Knowledge Flow

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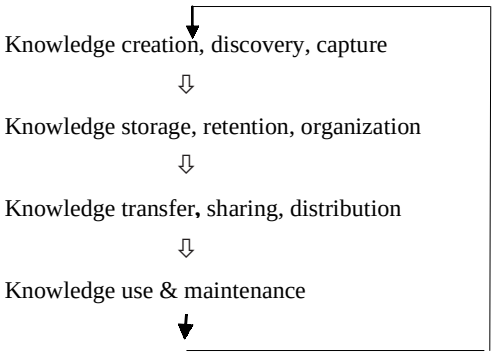
INTRODUCTION

Various models and frameworks have been used to represent the flows of knowledge in an organization. The first and most popular of these remains the spiraling SECI (socialization, externalization, combination, internalization) model presented by Nonaka and Konno (1998), Nonaka and Takeuchi (1995), and Nonaka and Toyama (2003), which presents the various knowledge interactions and creations between tacit and explicit knowledge. Knowledge flows can also be represented and assessed through the knowledge life cycle.



In this article, we describe knowledge flows through a third lens that is based on how people obtain and/or share the knowledge that they need to perform their work. We found a certain agreement on a typology defining two main strategies for knowledge flows: *codification* vs. *personalization*.

BACKGROUND

The Codification Strategy

The codification strategy is intended to collect, codify, and disseminate information. It relies heavily on information technology. One of the benefits of the codification approach is the reuse of knowledge. According to Davenport and Prusak (1998, p. 68):

The aim of codification is to put organizational knowledge into a form that makes it accessible to those who need it. It literally turns knowledge into a code (though not necessarily a computer code) to make it as organized, explicit, portable, and easy to understand as possible.

The codification strategy has been named and described in different ways by various authors. In 1999, Hansen, Nohria, and Tierney published an article in the *Harvard Business Review* titled "What's your strategy for managing knowledge?" In this article, they describe how different companies focus on different practices and strategies in order to manage their knowledge. The first approach is called codification, where the strategy centers on the computer:

Knowledge is codified and stored in databases, where it can be accessed and used easily by anyone in the company. Knowledge is codified using a *people-to-documents approach*: it is extracted from the person who developed it, made independent of that person, and reused for various purposes. (Hansen et al., p. 108)

Hansen et al. illustrate this strategy with the case of two consulting companies, Anderson Consulting and Ernst & Young, which adopted this strategy due to the fact that their activity mainly focused on implementation projects rather than on purely innovative projects. Stephen Denning (1998), former CKO of the World Bank, describes two different ways of sharing knowledge: the *collecting dimension* and the *connecting dimension*. The collecting dimension is described as the "capturing and disseminating of know-how through information and communication technologies aimed at codifying, storing and retrieving content, which in principle is continuously updated through computer networks" (Denning, p. 10).

Know-Net (2000), a "Leading Edge Total Knowledge Management [KM] Solution" developed by an European consortium, incorporates such an approach. Know-Net calls it the *product view* and the *process view*. The product-view approach is described as focusing on products and artifacts containing and representing knowledge. This implies the management of documents, and their creation, storage, and reuse in computer-based cor-

porate memories. The competitive strategy is to exploit organized, standardized, and reusable knowledge.

Natarajan and Shekhar (2000) present two models, the *transformation model* and the *independent model*, that clearly comply with the previous descriptions. The transformation model deals with explicit knowledge, relying mainly on document capture, structured databases, knowledge-extraction tools, text mining, and search and retrieval applications.

A Lotus white paper, describing KM and collaborative technologies, categorizes KM applications as *distributive* or *collaborative*: "*Distributive applications* maintain a repository of explicitly encoded knowledge created and managed for subsequent distribution to knowledge consumers within or outside the organization" (Zack & Michael, 1996).

As we can observe, all these descriptions and definitions are very closely related in depicting a codification strategy. For the remainder of this article, we will adopt the codification naming in order to refer to the type of approaches previously described.

The Personalization Strategy

The personalization strategy focuses on developing networks for linking people so that tacit knowledge can be shared. It invests moderately in IT. This approach corresponds to the Nonaka and Takeuchi (1995), and Nonaka and Toyama (2003) personalization phase of the SECI model where knowledge flow and creation happen during an exchange of tacit knowledge. The authors, who previously defined the codification strategy, also provide their own definition of the personalization strategy. Hansen et al. (1999) named it personalization. It focuses on dialogue between individuals as opposed to knowledge in a database: "Knowledge that has not been codified—and probably couldn't be—is transferred in brainstorming sessions and one-on-one conversations" (Hansen et al.). An investment is made in building networks of people, where knowledge is shared not only face-to-face, but also over the telephone, by e-mail, and via videoconference. Hansen et al. illustrate this strategy with the case of three consulting companies, McKinsey, BCG, and Bain, which adopted this strategy since they mainly focus on customized and innovative projects. Stephen Denning (1998) defines this strategy as the connecting dimension:

It involves linking people who need to know with those who do know, and so developing new capabilities for nurturing knowledge and acting knowledgeably. For example, help desks and advisory services (small teams of experts whom one can call to obtain specific know-how or help in solving a problem) can be very effective in the short term in connecting people and getting quick answers to questions, thus accelerating cycle time, and adding value for clients.

Know-Net (2000) defines this as the process-centered approach, which focuses on knowledge management as a social communication process. It facilitates conversations to exchange knowledge and can be improved by various aspects and tools of collaboration and cooperation support.

Natarajan and Shekhar (2000) use the independent-model designation to describe the tools that attempt to find solutions for the sharing of tacit knowledge. They list a number of technologies that could be used to facilitate the sharing of knowledge. Among them are technologies such as Web-based training used for skill-enhancement programs. Yellow pages, Web crawlers, broadcast applications, communities of practice (using expert locators, collaboration, virtual work-space applications), and the sharing of best practices (using knowledge repositories and discussion-group-based applications) are also examples of knowledge sharing.

Zack and Michael (1996) talk about the collaborative approach that focuses primarily on supporting interaction and collaboration among people holding tacit knowledge. They highlight that:

in contrast to distributive applications, the repository associated with collaborative applications is a by-product of the interaction, rather than the primary focus of the application. This repository of messages is dynamic and its content emergent. The ability to capture and structure emergent communication within a repository provides a more valuable, enduring, and leverageable knowledge by-product than the personal notes or memories of a traditional conversation or meeting. Collaboration technologies, therefore, can support a well-structured repository of explicit knowledge while enabling the management of tacit knowledge. The knowledge repository represents a valuable means to manage the explication, sharing, combination, application, and renewal of organizational knowledge. (Zack & Michael).

Figure 1. The codification strategy