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Research Report

**Knowledge Management and Its Impact
on the Management Accountant**

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Knowledge Management and Its Impact on the Management Accountant

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2. Introduction and Summary of Key Findings

2.1 Knowledge and knowledge management

Knowledge is a key organisational resource. Acquiring knowledge is a concern of organisations as most are significantly knowledge-dependent for their success.

There is a difference between data, information and knowledge. Data is defined as raw facts. Information is organised data that results from the processing of data for a purpose but without any interpretation (for example, its summarisation and reporting). Knowledge implies the application of a cognitive process to the information so that it becomes useful. Conclusions can be drawn from the information. Conclusions involve understanding.

Knowledge management has been described as a process of creating, capturing and using knowledge to enhance organisational performance at the organisational, rather than the individual, level of analysis.

Accountants in general (and management accountants in particular) are implicated in the management of their organisation's knowledge resource because the effective utilisation of that knowledge is reflected in ultimate business performance. However, accountants have tended to view knowledge mainly in terms of financial information and a range of non-financial performance measures, or in terms of reporting the 'intellectual capital' of an organisation.

Recently, accountants have become more interested in the idea of intellectual capital, which concentrates on valuing and reporting the stock of knowledge for external stakeholders, as well as management information. The reporting of intellectual capital recognises the value of an organisation's customer base, knowledge, people and processes, and largely explains the market-to-book ratio of listed companies.

Knowledge management is more concerned with the 'flows' of knowledge that take place as part of organisational processes than the 'stocks' of knowledge presented in financial reports. Knowledge management processes are a combination of acquiring, sharing, retaining and utilising knowledge.

- knowledge acquisition relates to obtaining knowledge that an organisation does not currently have;
- knowledge sharing refers to the availability of knowledge that is already held by the organisation;
- knowledge retention is concerned with not losing knowledge as people leave, or move around, the organisation; and
- knowledge utilisation is a concern with the value that can be added through the effective use of organisational knowledge.

People often see knowledge management processes purely in terms of information technology (IT), but it is just as much about people and organisational processes outside of computer systems. Many authors have referred to modern organisations as being 'learning organisations'. We suggest that an organisation can only achieve sustained competitive advantage (and perhaps only remain viable at all) as a result of effective organisational learning. This learning is not just a question of creating and/or acquiring more knowledge: it takes a critical approach to the knowledge already possessed. This approach must extend to knowledge not currently possessed, i.e. 'knowing what it is that we don't know'. Learning is a process of acquiring knowledge. Knowledge management is about ensuring that what is learned by individuals within organisations is shared and utilised and that processes exist to prevent knowledge from being lost to the organisation.

Knowledge management is connected with how individuals learn within the organisational context. Organisational learning is concerned with how people acquire knowledge, assimilate it with their existing knowledge and how they unlearn redundant knowledge. Knowledge management must enable organisational learning, not just by giving it direction, but also by permitting, encouraging and facilitating it. Conversely, it is only through organisational learning that knowledge management can be made into a day-to-day reality in organisations.

2.2 The research study

The objective of the research study was to provide an extra dimension from which organisational knowledge could be viewed as a business asset, and a key driver of competitive advantage, when utilised. The researchers believed that a description of knowledge management processes, and the identification of metrics that support knowledge management, would also inform the practice of management accounting.

The overall aim of the research was to discover techniques for exploiting the knowledge-base of organisations. There were three research aims. To discover:

- the processes that are currently used by organisations to acquire, share, retain and utilise knowledge;
- the processes that organisational members believe should be used to acquire, share, retain and utilise knowledge; and
- what measures were currently used, and those that participants believed should be used, in relation to the acquisition, sharing, retention and utilisation of knowledge.

There is evidence from research into knowledge-based systems that when people are interviewed individually, the responses they give do not match what they really do or think. This research aimed to understand knowledge management in the context of an organisation. It was crucial to study the understanding and beliefs of the group, not just the individuals within it. Data was therefore collected in a workshop format, which enabled a group understanding of knowledge management to be reached, rather than simply the aggregated understandings of individuals.

Ten full-day workshops were carried out, one in each of ten different organisations. Organisations with a genuine interest in, and concern for, knowledge management were sought. A variety of different sizes and types of organisation were included in the study. Between five and ten participants – all from the same organisation – attended each workshop. In total, there were 78 participants, who came from a variety of functional areas. Most of the participants were from 'management', ranging from board of directors' level to senior and mid-level managers. Each workshop included at least one accountant, but the majority of the participants in each came from all functional areas.

Of the ten organisations, six were for-profit, three were not-for-profit or non-profit-distributing and one was public sector. One of the not-for-profit organisations also received significant government funding. Three of the six for-profit organisations were listed plcs, two of which were divisions of FTSE 100 companies. Two organisations were privately-owned and one was a subsidiary of an overseas plc.

The organisations operated in the following sectors:

- retail (one);
- manufacturing (two);
- design/distribution (one);
- services (three);
- consumer protection (one);
- social housing (one); and
- law enforcement (one).

The technique used to structure the workshops is called 'JOURNEY Making'. This is a computer-based form of brainstorming that accommodates competing perspectives on an issue and facilitates a genuinely shared (that is, agreed) understanding as the workshop progresses. The researchers believed that considering knowledge management at the strategic level by using JOURNEY Making in this way would help clarify an organisation's thinking about the knowledge it has (or perhaps does not have, but needs), and how it can make the most of this intangible asset.

Participants worked in pairs. Each pair was given a laptop computer linked to a Local Area Network (LAN). The workshop was split into several sessions to address the different research questions. In each session, the research question was posed to the group members, who were asked to consider the question and type into their laptop computer any ideas, thoughts, responses or opinions they had to it. The shared ideas were captured in a 'group map' using specialist software.

The group map was then projected onto a large public screen to enable group members to read the shared ideas. With the help of the facilitator, participants were then able to group ideas together into clusters and to insert links (in the form of arrows) between ideas on the map. Links between ideas indicated that the ideas were in some way related. Linking encouraged group dialogue about these relationships. Linking also helped to structure the ideas into clusters. Clusters indicated sets of ideas that were agreed to by the participants and these were given titles (also agreed to by the participants).

A map was produced for each session in each workshop, resulting in between four and eight maps per organisation, or 60 maps in total. The full research report identifies both the aggregate findings and illustrations from particular organisations.

2.3 The importance of knowledge

One of the central issues that arose from the workshops was that of information versus knowledge. Participants in the workshops largely saw information as a commodity. Information did not appear to be valued at a corporate level, in contrast to the sense in which knowledge forms an integral part of an organisation's intellectual capital.

In all organisations, there was general agreement that there was a great deal of both information and knowledge, but that it was not well managed. This was largely because of the enormous variety of information that was available, held in widely different systems, and because knowledge resided in people and processes. In most organisations, IT was seen as a key element in any solution. However, the organisations appeared to appreciate that, even if the technology was a necessary element of the solution, it was by no means solely sufficient.

Another identified problem was that information was not effectively shared across the organisation – often emails were sent indiscriminately, and meetings were rendered ineffective by inviting the wrong people or being run ineffectively.

Many participants contrasted the quantity of information with its quality, especially the need for improved quality of information from the users' perspective in order to make interpretation possible. Most organisations reflected that there was lots of data (for example, market data) but that the data was only minimally organised into information. Typically, the information was only properly analysed – and knowledge created – when there was a specific need, rather than routinely.

One of the conclusions of the research was that technologies, such as database systems and data warehouses, may have led to a lack of focus in knowledge management, as most systems do not help to distinguish raw data from usable/relevant knowledge.

2.4 Formal and informal knowledge

The lack of a sufficient routine, or formal processes, in some organisations placed greater reliance on individuals, leading to a dependence on informal systems. In some workshops, the informal communications were exemplified through a single person. These organisations recognised the importance of informal processes, but held a desire to move to more formal, reliable and consistent ones. A difficulty participants recognised was that of being able to retain the richness of the informal systems, while adding the robustness and 'shareability' of more formal systems. However, in those organisations in which technology and formal methods dominated, there was a call for more informal ones, suggesting an over-riding need for a balance between formal and informal methods.

2.5 People and skills

In every organisation, people were seen as a key element of knowledge management. Particular emphasis in all workshops was given to staff training and retention, with an explicit recognition that knowledge was routinely lost as a result of staff leaving the organisation and that existing training was inadequate in ensuring that knowledge was shared among newer staff.

The lack of consideration, at a senior management level, for the processes necessary for knowledge management was noted in all organisations, particularly as they were all knowledge-dependent for their success. The main emphasis in organisations appeared to be on the processes to acquire, and share, knowledge and information. There was less evidence of retaining and utilising this knowledge.

Knowledge management was perceived as being everyone's problem, not just the problem of top management, or of designated knowledge officers.

2.6 Improving knowledge management processes

One of the principal concerns emerging from all of the workshops related to the identified processes that should be used to acquire, share, retain and utilise knowledge more effectively. Three patterns were identified: technology, people and process.

Technological solutions were concerned largely with making better use of databases and Intranet access. People solutions were concerned with staff retention and motivation, training and networking. Process solutions were concerned partly with paper-based specifications and process instructions, but also with the mix between formal and informal methods of sharing knowledge.

There appeared to be little relationship between the type of organisation and its preferred knowledge management 'solution', which seemed to be more a consequence of the unique history and circumstances of each organisation. For external information, there was a particular need for summarising, abstracting and disseminating – an essentially people-based process. Internal processes were either technology-based, such as using databases and workplace Intranets more effectively, or process-based, involving better manual documentation of procedures, or finding the right balance between formal and informal internal communications.

As with most (if not all) change initiatives, knowledge management will not succeed in an organisation unless it is backed by people with enough power and access to sufficient resources to make it work. A key point in the workshops was the general appreciation of the need for a 'knowledge champion' in each organisation. However, there was little evidence in nine of the ten organisations of a senior manager having taken ownership of knowledge management. This was despite the fact that the value of knowledge management had been recognised in each participating organisation, sanctioning the involvement of around ten people for one day.

2.7 Knowledge management metrics and the role of the management accountant

Significantly, the great majority of metrics suggested by participants were measures of organisational performance as a whole, although these included financial measures. The metrics identified were, on the whole, indirect measures of the effectiveness of knowledge management processes rather than direct measures of knowledge management per se, in the intellectual capital sense.

While accounting/finance was an element of the knowledge identified in each workshop, it was not usually a central feature. However, most workshops included this either as a separate cluster of knowledge, or as part of a corporate knowledge cluster, most commonly linked with corporate strategy. In most workshops, it was clearly taken for granted that achieving financial results (for private sector organisations) or operating within tight budgets (for public and not-for-profit organisations) was at the heart of organisational functioning, but that knowledge management went much wider, including strategic, market, operational, legislative, and innovative aspects.

It did not seem that accountants, or finance directors, saw knowledge management as particularly important. They did not see their role as broader than a financial one, generally failing to appreciate – or at least to demonstrate – the links between knowledge management and financial performance.

The finance director is seen to be the financial knowledge champion: the champion of each of the processes of acquiring, sharing, retaining and utilising financial knowledge. By contrast, human resource directors manage policies and procedures, not the people themselves, the knowledge in their heads or how it is used. IT directors manage the system and the data, but not the knowledge contained within the system and data, or how it is used. The absence of a non-financial knowledge champion may give undue power to finance directors, as financial knowledge is the most visible organisational knowledge, being reported broadly and routinely. Consequently, broader issues of organisational knowledge may be devalued because of the lack of a champion.

There is a potential role for accountants to become more involved in the broader issues of knowledge management as the driver of business success. This is consistent with recent research into the changing role of management accountants, and the need for them to take a broader business-wide perspective and adopt a more strategic focus.

2.8 Implications for organisations

In what is increasingly referred to as a 'knowledge-based economy', it is evident that insufficient management attention is given to this valuable corporate asset, and that organisational performance can be improved by sharing, retaining and utilising the knowledge already held by organisations more effectively.

Technology might simply have increased the volume and management of unfocused data and unanalysed information without establishing the people skills and organisational processes to convert them into useful knowledge.

Knowledge management strategy – especially where a technology-based solution is preferred – can imply a more centralised organisation. It could be that there is a tension between the decentralised organisation and centralised knowledge management 'systems' that has, given the explosion of information available, exacerbated the knowledge management problem.

Effective knowledge management is largely about the ability to harness knowledge – to focus information, to summarise, analyse and disseminate it – so that it can be used in decision-making. If organisations are to move from being information-based to intelligence-led, there is a consequent need to move from 'push' to 'pull' knowledge processes. This requires a supportive culture, a champion and a strategy/framework for knowledge management.

The emphasis given in organisations to financial knowledge may devalue the importance of a broader approach to knowledge management, unless a more explicit link can be found between knowledge management processes and improved organisational performance.

Most significantly for accountants, the breadth of knowledge required by organisations to succeed does not appear to be effectively managed and the links between knowledge and financial performance do not appear to be understood. In the range of metrics used by organisations, there was an underlying assumption that better management of these processes would lead to performance improvement.

However, management accountants have become increasingly marginalised in the knowledge economy. This research led to a tentative proposal for management accountants to re-focus their view of strategic management accounting to encompass the management of the knowledge resource that is already held within organisations, but which is not routinely, or effectively, utilised.

2.9 References

The following academic/practitioner articles have been published as a result of this research study.

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J S Edwards, D Shaw and P M Collier, '*Knowledge management in SMEs: it's different, but not so different*', Making Electronic Commerce Work for Small and Medium Enterprises (e4sme series), 2003.

J S Edwards, P M Collier and D Shaw, '*Making a Journey in Knowledge Management*', Executive Reference Books, Knowledge Management, Institute of Chartered Financial Analysts of India Books, 2004.

3. Intellectual Capital, Organisational Learning and Knowledge Management

3.1 Introduction

The literature on knowledge within organisations is useful in informing our study. Importantly, the literature has – unlike much academic literature – penetrated management practice, largely as a consequence of the publication, during the 1990s, of books on the subject that have aroused the interest of a practitioner audience. This literature began with a focus on transferring individual learning into organisational learning and became concerned with the processes used by organisations to manage that learning. Simultaneously, accounting literature has become interested in the value of hidden knowledge resources to explain the difference between the market value of a business and that of its underlying tangible assets – in other words, the notion of intellectual capital.

Learning is a process of acquiring knowledge. Knowledge management is about ensuring that what is learned by individuals within organisations is shared and utilised, and that processes exist to prevent knowledge from being lost to that organisation. Both are concerned with the flow of knowledge, while intellectual capital is more concerned with reporting this stock of knowledge.

3.2 Intellectual capital

Over the last few years, there has been some criticism of financial statements for not reflecting the knowledge assets of businesses. Concerns about market-to-book ratios, and the discrepancy between the market values of knowledge-based organisations, such as Microsoft, and the book value of their assets, suggest the need to value the intellectual capital of organisations. This is, to some extent, a development of the concern for human resource accounting a decade earlier.

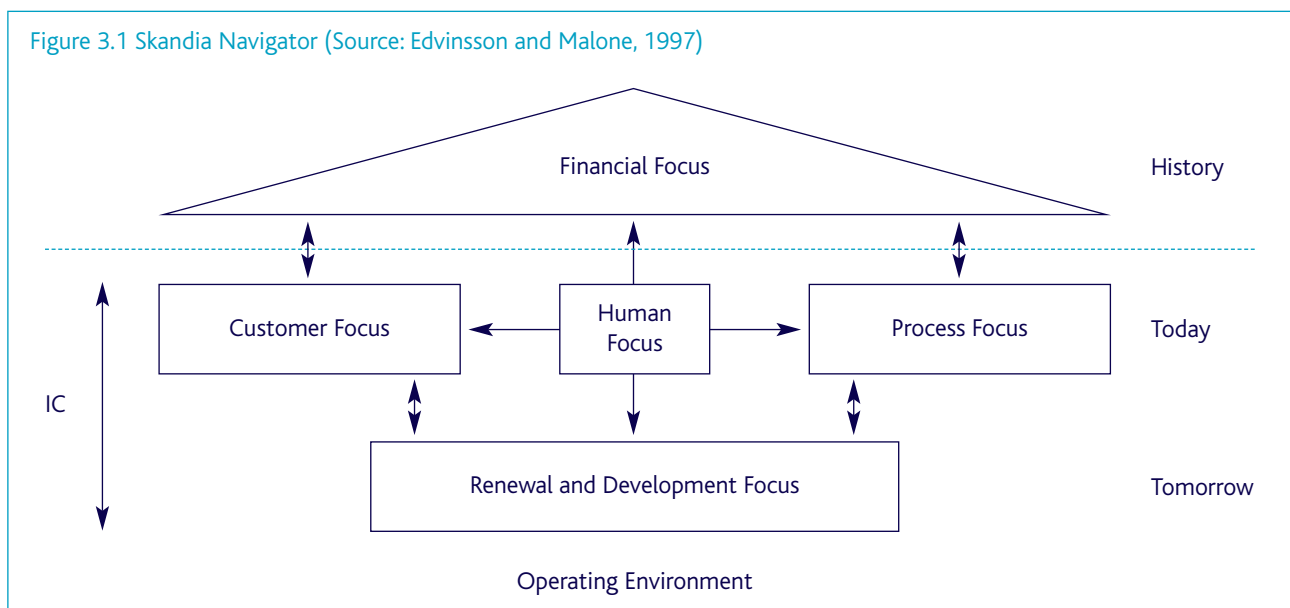
In 1999, for example, Rennie argued that the more intangibles a company invested in, the more incomplete was its balance sheet, and the more distorted were its reported profits. He argued against the need to make capitalisation/expense decisions prematurely for financial reporting purposes and suggested a new financial statement for intellectual capital. However, accounting rules surrounding the treatment of intangible assets in balance sheets prevented any serious consideration of the measurement and reporting of intellectual capital.

There is little in accounting literature in relation to knowledge management. A recent exception is Mouritsen (1998) who contrasted economic value-added with intellectual capital in approaches to wealth creation. Mouritsen argued that while the former is concerned with the firm's relations with markets and competitors, the latter is concerned with internal processes of the firm.

The non-accounting interest in intellectual capital was aroused by the publication of a number of books on the subject, including Edvinsson and Malone (1997), Stewart (1997), and Sveiby (1997). Stewart (1997) defined intellectual capital as 'formalised, captured and leveraged knowledge'. Sveiby (1997) differentiated three dimensions of intellectual capital:

- human – developing and leveraging individual knowledge and skills;
- organisational – internal structures, systems and procedures; and
- customer – loyalty, brand, image, etc.

Intellectual capital models such as the Skandia Navigator (see Figure 3.1) were a development of the balanced scorecard, linking non-financial measures to financial ones.



Different measures of intellectual capital have been discussed by numerous authors but these normative approaches can be contrasted with the argument by Bontis (2001), that the metrics suggested in various models were too firm-specific and that no one set of indicators could encompass the variety of international and industry settings.

A weakness of the literature on intellectual capital is that it has been dominated by a concern with the measurement of stocks of knowledge (the balance sheet representation) rather than with the flows (the processes by which knowledge is managed and accumulated within organisations¹).

A broader perspective on knowledge processes, i.e., the flow of knowledge, has been evident in knowledge management literature. There were two main drivers for this. The original driver was to look at these processes in terms of organisational learning, which more recently evolved into knowledge management. The second was an interest in knowledge management processes arising from the business process management school of thought.

3.3 Organisational learning

Organisational learning focuses on knowledge and understanding about cause-effect, or action-outcome, relationships. Although there are many definitions of organisational learning, they have one shared feature: they see the environment as a stimulus for learning.

Organisational learning is, therefore, more broadly based than intellectual capital (which looks inwardly at the organisation).

Organisational learning gained wide interest following the publication of *The Fifth Discipline*, written by Senge (1990). In it, Senge described how four core disciplines – personal mastery, mental models, shared vision and team learning – were integrated into the fifth discipline, which was systems thinking. Senge built on earlier work by Argyris and Schön (1978) that differentiated single and double-loop learning, the latter a concern with learning how to learn.

The literature of organisational learning can be divided into three broad categories. The first is concerned with how individuals learn within organisational settings. The second is how that individual learning is absorbed by organisations. The third takes an information systems perspective and emphasises organisational memory as a form of systems architecture. Although each category is important, it is the second category that is more relevant to the present study because it addresses how organisational learning processes enhance, or impede, the acquisition, sharing and utilisation of an individual's knowledge within organisations.

The concern with in-house organisational learning processes is reflected via three underlying themes in the literature. The first theme is concerned with models of information acquisition, sharing and utilisation. The second theme is the interpretive processes involving assumption sharing and the construction of mental maps. The third theme is related to developing knowledge and understanding about action-outcome relationships. Implicit – but rarely explicit – within this third theme is a concern with culture and the institutional mechanisms that enable or impede the stocks and flows of learning.

Popper and Lipshitz (1998) distinguished two forms of organisational learning – learning in organisations (LIO) and learning by organisations (LBO). The structural and procedural arrangements that convert LIO into LBO are described by Popper and Lipshitz as 'organisational learning mechanisms' (OLMs) which are the taken-for-granted structures and processes that allow organisations to systematically collect, analyse, store, disseminate, and use information.

Popper and Lipshitz (1998) distinguished two aspects of OLMs: structural and cultural. The structural aspect concerned the learning mechanisms, while the cultural aspect consisted of the shared values and beliefs that enabled the learning mechanisms to produce new insights and behaviours.

This brings us to the literature specifically addressing knowledge management. A bridge between organisational learning literature and knowledge management literature can be seen in the discussion of organisational learning systems. Organisational learning systems are defined by Argyris and Schön (1996) as creating:

'the conditions under which individuals interact ... making it more or less likely that crucial issues will be addressed or avoided, that dilemmas will be publicly surfaced or held private, and that sensitive assumptions will be publicly tested or protected'.

Many authors have referred to modern organisations as being 'learning organisations' or 'knowledge-based organisations'. We suggest that an organisation can only achieve sustained competitive advantage (and, perhaps, only remain viable at all) as a result of effective organisational learning. This learning is not just a question of creating and/or acquiring more knowledge but, more importantly, of taking a critical approach to the knowledge possessed. Indeed, this approach also needs to extend to knowledge not currently possessed, i.e. 'knowing what it is that we don't know'.

¹ A special issue of *Accounting, Auditing and Accountability Journal* (Volume 14, Number 4, 2001) was devoted to intellectual capital but the emphasis was on reporting intellectual capital as a stock of knowledge.

3.4 Knowledge management

Knowledge management has been described as a process of creating, capturing and using knowledge to enhance organisational performance (Davenport and Prusak, 1998) at the organisational, rather than the individual, level of analysis. A substantial part of knowledge management literature is devoted to knowledge management in the context of organisations.

Interest in knowledge management has grown steadily since the term was first coined by Wiig (1993). The appearance of publications, such as *The Knowledge-creating Company* (Nonaka and Takeuchi, 1995) and *Working Knowledge* (Davenport and Prusak, 1998), attracted a great deal of interest. Nonaka and Takeuchi's 'socialisation, externalisation, combination, internalisation' (SECI) model is complementary to the work of the previously mentioned Popper and Lipshitz.

People often see knowledge management processes purely in terms of IT. Although these processes will require IT support, other aspects are more important than the purely technological ones. For example, the organisation must have a culture that promotes organisational learning. Equally, the top-down policies and strategic initiatives regarding knowledge management must meet, and mesh, with bottom-up ownership of the learning that is taking place.

The literature suggests different types of knowledge. These are summarised below:

- formal and informal knowledge is the extent to which knowledge is embedded in organisational systems and processes, or is a largely social mechanism that takes place outside of formal systems. The formal and informal are not easily separated and a requirement for knowledge management is to build a shared context in which knowledge can be situated, shared and transferred.
- core knowledge is that knowledge required to perform core processes for the external customers who the organisation exists to serve. Supporting knowledge covers those processes that support internal customers and may be administrative in nature. In particular, any improvement to the organisation's core knowledge should produce a corresponding improvement in the organisation's overall performance. Supporting knowledge might be outsourced, but core knowledge would not be.

The main themes in the literature are different types of knowledge, knowledge management in organisations, the role of IT in knowledge management and the relationship between knowledge management and organisational learning. The knowledge management literature distinguishes between formal and informal views of knowledge in the organisation although it recognises that separating the formal from the informal is problematic. Situatedness is also a recurrent theme in the literature. Codification and personalisation (Hansen et al, 1999) are seen as alternative strategies, following 'IT-centred' and 'people-centred' approaches, respectively. Knowledge management as process is a viewpoint that has been gaining ground more recently.

There are many published descriptions of these knowledge management processes and activities, and none of them has gained common acceptance, as yet. Among the best known are those of Wiig (1993), Holsapple and Joshi (1999), van der Spek and Spijkervet (1995) and Alavi (1997). Each of these presents a slightly different focus.

Wiig identifies four activities, with a focus on the knowledge itself:

- creation and sourcing;
- compilation and transformation;
- dissemination; and
- application and value realisation.

Holsapple and Joshi present six activities, with a further breakdown into sub-activities (we have not listed the sub-activities here). Their focus is on what a person does with, or to, the knowledge. The six activities are:

- acquiring knowledge;
- selecting knowledge;
- internalising knowledge;
- using knowledge;
- generating knowledge; and
- externalising knowledge.

Van der Spek and Spijkervet list four activities, centred on managing knowledge:

- creating knowledge;
- securing knowledge;
- distributing knowledge; and
- retrieving knowledge.

A more detailed summary of these three views, and of several others, may be found in Beckman (1999).

Alavi's model (1997) also concentrates on managing knowledge, with four activities:

- knowledge creation/acquisition;
- knowledge organisation/storage;
- knowledge distribution; and
- knowledge application.

A significant difference to van der Spek and Spijkervet's hypothesis is that Alavi's model explicitly loops back from the final activity to the first one.

For the purposes of the current research, we synthesised a view of the key processes of knowledge within organisations as those concerned with their:

- acquisition;
- sharing;
- retention; and
- utilisation.

We were also concerned with the metrics used to support these processes.

3.5 Summary

Unlike intellectual capital, which concentrates on valuing and reporting the stock of knowledge, knowledge management is also concerned with the flows of knowledge – in particular, how knowledge is acquired, shared, retained and utilised. Effective knowledge management must be strategic. Without a strategic focus, the best that could be achieved would be isolated 'islands of knowledge'. By contrast, organisational learning must be both an organic, and a bottom-up process. The relationship must therefore be complementary. Knowledge management must enable organisational learning, not just by giving it direction, but also by permitting, encouraging and facilitating it. Conversely, despite the 'manager-driven' stance apparent in some of the knowledge management literature, it is only through organisational learning that knowledge management can be a day-to-day reality in organisations.

4. Role of Management Accounting

4.1 Management accounting and knowledge management

Management accounting is:

'the application of the principles of accounting and financial management to create, protect, preserve and increase value so as to deliver that value to the stakeholders' (CIMA official terminology).

CIMA's definition of the core activities of management accounting includes:

- participation in the planning process at both strategic and operational levels;
- the initiation of, and the provision of, guidance for management decisions;
- contributing to the monitoring and control of performance; and
- responsibility for the establishment, review and maintenance of appropriate information systems to fulfil the above activities.

Planning, decision-making, control and information systems provision all require knowledge, not just of financial information but of the total information resource available to the organisation. Consequently, whether explicitly or implicitly, management accountants are involved in processes of knowledge management. In the last chapter, we reflected on the academic interest in reporting the stock of intellectual capital. However, our concern in the research study was on processes for managing the flow of knowledge, and the extent to which accountants were participants in knowledge management.

Perhaps the best example of accountants' involvement in knowledge management is in the area of strategic management accounting.

4.2 Strategic management accounting

The term strategic management accounting was coined by Simmonds (1981). Simmonds argued that accounting should be more outward looking to help organisations evaluate their competitive position by collecting and analysing data on costs, prices, sales volumes and market share, cash flows and resources.

Bromwich (1990) argued that strategic management accounting was the management accountant's contribution to corporate strategy and defined it as the:

'provision and analysis of financial information on the firm's product markets and competitors' costs and cost structures and the monitoring of the enterprise's strategies and those of its competitors in these markets over a number of periods' (p.28).

Lord (1996) summarised the characteristics of strategic management accounting as the:

- collection of competitor information, including pricing, costs, volume and market share;
- exploitation of cost reduction opportunities, i.e. a focus on continuous improvement and on non-financial performance measures; and
- matching of the accounting emphasis with the firm's strategic position.

Tayles et al (2002) linked intellectual capital with strategic management accounting by arguing that the latter provides a 'vital fulcrum' in leveraging intellectual capital to achieve competitive advantage. Tayles et al proposed a model linking together shareholder value with a range of non-financial performance measures, arguing that there is a need for internal management information to be produced that makes visible – and hence manageable – the intellectual capital in employees and infrastructure.

Whether or not strategic management accounting is a 'vital fulcrum', studies of the changing role of the accountant reinforce a shift in the thinking about what constitutes a role for management accounting in the 21st century.

4.3 Changing role of management accounting

A study of changing management accounting practice by Scapens et al (2003) in *The Future Direction of UK Management Accounting Practice*, published by CIMA, identified a change in the way management accounting was being 'used' in organisations, from a traditional monitoring and control perspective, to a more business and support-oriented perspective.

This research identified how many routine management accounting tasks either were being done by computer systems or by small, specialist groups:

'The challenge for the management accounting profession is to ensure that their members have the knowledge, skills and capabilities to take advantage of the opportunities that are undoubtedly there' (p. ix).

Changes in the business environment that have impacted on management accounting during the 1990s were identified, including:

- globalisation, increasing competition, volatile markets and the emergence of more customer-oriented companies;
- technological change in production and IT and the nature of work and information flows, as a consequence of enterprise resource planning systems and personal computers;
- changing organisational structures, such as de-mergers and focusing on core competencies and the outsourcing of non-core activities; and
- the feeling in top management that change is necessary and the changing management information needs. (OR, the trend in senior management to view change as necessary and the changing management information needs.)

The impact on management accountants, identified by the Scapens et al research study, have included the following:

- database technologies that have facilitated the storage of vast quantities of information that is easily accessible and analysable. Transaction processing and routine management information is now computerised in most organisations;
- decentering of accounting knowledge to non-financial managers who need to be aware of the financial consequences of their decisions. Cost management is increasingly seen as a management, rather than an accounting, task; and
- budgets are increasingly being used as flexible rather than static plans, being updated with rolling forecasts by managers for performance-monitoring purposes.

These factors have led to a shift in the 'ownership' of accounting reports, from accountants to business managers.

The study argued that a key role for management accountants in the 21st century is:

'integrating different sources of information and explaining the interconnections between non-financial performance measures and management accounting information ... because it enables individual managers to see the linkages between their day-to-day operations, how these operations are presented in the monthly management accounts, and how they link to the broader strategic concerns of the business as reflected in the non-financial measures'. (p.15)

In his earlier study of the changing role of accountants, Parker (2001) argued that accountants have a role in knowledge management. This role is:

'to identify necessary, versus available, knowledge for each organisation, to determine the gap between these and to develop or acquire the requisite knowledge, utilising this and evaluating its utilisation ... Accountants can be pivotal knowledge managers promoting a culture of continuous organisational learning, analysing and identifying knowledge gaps, managing knowledge capture, sharing and retention, incorporating knowledge management into strategic planning and implementation, and leveraging organisational learning ... Organisations stand to benefit from the accountants' attention to knowledge management in the linking of operational and financial performance, more effective knowledge discovery, transfer and use, greater routinisation and retention of specialist knowledge, more effective employee training, lower knowledge loss rates.' (p. 437-8)

It is clear to most practitioners and researchers that the role of accounting is changing. Financial knowledge has been the main focus of the management accountant but if they are to add value and contribute proactively to organisational success, management accountants need to take a more strategic focus, expand their view to a range of non-financial measures, and understand and demonstrate the links between improved knowledge management processes, organisational performance and intellectual capital.

5. The Study

5.1 Introduction

The overall aim of the research was to discover techniques for exploiting the knowledge-base of organisations. There were three aims of the research. These were to discover:

- the processes that are currently used by organisations to acquire, share, retain and utilise knowledge;
- the processes that organisational members believed should be used to acquire, share, retain and utilise knowledge; and
- what measures were currently used, and those that participants believed should be used, in relation to the acquisition, sharing, retention and utilisation of knowledge.

The research project, funded by a grant from CIMA, was undertaken between September 2001 and October 2002.

5.2 The research questions

The research took a pragmatic perspective: that knowledge management is what people think it is. Previous research from this perspective has either surveyed several people in one organisation, or one person from each of several organisations. What these two approaches have in common is that their focus has always been on the individual, not the group, even when the purpose of the study was to produce aggregate results. There is evidence, from research into knowledge-based systems, that when people are interviewed individually, the responses they give do not match what they really do or think. Our belief is that to understand knowledge management in context, it is crucial to study the understanding and beliefs of the group about knowledge management in their organisation, not just the individuals within it.

Our research has taken an empirical approach, based on finding out what groups of staff in UK organisations think about knowledge management within their organisation (note that each workshop involved a range of staff from only a single organisation). Typically, most staff were from management, ranging from board of directors level down to senior and mid-level managers. Data was collected in a workshop format, which enabled a group understanding of knowledge management to be surfaced, rather than simply the aggregated understandings of individuals.

Each workshop addressed the following questions:

- what are the processes that are currently used in organisations to acquire, share, retain and utilise knowledge?
- what are the processes that participants believe should be used in organisations to acquire, share, retain and utilise knowledge more effectively?
- what metrics are currently used in organisations in relation to the acquisition, sharing, retention and utilisation of knowledge?
- what metrics do participants believe should be used in organisations in relation to the acquisition, sharing, retention and utilisation of knowledge?

Consideration of the two questions regarding metrics was usually combined.

5.3 Research method: JOURNEY Making

The technique that we used to structure the workshops is called 'JOURNEY Making' (see Eden and Ackermann, 1989;1998). JOURNEY Making includes brainstorming, but goes beyond it to accommodate competing perspectives on an issue, and the rationale and understanding behind those perspectives. Typically, these shared understandings (shared in the sense of being made known – not necessarily agreed upon) operate synergistically into a genuinely shared understanding (that is, one that is agreed) as the workshop progresses. Computer technology enables the exchange of ideas to take place anonymously and without the delays that result from participants having to use pen and paper.

The main use of JOURNEY Making has been in corporate strategy development and project risk assessment, so we knew at the outset of this project that it worked effectively with similar groups of people from a single organisation. However, it had not previously been used in a study of knowledge management. Furthermore, JOURNEY Making has not often been used as a research tool for the purpose of investigating an issue. Most of the research into JOURNEY Making has been focused on developing the methodology, rather than using it to build research insight.

We believed that considering knowledge management at the strategic level by using JOURNEY Making in this way would help clarify an organisation's thinking about the knowledge it has (or, perhaps, does not have, but needs) and how it can make the most of this invisible asset.

The JOURNEY Making methodology is one whereby participants are facilitated through a process of JOint Understanding, Reflection and NEgotiation on (knowledge management) strategY.

- **JOint Understanding.** Group members are encouraged to share their ideas with the rest of the group during a computer-supported group brainstorm. They do this by typing their ideas on an issue into a computer package on a laptop computer.
- **Reflection.** Asking the group members to integrate the ideas that have been shared into their own understanding of the issue, ie, asking them to reflect on their previously held views and reconsider these in the light of new information.
- **NEgotiation.** Giving the group members an opportunity to verbally negotiate on the different opinions that have been shared, in order to converge views and generate a unified perspective of the situation. This aims to generate shared commitment of all group members to a common understanding of how to improve knowledge management.
- **strategY.** Potential actions are identified throughout each group workshop. Each action has to contribute to the achievement of better knowledge management for the organisation. The actions would be agreed upon (and thereby committed to) by the group members (or a sub-section of group members who had responsibility for that issue).

Each workshop lasted a full day, split into sessions. The first was centred on this issue of 'what knowledge informs your business', with the three subsequent workshops based on the three research questions (the two metrics questions being combined). Additional sessions were also included, and/or the sequence modified, depending on the participants' preference. The number of sessions in the workshops, in fact, varied between four and eight. During each session, participants were split into pairs, the pairings being changed for each brainstorm to enable different people to work together. Doing this assists creativity by offering the stimulus of a new person to bounce ideas off. Each pair was given a laptop computer linked to a LAN and running Group Explorer™, a computer brainstorming-like software package. In each session, the research question was posed to the group members, and they were asked to consider the question and type into their laptop computer any ideas, thoughts, responses or opinions they had. The ideas that were shared were captured in a 'group map' using Decision Explorer™ software.

The group map was then projected onto a large public screen to enable group members to read the ideas that had been shared. Participants (with the help of the facilitator) were then able to group ideas into clusters and to insert links (in the form of an arrow) between ideas on the map. An arrow indicated that a relationship existed between the issues contained in the two ideas and helped to cluster the ideas. Clusters indicated a set of ideas that were agreed to by the participants and these were given a title, also agreed to by the participants (see the map in Appendix 1).

5.4 The organisations

We conducted ten workshops, one in each of ten different organisations. Two of the organisations agreed to participate as a result of direct contact made by the researchers. Eight organisations agreed to participate following a direct mailing to MBA alumni of the university. These contacts became the sponsors of the research and arranged for the participants from their organisations to take part. We sought organisations with a genuine interest in, and concern for, knowledge management, and we also wished to ensure that a variety of different sizes and types of organisation was included.

Between five and ten participants – all from the same organisation – attended each workshop. In total, there were 78 participants who came from a variety of functional areas. Each workshop included an accountant (a requirement of CIMA). With that exception, the participants in each workshop were those selected by each organisation. The criteria suggested by the researchers were that the participants should include 'a sufficient spread of people with awareness of, and responsibility for, knowledge management' and also 'one person responsible for securing the commitment of resources towards achieving whatever outcomes and actions are decided upon'. In the event, most participants were middle or senior managers, with a sprinkling of junior managers and operational-level staff. In all but two of the workshops, one participant was at director-level, or equivalent. By having a director present, the groups seemed more confident in the strategy that they were generating as they were getting immediate informal feedback on how the board might react, and so were able to appreciate whether or not they would realistically be allowed to implement actions.

Our first finding emerged at this point: in all of the workshops, except one, participants agreed that more involvement of operational staff was needed (i.e. knowledge management is not just for managers). Two of the organisations suggested that a specific workshop for operational-level staff might be a good idea.

Of the ten organisations, six were for-profit, three were not-for-profit or non-profit-distributing and one was public sector. One of the not-for-profit organisations also received significant government funding. Three of the six for-profit organisations were listed plcs, two of which were divisions of FTSE 100 companies. Two organisations were privately owned and one was a subsidiary of an overseas plc.

The organisations operated in the following sectors:

- retail (one);
- manufacturing (two);
- design/distribution (one);
- services (three);
- consumer protection (one);
- social housing (one); and
- law enforcement (one).

Seven of the workshops were held at the researchers' university and three at the organisation's own premises. This was the choice of the participating organisations.

The identities of the organisations have been withheld for reasons of confidentiality.

The ten organisations were:

1. 'Restaurants' was the restaurants division of a listed plc operating under about a dozen major brand names throughout the UK. Restaurant turnover was £1 billion in the latest financial year. Most participants were from the planning and insight department. Because of the selection of participants, the workshop emphasised head office knowledge rather than knowledge in the operating units.
2. 'Police' was an English police force with 2,400 police officers, 1,300 support staff and a budget of £144 million. Prior to the workshop, Police had increased the police levy (the portion of the council tax that pays for police services) by 33% and wanted to develop a communications strategy, 'a shared commitment to a shared plan'.
3. 'HighTechManuf' was a high-technology manufacturing group, privately owned with a turnover of £100 million and 800 employees. It had recently been formed, through a merger, and while there had been little pursuit of knowledge management in the four constituent companies, this was now seen as important. Most of the participants were engineers, who acknowledged 'we need to spread our wings, do a bit of lateral thinking'.
4. 'Consult' was the international technical/engineering consultancy division of a FTSE 100 plc. The consultancy was heavily reliant on its parent for technical expertise. Most of the participants were in the business development function.
5. 'DesignInst' was the design and installation division of a high-technology equipment supplier, a subsidiary of an overseas listed company. It was implementing a new enterprise accounting system and wanted to 'make sense of the information we have'.
6. 'ManufIndProd' was a privately-owned manufacturer of industrial products for engineering and construction, formed through a recent management buy-out. There had been an informal recognition of the importance of knowledge for years, but only recently had the new senior management team begun to formalise the knowledge management processes. They accepted a need for cultural change in the longstanding workforce.
7. 'ConsumProt' was a not-for-profit, membership-owned non-statutory consumer protection body that expects to have its function taken over by the Financial Services Authority within the next few years. There were differences in perceptions of the nature of the business – consumer protection or compliance – so that knowledge management was unclear, both within the activities, and across the boundaries between activities.
8. 'B2BService' was a listed plc providing business-to-business services, and was predominantly labour-based with 12,000 employees and a turnover of £200 million. A multi-site business, participants recognised that it was doing business throughout the country in different ways and was continually reinventing solutions to the same problems.
9. 'R&D' was a non-profit-distributing, membership-owned, research and development organisation with 550 employees. Their chief scientist commented that 'we are crawling with information and knowledge ... we need to be able to assemble it better and make sense of it better and draw conclusions from it more smoothly'.
10. 'Housing' was a privatised housing association, a non-profit registered social landlord with 500 employees managing 5,500 homes financed mainly from financial institutions, with some finance provided by government grants. Growth, and the increasing diversity of activity, had meant that the old informal approaches to its business were no longer suitable. The participants had a head office, rather than an operating unit, orientation.

We recognised that there was no one best solution to knowledge management, and allowed each organisation to determine the specific content of the workshops within the broad field of knowledge management and the research questions. Three slightly different focuses emerged from the workshops to reflect contextual differences:

- those looking at knowledge management across the whole organisation or unit;
- those addressing a specific theme (e.g. a communications strategy for Police); and
- those concentrating on a particular project or situation (a new computer system in DesignInst, results of a merger in HighTechManuf, a management buy-out and possible site relocation for ManufIndProd, the limited future life of ConsumProt).

5.5 Participant reactions

After each workshop, all participants were invited to complete a questionnaire regarding the value of this JOURNEY Making approach to discussing knowledge management in their organisation.

Answers to most questions were invited on a five-point scale, where 1 = Strongly Agree and 5 = Strongly Disagree. Responses indicated there was strong support for the idea that the process of JOURNEY Making workshops was beneficial for developing knowledge management strategy. Participants commented that 'I enjoyed the workshop' (average 1.41), and that 'the process was useful in helping us to explore knowledge management' (average 1.48).

In terms of the outcome from the workshop – the strategy which was generated – participants agreed that 'I think that the outcome of the workshop was the right list of things that we need to do' (average 1.97), 'I think that the outcome was generated in an appropriate way' (average 1.76) and 'I feel that I have had an impact on the outcome' (average 1.76).

All of these are factors that are crucial for the continued support and implementation of the actions. They also provide some validation of the workshop findings, by demonstrating the importance, and relevance, of the workshop to the participants.

5.6 Analysing the maps

The data from the workshops was captured in the form of 60 'maps'. One map was produced for each session in each workshop, so there were between four and eight maps for an organisation. An example of a map is contained in Appendix 1.

Individual reports for each organisation presented the series of maps from their workshop, running from the initial ideas about knowledge items through to the final action plan, and analysing the progression by which each led to the next. Each map is organisation – and context – specific. This situatedness means that it is difficult to appreciate the meaning of the full detail in each map without considerable elaboration, and so we have not included them all here. However, in the following chapters we report both the aggregate findings and illustrations from particular organisations. This is done using a simple 'counting' approach. Items were classified into various categories. In each case, this was first done by two researchers classifying the same maps independently, and then discussing any differences in coding that emerged to produce an agreed system for classifying all of the remaining maps. A weakness of this approach is that the quantity of items relating to a topic or idea does not equate to importance. For example, a concept that is agreed by the participants and very well understood may only need to be mentioned once. Feedback from the participants suggested that this was nevertheless a valuable way to summarise other workshops to them.

5.7 The results

The following chapters describe the results of our research. JOURNEY Making identified the very different approaches taken by organisations as a result of their context, histories, preferences, etc. This was reflected in the diverse maps that were the main outputs of the research. The results presented in the following chapters draw together the major themes we found across ten diverse organisations. It is not suggested that these themes will be relevant for every (or, even, any) single organisation. Any organisation wishing to better understand its own knowledge management processes would be advised to conduct a study set in its own context, rather than rely on these results. However, JOURNEY Making could be a valuable tool in helping them to understand those processes.

6. Themes in Knowledge Management

6.1 What knowledge informs your business?

Perhaps the central issue that arose from the workshops was that of information versus knowledge. Participants in the workshops saw information largely as a commodity. Information did not appear to be valued at a corporate level, in contrast to the sense in which knowledge forms an integral part of an organisation's intellectual capital.

The issue of knowledge was problematic for most participating organisations. Some of the comments made about knowledge are included below.

- 'Some is factual, some is financial, some is rumour, some is gossip, some is intuition, some is guesswork, some is accidental discovery.' (Consult)
- 'We have lots of information but not much knowledge.' (Restaurants)
- 'All we've got is knowledge but we're hopeless at managing it.' (Police)
- 'Information flows vertically, not horizontally ... we need to make sense of the information we have.' (DesignInst)
- 'The answer is in the business but we don't have ways of finding it.' (B2BService)
- 'We have lots of information but we don't share it, we reinvent the wheel about four times.' (Housing).

On average, this stage of the workshops identified around 90 different items (that is, distinct, contributed ideas) of knowledge (the range in the ten workshops was from 59 to 117 items) although, in fact, some of these were information and others were merely mechanisms, such as databases (content unspecified). In each session, the items were presented back to the group via a projector screen and clustered by the participants, as explained in the previous chapter. The results took the form of a map, an example of which is shown in Appendix 1.

As might be expected, some clusters were very specific to one organisation, such as Police's largest cluster, which was around front-line policing, and Housing's cluster around partnerships and networking.

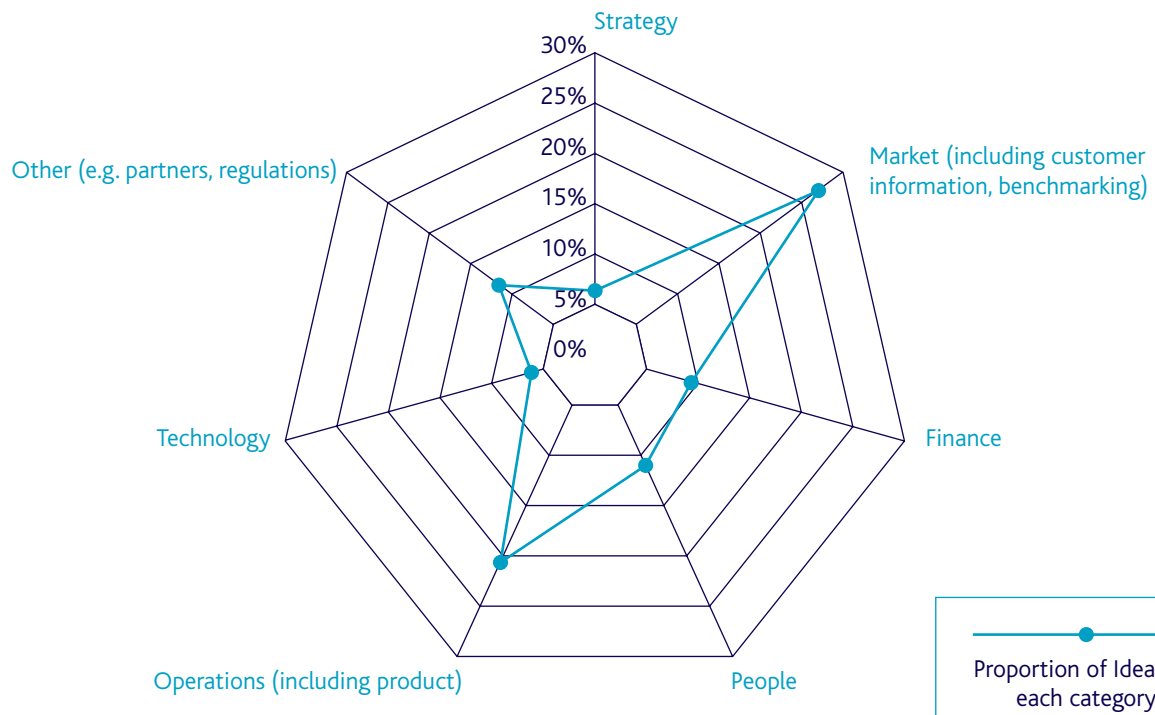
Others were more generally applicable, such as those relating to market knowledge or market intelligence (which appeared in some form in eight of the organisations' maps), and financial control and performance (which appeared explicitly in six of the maps). The different categories for the ten workshops are shown in Table 6.1. Note that the point that quantity does not equal importance may affect the strategy heading in particular. Participants often chose not to break down items in this category any further.

Table 6.1 What knowledge informs your business?

Knowledge of:	% of ideas for each category
Market (including customer information, benchmarking)	27%
Operations (including product)	20%
People	11%
Finance	8%
Strategy	6%
Technology	6%
Other (for example, partners, regulations)	11%
Channels/mechanisms	
People (knowledge in, rather than about)	4%
Technology	2%
Systems	2%
Documents	3%

Figure 6.1 shows the same distribution of the ideas in 'radar chart' format. The domination of market and operations knowledge reflected the general view that finance, people, technology and strategy were enablers of the core business.

Figure 6.1 What knowledge informs your business?



However, there was considerable variation between the different organisations, as shown in Figures 6.2-6.4. R&D placed a very strong emphasis on market knowledge, whereas Consult proffered most ideas under partnership and regulatory knowledge, and Police (perhaps not surprisingly) under operations knowledge.

Figure 6.2 What knowledge informs your business?

An organisation with strong focus on market knowledge management.

Research and development

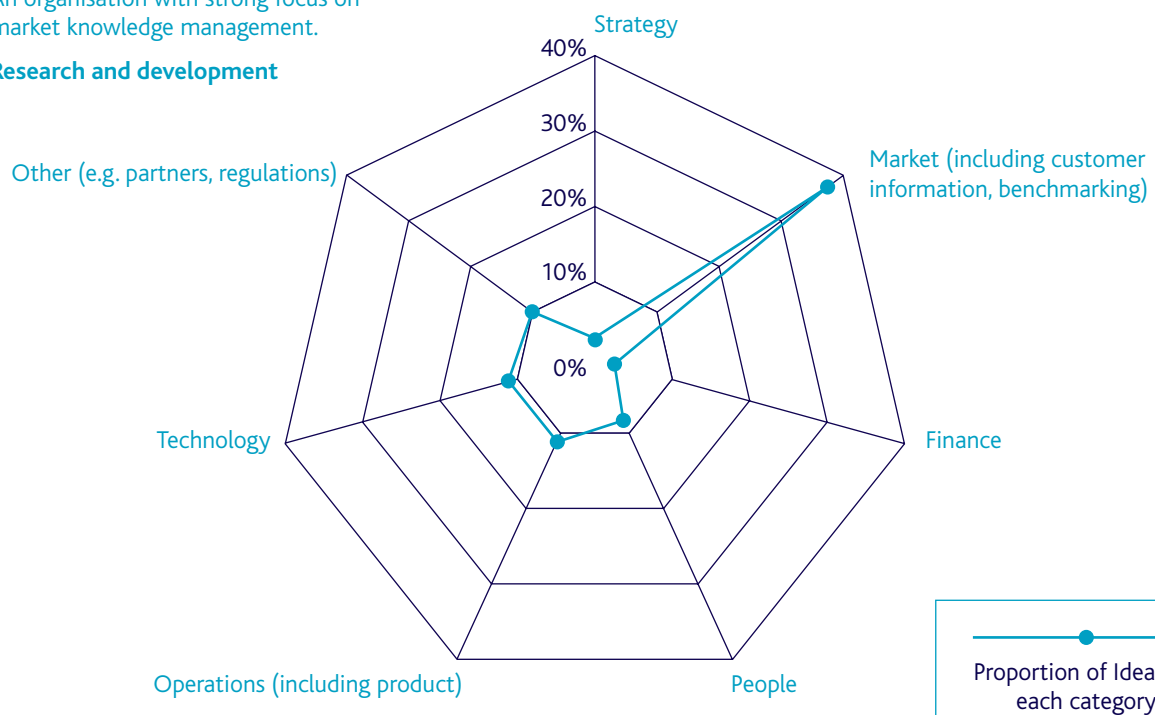
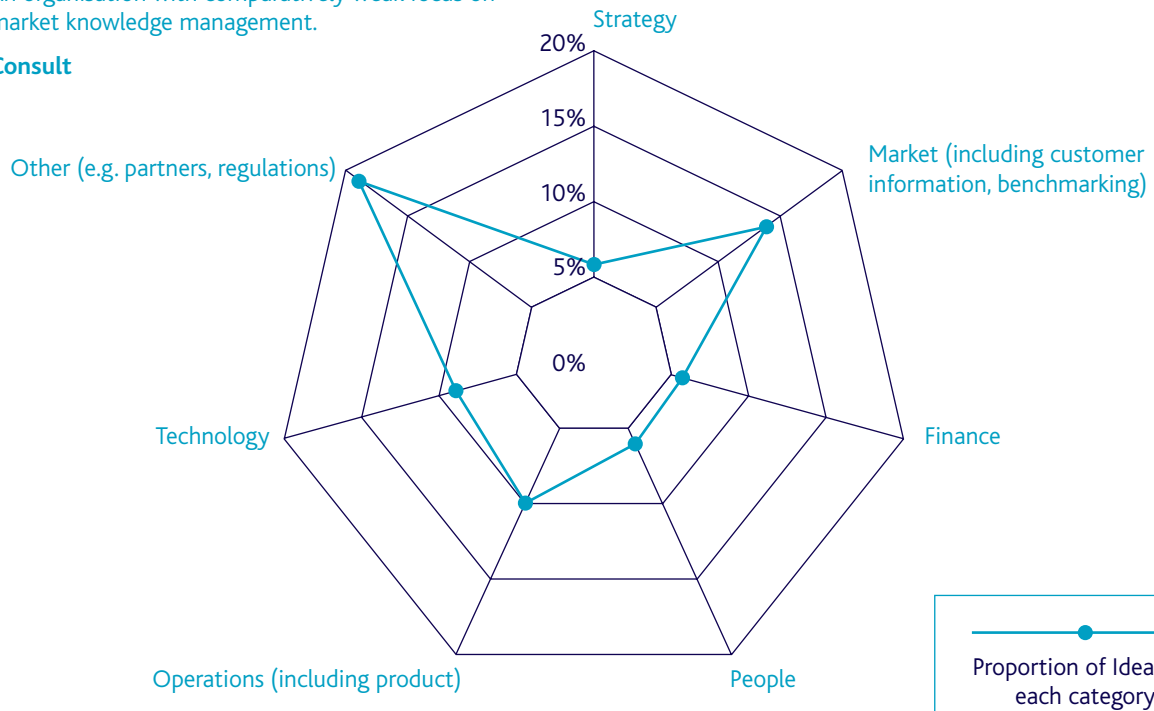


Figure 6.3 What knowledge informs your business?
An organisation with comparatively weak focus on market knowledge management.

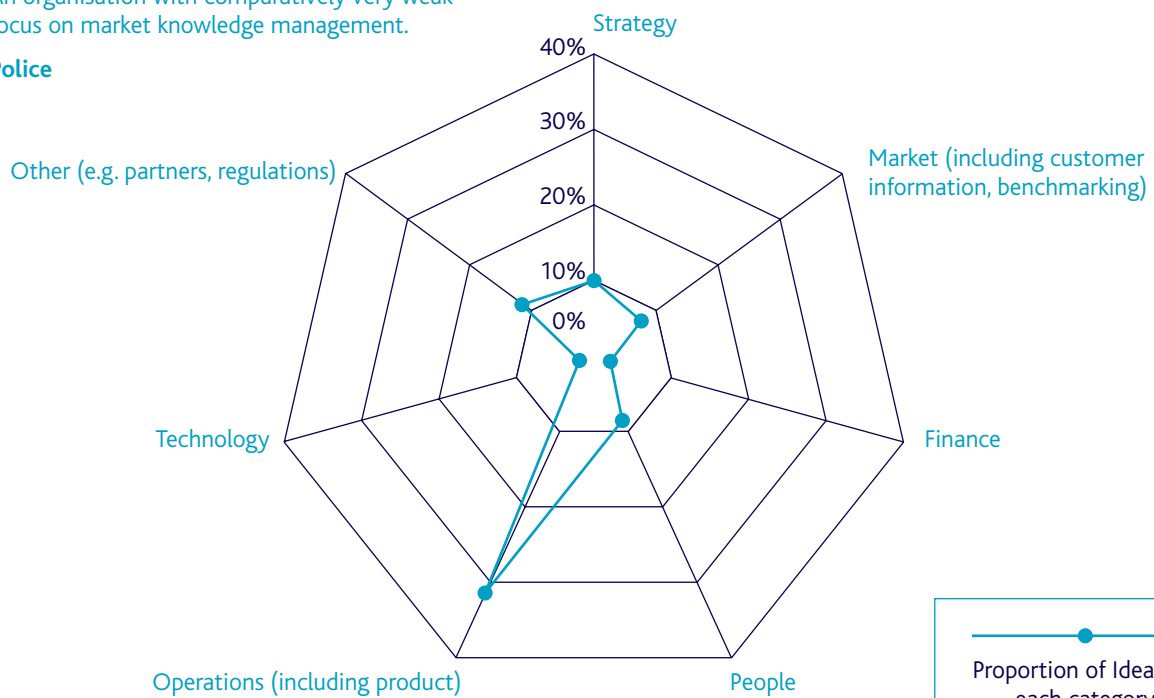
Consult



Proportion of Ideas for each category

Figure 6.4 What knowledge informs your business?
An organisation with comparatively very weak focus on market knowledge management.

Police



Proportion of Ideas for each category

6.2 The role of technology

In all organisations, there was general agreement that a great deal of both information and knowledge existed, but that it was not well managed. This was largely because of the enormous variety of information that was available, held in widely different systems, together with knowledge also residing in people and processes. In most organisations, IT was seen as a key element in the solution. However, those organisations appeared to appreciate that, even if the technology was a necessary element of the solution, it was by no means sufficient on its own.

A common issue at the workshops was the volume of information, as opposed to any focus – organised, but not interpreted, as we explained earlier. This was an important distinction between knowledge and information. Restaurants termed this 'selective versus mass distribution', where knowing who needs the information was crucial.

Many participants also contrasted the quantity of information with its quality, especially the need for improved quality of information from the users' perspective in order to make interpretation possible. For example, the users at DesignInst discussed, at length, the poor presentation of financial budgets. Most organisations reflected that there was lots of data (for example, market data) but that the data was only minimally organised into information. Typically, the information was only properly analysed – thus contributing to knowledge – when there was a specific need, rather than routinely.

Technology, such as database systems and data warehouses, may have led to a lack of focus in knowledge management, as most systems did not help to distinguish raw data from usable/relevant knowledge. In most workshops, for example, participants remarked that their Intranet was not used effectively to share information, let alone knowledge.

Most organisations emphasised the need to reduce the volume of information and to have greater focus. This was exemplified in the majority of workshops through the examples of email and meetings. The general view was that emails were sent indiscriminately, as were invitations to meetings (which themselves were unfocused).

6.3 Core and supporting knowledge

In the workshops, the researchers attempted to separate core from supporting knowledge (as defined in an earlier chapter) but this proved problematic. As an example of participants' misunderstanding, one Police participant commented that 'there is no core information that everyone needs to have'. This is undeniably true, but not the issue. Even with something as central as a core process, there will be many people in an organisation who are not concerned with it.

Consult identified commercial and financial knowledge as core knowledge, as 'the information we need in order to survive ... strategy is core and the budget supports the strategy ... technical knowledge isn't very important ... how we make money out of our business is around the commercial stuff'. This was especially surprising, given that, as a consultancy, technical knowledge is almost literally what Consult 'sells', and in our terms is therefore core knowledge.

6.4 Formal and informal knowledge

The lack of sufficient, routine-driven formal processes in some organisations placed greater reliance on individuals, leading to a dependence on informal systems. In some workshops, the informal communications were exemplified through a single person (in Police this was 'Dermot') and in Consult, 'The Legion' (a pub).

In those organisations, the contrast between formal knowledge and informal knowledge was prevalent. They recognised the importance of informal processes, but also held a desire to move to more formal, reliable and consistent ones. One difficulty participants recognised was being able to retain the richness of the informal systems while adding the robustness and 'shareability' of more formal ones. One R&D participant commented that, in one previous attempt at formalisation of informal processes, this richness had been lost.

However, in those organisations in which technology and formal methods dominated, there was a call for more informal processes, suggesting an over-riding need for balance between formal and informal methods.

6.5 Top-down and bottom-up knowledge

There was a general realisation by participants that knowledge management was not just for managers. Three of the workshops (ManufIndProd, ConsumProt and Police) included participants at, or near, operational level, and all but one of the other organisations expressed the feeling that they needed more 'grass roots' input to the design of effective knowledge management processes.

In addition, each workshop admitted that there were other problems in choosing participants – although this was, in part, constrained by their availability and commitment. Some identified the need for representatives of training and quality departments to progress key ideas raised during the workshop. Others identified product development and marketing. Some identified those closer to the product or service delivery functions as needing to 'buy in' to improving knowledge management processes.

6.6 People and skills

People were seen as a key element of knowledge management, particular emphasis being given in all workshops to staff training and retention. An implicit recognition was made that knowledge was routinely lost by staff leaving the organisation and that there was an inadequacy of training to ensure that existing knowledge was shared among newer members.

'Knowledge erosion' refers to the loss of knowledge resulting from people leaving or changing jobs. It is preventable, at least in principle, but actually implementing processes to prevent it needs to go to the very heart of what the organisation does. For both HighTechManuf and ManufIndProd, this was a key focus in their discussions. Although useful, exit interviews come too late in the process, and perhaps apprenticeships or sharing knowledge more effectively might be better knowledge management practice.

The 'make versus buy' aspect of knowledge management was not a strong theme in any workshop, but external consultants were regularly identified as a source of knowledge. Outsourced knowledge was not significant, but where it did arise it was in connection with capturing the knowledge gained by consultants, rather than losing the knowledge that the organisation had paid for.

6.7 Knowledge management processes

Participants clearly felt that the acquisition, sharing, retention and utilisation model was a satisfactory one on which to base their discussions, since no queries were raised about it in any of the workshops. It was necessary, as a point of definition, however, to clarify that acquisition related to knowledge that the organisation did not currently have, whereas sharing referred to knowledge that was already within the organisation somewhere. The lack of consideration previously given at a senior management level to the processes necessary for knowledge management was marked in all organisations, particularly as they were all significantly knowledge-dependent for their success.

The main emphasis in organisations appeared to be on acquiring and sharing knowledge and information. There was less evidence of retaining and using the knowledge.

Our first research question was: what are the processes that are currently used in organisations to acquire, share, retain and utilise knowledge?

On average, the maps contained 68 current knowledge management processes (the range was 47 to 100). Table 6.2 lists the types of processes currently used that were identified in the ten workshops.

Table 6.2 Processes currently used to acquire, share, retain and utilise knowledge

Nature of the process	% of total processes
Written, formal	49%
Oral, formal	18%
Electronic, formal	10%
Oral, informal	10%
Other	6%
Electronic, informal	3%
Experiential	3%
Written, informal	1%

Written, formal processes ranged from legislation, manuals, quality records and drawings, archives, books and publications, to financial reports. Oral, formal processes were meetings. Electronic, formal processes were largely about databases, and a single point of access to information. Oral, informal processes included coffee machine discussions, telephone calls, relying on memory, gossip, rumour and eavesdropping. Other processes included consultants, exit interviews, and succession planning. Electronic, informal processes were largely about random email and bulletin boards. Experiential processes included job shadowing and apprenticeship. Written, informal processes included 'post-it' notes.

Our second research question was: what are the processes that should be used in organisations to acquire, share, retain and utilise knowledge?

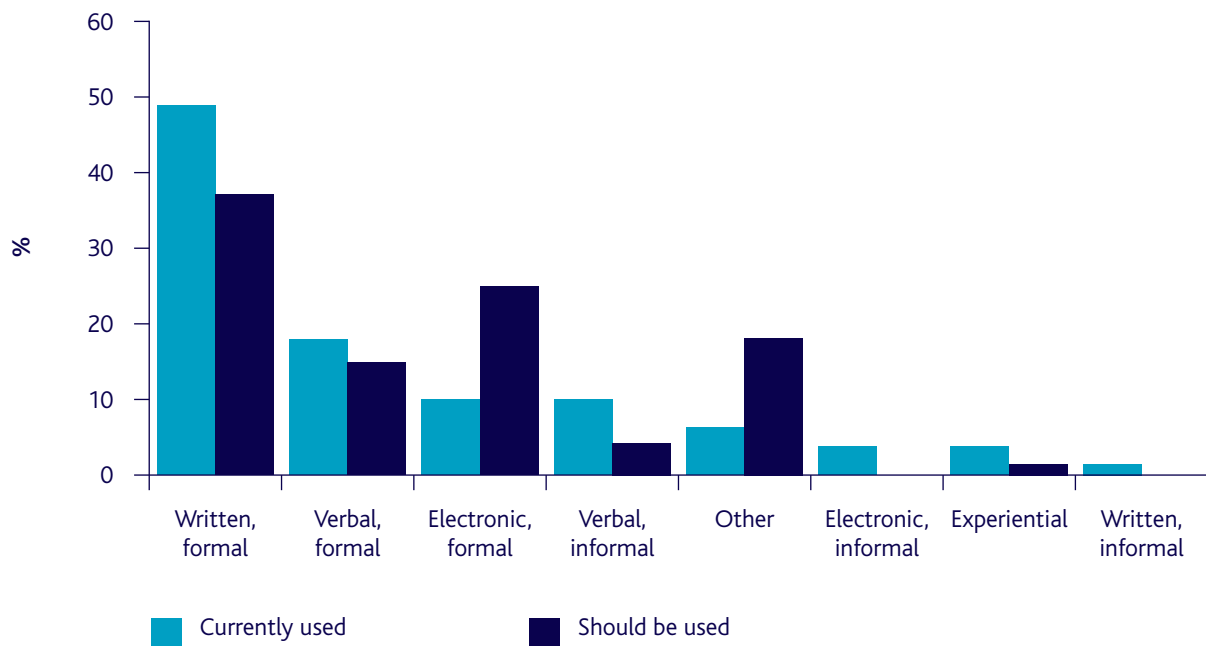
When participants identified the processes that should be used to acquire, share, retain and utilise knowledge, these were usually substantially different to the processes that were currently used, as shown in Table 6.3. On average, there were 54 'should be' processes (the range was 19 to 96). When added to the current processes from the first research question, the total number averaged more than 120 processes per organisation. Although seemingly very large, these numbers are consistent with the findings of other research in knowledge management.

Table 6.3 Processes that should be used to acquire, share, retain and utilise knowledge

Nature of the process	% of total processes
Written, formal	36%
Electronic, formal	25%
Other	18%
Oral, formal	15%
Oral, informal	4%
Experiential	1%
Electronic, informal	0%
Written, informal	0%

One significant finding was that there was a great desire to move away from written, formal documents to an electronic format, as shown by the comparison in Figure 6.5. There was also a reduction in preference for oral processes, and for informal processes generally. The increase in 'other' processes incorporated examples such as remote working, alliances with other companies, knowledge champions, physical re-organisation, etc.

Figure 6.5 Comparison of processes currently used and processes that should be used



6.8 Technology, people, process

One of the principal patterns that emerged from the workshops related to the major clusters of 'should be' processes identified. These clusters revealed three broad emphases in the 'solutions' proposed by participants.

- Technological solutions. These were predominant in DesignInst, Police and Restaurants.
- People solutions. These dominated B2BService, Housing, Consult, HighTechManuf and R&D.
- Process solutions. These were emphasised in ManufIndProd and ConsumProt.

The technological solutions were concerned largely with making better use of databases and Intranet access. At the extreme, Restaurants' solution entailed standardising technology over hundreds of sites leading to a single source of knowledge with 'cubes of sales information for analysis by cross-functional teams'. DesignInst argued for the need to reduce duplication by eliminating 'satellite' IT systems. Police went further, and identified 'privately-owned' personal organisers and laptops as a barrier to sharing information and knowledge.

People solutions were concerned with staff retention and motivation, training and networking. HighTechManuf identified the need to rely less on 'training through osmosis'. Consult emphasised activities such as partnerships, training, networking, debriefing and team working. R&D thought the processes should involve removing their previous 'culture of confidentiality'.

Process solutions were concerned partly with paper-based specifications and process instructions, but also with the mix between formal and informal methods of sharing knowledge. ManufIndProd were very concerned about passing on skills. ConsumProt wanted a substantial change of direction, reduced effort on compliance and more emphasis on educating the organisations it regulated. There was also an emphasis on 'working smarter', i.e. achieving process efficiency in order to cope despite people leaving over the next two years. Although most of their preferred solutions were in the 'people' category, Consult also suggested the creation of a 'knowledge map' – a clear structure of knowledge (and information) to enable easy retrieval.

At present, we can offer no systematic contingency explanation for these different solutions. Clearly, the type of organisation (listed, privately-owned, public sector or not-for-profit), type of business (retail, manufacturing, design/installation, service) and structure (centralised, decentralised, single site, multi-site) undoubtedly influenced the clusters. However, there appears to be little relationship between the type of organisation and its preferred knowledge management solution. The latter seems to be more a consequence of the unique history and circumstances of each organisation. The one possible relationship that emerges is that the organisations preferring process solutions, ManufIndProd and ConsumProt, were the two smallest. Perhaps only these two were small enough so that everyone in the organisation at least knew who everyone else was.

There was also a different emphasis in the treatment of knowledge that relied on external (environmental) and internal sources of information, although each organisation faced pressures in dealing with both. For external information, there was a particular need for summarising, abstracting and disseminating – an essentially people-based process. Internal processes were either technology-based, such as using databases and Intranets more effectively, or process-based, involving better manual documentation of procedures, or finding the right balance between formal and informal internal communications.

Two other important knowledge management themes emerged from the workshops:

- knowledge management life cycles; and
- knowledge champions.

6.9 Knowledge management life cycles

The most important difference between organisations seems to be the point they have reached in the knowledge management life cycle of that organisation. It seems reasonable to expect that the history and background of knowledge management in an organisation will form an important part of the relevant context, and significantly affect future knowledge management activities. However, this concept has had very little emphasis in knowledge management literature until now. The only exception is Collison and Parcell's (2001) description of how knowledge management in BP had progressed from 'unconscious incompetence' through to 'conscious incompetence', 'conscious competence' and finally 'unconscious competence'. Here we tentatively offer a slightly different four stage life cycle:

Stage 0 Unaware of the need for knowledge management.

Stage 1 Aware of the need for knowledge management but not actively engaging in it. Little appreciation of what is involved in actively carrying out knowledge management, as distinct from information management.

Stage 2 Engaging in knowledge management practices but not strategically across the whole organisation (at best, 'islands of knowledge' and not 'joined up knowledge management').

Stage 3 Carrying out knowledge management strategically and reviewing it.

There were no stage 0 organisations within our sample.

Housing, DesignInst, HighTechManuf and Consult were all at stage 1. In a slightly different position was Police, where the lack of explicit knowledge management needs to be balanced against the central role of 'intelligence' in much of police work. Here the operational units may manage knowledge better than headquarters (again, see Figure 6.2), but the organisation, as a whole, is not actively involved.

In the middle of the life cycle, at stage 2 – although at different points within it – were R&D, ConsumProt, B2BService and ManufIndProd. R&D had used knowledge management for some of their research and development activities, but their mission was undergoing change, which brought new pressures. ConsumProt, uniquely, has a limited life span and has realised that what was appropriate for knowledge management in its growth phase will be ineffective in its decline. B2BService had several 'islands of knowledge management' but they were not yet connected.

In stage 3 was Restaurants, who were more advanced in their knowledge management structures, having actively pursued knowledge management across the organisation for several years, albeit with a head office emphasis. However, there was a reduction in knowledge management activities after the workshop as a result of organisational cost-cutting.

6.10 Knowledge champions

As with most (if not all) other change initiatives, it has become clear that knowledge management will not succeed in an organisation unless it is backed by people with enough power and access to sufficient resources to make it work. The need for knowledge management to have these knowledge champions, and the qualities that they should have, are discussed at some length in Skyrme and Amidon (1997) and Davenport et al (1998). A key point in the workshops was the general appreciation of this need for a knowledge champion within each organisation. This occurred in every workshop. The different stages of the knowledge management life cycle reached by the organisations (see above) affected the nature of the discussion on this topic, but not the perceived importance of the role. Therefore, in one sense, the strategic nature of knowledge management is recognised.

Despite the clear importance of knowledge management to every organisation, however, there was little evidence of anyone at senior management level having previously taken ownership of knowledge management (with the exception of Restaurants).

7. Knowledge Management: Metrics and Accounting

7.1 Knowledge management metrics

Our third research question was: what measures are currently used, or should be used, in relation to the acquisition, sharing, retention and utilisation of knowledge?

Table 7.1 shows the nature of measures for knowledge management identified by the workshops.

Table 7.1 Measures for knowledge management

Nature of the measure	% of total measures
Internal management (including more informed employees)	24%
Workforce (morale, training, etc)	20%
Financial	14%
Quality (and customer interface)	13%
Key Performance Indicators (KPI)	12%
Esteem (internally and externally)	9%
Time	5%
Productivity (output quantity)	2%

Internal management measures included the ability to react to challenges, identification of the location of relevant knowledge, the number of analytical tools in use, and the number of best practice ideas adopted.

Workforce measures included training, morale, recruitment and retention, succession planning, proactive employees, empowerment, reductions in temporary staff, reduced sickness, qualifications achieved, and the number of internal promotions.

Financial measures included the number of credit notes raised, better returns on sales visits, market share, reduction in cost base compared with output, turnover and profits.

Quality measures included customer satisfaction, reduction of in-warranty returns, fewer complaints, and less repeat work.

KPIs included internal audits and benchmarking, Investors in People assessments, and the ratio of quotes to wins.

Esteem included 'pedigree', or industry standing, awareness of brand, being an adviser on legislation and attracting high calibre graduate trainees.

Time measures related to time-saving via knowledge management processes, whether accessing databases, producing reports quickly, reducing time spent on procedures, or speedier responses to queries and bids.

Productivity measures included scrap reduction, improved sampling pass rates, machine utilisation, and reductions in tooling changes and facility downtime.

Significantly, the great majority of metrics suggested were measures of organisational performance as a whole, such as KPIs. They were therefore indirect measures of the effectiveness of knowledge management processes. Naturally, these included quantitative financial measures. The ultimate measure, according to Restaurants was 'top-down, from the share price ... each brand has to achieve 10 per cent per annum sales growth and 5 per cent per annum profit growth if they are to be retained'.

There were relatively few direct measures of knowledge management per se, for example, in the intellectual capital sense. Knowledge management is generally seen as a means to an end, rather than an end in itself.

7.2 Knowledge management and the role of accountants

While accounting was an element of the knowledge identified in each workshop, it was not usually a central feature. However, most workshops included finance knowledge, either as a separate cluster, or as part of a corporate knowledge cluster, most commonly linked with corporate strategy.

In B2BService, there was more discussion of finance than in other workshops and, with Restaurants, the only two workshops in which shareholder value was mentioned. The Housing workshop was explicit that financial reporting and planning was central. In an aside, one participant in the Restaurants workshop commented that, while there was an under-emphasis on finance in the knowledge clusters, there was a realisation that the knowledge that had been identified linked to finance: 'We would still be selling <name of product and business> if it wasn't for the City.'

In the Police workshop, financial information, along with strategy, training and partnerships with other agencies, were identified as 'organisational enablers'.

Finance was integrated with strategy in most organisations, either as a resource constraint or in terms of financial performance targets, supported by non-financial performance measures.

It did not seem that accountants or finance directors saw knowledge management as particularly important. They do not see their role as broader than financial, generally failing to appreciate, or at least to demonstrate, the links between knowledge management and financial performance. There was, however, a significant exception in one organisation, where the financial controller was the contact who drove the workshop along.

Functional managers are 'champions' of their areas, e.g. sales or production, but cross-functional processes frequently do not have champions. Hence, the work doesn't get done (although there were exceptions, such as the continuous improvement champion in B2BService and the managing director in ManufIndProd).

The finance director is the financial knowledge champion. The absence of a non-financial knowledge champion may give undue power to finance directors, as financial knowledge is the most visible organisational knowledge, being reported broadly and routinely. The finance director is the champion of each of the processes of acquiring, sharing, retaining and utilising financial knowledge. By contrast, human resource directors manage policies and procedures but not the people themselves, the knowledge in their heads or how it is used. IT directors manage the system and the data, but not the knowledge contained within the system and data, or how it is used.

This suggests a potential role for accountants to become more involved in the broader issues of knowledge management, as the driver of business success.

This reflects the arguments presented in chapter 3 about the changing role of accountants (Scapens et al (2003); Parker (2001)) and, in particular, how strategic management accounting may play a role in operationalising intellectual capital reporting into knowledge management processes (Tayles et al (2002)).

Our findings suggest that the emphasis in organisations has been more on the first of the three characteristics of strategic management accounting identified by Lord (1996), and literally on the collection of the information, rather than its analysis. Knowledge management has implications for the development of strategic management accounting but we believe that the collection of further new information about suppliers, customers and competitors is less important than the analysis of information and the management of knowledge already held by the organisation. In particular, it seems that the same knowledge management processes cannot be used for external and internal acquisition, sharing, retention and utilisation of knowledge.

Accountants do have a role to play in a reformulated strategic management accounting, one in which the focus is not outward-looking, at information from suppliers and competitors, but inward-looking, making better use of the information and knowledge that is already available within the organisation.

8. Conclusions

8.1 Implications for organisations

The management of knowledge is the process for the acquisition, sharing, retention and utilisation of knowledge. It appears that most organisations are particularly effective in acquiring information, but because that information is in a raw, unprocessed state, it is not effectively shared, easily lost and is therefore not effectively utilised. In each workshop, it was much easier for the participants to identify processes for acquiring and sharing knowledge, and more difficult to identify the processes for retaining and utilising it. (The latter may have been influenced by the relatively small number of operational-level participants in the workshops.)

In what is increasingly referred to as a knowledge-based economy, it is evident that insufficient management attention is given to this valuable corporate asset, and that organisational performance can be improved by sharing, retaining and utilising the knowledge already held by organisations.

Perhaps the central issue that arose from the workshops was that of information versus knowledge. Participants largely saw information as a commodity. Information did not appear to be valued at a corporate level, in contrast to the sense in which knowledge forms an integral part of an organisation's intellectual capital. The connections between information and knowledge did not appear to be widely appreciated.

As this research has shown, there is an immense diversity of knowledge depending on the external and internal environment, the needs of individual users and their location in the organisational structure. These factors, in turn, influence the type of information required and the level of detail or aggregation of information. Knowledge management strategy, especially where a technology-based solution is preferred, may imply a more centralised organisation. It may be that there is a tension between the decentralised organisation and centralised knowledge management 'systems' that has, given the explosion of information available, exacerbated the knowledge management problem.

We found that there was a general lack of focus in the knowledge, as evidenced by the confusion between information, knowledge and mechanisms, and an emphasis on quantity, rather than quality, of information. Technology may have simply increased the volume and management of unfocused data and unanalysed information, without establishing the people skills and organisational processes to convert them into knowledge. All of the organisations were concerned about losing the knowledge that was not held in organisational systems and procedures. We reinterpret this concern as a loss of the intelligence (in the military or police sense of the term) that is in people's heads, something different to the knowledge held by IT and paper-based systems. This is largely about the ability to harness knowledge – to focus information, to summarise, analyse and disseminate it – that can be used in decision-making. If organisations are to move from being information-based to intelligence-led, there is a consequent need to move from 'push' to 'pull' knowledge processes. This requires a supportive culture, a champion and a strategy/framework for knowledge management that is consistent with bottom-up attitudes towards it.

The emphasis given in organisations to financial knowledge may reduce the importance of a broader approach to knowledge management, which may be devalued in organisations unless a more explicit link can be found between knowledge management processes and improved organisational performance.

8.2 Implications for management accountants

As with most (if not all) other change initiatives, it has become clear that knowledge management will not succeed in an organisation unless it is supported by people with enough power, and access to sufficient resources, to make it work. Such a role is not one currently carried out by accounting or accountants. While the knowledge that was important to the workshops emphasised regulators, markets and organisational processes, strategy and financial performance were often more implicit than explicit in the workshops. They were enablers of the core business processes related to marketing and operations.

Most significantly, the breadth of knowledge required by organisations to succeed does not appear to be effectively managed and the links between knowledge and financial performance do not appear to be understood. The accountant has become increasingly marginalised in the knowledge economy. Accountants might be contenders in the knowledge stakes but there is no evidence that most want to become their organisation's knowledge champion. The focus of accounting literature on intellectual capital is perhaps a reflection of that marginalisation. Accounting attempts to retain its importance in organisations by focusing on reporting the stock of intellectual capital, rather than focusing on the flow of knowledge and how better knowledge management can improve organisational performance.

In particular, the research identified the potential for management accountants to refocus (rather than expand) their view of strategic management accounting from gathering more information about competitor, customers and suppliers to managing the knowledge resource that is already held within organisations, but which is not routinely or effectively utilised.

This role for management accountants is consistent with CIMA's definition of the function of the role as encompassing planning, decision-making, and control and management of the information systems to support that activity.

It would seem appropriate for the training of management accountants – especially training related to information systems – to change to reflect this increased importance of managing the knowledge resource within an organisation. This training needs to cover not just technology-based approaches to knowledge management, but also people-based and process-based approaches.

The knowledge management metrics identified by the workshops were the typical financial and non-financial measures and, like the balanced scorecard, emphasis was given to customer, quality/efficiency (ie, process) and staff-related (innovation and learning) measures. In these measures, there was an underlying assumption that better management of knowledge management processes would lead to performance improvement. For private sector organisations, this was linked to profitability and share price. For public and not-for-profit organisations, this was linked to maximising services, given finance as a constraint on activity.

8.3 The future of knowledge management

The challenges facing organisations and accountants can be summarised as follows:

- to recognise that knowledge management is not just something for managers, but something that concerns everyone in the organisation, at all levels;
- the need to properly recognise and value the information and knowledge resource of the organisation;
- to understand that technology is merely a tool, rather than a solution to the problem of how to manage knowledge and to understand the difference between unselective information and usable knowledge;
- to better utilise technology for the communication of knowledge and to avoid processes that rely on mass distribution to unselected recipients;
- to balance formal and informal processes for managing knowledge;
- to put into place human resource management processes to more effectively share and retain knowledge through effective recruitment, training, motivation and succession planning policies;
- the need to manage the knowledge resource, in particular emphasising processes for sharing, retaining and utilising knowledge that has already been acquired;
- to understand that solutions can be technology-based, people-based or process-based;
- to recognise where an organisation is in its knowledge management life-cycle and to determine how it may progress along that life-cycle; and
- to recognise that a knowledge champion is needed to be the co-ordinator of, and driver behind, knowledge management as a cross-functional activity.

Management accountants need to understand that they can play an important part in knowledge management through:

- making explicit the link between effective knowledge management and improved organisational performance;
- acting as a knowledge champion; and
- focusing on the better utilisation of an organisation's existing knowledge base through a revised approach to strategic management accounting.

8.4 Limitations of the research and further research opportunities

The most obvious limitations of this work are that only ten organisations have been involved so far, and that only organisations (and generally people) with some interest in knowledge management took part. The latter is demonstrated by the responses to 'I think that knowledge management is an important issue in <their company name>', which averaged 1.36 on a 5-point scale (where 1 = Strongly Agree and 5= Strongly Disagree). Whether the process would work with organisations that are sceptical about knowledge management, ignorant of it, or downright hostile towards it, remains to be seen. Some of the individuals who participated in the workshops were somewhat sceptical about knowledge management, without it seeming to affect their contribution.

Concerns over how representative the participants were of their organisations, or of organisations in different sectors, generally suggests that care needs to be exercised in interpreting the results. There may be value in conducting a series of workshops at different organisational levels within the same organisation.

There is also an issue of what will happen next, especially where participants were mainly at mid-management level or below. Although participants hoped that the workshops would impact on their organisation's knowledge management processes (the statement, 'I hope that these outcomes will influence what our organisation does on knowledge management', scored an average of 1.47 among participants), they were less confident of this occurring ('I expect that these outcomes will influence what our organisation does on knowledge management' scored, on average, 2.37).

One reason for this difference between hope and expectation could be that often actions from such workshops do not follow through into implementation and so people are sceptical. Also, implementation of these actions by the board often needs to be supported by a wider group than just those attending the workshop, and difficulties in securing this can discourage people in the short-term. Evidence for this came from participants who noted on their questionnaires a 'lack of interest/commitment at highest level – need a champion at board level' (Restaurants), and 'our culture may stifle knowledge management implementation' (R&D).

However, other participants noted 'we have an action plan that is achievable and realistic' (R&D), 'focussed on key priorities ... was effective when linked with our mission and objectives' (B2BService), 'generated far more specific ideas ... than I expected. It enabled a diverse group to participate in a very open, dynamic way, where everyone could participate and benefit' (Consult), and 'identified areas for improvement which will contribute to better management of our company and hence increase its competitiveness' (Consult).

Finally, in response to the question, 'Overall, how would you rate the workshop?', responses averaged 1.59 (where 1 = Exceeded Expectations and 5= Failed to Meet Expectations). We conclude that the workshop approach was successful for developing realistic, knowledge management strategies that are both able to be implemented and that are business-focused and tailored for the their organisation. It would be interesting to return to these organisations in one to two years' time, to see whether or not the strategy had been successfully implemented.

As stated in chapter 4, the results presented in this report draw together the major themes we found across ten diverse organisations. It is not suggested that these themes will be relevant for every (or even any) single organisation. Any organisation wishing to better understand the knowledge management processes within its own organisation would be advised to conduct a study set in its own context, rather than rely on these results. However, JOURNEY Making could be a valuable tool in helping them to understand those processes.

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Appendix 1

