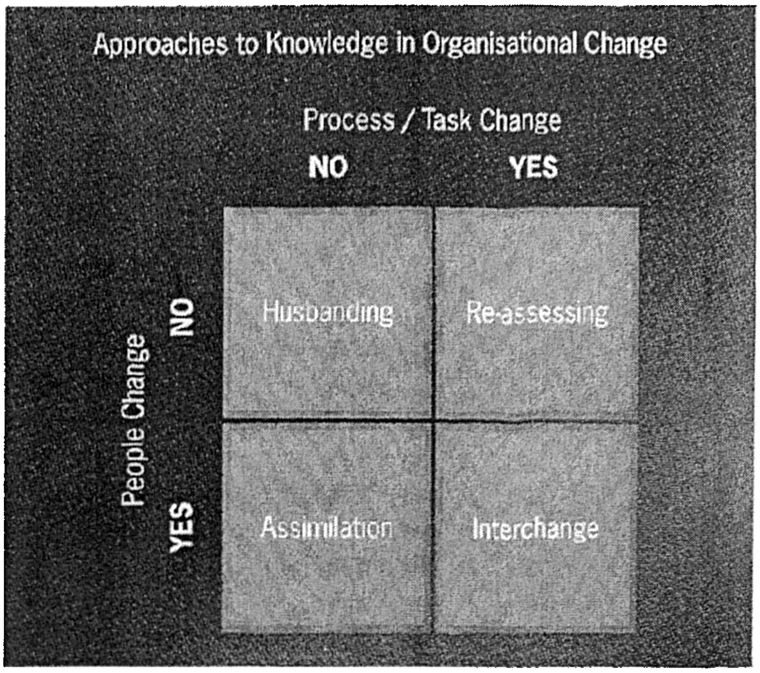
There is clear evidence that managing knowledge had not been considered by The Post Office as a whole, although there was considerable activity in Post Office Consulting, and some activity in Training & Development Group, Post Office Purchasing, Personnel and Group. Apart from Post Office Consulting, the feedback provided a mixed picture but one which focused primarily on managing knowledge via a rather mechanistic approach. Thoughts tended to be around existing knowledge and how best to capture and codify it. Surprisingly, there was little concern shown about creating knowledge which might be needed in new situations.

However, helpful questions were beginning to be asked about how The Post Office's new units should interact and tackle Knowledge Management: *"What mechanisms are we going to put into place to ensure our new disaggregated organisation is glued together and doesn't develop knowledge silos where expertise and data etc. is not shared across the group either because of laziness or because of the feeling that knowledge equates to power?"*

The future: developing a knowledge management strategy within The Post Office

A model[4] developed out of this research is shown below. This identifies four Approaches to Knowledge in periods of Organisational Change.

It is felt that The Post Office would benefit from considering this model. Evidence emerging showed



that, during change situations, very few people talked about the right side of the model, i.e. 'Re-assessing', for new situations by those who are taking on new jobs/tasks, and 'Interchange', required as new knowledge is created when both jobs/tasks and people change. Attention seemed fixed on the left side, i.e. the 'Husbanding' of existing knowledge by those in 'flow-through' posts where neither the people nor the jobs/tasks change, and the 'Assimilation' by new people of existing knowledge associated with existing jobs/tasks. In future, looking at all aspects could lead to a richer understanding of the issues and help to improve the effectiveness of the change process.

Happily the need to develop an approach to Knowledge Management generally, and to encourage a knowledge-sharing culture, has now been widely recognised, and discussions are underway regarding the formation of Communities of Practice[4] and a Post Office-wide Knowledge Network. In the light of their experiences champions of Knowledge Management already exist among the interviewees and others, and there is a willingness to learn from other organisations. *"Knowledge isn't just created within an organisation – a lot of it should be transferred in."*

This research has already prompted many to take a closer look at the area of Knowledge Management and several meetings have taken place as a direct consequence. Findings from the external organisations that were included in this study will widen the debate: British Telecom, Nortel Networks, Quidnunc and LloydsTSB all had interesting stories to tell. They take Knowledge Management[5] seriously and believe it to be essential for their future. Case studies and key learning points will form part of the final research report.

Conclusions

Knowledge in the modern world is the scarce resource for organisations. Notions for managing knowledge are challenging for managers. Good approaches are emerging for using technology in Knowledge Management but the same cannot be said for the human factors. This work highlights dangers for The Post Office of continuing with current approaches and starts to illuminate a way forward. o

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A Framework for Practising Knowledge Management

Colin Armistead and Magda Meakins

The management of an intangible asset such as knowledge is beset with complex and theoretical concepts. This paper sets out a matrix that describes four approaches to Knowledge Management based on whether it is in an organisational or an individual context, and whether knowledge management is imposed or empowered by managerial approaches. It explores the validity of the framework through an analysis of ongoing management projects at seven organisations.

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Magda Meakin's career developed into educational

Introduction

Over the last 50 years there has been a growing recognition of the role of knowledge in effective organisations. The concept of the post industrial society embodies the rise of service-based economies dependent on knowledge, the place of knowledge and knowledge workers.[1] In many industrial sectors physical assets become less important. The intangibility associated with knowledge in services is portrayed as *living on thin air* or the *weightless economy*.[2] In the US, the weight of the economy's total output has not changed significantly in the last 100 years despite a twenty-fold increase in the GDP.[3] The technological innovation of the Internet and the worldwide web have expanded the debate of the nature of organisations and the way people work. Knowledge Management (KM) is the notion that seeks to represent how organisations create, use and protect knowledge.[4]

Strategists describe the inclusion of knowledge as a primary asset as the extension of the resource based view of the firm to one that is specifically knowledge based.[5] The value of knowledge results from the way in which it is used in the firm's processes in the production of products and services.[6] A firm can gain advantage from using the capabilities that arise from knowledge assets in ways which are difficult for others to imitate or replicate, as well as the intellectual property associated with the assets.[7] However the ability of firms to measure the value of intangible assets including knowledge still remains problematic despite serious efforts to produce generic frameworks.[8]

Despite this limitation, there are prescriptions for improving managerial practice. These rest on a mix of pragmatic advice about managing knowledge and intellectually challenging concepts concerning the nature of knowledge.[9] There are, perhaps, three over-arching aspects of knowledge that managers need to consider in the performance of KM programmes:

1. The identification and roles of explicit and tacit knowledge

Discussions of KM begin by addressing the question, "What is knowledge?" The most popular tenet here rests on the forms of knowledge that can be expressed for codification. The "robust" assumption is that tacit knowledge is difficult to extract from the human mind, thus limiting the manipulation and transfer of this type of knowledge.[10] Accordingly, explicit knowledge has become associated with information (and information systems), and tacit knowledge linked to models and behaviours that are considered to aid its expression and transfer.

2. Collective (social) aspects of knowledge

The notion that knowledge can reside at the collective level has received considerable attention, not least because it has introduced debates about informal networks or "communities of practice".[11] One of the key issues here is the role of social interaction in the access to this type of knowledge. The concept has also been important in emphasising processes in the using, integrating, transferring and sharing of knowledge. Communities (and collective knowledge) are rarely discrete so an organisation can be considered to represent overlapping communities within and, of course, between organisations.[12]

3. The context for knowledge

Mere acknowledgement of aspects of tacit knowledge and collective knowledge are not sufficient for effective KM programmes; the manager will need to

management and then management training following initial training as a musician and teacher. Since 1990, Magda has been a Senior Manager with the Post Office (now Consignia) working to support management initiatives such as Total Quality, Business Process Improvement, Business Excellence and, currently, a Balanced Scorecard approach. Between January 1999 and April 2000, Magda was on full-time secondment to The Business School, Bournemouth University as a Research Analyst working on Knowledge Management.

develop the appropriate context for the formation of new knowledge and the encouragement of collective (social) knowledge.[13] This has been recently discussed in the descriptive (rather than empirical) concept of "ba".[14]

Approaches to knowledge management

Faced with the challenges of both understanding the nature of organisational knowledge and the way it is managed, we might expect managers to seek pragmatic approaches. They will aim to improve organisational effectiveness through KM by these means, even though they might over simplify some complex concepts in the process.

We know that there are differences between organisations in their perspectives of knowledge. Venzin and co-workers[15] make two important distinctions. According to the cognitive perspective of knowledge, new knowledge is created when historical knowledge is redefined through new 'incoming' insights (data, information or knowledge). A connectionist perspective suggests knowledge can be created during the identification of novel relationships and networks. This may be in looser social or more rigid technical networks.

These discussions resonate with the managerial paradox of improving performance through tight or loose control systems aiming for organisational effectiveness.[16] We can interpret this notion further as one of *imposition* or *empowerment*. Imposition is associated with bureaucracy, structured systems and attempts to codify all aspects of knowledge. We might expect such perspectives to be more inclined to explicit rather than tacit knowledge. In contrast, empowerment will recognise the potential in the social and individual for knowledge creation and sharing, in which the tacit as much as the explicit aspect of knowledge is engaged.

We consider that managers are likely to be concerned with

	Imposed	Empowered
Organisational	Prescribed	Adaptive
Individual	Compliance	Self-determination

Figure 1. Framework for knowledge approaches

knowledge at an individual and organisation level and with particular approaches to managing knowledge. Consequently we propose a managerial framework which uses the constructs of imposed and empowered as one axis and the individual and the organisation as the other.

Prescribed suggests a formal approach to knowledge and KM at an organisational level. We might see technology deployed widely to capture, store and protect knowledge.

Compliance requires individuals to engage in knowledge activities through contract and regulation. Resources are allocated through formal performance management processes.

Adaptive engages with the informal within the social fabric of the organisation in the sense of communities of practice and the self-management of teams.

Self-determination encourages individuals to take responsibility for their contribution to learning in the knowledge creation and sharing processes.

Investigating Knowledge Management programmes in practice

A number of companies have actively engaged in knowledge activities with some success. We have investigated some of these companies. We were keen to understand how managers had interpreted some of the abstract issues in KM (such as "tacit" knowledge), which tools and methods had appeared effective, which stumbling blocks existed. We were also keen to scrutinise the findings to explore the application of our matrix.

We selected seven organisations in different industrial sectors, each with ongoing KM programmes, and gained permission to undertake interviews with managers concerned with these activities. The companies were: BP Amoco, BT, Jaguar, Management Consultancy, Nortel Networks, RM Consulting and Quidnunc. The companies, the position of the interviewees, and a résumé of the KM programmes are presented in Table 1.

The interviews lasted for approximately two hours and used a semi-structured framework that sought to understand the issues noted above. The interviews were taped and transcribed for a two-stage analysis. First, the interviews were coded to elicit themes from the data which gave answers to our questions on why managers engage with knowledge and which approaches they take. The themes were then interpreted to give a greater understanding of knowledge approaches in the quadrants in the matrix. Through this process a number of features were associated with each quadrant.

Why managers engage with knowledge?

We found managers were engaged with thinking about knowledge and KM for a variety of reasons. Not least KM was seen

Table 1. Participant organisations background and scope of knowledge projects

Organisation and Interviewee	Background	Context and scope of KM strategy
RM Consulting 4 Project Managers, including the "KM Core Process Leader"	Internal consultancy in a leading distribution company to oversee project management and "expert service provision". Structured as 20 practitioner groups based on skill sets, totalling about 1,000 staff.	KM has been formally implanted through a "knowledge process forum" that interacts with the consultancy practitioner groups. KM initiated after a cultural review that indicated poor expression and sharing of knowledge and expertise. Based on technological approaches (intranet) and cultural development.
British Telecom Managers (2) responsible for "Global KM" and "Domestic KM" respectively	Telecommunications service with UK and world-wide ventures managed by 125,000 staff. A process driven organisation that has sought opportunities to improve cost structures.	KM started as an efficient strategy to move documents on the company intranet. Later extended by some, but not all functions, as a cultural initiative to increase sharing and expertise across the organisation. The functions involved include "corporate clients", "human resources" and "research and development".
Jaguar Manager responsible for "Knowledge-Based Engineering"	Engineering design unit for luxury car manufacturer.	Currently experimenting with technologically based approaches to the capture and sharing of knowledge. This initiative is centred on the development and use of a "Knowledge Based Engineering" system that seeks to capture and use knowledge about generic product designs for the development of new designs.
Quidnunc "Principal" responsible for "internal KM activities"	Software company of 150 staff based in UK, USA, India.	Has adopted KM as a company-wide strategy to manage the culture for induction (learning), knowledge sharing and error avoidance. As a fast growing company, a strong induction strategy was regarded as essential. Nature of project work requires leading edge knowledge. KM strategy encompasses both technological tools (intranet) and cultural development.
Management Consultancy	A famous internal consultancy of 60,000 employees that provides auditing, corporate financing and advisory roles.	KM is based around a "Global Knowledge Council" of 25 people who direct and manage knowledge strategies in word-wide divisions. KM has developed from a "Global Best Practices" strategy, and emphasises the importance of sharing knowledge. Knowledge strategy achieved by technological tools as well as cultural approaches and the identification of "knowledge specialists".

Table 1. Continued

Organisation and Interviewee	Background	Context and scope of KM strategy
"Partner" in the Audit and Business Advisory Practice responsible for "UK knowledge agenda"		
Nortel Networks	A global technology company that provides networks for telecommunications and internet protocols. A dynamic organisation that undergoes significant re-organisation on a 8–10 month basis.	KM developed from expansion of the intranet, and has recently extended to an awareness and strong support of informal network structures. Knowledge strategy is supported by the "Priorities Process" which supports informal discourse, and "Talent Management" which increases awareness of company expertise.
Vice President of Global Professional Services Division		
BP Amoco	A global oil and gas extraction organisation.	A "pioneer" in KM programmes, BP Amoco first deployed video-conference facilities to increase the sharing of expertise between geographically disparate extraction projects. The knowledge initiative has progressed to a cultural attitude that encourages sharing and effective contingent knowledge, and argues that performance and knowledge activities are tightly linked.
Global Knowledge Management Officer		

as being related to other ideas about learning in organisations. However, here there is often some degree of confusion about the definition of KM:

> "...And whether knowledge management is part of a learning organisation or whether a learning organisation supports knowledge management as well (RM Consulting)."

This organisation had explored approaches to the "learning organisation",[17] which regards learning as a systems-level phenomenon that is embedded in the organisation, but could not make a clear distinction between this and the broader context of KM. Other research suggests that because KM and notions of organisational learning have separate histories[18] they have rarely been integrated in organisations: this may be the case for RM Consulting. However there are obvious dangers if managers and employees lack a shared understanding of the relative positions of interrelated concepts and approaches.

All of the managers expressed the belief that knowledge activities were vital to their success. In some cases, represented by the Management Consultancy, Nortel Networks and Quidnuc, managers expressed something of a visionary belief that knowledge could transform the organisation. For example, in the Management Consultancy:

> "An implicit vision, that we had this knowledge, that if you could put it in one place, it would just be enormously powerful."

This belief in the potency of knowledge was perhaps strongest in this group who perceived themselves to be knowledge "intensive", and fully recognised knowledge as an asset:

> "By definition, the knowledge within our organisation is the only thing we have. It is the very DNA of a professional services organisation (Management Consultancy)."

Organisations such as large professional service providers clearly need to capture, organise and share knowledge to perform. They also need to generate new forms of knowledge if they are to survive in the longer term. In these organisations approaches to knowledge were very closely integrated into their strategies, and their ability to manage knowledge was regarded as a core capability.

> "We believe it's all about (the) integration of people, process, technology, but strategy and structure as well (RM Consulting)."

All the managers perceived that improved organisation of knowledge would lead to improved organisational effectiveness. They assumed that this would be a consequence of increased knowledge sharing and, accordingly, the managers perceived this to be an important role for KM. Some respondents, including the Management Consultancy, BT and BP Amoco, perceived benefits at an operational level through improvement in the efficiency of work and cutting costs. This is evident in the origins of KM activities in British Telecom, an organisation that has large volumes of information for sharing:

> "Knowledge Management as an idea started off as a good way of getting documents across the country."

Quidnunc emphasised that KM was regarded as a means to cope with the rapid growth of the company. For example, this necessitated the employment of graduates who lacked practical experience and needed knowledge and expertise from senior people to contribute to the organisation:

> "We have a lot of new people (graduates)...and we've obviously got to get the knowledge trickling down to them as quickly as possible."

This was an important aspect of KM in Quidnunc, in addition to the application of KM activities to reduce errors in work processes and thus improve quality directly:

> "It's okay to make a mistake once, but you shouldn't make it twice...to stop that happening you need to pass on lessons learnt, not you but the whole organisation."

Perhaps not surprisingly we found that in organisations where managers perceived knowledge to be at the core of their business, there was a tendency for KM to be perceived as a way to integrate the business processes. In other organisations the adoption and approaches to knowledge and KM appeared to be more discrete, being held within one function or process. We perhaps can characterise organisations into two broad groups. Those including the Management Consultancy who have a visionary approach to knowledge and for whom KM is at the heart of their strategy, and those such as Jaguar for whom KM is seen as a route to operational performance improvement.

A question of approaches to knowledge

While there were similarities and differences in the reasons for addressing issues of knowledge and KM in the organisations, our interest was also in understanding what attitudes the managers were exhibiting to the way KM should be approached. Here we have used the theoretical matrix shown in Figure 1 which presents four quadrants on the dimensions of the individual and the organisation and the tendency to impose or empower approaches to knowledge. Would we find that some organisations showed a greater tendency in one quadrant or another, or might they be present in more than one depending on particular circumstances? We identified features that we interpreted as fitting within each of the matrix quadrants from the themes in the interview and supporting data. Each of the four quadrants of the matrix of knowledge approaches—prescribed, compliance, adaptive and self-determined—is discussed in turn.

Prescribed

In this quadrant we might expect to see evidence of knowledge approaches being imposed at the organisational level, possibly represented in the way groups and teams operate in business processes. We would expect formal structures and bureaucratic systems for attempting to capture, store and distribute knowledge. Without the terminology of KM might perceive little difference from information systems with a heavy reliance on the capability of technology. We might expect to find strong attempts to measure the value of knowledge through formal measurement systems. We identified the following features that are evident in the prescribed quadrant:

• Formal structure and procedures

RM Consulting recognised that the divisional organisation of the Post Office had constructed some *excellent barriers to stop people knowledge-sharing* and accordingly put in place some of the prescribed approaches to impose knowledge activities, clearly identifying responsibilities:

> "You have to have reserve powers, you have to have certain rules and responsibilities to make sure things happen. I don't think there's any such thing as a totally empowered organisation. (RM Consulting)."

Talk of reserved powers indicates a rule-based attitude to the nature of management, which has been adopted in the context of KM in the prescribed approach.

• Knowledge as information

Knowledge tended to be discussed by managers whose KM activities had a heavy technical involvement (Jaguar), and to a lesser extent in other imposed organisations such as BT and RM Consulting. However, managers in these companies did not readily discount the tacit and social aspects of knowledge that are excluded from classification as information. Rather they were more comfortable on occasions to describe knowledge and information in the same terms and applications. For example, the manager in RM Consulting was ready to handle knowledge in a manner akin to information:

> "Acquire it, shape it, enhance it deploy it, preserve it."

• Knowledge identified by mapping

Some of the firms mapped the sources of knowledge in the organisation. As indicated above, the managers did not ignore the complexity of knowledge, but they assumed that explicit knowledge could be represented in a map, and the sources of tacit knowledge (i.e. persons) also specified this way:

> "We are trying to do rudimentary knowledge mapping... but I don't think it is as structured or rigorous (as it could be). (BT)."

And this was partly undertaken through the analysis of business processes:

> "To map out business processes on the wall and then to review that through a knowledge management lens."

This suggests organisations are attempting to adopt business process management techniques for the purposes of knowledge management.

• Technology has a strong role in KM (capture/reuse of knowledge and information)

Technology featured significantly in the prescribed knowledge programmes, and was often represented by intranets and associated technologies. They were central to the early development of knowledge activities in BT:

> "We have set up what we call 'knowledge management infrastructure' for controlling the way in which information started to grow on the intranets."

The design engineers in Jaguar were especially confident about the role of technology in KM activities:

> "Getting experts to formalise their knowledge in some way...to put a maintenance system around that knowledge."

Technology is thus central to KM in the prescribed quadrant. Also the language used of "controlling", "formalise", and of "maintenance" reinforce attitudes and behaviours of imposition.

- Recognition/Measurement of Intellectual Capital

RM Consulting considers knowledge as the primary asset of the organisation that needs formal recognition and "proof" of value:

> "We are trying to start an intellectual capital project...it's very important to us because we need to prove where the added value is."

In addition to identifying intellectual capital, RM Consulting attempts to use balanced scorecards for measurement as well:

> "We linked the knowledge programme specifically to the key performance indicators to try to build a linkage into the process performance of the organisation."

Similar approaches were used by BP Amoco and BT. The strong desire to measure knowledge in this quadrant corresponds with a structured and ordered approach to KM.

- KM driving a sharing culture for knowledge

Recognition that knowledge is intertwined with human (and social) aspects of the organisation led the managers to emphasise the importance of cultural change programmes. The theme most managers repeated was that knowledge needed to be shared for wider application and, perhaps, assist towards knowledge creation in the organisation. This could be achieved through KM activities developing a sharing culture, and was frequently associated with formal training programmes as in BP Amoco:

> "What you have to do is try and develop some things and promote some behaviour change through doing some activities."

To summarise, the managers contributing to features in the prescribed quadrant seem more at ease using structure and procedures to address the way knowledge is captured and shared between the individuals in the social context of the organisation and its business processes. The language they employ of formalising and controlling demonstrates their trust in more mechanistic systems. They evoke rules to try to ensure that the increasing power of technology delivers their goals for KM. However their descriptions of KM, and the way knowledge is handled, can be difficult to distinguish from those which might be associated with information systems. We see the strengths of the prescribed quadrant as being:

- Formal processes and systems ensure knowledge is captured and accessible
- Explores the potential of technology in KM.

Compliance

In this quadrant for imposed knowledge approaches at the individual level, we might expect to find evidence of people being subjected to formal rules and "rituals" for knowledge capture and sharing, and being linked to formal performance measurement systems. The way individuals acquire knowledge is more likely to be associated with formal approaches to training. There are four main features in the organisations that support the compliance quadrant:

- Knowledge sharing as (part of) a formal work contract

Knowledge sharing is considered as a critical knowledge process and organisations in this quadrant deploy formal approaches to encourage. For example, individuals are often required to log their expertise in databases.

> "We ve got a knowledge directory which is our yellow pages (RM Consulting)."

In the Management Consultancy, failure to comply is closely tied with the "performance contract" for an individual consultant:

> "Now we will evaluate you and praise you and reward you and acknowledge you and pat you on the head by how much you share your knowledge."

Individuals may feel that having to share because it is linked to evaluation may conflict with any ethos of a sharing culture.

This formal sharing of knowledge in many cases is associated with the notion of ownership of individual knowledge by the organisation:

> "We put in place an MBA programme where people have to write a formal document and sign an agreement to say, 'Okay, anything you do as part of the MBA we have ownership of it as well.' (RM Consulting)."

Failure to comply may lead to loss of access to knowledge, in this case though being denied access to education.

- Knowledge sharing as formal ritual

Knowledge sharing is considered as a critical knowledge process in the KM activities of this quadrant, and the organisations deploy formal approaches to encourage its activity.

> "We also have lots of conferences where people meet...the real purpose is a 'sharefair' or 'knowledge market' where people get together...to see what people are doing in different parts of the organisation and the world (Nortel Networks)."

The formality comes through events such as meetings, conferences and briefings.

- Formal access to knowledge

The organisations contributing to the compliance quadrant are associated with formal structure (hierarchy), which suggests that access to some knowledge might be restricted. Knowledge (and information) that is captured and mapped in KM technologies is likely to be characterised and processed for reuse. Access/addition to this knowledge might then be restricted. We inferred that this was the attitude among those organisations contributing to the compliance quadrant.

- Programmed learning

Knowledge skills in the prescribed quadrant can be associated with programmed learning often seen in classroom training. For example, in BP Amoco:

> "We did a lot of programmatic coaching—teaching various skills of how to listen, how to reflect, how to give constructive feedback."

In this approach there is an intention to change attitudes with attempts to encourage individuals to be more reflective in their learning.

In summary it is not surprising that having found evidence for organisational imposed approaches, we should also see how this reflected in the way individuals are treated. We see the strengths of the compliance quadrant as being:

- Individuals understand what is expected
- Reward can be tied to individual performance contracts.

Adaptive

In this quadrant, where empowered approaches to knowledge are employed at the organisational level, we would expect to find evidence of the recognition of informal networks and the social context of knowledge. We would expect that the limited role of technology in KM is recognised, especially in interacting with aspects of social and tacit knowledge. There would also be an emphasis on the cultural environment for knowledge activities.

Knowledge strategies associated with the adaptive organisation were infrequently observed in RM Consulting or BT, but clearly apparent in Quidnunc and Nortel Networks which were in a dynamic business environment at the time. We found five features which align with the adaptive quadrant:

• Informal Networks (& Communities of Practice)

The managers were fully aware of the significance of knowledge in informal social networks, for example in Nortel Networks:

> "Internally you can't live without your own network—you'd sink without one."

This was especially a problem for new employees, who lacked both internal and external networks. For example:

> "The problem we have is recruiting, particularly senior people who don't have a network, and it's very hard for them."

These and similar issues are often discussed in concepts of communities of practice, which are considered a powerful form of informal social knowledge that create and use contingent knowledge. BP Amoco was one of the few organisations in the study to use the term "communities of practice".

• Technology has a limited role in KM

The strong awareness of social aspects of knowledge in adaptive organisations is also indicated in their attitude to KM technologies. The organisations strictly consider that technology can capture data and information only. The organisations feel that it has a limited function in the manipulation of knowledge, and its role is restricted to the facilitation of that knowledge.

• Knowledge identified conceptually

In contrast to the imposed organisations, the adaptive group does not rely solely on knowledge mapping. In Quidnunc for example, managers will consider aspects of knowledge over and above "explicit" and "tacit" notions. They include more holistic concepts that might emphasise subjective, as well as objective, aspects of knowledge—using representations ("pictures") perhaps based on mental associations and metaphors; for instance:

> "We have a concept called the Design Spirit which is when you are shaping a solution for a client you have a picture in your head about what this thing is going to be like in terms of its design".

This indicates greater care in the consideration of definitions and representations of knowledge in the adaptive organisations.

• Measurement encourages awareness/use of knowledge

The use of any "measurement" is to encourage the awareness, significance and value of knowledge so that it is employed in the most effective manner in business processes. The Management Consultancy recognises knowledge as an asset but focuses on the performance of knowledge processes:

> "Measuring intellectual capital...we don't. We're more interested in making sure that the knowledge processes and knowledge people respond to the knowledge needs of the customer."

In Quidnunc, the company used some scorecard indicators in managers' appraisals:

> "In performance appraisals, people get set objectives for the next six months...and as you get more senior those objectives are related to actual knowledge sharing."

The sense is that even when managers recognise the complexity of notions of knowledge they still find it useful to link the use of knowledge to key performance measures.

- Collapsing barriers to knowledge sharing

Whereas programmes to encourage or demand sharing are a feature of the imposed organisations, they are less evident in the adaptive quadrant. The flat structure of the organisations, and the emphasis on the collaborative working mean that knowledge is freely shared:

> "We believe very strongly that the key to getting that right is the culture more than anything else (Quidnunc)."

In summary there is strong evidence that in Quidnunc, Nortel Networks and the Management Consultancy managers are engaging in activities that fit within the adaptive framework. In many respects they are acknowledging the complexity of knowl edge and not diminishing the problems they face when trying to improve the way knowledge processes operate. The emphasis on the social level is reflected in the recognition of the importance of informal networks. The strengths of the adaptive quadrant are:

- Accepts and encourages informal networks
- High levels of informal knowledge sharing.

Self-determined

This quadrant, for empowered knowledge approaches at the individual level, is associated with specialist management roles (such as management consultants and specialist teams). The approaches for individuals are supported at the organisational level. We might anticipate that the features in this quadrant relate to greater autonomy in the creation and use of knowledge with value placed on informal sharing of knowledge in an atmosphere of trust. It is the hardest quadrant to explore as we found less direct evidence of activity in the organisations in our study. However we have identified four features aligning with this quadrant.

- Knowledge sharing motivated by trust

Sharing of knowledge is completely natural, and individuals have strong autonomy to devise solutions and knowledge for novel problems.

> "I'm actually more interested in knowing that somebody has acquired a reputation for being an implicit knowledge sharer (Management Consultancy)."

The implication is that individuals are trusted to deploy solutions in their work and knowledge sharing is contingent on trust between individuals. The individuals have a strong psychological contract, partly based on personal knowledge that they develop and use.

- Complexity of knowledge accommodated

Individuals in organisations seen in this quadrant are also able to discuss knowledge in terms that are more advanced than in the organisations of other quadrants. In the Management Consultancy.

> "My definition of knowledge is not necessarily everybody else's."

This is similar to discussion of knowledge in Quidnunc referred to in the adaptive quadrant.

- Adaptive learning

In contrast to the programmed learning in the compliance quadrant we now find an emphasis on learning that is based on action and reflection so that it is effectively applied and adapted to new situations.

> "And we learned this from the Army...when you're doing what they call 'movement to contact'...the wrong (approach) would be 'I did what the book said'...the right (approach) would be doing the right thing out there on the field based on what you know (BP Amoco)."

By implication there is the need for individuals who can learn quickly from experience and make the most of their knowledge in new circumstances.

- Informal access to knowledge

Again in contrast to the compliance quadrant, the sense from the organisations associated with the self-determination quadrant such as Management Consultancy and Quidnunc is that individuals have more informal access to knowledge. The study did not uncover direct evidence of this activity, although it might be anticipated that empowered organisations that recognise informal networks will demonstrate strong informal access to knowledge.

It is perhaps not surprising that we found less evidence of activity in this quadrant as it requires the greatest degree of trust on the part of managers. Where we have found empowered activity at the level of the organisation, we infer there would be activity at an individual level, although this has not always been the case. The strengths of the self-determined quadrant could be seen as:

- High levels of knowledge sharing and problem solving (knowledge creation)
- Advanced understanding of knowledge.

A summary of the levels of activity for each organisation in the four quadrants is shown in Table 2. This results in the following collective levels of activity for all the organisations:

- Prescribed quadrant: 26 instances
- Compliance quadrant: 14 instances
- Adaptive quadrant: 13 instances
- Self-determination quadrant: 3 instances.

The reasons why there is greater activity associated with the imposed dimension over the empowered and the organisational dimension over the individual we discuss in the context of possible trade offs.

The recognition of "trade-off" in the matrix

The questions we raise about our "knowledge approaches" matrix are: can organisations simultaneously address all four quadrants with equal capability, on the assumption that there are positive aspects associated with each quadrant? Or are there inherent aspects of some quadrants that make trade-offs inevitable and lead to compromises being made? The concept of trade-offs in performance terms is that it might not be possible to achieve more than one goal simultaneously, so managerial choices are necessary.[19] It is recognised that trade-offs may be conscious choices perhaps affected by access to resources or

Table 2. Level of activity in the knowledge approaches

	Prescribed	Compliance	Adaptive	Self-determination
Number of features	6	4	5	4
RM Consulting	6	3	1	0
British Telecom	6	2	1	0
Jaguar	3	0	1	0
Quidnunc	2	3	4	0
Management Consultancy	3	3	2	2
BP Amoco	5	2	2	1
Nortel Networks	1	1	2	0

unconscious because the benefits of each option is not fully appreciated. Also it is possible that what had been seen to be "immutable" trade-offs in practice can be eliminated or greatly reduced. For example, cost and quality were traditionally regarded as trade-offs until Japanese manufacturers demonstrated it was possible to produce reliable products at low cost.

The findings in Table 2 clearly show that all of the organisations in our study demonstrate they are engaged in more than one of our categories of knowledge approaches. Some indication of the degree of engagement is given by the number of features recorded for each organisation in each quadrant. This is done without making any comment on any relative weighing of importance of the features.

It is clear all of the organisations in the study are adopting more than one approach and that there is a slight indication that the majority is engaging the prescribed and compliance approaches to a greater degree than the other two. Could this be because there are trade-offs being made either explicitly or implicitly by the managers? We now examine some possible trade-offs to look for evidence of this happening.

- Imposed versus an empowered approach

Imposed approaches to KM suggest formalised procedures for knowledge processes. In contrast the term empowerment within the approach suggests involvement, elements of self-management and decision making.[20] However there are risks that empowerment creates expectations in individuals which cannot be realised. So imposed approaches to knowledge may stifle autonomy for individual creativity whereas empowerment might encourage creativity. Other evidence that the ability to maintain simultaneous managerial control while allowing degrees of empowerment suggest that for many organisations a trade-off is inevitable as the approaches to knowledge in the two domains require different attitudes to the way people work and share knowledge.

We found that three of our organisations—RM Consulting, BT and Jaguar—were not addressing the adaptive or self-determination quadrant while Nortel Networks, Quidnunc and the Management Consultancy were addressing the empowered quadrants. In all these cases some trade off is perhaps suggested. One view could be that organisations which have a strong bureaucratic tradition are perhaps more likely to be associated with the imposed quadrants, corresponding to the "cognitivist" perspective of organisational knowledge.[21] RM Consulting and BT share a public sector history and might be more likely to demonstrate such characteristics. We are suggesting that the history of an organisation influences the quadrant(s) it is most likely to be associated with. RM Consulting indicated a belief that a totally empowered organisation is not possible which suggests an acceptance of the choice being made between the rule based and empowered approaches. In contrast, BT expressed the view that the KM initiative might change attitudes and behaviours in the organisation in the way knowledge was shared. This suggests that if successful, a KM programme may help to reduce the extent of the trade-off.

- A focus on the individual versus the organisation

If managers focus on the knowledge held by individuals they will encourage opportunities for individual learning but potentially at the expense of the needs of the collective knowledge. A concentration mainly on the latter could restrict the creative learning of individuals. Our findings suggest that managers do not perceive a trade-off between the individual and the organisational approaches to knowledge to the extent that they also correspond to the imposed dimension. This could be because they recognise that knowledge sharing and creation address both the individual and the organisational dimensions. We might infer this is because they do not see any conflict of interest between the two.

- Focus on explicit/codifiable versus tacit/uncodifiable knowledge

If managers become overly obsessed with the collection and management of codifiable, explicit knowledge they clearly exclude the richness contained in the other domain. However ignoring the explicit knowledge to manage the tacit could run the risk of loss of control through the lack of ordered management of knowledge needed in key business processes. Here we are at the heart of the KM debate because a concentration on the codifiable in any knowledge approach may simply, at best, lead to improved information systems, whereas high levels of integration of explicit and codified knowledge can also lead to a richness itself for knowledge creation. Managers in the study recognised that the difficulties in "managing" the tacit dimension might tend to start with the explicit. This was not because they saw an inherent trade-off between the two, but rather the difficulty of executing of the tacit knowledge processes.

- Technological versus people knowledge

The technology versus people argument is about the means of managing knowledge processes. The question inherent in the trade-off is the extent to which technology can be used alone or in combination with people at an individual or organisational level. Managers do not believe technology could wholly replace people, or that there is no place for technology in approaches to knowledge. Trade-offs in performance of knowledge processes are thus most likely to occur because of uncertainly by managers about how to get the best from the people/technology mix. This could arise because the expertise about technology lies mainly with information systems experts so that the users in the business processes are unable to get the best from what is installed. The discussion of the technology and human factors above demonstrates that managers in this study do not have a common approach to achieving a balance between these factors. Consequently we can infer that trade-offs are occurring.

We have shown there are distinct strengths for each of our knowledge approaches. Consequently we would expect organisations to be trying to engage with each in order to maximise the effectiveness of their approaches to KM if they were aware of the potential of the different approaches. This is not the case as we see in Table 2. We suggest trade-offs of the type we have identified are occurring to varying degrees either by intent or by default. If this is the case they restrict the potential to be gained from a holistic approach to knowledge management that engages with of all the approaches.

Reliance on technology or human factors?

Another consideration for managers is the role of technology and people. The majority of the managers in the study related human and technical aspects of the organisation to KM initiatives, for example, RM Consulting:

> "It's all about the integration of people, process, technology but strategy and structure as well."

There was, however, considerable variation in managers' perceptions about the role of technology, the emphasis of human factors and the appropriate balance between these factors.

Jaguar, associated with the "prescribed" quadrant, has high aspirations for the role of technology in KM. The vision of technology noted above is that it can capture codified knowledge and, eventually, uncodified knowledge as well. The managers in Jaguar recognised the limitations imposed by the "complexity" of knowledge, although they did not discuss aspects of tacit, and social knowledge, and certainly not personal knowledge. Perhaps not surprisingly, one of the human factors that concerned the managers in Jaguar was the ability of their engineers to interact with KM technologies:

> "The fundamental difficulty is that the level at which you communicate with the computer in order to impart knowledge to it is not English."

However, the majority of the companies considered that although the role of technology is influential, it is ultimately a facilitator of human knowledge in the organisation. The manager in BP Amoco was quite adamant about this, although the organisations knowledge activities reflected both "prescribed" and "compliant" strategies. In RM Consulting, the facilitating role of technology extended to human networks including communities of practice:

> "The intelligent agents compare the documents you've found and searches your own documents with what other people are doing...(from this) we start to create 'communities of interest'."

An informative contrast is that between the views in Jaguar and Quidnunc, the software company, which is positioned in the "adaptive" strategy box. In Quidnunc the managers recognise that tacit and social knowledge cannot be captured by technology, and the objective here is to ensure that managers can identify and register such knowledge. The concern in Quidnunc is less about the employees ability to interact with technology (as it is in Jaguar), but attainment of the social behaviour that encourages the sharing culture and creation of knowledge.

Notably, discussion of personal knowledge in the "self determined" quadrant is not associated with discussion of technology. Perhaps any systematic component of knowledge creation could be enabled by a technological component, for example, through database functions.[22]

A comparison with other models of knowledge activities

We can introduce some further discussion of imposed and empowered approaches to knowledge activities by briefly comparing our framework with other models that describe individual and organisational knowledge. Spender's typology of organisational knowledge[23] has studied the interplay between the individual and the social (or organisational, as we have selected) and tacit knowledge relative to the explicit. This produces four knowledge domains, of which the last two are particularly significant to the issue of intellectual capital:

- Conscious knowledge—individual explicit knowledge
- Objective knowledge—social explicit knowledge
- Automatic knowledge—individual tacit knowledge
- Collective knowledge—social tacit knowledge.

Automatic knowledge indicates that some tacit knowledge of the individual can represent personal knowledge that has become "frozen into habit", and might be represented by the application and practice of the skills of craftsmen. The knowledge of the "community of practice"—collective knowledge—reminds us of the sharing and creation of contingent knowledge that can develop through informal relationships. It has a personal identity and interpretation to the extent that it can be affiliated to the identity and behaviours of the community. Thus our framework emphasises aspects of empowered knowledge in the automatic (individual) and collective knowledge types presented by Spender. In contrast, imposed knowledge in our framework draws on the conscious and objective knowledge types with emphasis on explicit knowledge. However, Spender reminds us of the convenience in applying boundaries to knowledge types, and emphasises that his matrix could be interpreted as a mass of human collective knowledge that is heavily implicit, with "patches" or zones of explicit knowledge. This perspective of Spender's matrix should lead practising managers to realise the difficulty in applying measures of intellectual capital. Nevertheless, we can suggest that our framework should provide managers with a means to consider and approach Spender's typology. Thus prescribed approaches help to address objective knowledge, compliance approaches address conscious knowledge, adaptive approaches address collective knowledge and self-determination approaches address automatic knowledge.

To a certain extent it is additionally possible to suggest that our framework will support some of the activities in the model of knowledge creation provided by Nonaka.[24] The model considers that knowledge creation occurs especially during the conversion of tacit experience to explicit knowledge, and consequently emphasises approaches in the sharing and transfer of knowledge. Although many of the managers in the present study focus on this activity in their organisations, it is notable that few of them discuss actual knowledge creation. According to Nonaka's model, the externalisation of tacit knowledge would match the empowered domains of our framework, especially where there is an emphasis on informal communication. The example in Quidnunc, in which managers use metaphors to communicate the "design spirit" of products in development, is strongly indicative of the approaches supported by Nonaka in knowledge creation.

Key issues for knowledge programmes

The challenge in knowledge management programmes is for managers to understand the strengths of the different approaches to knowledge and the consequences of each for the performance of their business processes.

We suggest managers address five key areas:

1 Identify what knowledge within your organisation or key business processes is associated with each domain in the framework i.e. prescribed adaptive, compliance and self-determination.
2 Identify your use of technology as a knowledge management tool across the framework.
3 Question the appropriateness of your regimes for managing knowledge in each domain.
4 Explain the presence of any trade-offs between the quadrants and how these might be affecting organisational effectiveness.
5 Develop approaches for eliminating trade-offs or minimising their effect using the activities that we have identified.

Conclusion

Practising managers do not find it easy to develop common languages for organisational knowledge. However they recognise in the changed business environment that knowledge can be a source of organisational advantage and would like to be able to encourage knowledge creation and sharing. We have shown that among the organisations that have developed knowledge management projects, there are differences in objectives and approaches. Success of these projects for organisational effectiveness is difficult to judge because of the limitations of measurement regimes. Nevertheless we have been able to draw from each case evidence of activities which might contribute to better ways to address knowledge in organisations. The KM Approaches Framework should also help managers in their understanding of other KM models. The notion of trade-offs in approaches we believe is a powerful antidote to complacency.

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