Knowledge management in General Practice surveying firms: awareness and practices

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Knowledge management in General Practice surveying firms: awareness and practices

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Abstract

It is widely held that knowledge is a company's most critical asset for and a source of lasting competitive advantage. It follows that managing knowledge is becoming the crucial skill of our time, critical to business success, if not to business survival. General practice (GP) surveying firms, which are knowledge-intensive in nature, are facing intense local and global competition in the current business environment. The aim of this study was to investigate the awareness of the concept of knowledge management (KM) among GP surveying firms in the UK and Hong Kong (HK), and to gain an understanding of how these firms manage their knowledge. Questionnaires were sent to 217 GP surveying firms with a response rate of 18.9%.

Qualitative and quantitative analyses of the survey showed that management of professionals and the use of information technology were integrated into the processes of knowledge storage, sharing, distribution, transfer and evaluation in these GP firms. While managers confirmed the value of knowledge management, there was still a lack of understanding of the KM concept and its potential benefits. It was perceived that the most important goal of KM was to increase customer satisfaction, while the biggest obstacle was a lack of time. Knowledge sharing was perceived to be difficult due to fierce competition and a lack of incentives and rewards, although it was not held that it would reduce one's competitive advantage. Respondents preferred experience-based face-to-face methods for knowledge acquisition. Most IT tools in use were basic and related to knowledge storage and daily communication, whereas systems enabling virtual meetings and knowledge creation had not been implemented. In addition, the size and location of the firm also plays a part: statistical testing revealed that large and global firms had higher awareness of KM and took the lead in implementing KM programmes.

Suggested implications for managers include the promotion of knowledge management awareness, the creation of corporate and interpersonal trust and the formulation of a practical attitude towards technology-based KM systems.

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Introduction

A new perspective on organisations is being created - they are viewed as bodies of knowledge (Blaauw and Boersma, 1999; Nahapiet and Ghoshal, 1998). The economic prosperity of an organisation depends on the effective exploitation and retention of this organisational knowledge. Teece (1998: 75) suggests that "knowledge assets underpin competences, and competences in turn underpin the firm's product and service offering to the market". Scholars and observers from disciplines as disparate as sociology, economics and management science agree that a transformation has occurred - knowledge is now at centre stage.

Knowledge management (KM) first established itself as a distinct area of management science in the early to mid-1990s (Prusak, 1999). In the middle of the 1990s, large management consulting firms began to offer KM services to their clients and KM is now evolving and being refined through implementation. KM is an amalgam of concepts borrowed from artificial intelligence/knowledge-based systems, software engineering, business process reengineering, human resource management and organisational behaviour fields. Though the exact definition of knowledge management is still being widely debated, there is general agreement that the circumstances that gave birth to the concept are fundamental and profound. Most organisations now face a future in which knowledge supports competitive strength (Davenport et al., 1998; Skyrme and Amidon, 1998).

The surveying profession has a long history and is knowledge-intensive in nature. The challenge of managing knowledge has always been the key issue underpinning the existence, growth and further development of surveying firms. Since the 1990s, on the one hand, surveying firms have accounted for an increasing share of the overall economic base; on the other hand, they have been

The economic prosperity of an organisation depends on the effective exploitation and retention of organisational knowledge

facing new challenges and opportunities in a highly competitive environment (Matzdorf and Price, 2000). They face demands for the removal of restrictive practices, for the regular updating and re-assessment of competence, and for the definition of quality standards of practice. In addition, new technology and the trend towards globalisation have provided further incentives for surveying firms to possess a unique base of knowledge, both explicit and tacit, gathered from their employees and associates, i.e. customers, partners and authorities.

Surveying firms possess the typical business and professionalism characteristics of professional services. In theory, these are value creation, a bridging role between agencies and clients, services that are customised to each client's needs, services that are based on a professional assessment by experts in the service field, individuals who are trained in a standardised body of knowledge, etc. (Freidson, 2001). Thus, the management of professionals and their knowledge presents big challenges for managers in surveying firms. In addition to this characteristic, the rapid development of IT and its increasing use in business and commerce has led many to argue that it will also have impacts on the role of surveying firms and influence the way they manage their knowledge (Dixon, 1998). Table 1 lists the differences between "service as service" and "service as knowledge". It can be seen that service as knowledge will provide better service to clients as well as preventing the stagnation of business knowledge.

Table 1: The service-knowledge spectrum (Revised from Nicou et al., 1994: 23)

Service as service	Service as knowledge
Carried out for customers	Enhances client's knowledge or competence
Saves time and effort and creates convenience	Initiates improvement and development and creates change
Task-oriented	Process-oriented
Uses competence internally	Transfers knowledge
Aims to take over responsibility	Aims to help clients to help themselves
Packaged "product"	Adapted to client's unique needs
Costs	Investments
Repetitive	Creative/innovative
Runs operations	Runs projects

However, little is known about the current status and aspects of practices these firms may employ to manage their knowledge in order to position themselves for survival and improved performance. Few studies have been carried out in either the UK or Hong Kong concerning the application of KM in the surveying industry, although some limited scholarly work has been conducted in a larger context, notably in the construction industry.

Research contributions and objectives

This research focuses on the aspects of knowledge management in surveying firms, and in particular, general practice surveying firms in the UK and Hong Kong. Such firms have grown rapidly in size and complexity, generate more and more high value-added jobs, and face an increasingly competitive environment, which makes a study of managerial issues in these surveying firms of theoretical and practical importance. General practice surveying firms represent the surveying industry very well in terms of their broad business nature and heavy reliance on knowledge, yet little empirical research has been conducted on how knowledge is managed in this sector.

Firstly, it has been recognised that professional service businesses, such as the surveying profession, differ significantly from traditional manufacturing organisations (Eccles and Crane, 1988; Mills, 1986; Tomas, 1978). Despite the acknowledged differences, much of the knowledge in these businesses is derived from traditional industrial organisations and is therefore of questionable pertinence. By applying the emerging knowledge-based view and investigating the current status and practices of knowledge management in GP firms, the study will have practical implications for the future direction of this management approach in the surveying sector.

Secondly, knowledge management has three basic elements: people, technology and process (KMWG, 2001). By looking into the professional identity characteristics of the people and the progressive use of IT in surveying firms, this study helps to explain the heterogeneity of the process of knowledge management. Thus, this empirical study also has theoretical implications for the existing KM literature.

Although this research focused on GP surveying firms, its conclusions may have general application in other fields within the surveying profession, and thus an even wider scope. In today's knowledge-based and increasingly service-oriented economy, some characteristics that have so far been unique to professional service firms will become more common to other industries. This includes, for example, the need to balance the constraints between human capital management (the most important resource of the firm), customer and business development, and profitability management, in order to be able to pursue a specific growth and market positioning strategy. Lessons learned in this industry are also therefore of value for companies that are not engaged in traditional professional services but share some of their attributes, such as the

increasing dependency on expert individuals and knowledge workers.

This investigation has three specific objectives, following from the discussion above:

- To ascertain the awareness of knowledge management in GP surveying firms in the UK and Hong Kong;
- To investigate the current practices used to manage knowledge in these firms;
- To reveal the interrelationship between the characteristics of surveying firms and the process of knowledge management in these firms;

Composition of the report

This report is divided into five chapters. Chapter 2, which follows this introductory chapter, presents a literature review of the basic concepts, key elements and general mechanism in knowledge management. In chapter 3, the survey methodology is discussed in detail. Further analysis of the survey data is carried out in chapter 4. Finally, generalisation of the findings, recommendations for GP firms and the limitations of this study conclude the report in chapter 5.

Theory of knowledge management

Concept and types of knowledge

The importance of knowledge has been stressed by many management researchers and authors. An early recognition of the concept of harnessing knowledge in the workplace is attributed to Peter Drucker, who, in the 1960s, introduced the concept of the knowledge worker. He referred to knowledge as displacing capital, natural resources and labour as a basic economic resource (Drucker, 1993). As such, this represented a break from the past. Quinn (1996) shared a similar view while also stating that the economic and producing power of modern organisations lies more in its intellectual assets and capabilities than in its tangible assets.

Before attempting to manage it, it is important to understand what the term knowledge refers to, and the various classifications of knowledge. Davenport and Prusak (1998: 5) have defined knowledge as a "fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information". It originates and is applied in the minds of the owners of knowledge. In organisations, it often becomes embedded not only in documents or repositories, but also in organisational routines, processes, practices and norms. Distinctions are often made between data, information and knowledge (Davenport and Prusak, 1998). A short comparison is shown in Table 2.

Data are a set of discrete facts. Data are unorganised, but the independent numbers, words, sounds and images can easily be structured and captured on machines.

Information is data that is organised, patterned, grouped, and/or categorised. Information changes the way a person perceives something, by impacting judgment or behaviour.

Knowledge is familiarity, awareness, or understanding gained through experience or study. It results from making comparisons, identifying consequences, and making connections of information. Some experts include wisdom and insight in their definitions of knowledge.

Table 2: Comparison between data, information and knowledge

Data	=	Unorganised Facts
Information	=	Data + Context
Knowledge	=	Information + Judgement

Zack (1999) makes distinctions between core, advanced and innovative knowledge. *Core knowledge* is the minimum scope and level of knowledge required for daily operations, while *advanced knowledge* enables a firm to be competitively viable, and *innovative knowledge* is the knowledge that enables a firm to lead its industry and competitors.

Many authors are also concerned with the distinction between *explicit and tacit knowledge* (Nonaka and Takeuchi, 1995; Alavi and Leidner, 1999; Fahey and Prusak, 1998). Explicit knowledge refers to formal models, processes, rules and procedures which can be communicated externally, while tacit knowledge refers to mental models, experiences, stories, rituals and skills residing in the individual and private mind. In a general sense, all knowledge is derived from tacit sources. Dym and Levitt (1991) said that much of what is most precious remains inaccessible and incommunicable. Polanyi (1966) also viewed knowledge as a construct that could not be divorced from its social context, asserting that all explicit knowledge had its roots firmly in the tacit. Knowledge may dynamically shift between tacit and explicit over time, although some knowledge will always remain tacit (Nahapiet and Ghoshal, 1998).

....master craftsmen painstakingly taught their trades to apprentices

Concept of knowledge management

If knowledge is viewed as a resource that is critical to an organisation's survival and success, then, like any other resource, it demands good management. It is claimed that, before the birth of the term "knowledge management", the practice of knowledge management had existed for centuries. For example, workers exchanged ideas and know-how on the job with their fellow workers, and master craftsmen painstakingly taught their trades to apprentices (Hansen, 1999). However, the discipline of knowledge management is a recent development. While Perrow (1967: 196) stated, "*an important aspect of effective managing is understanding - many times people in organisations don't know what they don't know*", it was not until 1986 that Wiig (1986) coined the phrase "knowledge management".

There seem to be as many definitions of knowledge management as there are people

who are working on this subject. Most academics, consultants and technology vendors now subscribe to the view that a consensus definition of knowledge management is futile (Mann, 2002).

In this research, knowledge management is defined as **"applying the individual and collective knowledge and abilities of the entire work force to achieve specific organisational objectives"** (revised from the definition given by KMWG, 2001). KM depends on both the cultural and technological processes of creation, storage, sharing and transfer. The goal of knowledge management is not to manage all knowledge. It is rather to manage the knowledge that is most important to the organisation. Efficiencies occur when the right knowledge gets to the right people at the right time.

By the end of the 1990s, it seemed that knowledge management had become a buzzword, and many consulting firms began offering software and other services to business firms. However, Prusak (1999: 1002) states that the idea of KM is both old and new: while the idea of consultants looking for a profitable new subject to replace an expiring one has some credibility, the fact is that knowledge management is not just a consultants' invention but a practitioner-based, substantive response to real social and economic trends. Three factors have contributed to these trends, namely, globalisation, ubiquitous computing, and the knowledge-centric view of the firm.

Lee (2002) also believes that KM has already been practised in the past, in one form or another. It is an amalgamation of concepts borrowed from the fields of artificial

Table 3: Four modes of knowledge conversion (Nonaka and Takeuchi, 1995: 62)

	To	
	Tacit Knowledge	Explicit Knowledge
Tacit Knowledge	Socialisation	Externalisation
From Explicit Knowledge	Internalisation	Combination

intelligence, knowledge-based systems, software engineering, business process reengineering, human resource management and organisational behaviour. Whereas in the past, KM was approached in a piecemeal fashion, and with little awareness of its value, it is now practised in an integrated and holistic manner.

Key elements of knowledge management

KM involves three major components – people, process and technology (KMWG, 2001). People create, share and use knowledge. Processes acquire, create, organise, share and transfer knowledge. And technology stores and provides access to knowledge. These three elements are the legs of a three-legged KM stool. The stool does not function if one or more of the three legs is not substantially developed.

People element: managing knowledge consists of deciding with whom to share, what is to be shared, how it is to be shared, and ultimately sharing and using it. The success of KM initiatives depends upon people's motivation and their willingness to share knowledge and use the knowledge of others.

Knowledge can be thought of as a commodity and its exchange based around market principles (Davenport and Prusak, 1998). Since firms are unlikely to sanction the actual sale of information between employees, Davenport and Prusak (1998) have suggested that the transactions occur on a personal level, with the sellers receiving:

Reciprocity : The right to receive information from the buyer in the future

Repute : The right to be seen as an expert

Altruism : The satisfaction derived from sharing knowledge

Empson (2000) suggests that sellers may not participate in the market for fear of contamination (being associated with low-status people) and exploitation (not receiving adequate reward for their work). Another reason for people not sharing knowledge may simply be that some people do not know with whom to share or how to share what they know (KMWG, 2001). Lee (2002) also suggested that some Asian values, such as the respect for one's elders, might be an impediment to knowledge sharing.

Tacit knowledge is inherently elusive, difficult to recognise and access

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Therefore, knowledge is exchanged between buyers and sellers, with reciprocity, repute and altruism functioning as payment mechanisms. Empson (2000) further states that trust is an essential condition for the smooth functioning of the market. This trust can exist at an individual level, through close working relationships between colleagues, or at an organisational level, by the creation of a cultural context which encourages and rewards knowledge sharing, and discourages and penalises knowledge hoarding.

Process element: the task of knowledge management is a continuous process and cannot be said to be fully managed (Suresh, 2001). Because knowledge exists inside and outside an organisation, and in both explicit and tacit form, the challenge is finding it, acquiring it, organising it, getting it to those who need it, and encouraging people to actually use it.

For Nonaka and Takeuchi (1995), the most critical function is not the managing of existing knowledge, but the generation of new knowledge. Nonaka and Takeuchi described the knowledge-creation imperative as a dynamic and continuous process involving the acquisition, accumulation, creation and exploitation of new knowledge. Central to this is the conversion - in dynamic

interaction - from tacit to explicit, with a final reconversion to tacit norms. The iterative process advanced by Nonaka and Takeuchi characterises the process moving through four realms in its journey from tacit-explicit-tacit: socialisation, externalisation, internalisation and combination (see Table 3).

- Socialisation is the direct conveyance of tacit knowledge through shared experience.
- Externalisation is the process of articulating tacit knowledge into explicit concepts via such means as metaphor, analogy, hypotheses or models.
- Combination is the process of systematising concepts into a knowledge system.
- Internalisation is the process of embodying explicit knowledge into tacit operational knowledge.

Spender (1996, 1998) also wrote about the assimilation of knowledge through a process of ritual socialisation. He emphasised the importance of the interaction between individual and social knowledge, both of which can be characterised as either explicit or implicit. Though the organisation can provide a framework within which this process may be encouraged, Nonaka and Takeuchi argued that the interaction between tacit and explicit is performed by the individual employee rather than by the organisation. The best the organisation can do is to establish and endorse a framework.

Whereas Nonaka and Takeuchi's work is based on a case study of Japanese firms, which may have a kind of internal self-sufficiency, it is argued by Lomax (2002) that the established Western firm frequently relies on derived input and thought from exogenous sources. This happens informally via daily interaction with suppliers, stakeholders and customers.

According to KMWG (2001), several common practices adopted by organisations in the process of KM are:

- knowledge audits to determine and locate the knowledge that is needed,
- knowledge maps to allow quick access to knowledge,
- communities of practice and apprenticeships to share tacit knowledge,
- best practices and lessons learned,
- content management to keep knowledge current and relevant, and
- story-telling to convey knowledge.

Technology element: the low cost of computers and networks has created a potential infrastructure for knowledge exchange and opened up important knowledge management opportunities. The computational power of computers has little relevance to knowledge work, but the communication and storage capabilities of networked computers make them knowledge enablers. Through email, groupware, the internet and intranets, computers and networks can point to people with knowledge and connect people who need to share knowledge over a distance. Desktop videoconferencing and multimedia computing, which transmit sound and video as well as text, make it possible to communicate some of the richness and subtlety of one person's knowledge to another.

What is new and exciting in the KM area is the potential to use modern information technologies to systematise, facilitate, and expedite firm-wide KM (Alavi and Leidner, 1999). According to Monitor (1998), growth-oriented companies seeking a competitive advantage in the 21st century call knowledge management systems the leading IT issue they face. Many organisations have initiated a range of KM projects and programs where the primary focus has been on developing new applications of IT to support the digital capture, storage, retrieval and distribution of an organisation's explicitly documented knowledge (Zack, 1999). According to Laudon and Laudon (1998), some of the developments are:

- artificial intelligence systems, such as expert systems, neural nets, fuzzy logic and generic algorithms to capture and codify knowledge;
- group collaboration systems, such as groupware and intranets to share knowledge;
- office automation systems, such as word processing, desktop publishing, imaging, electronic calendars and desktop databases to distribute knowledge; and
- knowledge work systems, such as CAD, virtual reality and investment workstations to create knowledge.

Technology is an essential enabler to KM. However, Mentzas (1999) finds that the holistic requirements and constraints of successful KM support are often ignored in business practice. Despite having considerable potential, the availability of electronic knowledge exchange does not automatically induce a willingness to share information and build a new intellectual capital. Major changes in incentives and culture may be required to stimulate the use of new electronic networks, and motivated

...the experts think they receive very little new knowledge back when sharing their own knowledge

creativity is a fundamental aspect thereof.

Barriers to implementation of knowledge management

Suresh (2001: 1) states that the paradox in knowledge management is that "*we are trying to manage what cannot be managed*". Tacit knowledge is inherently elusive, difficult to recognise and access and, on a personal

level, individuals do not need to make it explicit in order to use it (Stenmark, 2001). Furthermore, the dispersed characteristic of knowledge is that it "*never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess*" (Hayek, 1945: 519); "*dispersed knowledge is essentially dispersed, and cannot be possibly gathered together and conveyed to an authority charged with the task of deliberately creating order*" (Hayek, 1988:77).

In practice, Stewart (2002) states that companies waste enormous amounts of money on knowledge management because they fail to figure out what knowledge they need, or how to manage it. In fact, the International Data Corporation (IDC) reports that poorly managed knowledge costs Fortune 500 firms about US$12 billion a year. Mann (2002) attributes the failures of KM to five factors:

- Lack of business purpose - knowledge management is not tied into business processes/ways of working. It is seen as another laborious overhead activity.
- Lack of incentives - employees' personal objectives probably encourage individualistic rather than collaborative activity.
- The people who use it the most are not the people you want/need to use it - as with most communities, the experts think they receive very little new knowledge back when sharing their own knowledge.
- Lack of support from the senior executive level.

Survey methodology

- The focus is on the technology rather than the business and its people.

In addition to these obstacles, Suresh (2001) identifies three other factors and makes the following recommendations:

- Poor planning and inadequate resources - many companies focus their attention on the KM pilot project and forget about the rollout. Organisations need to make the plan, the rollout and the pilot plant simultaneously to avoid loss of focus on the rollout.
- Lack of accountability - knowledge management initiatives peter out if accountability is not fixed on persons to implement the initiatives and see them through. Typically, knowledge management programmes could be implemented by a core team dedicated to that purpose.
- Lack of customisation - knowledge management is not a one-size-fits-all programme. It works best when individual programmes are tailored to the needs of the individual users. It should also fit into the organisational culture.

Table 4: Response rate

	GP firms listed in RICS Directory	GP firms in HKIS Directory	Total
Target population	150	67	217
Valid responses	23	18	41
Replied with reasons for not participating	(8)	0	(8)
Response rate	15.3% (27.3%*)	26.9%	18.9% (22.6%*)

* This figure includes the 8 respondents who provided reasons for not participating.

Target population

Since the aim of the survey was to investigate current awareness and KM practices in GP surveying firms in the UK and Hong Kong, the target respondents of the survey should have been all the GP surveying firms in the UK and Hong Kong. However, there are no formal statistics about the exact number of GP surveying firms in these two locations. There were 706 GP firms listed in the RICS Geographical Directory 2001, and 67 listed in the HKIS Surveying Company Directory 2001. The actual number should be more than these two figures indicate, and the total population is estimated to be around 1000. In the end, it was decided to randomly select 150 GP surveying firms in the UK and all the 67 firms in Hong Kong as the target respondents for this survey. Table 4 tabulates the response rates from the UK and Hong Kong.

Data analysis

Online survey responses were collected, bundled and exported in an Excel data file. Questionnaires sent to Hong Kong companies by post and fax were hand tabulated and added to this data file. This dataset was then imported into SPSS version 10.0 to conduct the data analysis.

In chapter 4, the responses to the questionnaire are analysed to provide an overview of perceptions of KM and the current state of KM practices in the respondent GP firms. Given present purposes and the number of responses, the focus of the analysis was placed on basic descriptive analysis. Numbers of respondents

Data analysis and discussion

(N), mean value (Mean), and standard deviation (S.D.) are presented for the variables. A few responses to individual questions appeared to have been left out by mistake by respondents, but no pattern was found. The missing values were automatically dealt with by SPSS.

Within each of the key areas (general strategy, knowledge acquisition and storage, knowledge transfer and sharing, evaluation, and barriers), the results shown are comprised of both quantitative results, derived mainly from the survey, and qualitative results, derived from both the survey and the internet search. All transcript quotations are indented to distinguish them from other comments.

Table 5: Company information

		Frequency	Percent	Cumulative Percent
Type of discipline	GP	28	68.3	68.3
	Multi-discipline	13	31.7	100.0
Geographic presence	UK local	19	46.3	46.3
	HK local	13	31.7	78.0
	Multi-national	6	14.6	92.7
	Global	3	7.3	100.0
Firm size	< 10	15	36.6	33.6
	11-30	9	22.0	58.5
	31-50	6	14.6	73.2
	51-100	6	14.6	87.8
	101-200	1	2.4	90.2
	>200	4	9.8	100.0
Total		41	100.0	100.0

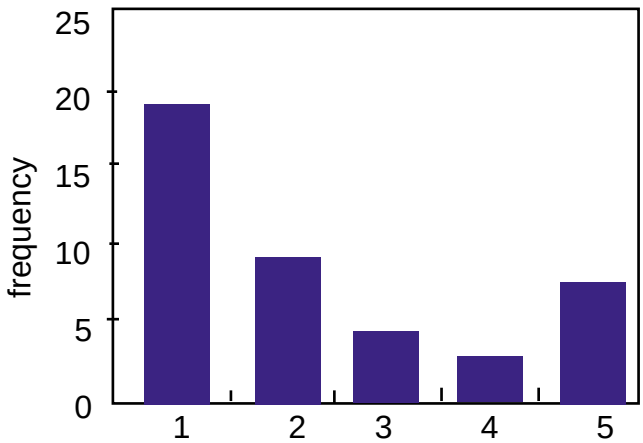
Table 6: Respondents' positions

Position	No.	Position	No.
Director	10	Partner	8
Managing Director	5	Principal	3
Associate Director	2	CEO	2
Vice President	1	Administrative Manager	2
Director of Information Systems	1	Head of Real Estate Consultancy	1
Valuation Team Leader	1	Head of Professional Services	1
Valuation Assistant	1	Office Manager	1
Clerk/ Secretary	1		

Respondent company information

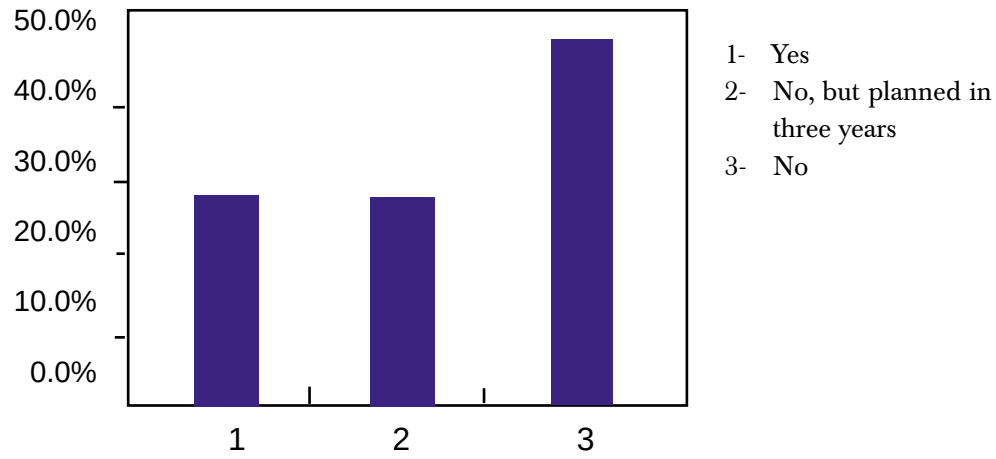
As shown in Table 5 nearly 70% of respondents were general practice only firms, and the rest were multi-disciplinary surveying firms. The respondents were a good mixture in terms of their geographical presence. The

Figure 1: Perceptions of knowledge management



1- Valuable way to organise and use corporate information
2- Major new strategic imperative for staying competitive
3- New spin on old technology
4- Latest management fad
5- Others

Figure 2: Knowledge management strategy in place



majority (78%) - of the companies operated on a local level (19 firms in the UK and 13 in Hong Kong), with others either operating on a multinational (14.6%) or global level (7.3%). Interestingly, firms were relatively small in scale - nearly 90% had fewer than 100 employees and only 4 had over 200 employees. This finding is in line with the overall structure of the profession. Excluding one response where the information was not provided, the positions of the people who filled in the questionnaire are shown in Table 6. It can be seen that the majority of the respondents were from the senior managerial level, thus constituting a good sample and yielding more reliable results.

General knowledge management strategies

Perceptions of knowledge management

The Delphi Consulting Group study (1997) has identified two distinct approaches to knowledge management – the "strategic" and "logistical" approaches. The former views KM as a weapon for competitive advantage, which could have far-reaching implications across the organisation; the latter sees KM as "*a useful approach to information organisation*". It can be seen from Figure 1 that about 25% of the responding firms belonged to the "strategic" group, whereas about half belonged to the "logistical" group. In addition, four respondents (9.8%) thought it

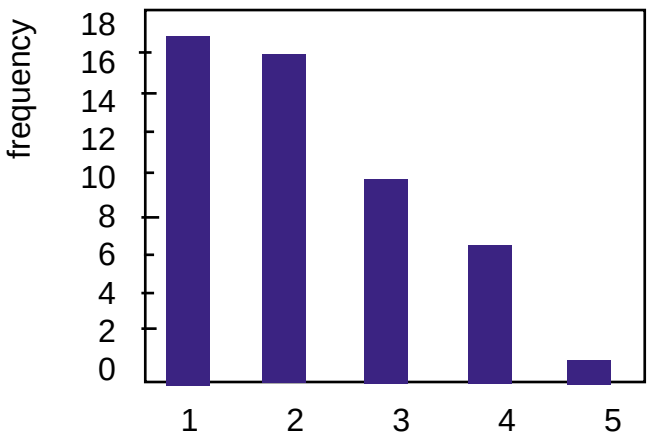
Table 7: Knowledge management strategy in place

	Respondents selected from		
	RICS Directory	HKIS Directory	Total
Yes	7	5	12
No, but planned in 3 yrs	6	5	11
No	10	8	18
Total	23	18	41

was a "new spin on old technologies" and two regarded it as the "latest management fad". "Others" includes: "No idea what it is", "Never heard of it", "Tell me more", "Not thought of it in this office", "Doesn't mean anything to me" and "The term is a disaster".

As stated by Fiddis (1998: 26), the focus of the "strategic" group is the application of knowledge and cultural change programmes to enable the sharing of tacit knowledge, while the "logistical" group puts its efforts in technology and focuses on improving organisational effectiveness. The data also show that although these respondents generally regarded KM as a beneficial management strategy, many were unfamiliar with the KM concept and a few even had misgivings about it.

Figure 3: Key elements of knowledge management



1- Knowledge sharing
2- IT aspects
3- Human resource aspects (training, incentives, recruiting, …)
4- Organisational aspects (communities of practice, …)
5- Others

Knowledge management strategy in place

Respondents were asked whether their organisation had a knowledge management strategy in place. Overall, 11 respondents (26.8%) indicated that their company had a KM strategy (see Figure 2) in place. Of the respondents who stated their companies were not currently involved in a KM initiative, 36.7% stated that they were considering doing so in 3 years. Firms selected from different directories showed little difference in this respect (see Table 7).

The current implementation rate of KM was not very high in the surveyed GP firms. However, this rate was expected to double in 3 years, which is an encouraging signal (see Figure 2). This coincides with the trend seen in other sectors and industries (e.g. the KM 2001 survey, the EFQM and CIBIT 2002 survey, the KPMG 2003 survey). The survey responses confirm that knowledge management is migrating from a discrete undertaking to a strategic component of business solutions, with more and more firms adopting it.

Key aspects of knowledge management

Respondents whose firms had a KM strategy planned or in place were asked to select the key aspect(s) of KM. Figure 3 shows that over 75% of the firms regarded knowledge sharing and IT as key elements. Compared with the organisational aspects, HR aspects also received considerable attention. One respondent put "data mining and modelling" in the "others" category.

These results reveal that while the importance of knowledge sharing was well accepted, KM was not yet distinguished from information management. This coincides with the view that "*the information systems themselves - not the people - can become the stable structure of the organisation. People will be free to come and go, but the value of their experience will be incorporated in the systems that help them and their successors run the business*" (Applegate et al., 1988: 44). GP firms seem not to be paying enough attention to the organisational aspects of KM; however, in some industries, such as business consultancy and law firms, communities of practice are rapidly emerging as effective means of making applications and information personally relevant to the knowledge worker within a collaborative environment.

Goals of knowledge management

Respondents were asked to give ratings to the relative importance of nine goals of implementing KM in their firms. Table 8 clearly shows that with the exception of the goal "to encourage innovation", all the other eight goals were seen as being important. The most important goal was "to increase customer satisfaction", followed by "to

Table 8: The importance of various goals of knowledge management

	Mean	S.D
To increase customer satisfaction	1.50	.67
To increase market share	1.68	.89
To improve knowledge sharing horizontally	1.86	1.17
To make up for loss of knowledge	2.00	.98
To improve work efficiency	2.05	1.05
To reduce cost	2.14	.83
To improve knowledge sharing vertically	2.36	1.05
To increase employee satisfaction	2.45	.96
To encourage innovation	2.50	.80

1 - Very important, 2 - Important, 3 - Neutral, 4 - Not so important,
5 - Not at all important

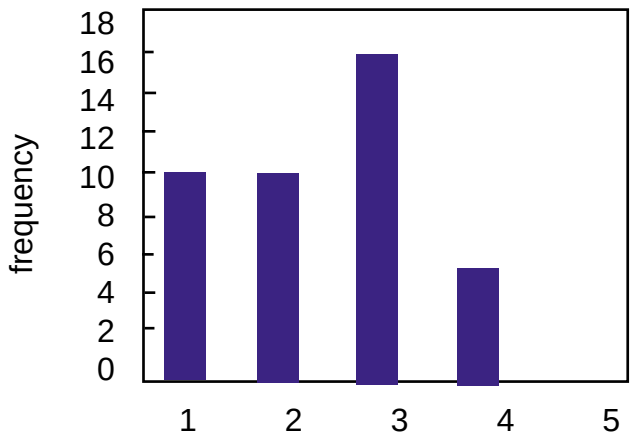
increase market share". From the managers' point of view, they seemed to be more concerned with horizontal knowledge sharing than vertical knowledge sharing. It was a surprise to find that the importance of "to increase employee satisfaction" was nearly "neutral".

In addition to these results, statements like the following were found on the websites of GP surveying firms:

- "The introduction of Quality Management Systems is designed to ensure clear and measured added value to clients."
- "We offer a highly professional and personal service tailor made to the specific needs of each client."
- "The firm has to adhere to the highest professional standards, yet it is able to maintain personal contact with its clients, backed up by modern computerised systems and top quality presentation."

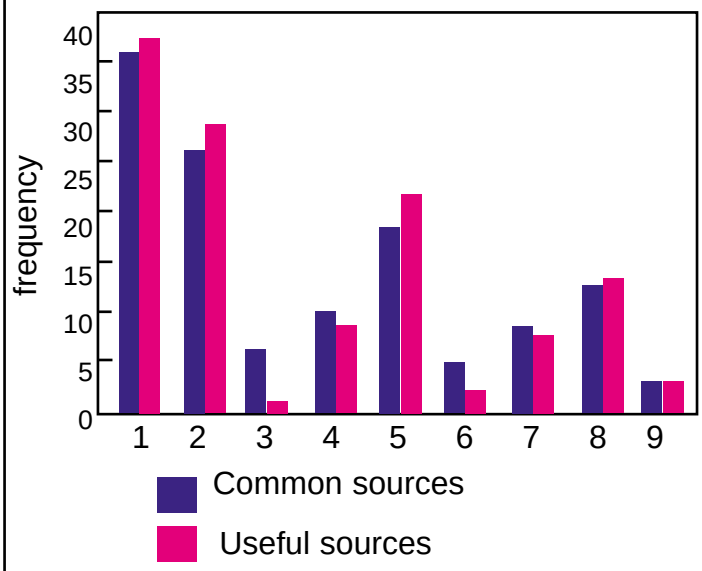
As well as stressing the "professional service" component, the GP surveying firms claimed to put the customer first. Therefore, it is understandable that the most important goal was to "increase customer satisfaction". This is also roughly consistent with the finding of the Delphi Consulting Group survey (1997),

Figure 4: Knowledge storage methods



1 Human memory storage
2 Traditional filing system
3 Personal computer
4 Intranet
5 Others

Figure 5: Sources of knowledge



1 Personal experience
2 Colleagues' experience
3 Internal courses
4 External courses
5 Interaction with outside parties
6 Research and Development Dept
7 Company library
8 Resources outside company library (including internet, journals and books)
9 Others

namely that the two most important justifications for KM are "faster responsiveness" and "increased value for customers".

However, Frappaolo (2002: 24) states that KM clearly differentiates itself from other approaches to governing expertise in that "*KM assumes a constant vigilance of change, and encourages innovation at a rate that at least keeps pace with changing market dynamics*". Coopers and Lybrand's Innovation Survey (1997) also asserts that knowledge is critical to achieving innovation. The importance of innovation, clearly, has not received as much recognition as it deserves in these GP firms.

Knowledge acquisition and storage

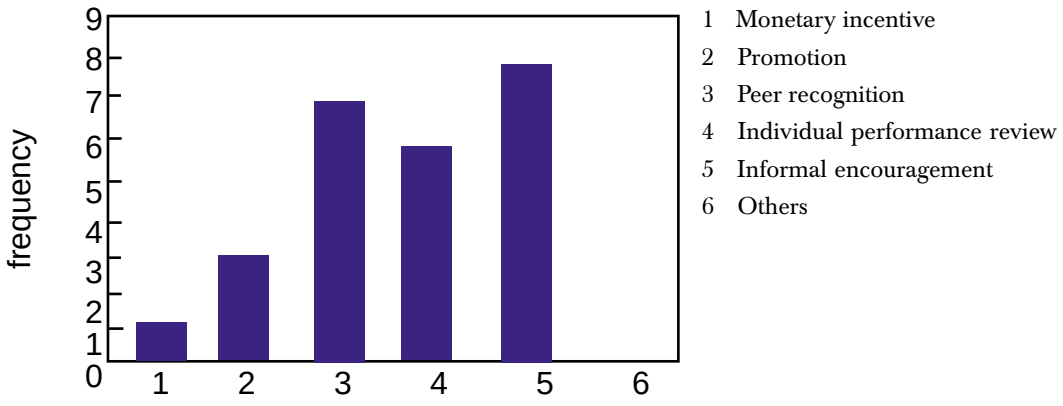
Knowledge storage method

All respondents were asked what was the most common knowledge storage method in their firms. The personal computer ranked first (39%), followed by human memory and filing systems, which are relatively traditional methods of knowledge storage (see Figure 4). This finding confirms the progressive use of computers and information technology in GP surveying firms. It also indicates that more and more corporate knowledge is being made explicit and stored in information systems.

Sources of knowledge

Respondents were asked to identify the three most common and three most useful sources of knowledge. The combined results are presented in Figure 5. Personal experience, colleagues' experience and interaction with outside parties were both the most common and most useful resources of knowledge. This infers that in eliciting existing knowledge,

Figure 6: Incentives for knowledge sharing



people rely heavily upon face-to-face exchanges and personal networks. Non-communicative methods such as using the departmental library, reading professional journals and magazines, searching the internet and reading books are rated lower in terms of usage and usefulness. Courses, internal courses in particular, seem to be less useful than expected.

This heavy reliance on face-to-face communication to acquire and share knowledge indicates that a large part of knowledge in the GP firms remains tacit and dispersed in the individual's mind. This is consistent with the statement by Polanyi (1966) and Nonaka and Takeuchi (1995) that the most valuable experiences are tacit, and it is very hard to express these in written words or numbers.

Knowledge transfer and sharing

Reward for knowledge sharing

Twenty-six respondents (63.4%) stated that their firms did not provide incentives for knowledge sharing. In those firms where knowledge sharing was rewarded, it was found that the most common incentive was "informal encouragement" (32%), followed by "peer recognition" (20%) and "individual employee performance review" (17.1%). Few firms used promotion and money as incentives (see Figure 6).

Table 9: IT provisions

	Mean	S.D.
Telephone	4.98	.16
Email	4.63	.83
Fax	4.56	.95
Inernet	4.56	.92
Intranet	2.85	1.85
Telephone conferencing	2.49	1.70
Project management software	1.93	1.25
Web conferencing	1.22	.88
Video conferencing	1.10	.37

1 - None, 2 - Less than half, 3 - About half, 4 - More than half, 5 - All

On one hand, the lack of provision of incentives for knowledge sharing indicates the absence of an organisational culture that encourages knowledge sharing; on the other hand, among those firms who employed such incentives, the focus was on the intrinsic rewards. As suggested by Huber (2001), extrinsic rewards can deflect attention from the intrinsic satisfaction or social-psychological motivators that may, in the long run, be more effective at prompting knowledge transfer. As suggested by Hasanali (2002), organisations have to maintain a balance between intrinsic and explicit rewards in order to encourage employee behaviour. The most effective use of explicit rewards has been to encourage sharing at the onset of a KM initiative. If the attendees do not find value in the system, providing incentives will not sustain their participation. As explained previously, people share because they want to, they like to see their expertise being used, and they like being respected by their peers.

Provision of technical processing tools

Table 9 illustrates the provision of technical processing tools in the respondents' firms.

Table 10: Effectiveness of knowledge management

	Mean	S.D.
Improving work efficiency	1.64	.50
Increasing customer satisfaction	1.82	.60
Improving knowledge sharing horizontally	2.00	.63
Making up for loss of knowledge	2.09	.83
Improving knowledge sharing vertically	2.36	.67
Increasing employee satisfaction	2.36	.50
Reducing cost	2.55	1.29
Encouraging innovation	2.64	.50
Inceasing market share	2.82	.60

1 -Very successful, 2 - Successful, 3 - Neutral, 4 - Not so successful,
5 - Not successful at all

Telephone, email, fax and internet scored high - a value above 3 means that more than half of the staff used those tools. However, web and video conferencing were rarely used or were provided to only a small number of staff, and are less widely used than other tools. The provision and use of tools such as intranets, telephone conferencing and project software varied widely between firms.

One study conducted by the IDC in 2002 showed that more advanced tools are of little interest, even among some early adopter firms. It is believed that, while GP firms are becoming more keen to enhance their internal collaboration and retain the expertise of their key personnel, emerging technologies will be adopted later to extend the value of the content from a variety of sources, the know-how inside and outside the enterprise, and productivity-enhancing applications.

Evaluation of knowledge management

The effectiveness of knowledge management

Those respondents whose firms had implemented KM were asked to give ratings to the effectiveness of the KM programmes in their firms (see Table 10). The view that emerged was that KM was very successful at improving work efficiency, customer satisfaction and horizontal knowledge sharing, but had not achieved the goals of reducing cost, encouraging innovation and increasing market share.

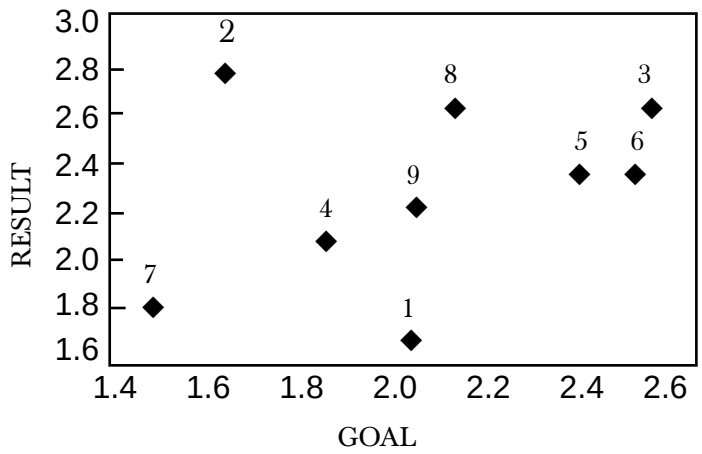
Figure 7 reveals interesting findings when comparing KM goals with results. Most of the items have a positive relationship between importance and effectiveness. On the lower end of the line, "to increase customer satisfaction" was seen as the most important motivator to establish KM, and KM has been successful in achieving this goal. On the upper end of the line, innovation was not stressed by many firms, and KM does not seem to have done much in encouraging innovation. The chart also exhibits one marked deviation - the item regarding "market share". Contrary to the firms' expectations, KM seemed not to be effective in increasing market share, at least in the short term.

Evaluation of knowledge management

Measurements help gauge and manage knowledge assets, and support continuous improvement. Among the 11 GP firms who provided information on this, 5 had no follow-up evaluations to assess the progress made in implementing KM. "Written or oral feedback" and "comparisons made between the respondent's firm and other firms in the country" were adopted by all the remaining 6 firms. In addition, one firm used indicators and made comparisons with companies in other countries. No firm used the balanced scorecard approach as suggested by Kaplan and Norton (1996). Therefore, the results so far indicate that feedback evaluation systems, especially formal ones, are lacking. Because many variables may affect an outcome, it is important to correlate KM activities with business outcomes, while not claiming a pure cause-and-effect relationship. Due to the impossibility of completely isolating KM results, tracking the correlations over time is also important.

Groups responsible for KM implementation

Figure 7: KM goals vs. results (1 = important, 3 = not important)



1- Work efficiency
2- Market share
3- Encouragement of innovation
4- Horizontal knowledge sharing
5- Vertical knowledge sharing
6- Employee satisfaction
7- Customer satisfaction
8- Cost reduction
9- Making up for lost knowledge

Table 11: Group responsible for KM

Function Groups		Number
Information Technology		4
Executive Management Team		1
Library/Document Centre		1
Human Resources		1
Knowledge Management Unit		0
Don't Know		0
Others	IT, Lib and Executive Team	1
	Quality Management Services	1
	General staff	1
	No definite staff	1

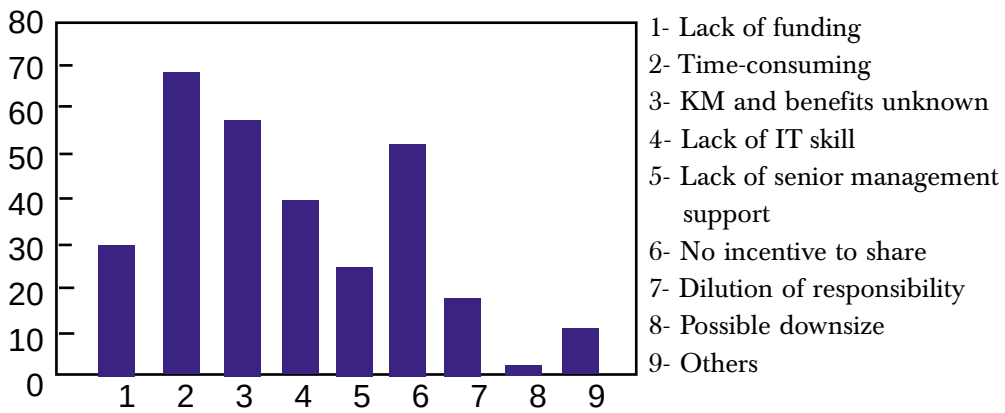
According to Charles and Bixler (2002), the successful implementation of a knowledge management system requires a champion or leader at or near the top of an organisation, who can provide the strong and dedicated leadership needed for cultural change. Thus, focus must be placed on building executive support and KM champions. However, Table 11 shows that, in all the firms where KM was implemented, no definite person was designated or group set up to be directly responsible for the implementation of KM. There was clearly a heavy reliance on the IT team to implement the KM programme, which is consistent with the previous observations that the focus was on the IT component of KM in those firms. Certainly, the IT department cannot work alone to implement KM. Buying-in from future users of the knowledge management solution is as important as making the right technology decisions. Furthermore, the results also indicate a certain degree of misapprehension of responsibility. This suggests that many KM initiatives still emerge at the grass-roots level.

Overall rating of implemented knowledge management

The mean for the rating was 2.18 on the 5-degree scale, "1" being "very successful" and "5" being "not successful at all". In other words, most respondents thought that KM practices were fairly successful in their firms. It should be noted that the evaluation of KM is difficult due to the lack of financial performance indicators available to measure the success of knowledge management. In the absence of financial measures, companies must understand the implicit benefits of improved collaboration, customer satisfaction, and employee effectiveness.

Barriers to knowledge management implementation

Figure 8: Barriers to the implementation of KM



Barriers to KM implementation

As seen from Figure 8, the biggest identified barrier to KM implementation was that it is "time-consuming". Managers may be very busy at work and thus have no time to share knowledge with others. And although some technical tools could improve efficiency in the long run, managers may still consider that to train their employees and to maintain the systems are time-consuming activities. Thus, the processes, technologies, and roles designed during a KM initiative must save employees' time, not burden them with more work. This can only be accomplished if the employees' work patterns are accounted for during the initial design and planning phase of the initiative.

As stated before, KM is still an unfamiliar topic to many GP surveying firms, since many did not know what it means or what benefits it may bring. This fact may further add to the difficulty of implementing KM programmes in this sector. The reasons for people not being willing to share have been explained in the literature review. The survey further evidenced that in such knowledge-intensive and professional service firms, possession of knowledge is seen as a personal advantage, and a knowledge-hoarding culture exists to a certain extent. Managers have already recognised that this mentality acts as a big obstacle to the implementation of KM.

Assertions about knowledge management

It is believed that certain myths surrounding

Table 12: Assertions about KM

	Min	Max	Mean	S.D
KM is somthing new	1	5	2.85	1.20
KM is about technological solutions	1	4	2.63	.86
Sharing knowledge reduces one's competitive advantages	2	5	3.78	1.01
It is difficult to capture undocumented knowledge	1	5	2.32	1.01
Competitors/General public would be able to access sensitive information	1	5	3.00	1.14
Good KM is driven by a good chief knowledge officer	1	5	2.32	.91
KM is adapted to big firms but not S & Ms	1	5	2.83	1.24
KM is not a top priority in my company	1	5	2.76	1.16

1 - Definitely agree, 2 - Agree, 3 - Neutral, 4 - Disagree, 5 - Definitely disagree

KM are acting as impediments in KM development. Therefore, the respondents were asked to give their opinions on some widely debated statements, to ascertain their attitudes towards KM. The results are shown in Table 12.

Clearly, all items have a large range and a high standard deviation, which suggests that there is no answers now, so the figures cannot be interpreted as the attitude of the sector as a whole. However, it is still helpful to look at the assertion "sharing knowledge reduces one's competitive advantage". Although the literature review and this rescard suggest that knowledge sharing is perceived as more difficult but also more important in GP surveying firms, it is interesting to note that managers generally do not think that sharing knowledge reduces one's competitive advantage. They may be willing to share, but have no time or don't know with whom or how to share. Hence, it is useful to restate here that it is important to market the concept of KM to the whole organisation, and that this communication should be integrated into the business process.

Conclusions and recommendations

Summary of findings

This chapter summarises the results of the study, discusses their implications, highlights the limitations of the study, and finally outlines directions for future research. Referring back to the research objectives, the major findings of the questionnaire survey are summarised as follows.

The awareness and status of knowledge management

Although knowledge management is perceived by the majority as a valuable way to organise corporate information and a strategic imperative in order to stay competitive, this concept is still not widely understood among GP surveying firms in the UK and HK. The potential benefits, such as encouraging innovation, are not fully recognised by most firms. Furthermore, knowledge management is not distinguished from information management. This is evidenced by the stress on the technology element of KM and the allocation of responsibility largely to IT departments in these firms.

The most important motivator for establishing KM initiatives is the opportunity to increase customer satisfaction

The most important motivator for establishing KM initiatives is the opportunity to increase customer satisfaction, followed by increasing market share and improving horizontal knowledge sharing. This is consistent with the "professional service" business nature of GP firms. On the other hand, the three biggest barriers are "lack of time", "lack of understanding of KM and its benefits" and "lack of incentives to share knowledge". This finding suggests that the current corporate culture neither facilitates nor promotes knowledge sharing.

Although the current implementation rate of KM is not high, it has great potential to increase in the next few years. There is a trend towards more formal strategic planning for knowledge management in support of business objectives. KM is a subject that needs to be better understood by managers, and subsequently incorporated into their strategic planning.

The influence of professional identity on knowledge management

GP surveying firms are characterised by a professional culture and identity. Fierce competition sets a high value of individual competence and knowledge. Professionals using expert language are working at a high level of abstraction, which acts as a cognitive obstacle to knowledge sharing. There exists a knowledge-hoarding culture, although the managers of the GP firms surveyed here

generally did not agree that sharing knowledge reduces one's competitive advantage.

Experience-based methods were favoured by the professionals. Knowledge acquisition by informal and face-to-face interactive communicative methods has an advantage over the use of more formal and passive methods. This preference may be due to the fact that a large amount of tacit and dispersed knowledge resides at the individual level, and it is difficult to make such knowledge explicit and at the organisational level.

Regarding the incentives to share knowledge, it is surprising to find that over half of the GP firms surveyed do not reward their employees for knowledge sharing. In those firms where such incentives are provided, intrinsic rewards are more common than extrinsic rewards. The reason may be that, for professionals, intrinsic satisfaction or social-psychological motivators may in the long run be more effective at prompting knowledge sharing.

The role of IT in knowledge management

Technology is an essential enabler of KM. With only a few exceptions, the GP surveying firms in this study were well equipped with internet, email, telephone and fax. Personal computers, rather than human memory and filing systems, were reported as the most common method of knowledge storage. This finding indicates that there is progressive use of IT to make implicit knowledge explicit. However, most IT tools in use were basic and related to knowledge storage and daily communication, whereas tools enabling virtual meetings and knowledge creation had not been implemented.

On one hand, this result is further evidence for the view that the "first wave" of KM implementations is technology-driven; on the other hand, this helps to explain the low adoption rate of KM - some managers believe that KM requires the advance purchase of expensive technology systems, and this prevents them from investing in it at present.

Recommendations for the GP surveying firms

This study does not intend to give a step-by-step implementation process for the design and refinement of the KM infrastructure and strategy, as knowledge management is not a homogeneous process. Thus, just a few general and adaptable strategies are given here.

The main implementation challenge stems from the employees' lack of understanding of KM and the benefits it offers. Firms can address this challenge by training their staff, changing their management and processes, and redesigning the primary components of their KM initiatives. Working with rather than against barriers is the art required, or, in metaphorical terms: they need to adopt a "martial arts" rather than a "boxing" approach. What used to look like barriers will then be considered opportunities for learning. Once organisations develop a sense for opportunities, development will follow, and will in the end promote awareness of KM.

Another problem is associated with knowledge sharing. To facilitate or smooth this process, firms could develop organisational trust using sanctions, or policies and a strong culture. Alternatively, they could promote interpersonal trust, such as knowledge-based trust, identification-based trust, and relational trust (Das and Teng, 1998; Edmondson and Moingeon, 1999).

Finally, firms should strike a balance between the people and technology elements. A good technology-based KM system need not be complicated or capital-intensive, insofar as it could serve the core business by providing internal information within a work group and sharing customer-specific information with clients. The surveying sector is characterised by a wide variety of different types of organisations, including many small and medium firms. Careful attention needs to be placed on the selection of tools that are appropriate for different actors within the sector, particularly those with severe resource constraints. It should further be noted that the best tools and processes alone will not achieve a KM strategy. Ultimately, KM aims to free up professionals' valuable time, enabling them to focus on creating thoughtful and innovative approaches rather than focusing on data capture from disparate sources.

Limitations and suggestions for future studies

The results of this study should be considered as indicators of current awareness and practices of KM in GP surveying firms, rather than as definitive findings. The sample from which the data were derived is too small for hard statements in this regard. The results are also subject to limitations arising from the time frame, the use of a questionnaire and its different delivery methods. It was not possible to control the settings in which the questionnaires were completed, nor was it possible to identify potential factors that may have impacted the results. However, these results do suggest a certain number of practices in GP surveying firms in the UK and HK with regard to knowledge management, and they serve as a foundation for more a refined investigation in the future.

It would be worthwhile conducting a factor analysis of professionals' willingness to share knowledge. Future work could also develop and test a more dynamic approach to the contingency theory. For example, it would be interesting to test whether those GP surveying firms that have implemented knowledge management have experienced improved performance over time. It would also be useful to conduct a cross-sectional analysis in different sectors of the surveying industry, to examine how business nature may influence KM processes.

As stated before, in today's knowledge-based and increasingly service-oriented economy, some characteristics that have so far been unique to professional services firms like GP surveying firms will become more common in other industries. Research in the area of professional services firms is rich with possibilities and has wider applications. This particular study only scratches the surface and offers several promising points of departure for future research.

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