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INDIANA UNIVERSITY

A strategic risk approach to knowledge management

Bruce E. Perrott

University of Technology, Sydney, P.O. Box 123, Broadway, NSW 2007, Australia

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Abstract

In today's business environment, strong forces of competition and globalization have created an urgency to focus how an organization controls and nurtures its intellectual capital. The concept of knowledge and its management has gained currency and momentum as technology has enabled thoughts and ideas to be more easily generated and distributed. With increased application of technologies such as the Internet, Customer Relationship Management (CRM), and advanced software capabilities, it has been suggested the time has come for discussion of a new paradigm for knowledge management. Toward that end, this article examines the knowledge literature and reviews the experience of a leading private healthcare group, with the objective of gaining a better understanding of the issues that confront effective knowledge management in contemporary organizations. Finally, a tentative knowledge process model is developed herein, one which is intended to guide future discussion in the ongoing knowledge debate.

1. A perspective on knowledge management

Knowledge management (KM) is not a new concept. Beyond its role in ancient world history, KM came into mainstream relevance in the mid-fifteenth century with the invention of Johann Gutenberg's revolutionary printing technology. The resulting increase in printed books and manuscripts coincided with the development of libraries, which quickly became a main source of knowledge for many people. Less than 200 years later, there was a rapid expansion of learning and knowledge through newly-formed societies which had the charter of disseminating new thinking and knowledge through journals (Weigand & Davis, 1994).

The next major change impacting dimensions of information and knowledge capture, storage, and distribution was the introduction of computers. Through this technology, digital words were captured and shared between computers across wide geographical distances. This trend gathered momentum with the spread of the Internet and continues to move forward as information technology (IT) advances.

In the 1990s, senior managers began to talk about knowledge management when they realized the foundations of modern economies had shifted from natural resources to intellectual assets. By this time, networked computers provided the capability to address how knowledge might be codified, stored, and shared, both practically and economically (Hansen, Nohria, & Tierney, 1999). One estimate from this period suggested that three-quarters of

E-mail address: Bruce.Perrott@uts.edu.au

the Fortune 100's total market capitalization was represented by intangible assets such as patents, copyrights, and trademarks. As such, the responsibility of managing these important company assets became very clear to senior managers, as well as corporate legal staffs (Reitzig, 2004).

To some, knowledge management is seen to be a logical extension of three basic business trends:

(1) An increasing amount of digitized information data that is available 24 hours a day, seven days a week;

(2) Globalization of business such that production can occur anywhere in the world, as it is knowledge that is the true source of competitive advantage; and

(3) A growing complexity of business, which requires that new business processes will deliver 'the right information at the right time' so as to ensure accountability and reduce the risk of mistakes. (Guptill, 2005)

Herein, I attempt to demonstrate the need for a disciplined approach to the organization and management of knowledge in an operating environment which is increasingly complex and information rich.

In discussing the concept of knowledge, it is helpful to make a distinction between various use graduations of terminology as employed in the literature. *Data* is often described as the base platform in the knowledge hierarchy, and is defined as facts and statistics either historical or derived from experimentation or calculation. *Information* is the next step in terms of value and has been considered as 'systematically organized data' (Meadows, 2001). *Knowledge* has been conceptualized as 'actionable information,' thus more effectively assisting in the decision-making processes within the organization. Finally, *wisdom* is often seen as the highest dimension on the knowledge tree, whereby it is possible to act appropriately in a given situation with a strong element of ethical judgment (Jashapara, 2004).

2. What is knowledge management?

A new focus of interest emerged with the transitioning of the industrial economy into what Drucker (1992) refers to as the 'knowledge economy.' The management of knowledge has gained interest from both academics and practitioners, with the realization that knowledge holds the key to organizational growth and development. Research and publications have emerged from different disciplines, reflecting the wide impact of this interest area on numerous functions and at different levels of the business. Some have conveniently attempted to organize contributions into those that take an information-based approach, while others have looked more at the human side of knowledge creation, sharing, and management.

It has been suggested that knowledge management, as a field of study, will gain considerable momentum through dialogue and debate with multiple disciplines. Further, it has been put forward that this branch of learning will yield rich rewards as it moves into a new paradigm of work (Jashapara, 2004).

Many definitions of knowledge management appear in the extant literature. By considering the following examples, differences may be observed regarding perceptions of scope and emphasis:

- "Knowledge management draws from existing resources that your organization may already have in place - good information systems management, and human resource management practices." (Davenport & Prusak, 1998, p. 8)
- "...any processes or practice of creating, acquiring, capturing, sharing, and using knowledge, wherever it resides, to enhance learning and performance in organizations." (Swan, Scarborough, & Preston, 1999, p. 27)
- "...all methods, instruments, and tools that in a holistic approach contribute to the promotion of core knowledge processes." (Mertins, Heisig, & Vorbeck, 2000, p. 12)
- "Knowledge management is the identification, storage, protection of knowledge for future operational and strategic benefit of the organization; this may be implicit or explicit." (Perrott, 2006)

The latter definition is used to guide the discussion of this article, as it contains a number of elements considered essential in helping the reader to conceptualize the scope and dimensions of knowledge management in organizations. Firstly, it distinguishes between operational and strategic knowledge. While operational knowledge is concerned with the day-to-day running of the business, strategic knowledge is essential to major decisions an organization must make to capitalize on priority opportunities and successfully overcome major threats. Secondly, the chosen definition recognizes that knowledge contained in an organization may be implicit (that is, remaining in the domain of the individual) or explicit (knowledge that is available for use throughout the organization). One critical dimension of contemporary knowledge management is the sensitive but critical issue of when, if, and how implicit knowledge should be made explicit and available for wider

use throughout the organization. The third benefit of this definition is that it recognizes knowledge management as process, rather than an occasional or one-off event. Ongoing and continuous process will be essential in actioning knowledge creation in vital areas of knowledge deficiency (refer to Drew's (1999) knowledge classification framework, outlined in Section 4).

3. Dimensions of knowledge

There is considerable debate in the literature regarding various types and dimensions of knowledge. In particular, the distinction between tacit and explicit knowledge receives substantial attention. *Tacit knowledge* is that held in the minds of individuals, while *explicit knowledge* is that externalized and shared with others. It has been suggested that there are four modes of interaction between these two forms of knowledge:

(1) *From tacit knowledge to tacit knowledge*: the process of 'socialization' through shared experience and interaction;

(2) *From explicit knowledge to explicit knowledge*: the process of 'combination' through reconfiguring existing knowledge (such as sorting, adding, recategorizing, and reconceptualizing explicit knowledge) can lead to new knowledge;

(3) *From tacit knowledge to explicit knowledge*: the process of 'externalization' using metaphors and figurative language; and

(4) *From explicit knowledge to tacit knowledge*: the process of internalization through the learning process. (Polanyi, 1967)

Davenport and Prusak (1998) describe the knowledge management process as necessarily loose and collaborative because the human qualities of knowledge (such as experience, intuition, and beliefs) are not only the most valuable, but also the most difficult to manage and maximize. Hence, the knowledge management process integrates theories from at least four distinct fields: Theories about organizational culture, organizational structures, organizational behavior, and knowledge-based systems, leading to theories about knowledge support infrastructures (Baskerville & Dulipovici, 2006).

Other research emphasizes the importance of context in the knowledge conversion process (Ancori, Bureth, & Cohendet, 2000) and that knowledge should be seen as a cultural process situated in, and inextricably linked to, the material and social circumstances in which it is produced and consumed (Hassard & Kelemen, 2002). A balanced environment of power, control, and trust is seen as an essential condition for a successful knowledge-oriented culture; Allee (2003) suggests that if people do not trust each other, they do not exchange knowledge and ideas. Here, trust helps build and sustain valuable networks and rewarding relationships while a lack of trust erodes knowledge leadership, creation, and transfer.

The knowledge management process is seen to begin with the formulation and implementation of strategies for the construction, embodiment, distribution, and use of organizational knowledge. Other strategies include those for the basic management functions to monitor and measure the knowledge assets and processes (Quintas, Lefrere, & Jones, 1997).

4. Relevance of knowledge management

An intensifying focus on the management of knowledge can be explained by increasing demands upon organizations, posed by the operating environment. Knowledge becomes the critical currency in determining outcomes in a competitive and demanding world. Additional pressures include rapidly changing and turbulent operating environments, high stakeholder demands, corporate governance requirements, accountable risk management strategies, and the need to replicate acceptable performance (Perrott, 2006).

These pressures demonstrate the importance of possessing and harnessing relevant and timely knowledge, and that businesses associated with the sub-optimum management of knowledge will face risks. Drew (1999) presents a classification of business knowledge which highlights where the risks of knowledge deficiencies may occur:

- *What we know we know* (knowledge sharing, access, and inventory);
- *What we know we don't know* (knowledge seeking and creation);
- *What we don't know we know* (uncovering hidden or tacit knowledge); and
- *What we don't know we don't know* (discovering key risks, exposures, and opportunities).

To further demonstrate the risks stakeholders face due to inadequate knowledge availability, Zack (1999) refers to the concept of a 'knowledge gap,' which represents the difference between what a firm must know and what it actually does know. Hence, the larger the knowledge gap in a business at a point

in time, the greater the risk of not having timely strategies and capabilities available for deployment.

In addition to gaining and managing knowledge, some authors have mentioned that managers should also be conscious of the need to shed knowledge as it becomes redundant (de Holan, Phillips, & Lawrence, 2004). In certain cases, redundant knowledge may inhibit an organization's ability to operate effectively in a changed environment, and negatively impact its relevant capabilities. Relevant knowledge capability is seen as critical to being able to maintain a competitive advantage (Venkatraman & Tanriverdi, 2004).

As early as a decade ago, knowledge management was forecast to become a hot topic in healthcare (Johnson, 1997); however, progress in this area has been slow. A scant four years later, Malone (2001) observed that knowledge management was not a well-known discipline in the healthcare industry. In the UK, the National Health Service has embarked (with mixed results) on a wide-ranging program of change and reform to address pressing issues facing health service delivery. In this vein, it has been suggested that knowledge management concepts and practices could positively contribute to more effective reforms in the health system (Bate & Robert, 2002).

Healthcare organizations are perceived as being information rich and having an implicit capacity to create or access the knowledge necessary for successful delivery of their services. They have been slow, however, to embrace the concepts of knowledge management and demonstrate visible knowledge assets.

Many, including Desouza (2002), have heralded the critical importance of sound knowledge management infrastructures as the health industry attempts to come to terms with current challenges. Healthcare stakeholders face increasing risks to assets and operations, as there are mounting pressures in areas such as cost reduction, quality improvement, customer service, disease management, and professional liability. This, in turn, has led to the realization that a focused attempt to effectively manage knowledge in healthcare organizations is very much needed.

Healthcare has had the luxury of learning from other industries' experience, as managers move to improve clinical and operational performance in today's hospitals. In this area, Guptill (2005) proposed a checklist of five major components that could provide a useful base for building an effective knowledge management organizational capability. Next, each of these elements is considered in detail.

4.1. Communities of practice

Knowledge management is more than a centralized repository of data, documents, and other information. It also encompasses the social context of others' experiences in the process. Within this element, the goal of knowledge management is to codify and understand how the dynamics of the particular community operate in the context of the wider organization.

4.2. Content management

Here, a repository is developed to facilitate knowledge exchange with careful planning as to the types of content to be published, access guidelines, update process, and publishing practice. This phase also includes a communications plan for marketing the knowledge base throughout the organization.

4.3. Knowledge and capability transfer

In addition to information and knowledge transfer, there should be change in behavior leading to innovation, operational process improvement, and enhanced patient care. This component is concerned with strategies to ensure the spread of new and best practices between units and across hospitals.

4.4. Performance results tracking

To ensure that knowledge activities lead to improved organizational performance, rigorous monitoring needs to be incorporated into the tracking of results. Three types of measures are seen to be appropriate:

(1) Outcome measures that reflect attainment in clinical, financial, and operational targets;

(2) Process measures which track activity that is expected to yield results; and

(3) Satisfaction measures that track improvements in staff/consumer/physician satisfaction with the care process.

4.5. Technology and support infrastructure

Web-based technology is an effective enabler of the process of knowledge management, in that it facilitates the collaborative process and the wide distribution of knowledge for capture and re-use. Consider two case study investigations of healthcare-providing organizations, one located in Canada and the other in Australia. Both firms were seen to have similar macro operating environmental challenges in health service delivery. However, the Australian palliative care organization operated in a care environment; hence, knowledge was flexibly and implicitly managed through people. By contrast, the Canadian spinal case operated in a cure environment which was heavily reliant on technology, using explicit and clearly communicated directions for knowledge processing procedures (Wickramasinghe & Davison, 2004). These

two cases demonstrate widely differing knowledge management strategies according to the demands of the different healthcare operations and types of risks that need to be managed.

Wickramasinghe and Davison (2004) propose the use of a knowledge management infrastructure made up of a number of components: organizational memory, human resource infrastructure, knowledge transfer network, business intelligence infrastructure, and infrastructure for collaboration. The authors point out the usefulness of this infrastructure model in making decisions about resourcing, possible difficulties and risks to be incurred, and timelines necessary in evolving explicit knowledge management capability in healthcare organizations. From the human perspective, it has been noted that the exit of knowledge workers is causing a major problem for Canada's healthcare organizations, as they have been impacted with corporate memory loss from retiring senior executives (Lahaie, 2005).

Drawing on the work of the recently discussed authors and researchers, it is possible to construct a flow chart which brings together a number of the key concepts seen to be necessary for a knowledge management process that would be effective in healthcare organizations. Fig. 1 embraces the idea of communities of practice being a key source of knowledge creation. Knowledge relevant and important to the organization is encouraged to be codified and made explicit using active knowledge marketing, effective technology, and human resource management, to ensure that it is continuously transferred via an organizational memory or repository. The movement and spread of up-to-date and relevant knowledge then reduces the risk of knowledge atrophy or gaps appearing in critical areas and units of an organization. This knowledge transfer process would especially address two critical areas of knowledge management outlined by Drew (1999), namely *what we know we know* (knowledge access, sharing, and inventory) and *what we don't know we know* (uncovering hidden or tacit knowledge).

Assuming a corporate or holistic perspective of knowledge also enables senior managers to explore opportunities to leverage knowledge for strategic gain of the whole organization. Making senior management responsible for knowledge strategy could be termed as a 'tops down' approach to managing knowledge in an organization. Having a

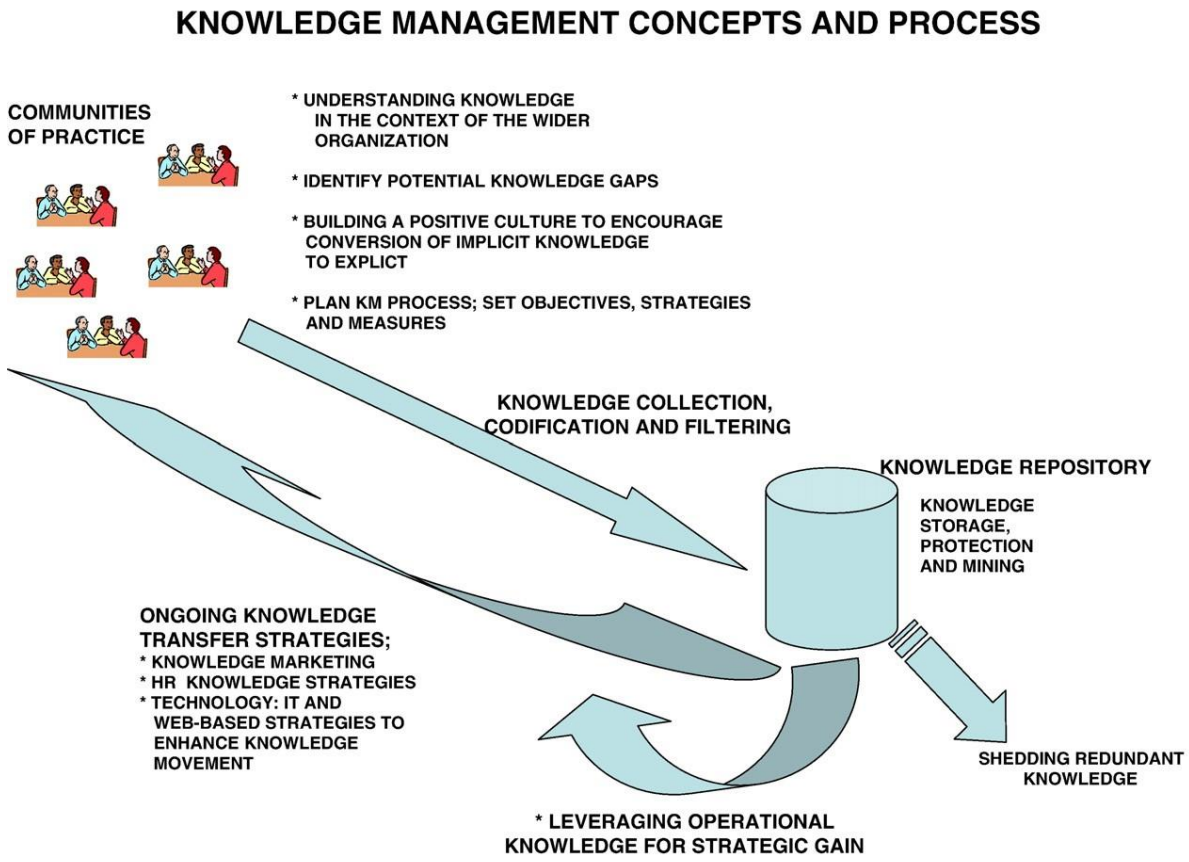

Figure 1 Knowledge transfer process.

high-level view of the firm affords them perception as to sources and uses of knowledge for operational and strategic benefit, where pockets of knowledge exist, and the benefits of when this tacit knowledge should be made explicit for the good of relevant communities of practice throughout the organization.

Next, the experience of one company is drawn upon in an effort to better understand the ongoing practical dimensions of how knowledge is managed in a contemporary organization. The objective is to gain insight into how knowledge management is approached in Australia's largest private hospital company, Ramsay Health Care Limited. This review is intended to make a contribution to the timely debate on the issues and dimensions of knowledge management in healthcare discussed in the previous section.

5. The Ramsay experience

Ramsay Health Care was founded in 1964 by Paul Ramsay, in the form of a single private hospital located in an inner north shore suburb of Sydney. Having a strong belief in the future of private healthcare in Australia, the founder grew his business from its small beginning in acute care into numerous psychiatry and veterans affairs units. Enjoying phenomenal growth and vitality, the Group was publicly listed on the Australian stock exchange in 1997, with the original founder retaining 49% of the equity.

Ramsay has pursued progressive growth via its charter, which is to provide consistently competitive returns for its shareholders through:

- Focusing on core hospital management to achieve strong organic growth;
- Investing in enhancements and expansions to existing facilities;
- Growing through acquisitions in the hospital sector; and
- Pursuing opportunities (outside hospitals) close to core competencies.

Ramsay experienced strong growth throughout the 1990s by way of organic expansion and progressive acquisitions. In April 2005, the firm more than doubled its size (from 37 to 74 hospitals) when it acquired Affinity Health, creating the largest Australian private hospital company. The acquisition provided Ramsay with a unique opportunity to increase size substantially with one commercial transaction and, to the benefit of key stakeholders, the chance to apply its management philosophy across a far greater number of facilities. This included the implementation of hospital operating techniques which were planned to drive improvements in operations and margins through revenue enhancement, better labor utilization, and supply chain rationalization (Ramsay Health Care Limited, 2005).

This opportunity also proved to be a challenge. Senior managers noted the need to turn to more programmed, explicit knowledge management in order to create an effective and consistent expanded healthcare business which shared information across hospitals and communities of practice (as opposed to the traditional, implicit management culture whereby knowledge generally remained the domain of separate hospitals, units, and individuals). A move toward the explicit end of the spectrum provided greater opportunities to leverage knowledge toward strategic advantage of the larger Company.

What were seen as Ramsay strengths then became challenges in the expanded organization, including:

- The tradition of supporting decentralized, autonomous hospitals;
- Community linking and focus, rather than a strong corporate control;
- The encouragement of continuous innovation by hospital management;
- The tradition of supporting and promoting Ramsay managers; and
- The challenge of blending the Ramsay and Affinity cultures.

As regards this article, the merged organization became an interesting study in terms of trying to understand how relevant knowledge would be shared throughout, rather than remain locked tacitly within individuals and communities of practice in each of the 74 hospitals, across the cultures of what were previously two separate organizations. Expressed as a major concern by the Chief Executive of Ramsay, this could be referred to as what has previously been described as a knowledge gap (Zack, 1999). Following the Ramsay/Affinity merger, there was a chance that large knowledge gaps could occur in the new Ramsay, as communities and individuals were both culturally and geographically dispersed. Importantly, knowledge gaps would increase the risk that the new organization might not reach its recently committed corporate objectives.

Rather than attempt a total solution to the knowledge management issue, senior management developed a knowledge priority system based on areas of highest potential risk to Ramsay. This gave rise to the concept of forming a Risk Committee, which had the task of deciding where knowledge and sound

practice gaps could most threaten the organization's ability to meet its obligations. Examples of risk could be related to such areas as infection control, disease management, and financial management.

A knowledge management strategy for the expanded Ramsay began to conceptualize into what is best described as the 'dual approach.'

The senior management team saw the first priority strategy as a 'tops down' approach which would be capable of transferring key modules of knowledge from senior management and the executive to each unit, for reliable and predictable action across the 74 hospitals (see Section 6). The next knowledge priority for Ramsay was to be a 'bottoms up' approach, being a process which could tap into the valuable modules of existing and ever-generating knowledge within individual hospital units and communities of practice, and then making it available as appropriate across the national network. The likely detail of a future 'bottoms up' process is shown in Fig. 3 and described in the supporting text.

6. 'Tops down' knowledge management

We now explore the 'tops down' approach introduced at Ramsay, as it has been the initial phase of their knowledge management focus. In the rapidly expanding organization, there was a perceived need to implement a process that could focus on potential knowledge gap priority areas of the operation, and investigate and recommend how they should be dealt with across the extended Ramsay Group. In turn, Ramsay formed a Risk Management Committee (RMC), which had the task of deciding where knowledge and sound practice gaps could most threaten the organization's ability to meet its obligations. Within this body, key areas of risk to the business were identified and researched, and an implementable process was developed to manage the risk of knowledge gap occurrence to acceptable limits of the highest priority areas.

Membership of the RMC usually consists of two non-executive directors from the main board, the Chief Executive Officer, the Chief Operating Officer, the Group Risk Manager, the Group Corporate Services Manager, the Manager Human Resources, the Manager Occupational Health and Safety, and the Financial Controller. This Committee is responsible for the ongoing assessment and management of risk to the Company in critical areas including clinical operations, medical practice, occupational health and safety, and financial management risk, none of which can afford serious knowledge or practice gaps.

The Risk Management Committee also consistently monitors, classifies, and processes emerging strategic issues that might potentially affect the firm. Strategic issues have been described as forthcoming events that may impact an organization's ability to achieve its objectives (Ansoff, 1980). They can be classified into internal issues (strengths and weaknesses) and external issues (opportunities and threats). Examples of strategic issues could include an escalating viral epidemic (external threat), or inconsistent or inadequate infection control procedures (internal weakness).

In addition, the RMC is responsible for the accreditation process of all hospitals, including the review of clinical and infection control procedures. Further, they verify the credentials of medical practitioners who use the Ramsay facilities, and receive reports from each hospital's medical advisory board (Ramsay Health Care Limited, 2006).

The modus operandi of the Ramsay RMC involves member agreement as to the areas of knowledge risk that face operations and resources at a given point in time. Focus is devoted to aspects of the operation that would be compromised or impaired if a knowledge gap was evident. This process involves close monitoring of strategic issues. A Ramsay Risk Action Matrix is used to illustrate the level of estimated impact that each issue could have on the business. Here, the Yaxis of the matrix represents the level of knowledge risk associated with each strategic issue, and the X axis represents the level of potential impact the issue may have on the Ramsay operation. Members of the Risk Management Committee are asked to estimate the levels of risk and potential impact for each strategic issue. Differences in members' opinions are used as a vehicle for discussion to help understand the rationale behind such impasses. If differences cannot be resolved through discussion, further research and investigation may be needed such that members are better informed about the implications or impact on the area of risk under consideration. In due course, the Committee decides where in the matrix to locate each strategic issue, according to the estimated level of risk and level of potential impact on the organization. Those which fall within the top right-hand sector (i.e., high risk; high potential impact) are seen as areas for high priority issue processing action.

Once it has been decided to action a priority (Fig. 2, step 1) an expert group or task force is recruited, made up of staff with experience and expertise in the particular field to be investigated. A senior member of the management team with proficiency and authority in the area under investigation is asked to chair the relevant expert team; for example, the Finance Director was asked to chair the task force dealing with financial management.

Each expert group is given a specific briefing on the scope and nature of the risk area to be investigated (Fig. 2, step 2). Its charter is to recommend strategies

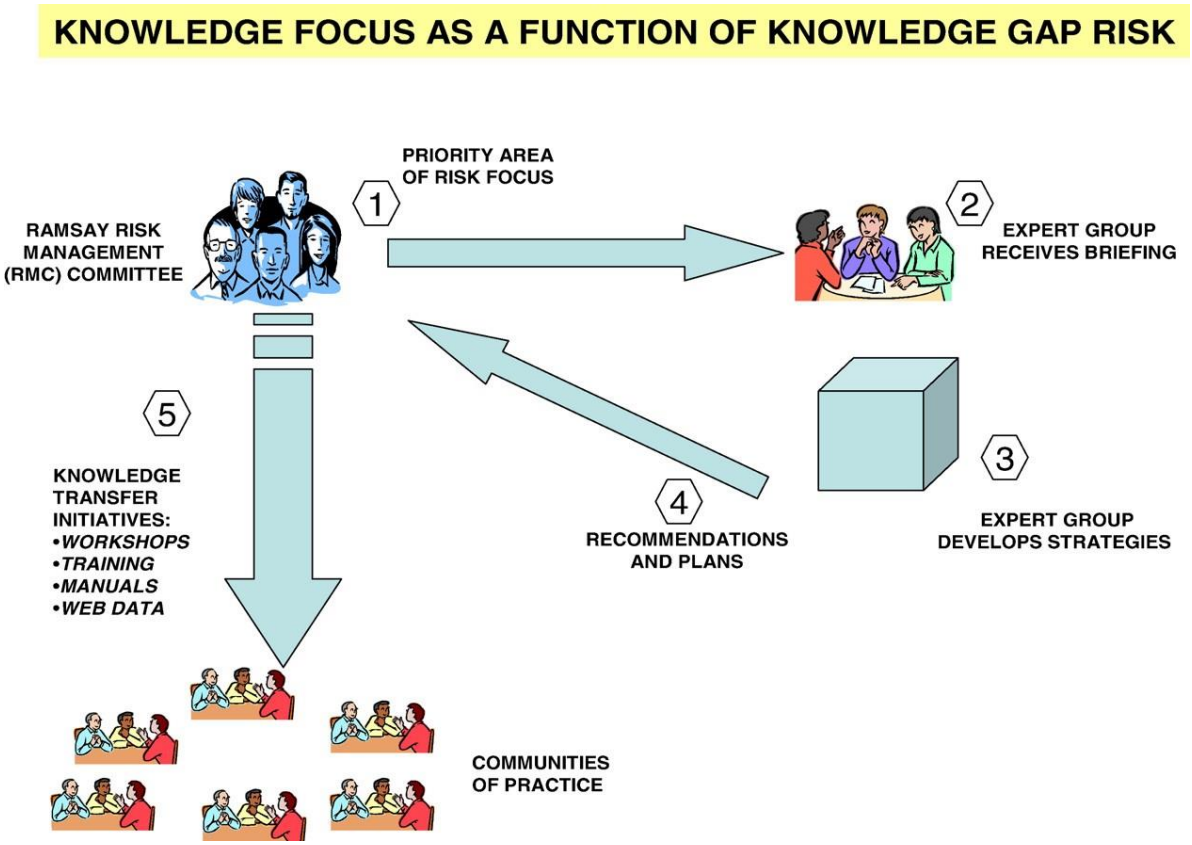

Figure 2 Ramsay 'tops down' knowledge management.

necessary to manage the risk area under review for the entire Company (Fig. 2, step 3). Some examples of risk projects include infection control, financial management, obstetrics, occupational health, and safety and clinical education.

In due course, the expert group presents its findings and recommendations to the Risk Management Committee (Fig. 2, step 4). From this, company-wide objectives and strategies are agreed upon which will implement the desired form of knowledge management framework appropriate for a particular area of risk. The approved company-wide program is then put into practice. Multiple methods and channels are used to transfer the knowledge management doctrine to communities of practice throughout the organization (Fig. 2, step 5). In a given program, there may be a need for multiple strategies; for example, transferring knowledge, developing new skills, discontinuing existing practices, setting new standards and procedures. Action steps to establish uniform knowledge may include staff training, newsletters, operating manuals, Web-based Intranet guidelines and formats, etc. Key performance indicators are established to ensure that each risk area is monitored and management is adequately warned when risk levels exceed acceptable limits.

7. The future of knowledge management at Ramsay

Senior managers at Ramsay recognize the need to embrace knowledge management as an important strategic capability for the organization. They see that there is a high priority to formulate and implement an efficient and effective knowledge management model and process, in order to optimize leading-edge practice across the expanded Ramsay healthcare network. Ramsay has made a meaningful start on an evolution knowledge management pathway. By implementing the 'tops down' approach, Ramsay has enabled itself to better manage knowledge perceived to be critical to the Corporation's successful future; that is, high risk areas of the operation. Management appreciates, however, that this strategy is only a partial solution and that it has limitations in terms of scalability and dealing with the large volumes of knowledge which reside within communities of practice across the network.

Ramsay senior management has recognized the need to promptly move to the next important phase of knowledge management. This may well be a 'bottoms up' approach whereby critical pockets of knowledge are identified in the Ramsay network.

Here, knowledge would be collected, codified, filtered, made explicit, and transferred for the operational and strategic benefit of the whole company.

8. Implications for managers

Managers are once again taking a keen interest in the benefits that knowledge management may bring to an organization, and the subsequent benefits to its key stakeholders. Drawing on the research cited in this article and through insights gained from the Ramsay experience, a tentative knowledge management process model is proposed for further discussion and debate. This is shown diagrammatically in Fig. 3.

The Tentative Knowledge Management Process Model depicts a senior knowledge management panel which is responsible for setting strategic direction for knowledge management for the organization. This panel would be made up of senior executives vitally concerned with the benefits and costs of how knowledge is maintained, processed, protected, stored, transferred, and leveraged on an ongoing basis. This has sometimes been referred to as the knowledge economy within an organization (Demarest, 1997; Tordoir, 1995). At the higher level, this senior panel would set down knowledge management policy for the entire organization (Fig. 3, step 1), including:

- The role and priority for intellectual capital and knowledge;
- A rationale (including costs and benefits) for knowledge management application in the organization;
- A charter/vision/mission for knowledge management;
- An operational model and guidelines (how knowledge management works here);
- Plans to develop relevant operational knowledge to the strategic advantage of the whole organization;
- Key areas of knowledge at various organizational levels (the 'thats' and 'hows');
- Broad objectives and strategies for each key knowledge area;
- Tactical details for priority areas of the knowledge management development plan; and
- Gaining a wide commitment and support for the knowledge management process; creating a knowledge-sharing culture where tacit knowledge is encouraged to be shared and made explicit.

In this proposed model, the senior knowledge management panel would oversee a dual process of knowledge management. First, the 'tops down' component decides on the top priorities; i.e., which knowledge areas need to be managed explicitly and effectively across the entire organization. This may include embracing an approach similar to the Ramsay case, where priorities for possible knowledge gaps were chosen according to risk and potential impact of emerging strategic issues using the Risk Action Matrix (Fig. 3, step 2). Some researchers recommend that only strong leadership can provide the direction a company needs to choose, implement, and overcome resistance to a new knowledge management strategy (Hansen et al., 1999).

An expert panel would then be created for each priority area, with the responsibility of formulating and recommending strategies to achieve agreed knowledge objectives (Fig. 3, steps 3 and 4). Implementation of this plan would then be considered as part of the integrated knowledge strategy for the company going forward (Fig. 3, step 5). Knowledge strategies would involve the transfer of priority knowledge to relevant sections of the organization in their communities of practice (Fig. 3, step 6). This focus is on the sharing of operational knowledge. Strategies may include human resource policies such as training and development, knowledge marketing to encourage the dissemination and sharing of knowledge, and Web-based knowledge banks. Special care is advised to consider the human factor when implementing knowledge processes which should cover: a shared vision for KM, creating a collaborative knowledge sharing culture, company wide thinking, time and funding for KM, adherence to ongoing KM processes, and progressive action (Horak, 2001).

The second main thrust of this knowledge management initiative would be the 'bottoms up' approach. Here, the senior knowledge management panel would focus on the knowledge residing in communities of practice throughout the organization. A process would be embraced that provides clear guidelines and instruction as to how these knowledge modules are identified, collected, codified, filtered, and then located in the organization's knowledge repository (Fig. 3, steps A, B, and C). The knowledge repository could be configured as a knowledge warehouse where knowledge can be stored, sorted, and mined as needed. A provision to shed or export redundant knowledge from the repository, as previously discussed, is also provided for in Fig. 3.

Priorities would have to be decided as to which modules of knowledge needed to be made available next for organization-wide use. Once again, a risk approach could be used here to decide priorities.

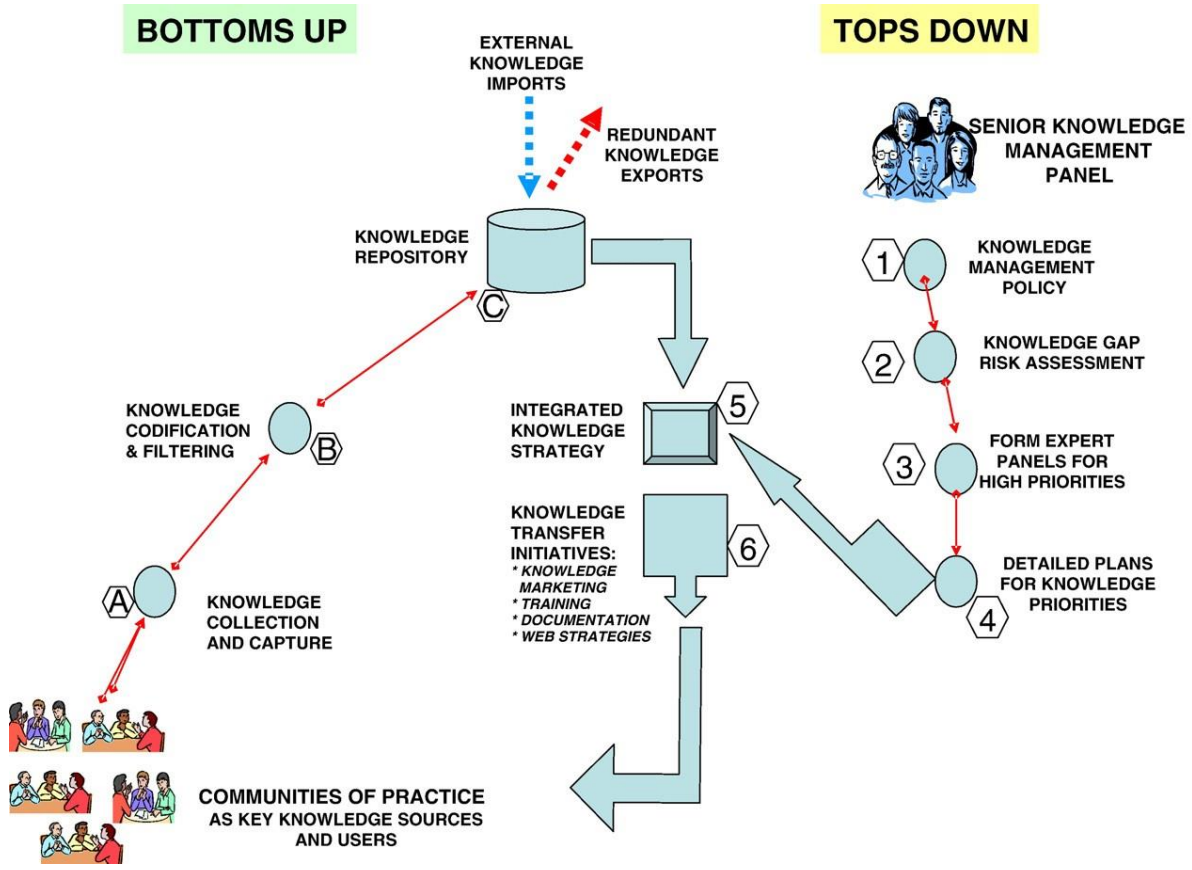

Figure 3 Tentative KM process model.

For example, an organization may be concerned that it has a knowledge gap in sections of its operation. This gap may become acute due to the intensity of an emerging strategic issue.

An illustrative scenario may help to clarify what is intended in this phase of the knowledge management process. For example, a healthcare company may be aware that it has varying standards of practice for infection control throughout its communities of practice. As it becomes aware of a possible emerging epidemic such as the H5N1 Avian Flu Virus (emerging external threat), it may decide to employ the best infection control procedures of one community of practice throughout the entire organization, using the process of knowledge transfer outlined in Fig. 3.

Each decision to transfer knowledge would always be made as part of the integrated knowledge strategy developed for the whole organization (Fig. 3, step 5). Transfer to relevant communities of practice would be made using an appropriate mix of transfer channels chosen from the knowledge transfer initiatives checklist shown in Fig. 3 (step 6). Guidelines would include how and where these knowledge modules were to be used for routine operational purposes. It would also direct the process of ongoing leveraging of knowledge to the strategic benefit of the organization in areas such as business improvement, diversification, product development, etc.

9. Wrapping up

This article set out to explore the concept of knowledge management, first in a general context and then specifically in a healthcare environment. Drawing on previous work, it reviewed a case study in order to analyze the practical issues that need to be considered in managing knowledge in a contemporary setting. Using insights gained from the secondary research and the case study, a tentative process model for managing knowledge was proposed. Although no claim is made as to the robustness or general appropriateness of the model to different types of organizations operating in different environments, is intended to act as a basis to guide future research and discussion regarding the ongoing knowledge management debate.

It may be prudent to take the advice of some previous authors in moving the knowledge debate forward, that competitive strategy must drive knowledge management strategy in an organization.

Senior executives need to ask how the knowledge that resides in the company adds value for customers. If a company does not have a clear answer to this question, it should not attempt to choose a knowledge management strategy because it could easily make a bad choice (Hansen et al., 1999).

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