Business Processes and Knowledge Management

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INTRODUCTION

Knowledge has been a subject of interest and enquiry for thousands of years, since at least the time of the ancient Greeks, and no doubt even before that. "What is knowledge" continues to be an important topic of discussion in philosophy.

More recently, interest in *managing* knowledge has grown in step with the perception that increasingly we live in a knowledge-based economy. Drucker is usually credited as being the first to popularize the knowledge-based economy concept, for example, by linking the importance of knowledge with rapid technological change in Drucker (1969). Karl Wiig coined the term knowledge management (hereafter KM) for a NATO seminar in 1986, and its popularity took off following the publication of Nonaka and Takeuchi's book *"The Knowledge Creating Company"* (Nonaka & Takeuchi, 1995). Knowledge creation is in fact just one of many activities involved in KM. Others include sharing, retaining, refining, and using knowledge. There are many such lists of activities (Holsapple & Joshi, 2000; Probst, Raub, & Romhardt, 1999; Skyrme, 1999; Wiig, De Hoog, & Van der Spek, 1997). Both academic and practical interest in KM has continued to increase throughout the last decade.

In this article, first the different types of knowledge are outlined, then comes a discussion of various routes by which knowledge management can be implemented, ad-vocating a process-based route. An explanation follows of how people, processes and technology need to fit together, and some examples of this route in use are given. Finally there is a look towards the future.

BACKGROUND

Types of Knowledge: Tacit and Explicit

Nonaka and Takeuchi's book (1995) popularized the concepts of tacit and explicit knowledge, as well as KM more generally. They based their thinking on that of Michael Polanyi (1966), expressed most memorably in his phrase "we know more than we can tell".

It is, however, most important to realize that tacit and explicit knowledge are not mutually exclusive concepts. Rather, any piece of knowledge has both tacit and explicit elements, as shown in Figure 1. The size of the inner circle represents the proportion of tacit knowledge: the "tacit core" at the heart of the knowledge that we "cannot tell". Figure 1(a) shows a case where the knowledge is almost entirely tacit, as in riding a bicycle. Figure 1(b) shows mainly explicit knowledge, where the tacit core is very small, for example, how to process a claim for travel expenses in an organization. Figure 1(c) shows an intermediate case, such as making a piece of furniture, where

Figure 1. The relationship between tacit and explicit knowledge
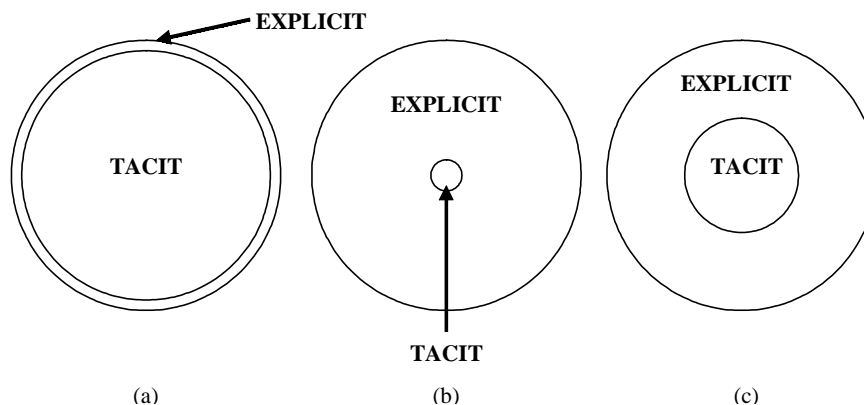
substantial amounts of both tacit and explicit knowledge are involved.

The Role of KM Systems

KM systems represent a deliberate, conscious attempt to manage knowledge, usually in an organization. Hansen, Nohria, and Tierney (1999) identified that there are two fundamental KM strategies, codification and personalization. Codification concentrates more on explicit knowledge (often relying very heavily on information technology), personalization more on tacit knowledge. Again, it is important to realize that these are not mutually exclusive, and that a strategy combining elements of both is likely to be the most successful.

ROUTES TO IMPLEMENTING KM

Many organizations have found it difficult to implement knowledge management systems successfully. Identifying "who", "what", and "why" – who is involved in knowledge management, what knowledge is being managed, and why is it being managed – can be problematic. The routes they have attempted to follow can be put into five generic categories, which will now be described.

Knowledge World Route

A substantial amount of the literature on knowledge management addresses knowledge at the level of the whole organization, or in a "world of knowledge" that is not specifically linked to the activities that a particular organization carries out. On an abstract level, such discussion of knowledge management can be extremely valuable. However, it has weaknesses in terms of practical implementation. For example, it is necessary not only to understand how individuals learn, but also how they learn in a given organization, and how the organizational systems may help or hinder the individual's learning process. The same issue applies even more forcefully to group learning, since the organization provides a crucial element of the group's context.

The practical focus in Nonaka and Takeuchi (1995) was very much on knowledge creation. As a result, organizations attempting to follow their principles for other aspects of KM, such as sharing or retaining knowledge, have sometimes found it difficult to make a specific connection from abstract ideas about knowledge to what the organization actually does, or could do, or should do.

Often only the "why" is present, not the "who" or even the "what". Something more concrete is needed.

IT-Driven Route

This route assumes that the fundamental requirement is for the codification of as much knowledge as possible. Advocates of this approach sometimes refer to this as "extracting" the knowledge from the people who possess it; see for example Johannsen and Alty (1991). This is an inadvisable term to use, for two reasons. First, it is logically incorrect; their knowledge is being *shared*, not extracted. The people still have the knowledge after the "operation" has taken place. Second, it gives the people the wrong impression – that their knowledge is being taken away. This is not a recipe to encourage their co-operation. For an organization of any size, such a codification task evidently requires IT support, and the thrust of this route is that once the "correct" form of IT support for managing knowledge has been chosen, it is simply a matter of a great deal of hard work.

This technology-driven route only works well in a limited range of situations where the "what" questions are most important, for example, where the main KM task is managing the knowledge held by a company in the form of patents. In other circumstances, it may not achieve any improvement in knowledge management at all. One example of this from the author's experience is of a heavy manufacturing firm. Knowledge management in this organization was seen solely as an information systems issue; the KM group was part of the information systems department. The "solution" was seen in terms of the implementation of a knowledge sharing system based on Lotus Notes™. However, there was no real consideration as to who would share what knowledge or for what specific purpose. Consequently, the eventual use of the installed IT was poor; the only really successful use was by the knowledge management project team itself, where the "who" and "why" questions had been properly addressed, as well as the "what" questions.

Functional Route

An alternative route that has the potential to address the "who", "what" and "why" questions is to organize the implementation around the existing organizational structure. The most commonly found structural elements intended to facilitate learning and knowledge sharing in organizations are departmental groupings based on functions. These have clear advantages in terms of what might

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