

Chapter 49

Knowledge Codification and ICT Use in Business Networks

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Category: Processes of Knowledge Management

INTRODUCTION

The notion of networks in business, i.e. structures of heterogeneous relationships between firms interacting for business purposes (Todeva, 2006), is not new in the economic literature. Today, however, this concept is becoming popular again since the diffusion of Information and Communication Technologies (ICTs) and the globalization of competition have led to the emergence of new inter-organizational forms that the literature denotes with various terms (e.g. extended/virtual enterprises, global networks, knowledge networks,

extended supply chains, etc.), and are characterized as follows:

1. companies interact with other companies, often on a regular base, because they are not able to manage all the knowledge needed to pursue their strategies in a global and turbulent environment;
2. there is a subdivision of tasks and activities among business partners, but also shared goals whose achievement affects the success of the individual company;
3. companies are scattered globally, and make intense use of ICT applications to communicate.

A common feature of these networks is that companies are embedded in a *web of relation-*

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ships, whose management implies the necessity to cooperate and exchange knowledge. Therefore, the capability to *code and de-code knowledge* becomes critical (Barlatier, 2008): on the one hand, the individual firm needs to communicate with partners based on standard managerial languages and with extensive use of ICTs; on the other hand, it has to exploit its tacit knowledge locally, and to share parts of it with the rest of the network.

This article aims to discuss the possible approaches to the management of knowledge exchanges in business networks and the consequent use of ICTs. Particularly, we refer to the issue of *knowledge codification*, which is essential for the adoption of ICT systems, but can be performed in various ways in relation to the specific business tasks and context. With this purpose, three main *strategies of knowledge codification* are illustrated, which can be adopted for managing knowledge exchanges among business partners.

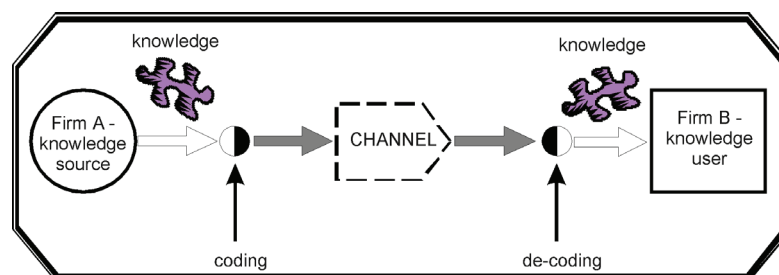
BACKGROUND: BUSINESS NETWORKS, KNOWLEDGE EXCHANGES, AND CODIFICATION

The nodes of a network are linked by various flows: physical (materials, components, etc.), monetary (payments), and information/knowledge flows. Physical and monetary flows are necessarily coupled to and governed by *knowledge flows*. This moves attention away from more traditional approaches to inter-firm networking (such as: supply

chain management, or transactions management) to novel ones that consider business networks as *knowledge networks*, i.e. structures where the interacting firms, specialising in distinct cognitive domains, establish formal or informal agreements to share knowledge thus exploiting complementary competencies, exploring innovations, and generating new ideas. Hence, managing business networks implies *managing inter-organizational knowledge exchanges*.

To put it simple, we can consider knowledge exchanges in a business network as the sum of the transfers occurring between *couples of its nodes*. Figure 1 depicts a simple scheme of this process, where firm A plays the role of knowledge source from which a piece of knowledge is transferred to firm B that needs it for some purpose (e.g. processing a transaction, accomplishing a production task, completing a design, etc.). A channel (for instance, an ICT application) supports this exchange, and necessarily implies some kind of *codification* aimed at representing knowledge in a form that makes it accessible to external subjects (Davenport & Prusak, 1998). This means converting knowledge into a code to make it well organized, portable, and easier to understand by other actors. When the codified knowledge is inscribed in a memorization support, usually a document, it can be communicated in an indirect way. Hence, writing a document is the last phase of the process of translation of tacit into codified knowledge (Balconi et al., 2007). Codified knowledge may also be embedded in artefacts that

Figure 1. Process of knowledge transfer between two firms in a network (adapted from Lindsey, 2006)



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