

**Understanding Knowledge Management in achieving
competitive advantage in a Global Business Environment**

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ABSTRACT

This paper compares opposing theoretical concepts regarding knowledge management (KM) and the principles of knowledge transfer in organizations, and appraised the applicable methods in knowledge management principles. This paper also examined what knowledge is, and noted the differences between explicit and tacit knowledge, the theoretical perspectives, socialisation and technological issues, and the challenges knowledge posed to organisations. In conclusion, some practical steps were considered in the implementation of KM. The paper also looked at the vital role knowledge management can play in today's knowledge economy and noted that in some sectors, re-use of intellectual capital is no longer a case of gaining competitive advantage, but of survival. Re-use of intellectual capital across geographies, industries and functions can yield enormous business benefits. Readers are therefore encouraged to apply the lessons learnt from this paper to their own work contexts, and consider how their organizations can better exploit intellectual capital to gain competitive advantage.

Introduction

In defining knowledge management, some authors emphasised the human interaction and psychological factors that impact knowledge sharing, whereas others stress the enabling infrastructure and knowledge management system. A successful development of knowledge management must recognize that the views of knowledge are fundamentally human views. People are different from one another, and exhibit different temperaments. Some of these differences are profound and influence collaboration and knowledge sharing. Building intellectual capital is based on existence of communication channels between people, on relationships that build trust and a sense of mutual obligation, and on a common language and context. Thus, it is vital that organizations foster a collaborative culture for success. Team work over individual excellence should be rewarded. However, it is equally important that a corporation take a strong process perspective in

establishing knowledge management, and investment in the appropriate technology to facilitate the process; knowledge creation, collaboration, sharing and development. Enabling technology is particularly critical for geographically distributed organizations, where opportunities for face-to-face interaction are limited.

Theoretical Concepts on Knowledge

In theoretical terms, two developments have contributed to an increased emphasis on knowledge in looking at strategic management:

- The popularity of the resource-based view of the company: This clearly identifies knowledge as potentially the primary source of sustainable competitive advantage.
- The development of post-modern perspectives on organizations, which have challenged fundamental assumptions, about the nature and meaning of knowledge within companies, industries and society as a whole.

The Resource-based view

A resource-based perspective highlights the need for a fit between the external market context and its internal capabilities. In accordance with this, a company's competitive advantage derives from its ability to assemble and exploit a combination of resources. Competitive advantage is achieved by developing existing resources and creating new resources in response to changing market conditions. Writers like Grant R. (2003) argue that knowledge represents the most important value-creating asset. The primary function of the company is to create conditions under which many individuals can integrate specialist knowledge in order to produce goods and services. The resource-based view, therefore, suggests that knowledge, like any other asset, can be stored, measured and moved around in an organisation.

The Post-modern view

Post-modern perspectives on organizations challenged the resource-

based assumption. Writers like Frank Blacker argue that knowledge cannot exist in any absolute or objective sense. The recognition of knowledge and how it is applied is determined by the social and organization contexts in which a company operates. An innovative proposal, which may be perfectly valid to an external observer, may be rejected by those inside the organisation because it fails to conform to their mental model of what constitutes valid or useful knowledge. In this paper we compare opposing theoretical concepts regarding knowledge management and the principles of knowledge transfer in organizations and appraise the methods available for application of knowledge management principles. If knowledge is a social construct, that is, it emerges through interaction; it follows that it cannot be formally managed. Like culture, knowledge exists only in an abstract form within organizations. Also, it is affected by managerial action and its nature can change only gradually over time through a process of interaction between the various individuals within the organization. There is thus a debate concerning two opposing theoretical perspectives. A quote from Tony Blair, former Prime Minister of Great Britain, from his speech at the Lord Mayors Banquet, Guildhall, London, November 1998, He said:

The ambition is to turn Britain into the leading knowledge-based economy in the world. That is our future: a knowledge-based, creative economy. In global markets, where products can be made anywhere and shipped anywhere, in which production technologies can soon be copied, we cannot base our future prosperity on the traditional building blocks of the old industrial economy: raw materials, land, machinery, cheap labour. We must base our competitiveness on distinctive assets which our competitors cannot imitate – our know-how, creativity and talent.

What is knowledge?

In the context of strategic management, it is easier to understand

knowledge in terms of what it is not. It is not data and it is not information. Data are objective facts. Data becomes information when it is categorized, analysed, interpreted, summarized and placed in context, that is, it is given relevance and purpose. Information develops into knowledge when it is used to make comparisons, assess consequences, establish connections and engage in a dialogue. Knowledge can be seen

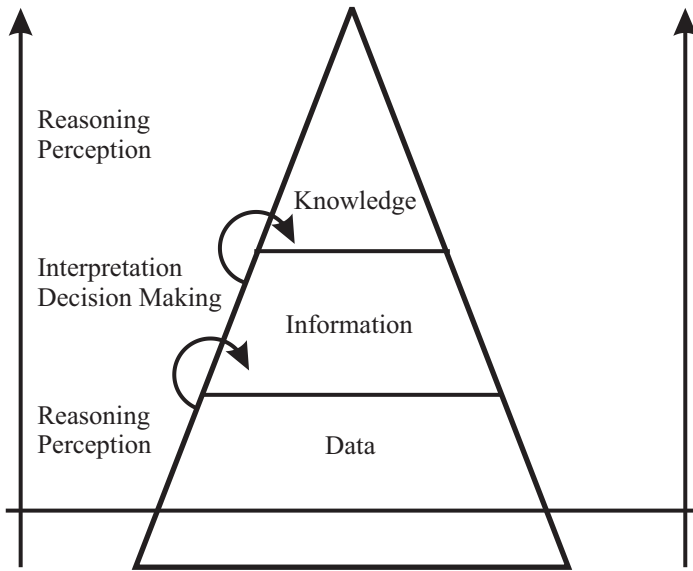


Figure 1: Pyramid view on knowledge, information and data

as information combined with experience, judgment, intuition and values. See Figure 1 for a pyramid view on data, information and knowledge. Knowledge is at the top of the value chain. Data is at the bottom. Data is essentially meaningless on its own. It is raw data. Reasoning, perception and interpretation are critical in transforming data into information. In addition to reasoning, perception and interpretation, decision making (using experience, judgment, intuition and values) is the key to the transformation of information into knowledge.

One must be careful not to confuse knowledge management systems with data and information management systems. The latter are merely efficient mechanisms for capturing, organizing and retrieving information. A true knowledge management system must capture,

organize and retrieve information, but also systematically create associations between corporate expertise and information resources, personalise and organize knowledge for individuals' communities, and provide a 'place' (virtual) for teams to work, make decisions and act. Knowledge is the result of deciphering and attaching meaning to facts and information. Knowledge management is the capability of an organization to create, capture, combine and share knowledge amongst its members. It is the process by which an organization generates value by using its intellectual asset.

The nature of knowledge

An individual's knowledge base is like an iceberg. Most knowledge is hidden below the surface and can be divided into two types:

- A limited stock of **explicit knowledge**, which is easy to articulate to others, e.g. books read, reports written, advice given fall into this category.
- The majority is tacit knowledge, which cannot be easily articulated to others, e.g. a green fingered gardener cannot explain to a novice precisely why his plants always thrive.

Tacit knowledge only transfers through observation and practice. Traditional craft apprenticeships systems recognize this. However, much knowledge remains tacit because no attempt has been made to make it explicit. It is this area that presents the greatest opportunity for knowledge management within organizations. The primary goals of knowledge management systems are to identify the valuable knowledge that resides within individuals and disseminate it throughout the organization. However, this seemingly straightforward process is in practice complex and can be fraught with difficulties.

Knowledge Problems

Knowledge represents a source of power for an individual. Sharing valuable knowledge with colleagues is often seen as risking reduction of

value of that individual to the company. There are, thus, psychological issues relating to knowledge management. Davenport and Prusak (2000) argue that there are three conditions under which an individual would agree to share knowledge:

- Reciprocity: Will an individual receive a valuable knowledge in return, either now or in the future?
- Repute: an individual will need to be certain that the source of knowledge will be recognized and others will not claim the credit.
- Altruism (though the motives may not be more akin to self-gratification): Individuals find some subjects fascinating and want to talk to others about them.

Davenport and Parusak's (2000) analysis lead them to argue that there is in effect an internal market for knowledge. Knowledge is exchanged between buyers and sellers, with reciprocity, repute and altruism functioning as payment mechanisms. 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 organizational level, by creation of a cultural context which encourages and rewards knowledge sharing and discourages and penalizes knowledge hoarding. Noting the above issues, for successful development of knowledge management in organizations, the right collaborative culture must be fostered, the individual contributor of intellectual capital recognized, and the reward system must reflect a high focus on knowledge sharing. Leading knowledge-based companies include the contribution of intellectual capital as part of the employee's business objectives.

Barriers to Understanding

It is easy to learn about things that we already know. It is very difficult to learn from an expert if you do not have a basic grounding in the topic. The expert must take time to explain the context and translate the jargon. The barriers to communication in organisations that arise between departments typify this problem. Those problems can be ascribed by differences in the content of the knowledge bases. To overcome these

problems, particularly in larger global organizations engaged in diverse activities, it is necessary to establish communities of practice based on the core competencies of the organisation.

Knowledge Transfer

Much can be done within an organization to encourage knowledge transfer. IT-based frameworks provide the essential infrastructure for knowledge management, but to be used effectively and achieve widespread take-up, other conditions are necessary to establish:

- Trust – Face-to-face contact is important when seeking to build strong interpersonal relationships.
- Time – exchange information at speed may be efficient, but tacit knowledge cannot be discovered, articulated and disseminated in a hurry.
- Creating a common language for talking about knowledge, encouraging staff to think and talk about what they know and what they need to know.

The first two points pose particular challenges for large, diverse, globally dispersed organisations. Establishing communities of practice (based on core competencies) is critical. Examples of such communities of practice might be Researchers, Project Managers, Quality Champions, Programmers, Research Chemists, Marketers in a particular geography, etc. The precise communities of practice would depend on the sphere of activity of the corporation. It is then essential that people within communities of practice have the opportunity to meet and share knowledge, supported by the technical infrastructure, but also be able to share knowledge which technology cannot at present capture. Thus, knowledge sharing through informal and formal gatherings, seminars, e-learning initiatives, problem-based learning, networking and mentoring is critical.

In the context of knowledge transfer, it should also be noted that it is not enough simply to manage existing knowledge. Competitive advantage is achieved when organizations adapt and evolve

continuously in response to changing market conditions. Knowledge management can play a key role in this. The competitive edge arises when companies leverage knowledge, not just existing, but new knowledge across the global organization; across horizontal and vertical divides, in a rapid, efficient and easy-to-use, codified form. Re- use of intellectual capital across geographies, industries and functions can yield enormous business benefits. Nonaka and Takeuchi (1996) in their book *The Knowledge Creating Company*, identify four inter-related processes by which knowledge flows around the organization and transmutes into different forms. The above processes explain how individual tacit knowledge flows until it is widely disseminated around the organization, but it does not fully explain how new knowledge is created. .

- **Socialisation** is the process of communicating tacit knowledge to a broader organization context. Individual share experiences, demonstrate skills and model behaviour in such a way that they can be observed and copied by others within the organization.
- **Externalisation** is the process of converting tacit knowledge into explicit concepts, e.g. the simplification of context concepts in a highly simplified form using models. Externalization may occur at an individual level or at a collective level. Once an individual has externalized tacit knowledge, it is more easily combined with the knowledge of others.
- **Combination** is the process of analyzing, categorizing and integrating the explicit knowledge of a set of individuals in order to create new explicit knowledge, which can be disseminated more widely within the organization.

The final link in the process is internalization, whereby individuals absorb explicit knowledge to enable the development of new forms of tacit knowledge. How can knowledge creation be encouraged? Nonaka and Takeuchi in identifying five key conditions:

- Senior management must be committed to accumulating; exploiting and renewing the knowledge base within the organization and be able to create management systems that will facilitate this process.

- As new ideas first develop at an individual level, an individual must be given scope to follow initiatives and explore unexpected opportunities that emerge.
- This process of exploration can be further encouraged by 'creative chaos' where flux and crisis cause reconsideration of established precepts at a fundamental level.
- Knowledge should not be rationed (or hoarded). Opportunities should actively be provided for even unrelated individuals to exchange knowledge.
- In order to respond creatively to changing conditions, an organisation's internal diversity must match the variety and complexity of the external environment.

A drawback is that the knowledge creating company that Nonaka and Takeuchi describe is often far removed from organizational reality, e.g. chaos and crisis are likely to stifle as to promote creativity by provoking anxiety and insecurity.

Practical steps to promote Knowledge Management

In the previous sections we looked at the key issues relating to knowledge management – but from a somewhat theoretical perspective. How do issues of trust, time and common language get addressed? What practical steps can be taken to implement knowledge management and leverage the corporation's intellectual capital? It is important to emphasise that knowledge management must be at the heart of a company's strategy if it is to work. A collaboration culture must be promoted from the top of the company. Senior executives should be accountable and rewarded for encouraging knowledge sharing and knowledge enabling.

Assessment of current capability

Wherever you are in the development of knowledge management, it is important at regular intervals to evaluate your knowledge management capability, and benchmark this against best practices. The company

should then put in place a roadmap to target areas of weakness. A practical tool for such an assessment is to score your capability using a knowledge management spider diagram (see Figure 2), with the following dimensions:

- **Company strategy:** Score the extent to which knowledge management is incorporated into strategy and business and operational plans. Does knowledge management feature in company-wide strategy or only in specific strategies, e.g. marketing? Is a strategy in place to address knowledge management process, issues of culture and technology? Is there knowledge collaboration externally – across stakeholders (customers, supply chain) and business partners (e.g. through strategic alliances)?
- **Collaboration culture:** Company-wide awareness of knowledge management, and level of integration into the business. Is collaboration, teamwork and knowledge sharing built into the ethos of the company? What is the level of senior management support? Are there senior roles in knowledge management?
- **Knowledge process:** Is there a formal and unambiguous process for the creation/ acquisition, organization/storage, distribution, application, maintenance and quality assurance (QA) of knowledge assets? Furthermore, to what extent have knowledge management practices been incorporated into core business processes, e.g. when selecting a project management methodology or developing project plans? Do Project Managers re-invent the wheel each time, or does the business process require them to check the Knowledge Management System first?
- **Enabling Technology:** What are the current technologies used for knowledge sharing? Is there specialist Knowledge Management System, do you have other enabling technologies such as data-warehousing, business intelligence, data mining, GroupWare and messaging, electronic data management, workflow management, web-based technologies in the company? Do you have a corporate intranet?

- **Knowledge Bases:** To what extent have knowledge sources (explicit and tacit) been identified, captured and indexed?
- **Knowledge Access:** What level of accessibility is there to the knowledge sources? How easy is to search for information? What access rights and security measures are in place?
- **Knowledge Quality:** What Quality Assurance procedure is there in place? Are there reviews and sign-offs prior to intellectual capital being made 'public' on the system? What procedures are in place to maintain up-to-date and relevant knowledge? Is knowledge catalogued by business area, and is there a flag to indicate importance/relevance.

You will note that the dimensions of the Web Diagram are the knowledge management success factors identified in earlier sections. It is suggested that a company score each of the dimensions against a 10-points scale. This can be done against best industry practices, so that a score of ten relates to best practices. A score of zero will apply if that particular dimension does not feature at all in the corporation. See Figure 2 for an example of a knowledge management web diagram for a company. From a strategy perspective, it is also useful to score your main competitors on the web diagram and then identify weaknesses/strengths. Additionally, strategic partners can be scored. It may be the case that where the corporation scores weakly, a strategic partner score highly. There are, therefore, wider collaboration opportunities across strategic alliances.

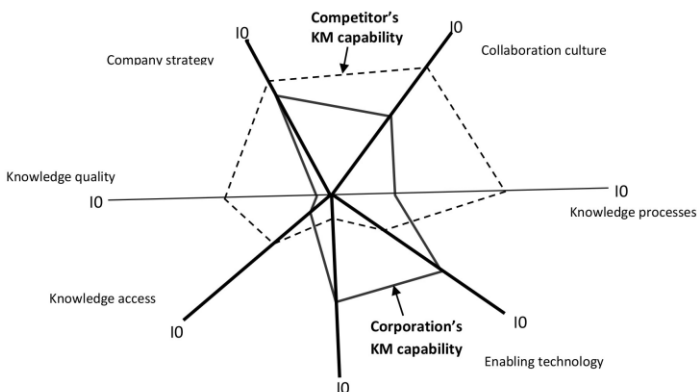


Fig. 2 Spider diagram

Road Map for Improvements

Having assessed your current knowledge management capabilities, a picture emerges of the gaps in access to knowledge, cultural factors and enabling technology. Based on the gaps identified, particularly in comparison to best practices and also to the competition, the organization can then develop a picture of where it wants to be, and in what time-scales. A road map should then be prepared to get the organization to the desired state. The 'where you want to be' state may also be mapped on the web diagram. For those organizations relatively immature in the development of knowledge management, the following steps are recommended:

- Identify communities of practices or teams based on core competencies. For smaller organizations, business units will suffice as 'communities'.
- Identify a sponsor (senior executive) for each community, and nominate leaders for each community.
- Train leaders in generic KM practices (e.g. virtual team working, knowledge creation, sharing).
- Facilitate socialization and transitional encounters (meetings, seminars, workshops, etc) with informal agenda to allow tacit knowledge to be shared.
- Build, manage and maintain a network of staff with deep skills in specified subject matters.
- Defined the KM process (covering knowledge creation/acquisition, organization/storage, distribution, application, maintenance and QA).
- Define access (security, rights) model.
- Evaluate and implement enabling technology.
- Define categories and populate with generic information, e.g. yellow pages (who is who for what).
- Train all staff in KM system and knowledge sharing.
- Raise team awareness of contexts through presentations, visits, education, etc.
- Use knowledge proponents/developers (experts who create new

content on dedicated, short-term assignments) in early stages of deployment.

- Promote widespread deployment and publicise early successes.
- Recognise and reward knowledge contributors.

Source:

The challenge of Managing Knowledge by Laura Empson – Financial Times 4th October 1999.

Conclusion

In this paper we have looked at the vital role knowledge management can play in today's knowledge economy and noted that in some sectors, re-use of intellectual capital is no longer a case of gaining competitive advantage, but survival. We have examined what knowledge is, and have noted the differences between explicit and tacit knowledge. We then looked at the theoretical perspectives, the socialisation and technology issues, and the challenges posed to organisations. We concluded by considering some practical steps in the implementation of KM.

A successful development of knowledge management must recognize that the views of knowledge are fundamentally human views. People are different from one another, and exhibit different temperaments. Some of these differences are profound and influence collaboration and knowledge sharing. Building intellectual capital is based on existence of communication channels between people, on relationships that build trust and a sense of mutual obligation, and on a common language and context. Thus, it is vital that organizations foster a collaborative culture for success. Team work over individual excellence should be rewarded. However, it is equally important that a corporation takes a strong process perspective in establishing knowledge management, and invest in the appropriate technology to facilitate the process; knowledge creation, collaboration, sharing and development. Enabling technology is particularly critical for geographically distributed organizations, where opportunities for face-to-face interaction are limited. Readers of this paper are therefore encouraged to apply the lessons learnt to their own work contexts, and consider how

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