

# Chapter 28

## Strategic Knowledge Management System Framework for Supply Chain at an Intra–Organizational Level

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### ABSTRACT

*In the Web 2.0 and organization 2.0 era, implementing Knowledge Management Systems (KMS) in Supply Chain (SC) in companies should contribute to gain sustainable competitive advantage. Using a case-study in an Italian SME (BONFIGLIOLI), this chapter seeks to propose new processes and recommendations to design and operate an efficient KMS for a SC at an intra-organizational level. This case study shows in particular the role of IT as an artifact implying individuals in organizational knowledge creation. It also shows that implementing KMS in SC makes SC actors change their cognitive scheme and work practices and calls for a new role of middle management.*

### INTRODUCTION

During last decade academic researches and practitioners placed Knowledge Management and Supply Chain Management as strategic key drivers for companies.

Knowledge Management sources from several theories that cover among other fields such as economic, strategic, artificial intelligence, organizational culture, social science or management fields without really becoming an independent theory. For instance many Knowledge Management practices are encompassed in the Resource-Based view (Penrose, 1959; Rumelt, 1984; Wernerfelt,

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1984; Conner & Prahalad, 1996) that considers knowledge as a scarce resource contributing to economic profits. As a result “such issues as skill acquisition, the management of knowledge and know-how, and learning become a fundamental strategic assets” (Teece & Pisano & Shuen, 1997, p.514). Nevertheless organizations have difficulties to identify and understand their knowledge in order to design an appropriate framework and processes management empowering all actors through the same global goal of performance (Grant, 1996). Knowledge Management is also considered as a complex process mobilizing tacit or non codified explicit know-how in daily activities that have to span traditional structures, culture and management forms (Grover & Davenport, 2001).

Supply Chain is a transversal function which is a stake for companies which aim to consolidate their competitive edge. For several years Supply Chain optimization has mainly been oriented toward managing physical and financial flow of information. Operational Research and IT have contributed to the creation of tools and methods for managing demand, production, distribution and reverse logistics. As examples we can mention integrated tools such as Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and Efficient Customer Response (ECR). Methods such as Lean Management, Supplies Synchronization, Late Product Differentiations have also improved Supply Chain. Technologies as Radio Frequency Information Device (RFID) provide with opportunities to accelerate informational and physical flows while improving reliability.

Nevertheless more improvements are expected. Managing physical and financial flow of information is mandatory, but interpreting information all along the Supply Chain to focus actions on competitive advantage development brings a new way of optimization. In the Web 2.0 and Organization 2.0 era, Knowledge Management approaches such as that of WAL MART (Binot & Duzert, 2008) have recently led scholars to focus on this

type of improvements in Supply Chain (Lancini, 2007; Gunasekaran & Ngai, 2007). Most of researches deal with Supply Chain optimization at an inter-organizational level (Hult & Ali, 2003; 2006; Evrard & Spalanzani, 2009; Fabbe-Costes & Lancini, 2009). However there is also need to study intra-organizational level.

This chapter based on a case-study in an Italian SME assesses to explore the impacts of a Knowledge Management System implementation in a Supply Chain Department.

First we present the characteristics and aims of Knowledge Management System for Supply Chain. Second we present the methodology of research and the context of its application. Then we describe the case-study and the lessons learned from industrial and academic points of view. Finally we continue with discussing Supply Chain KMS characteristics, the role of IT as an artifact leading individuals to create organizational knowledge, the role of middle management which has to consider individual cognitive scheme changes and the emergence of new work practices.

## **BACKGROUND: DEFINING KNOWLEDGE MANAGEMENT SYSTEM FOR SUPPLY CHAIN**

### **Knowledge Management System**

Knowledge is when collaborators can interpret information linked to a specific context by adding in the expertise of their own experience. The works of Polanyi, Nonaka & Takeuchi regarding the knowledge nature (explicit/tacit), the hypertext cycles (internalization/externalization, individual/collective) have highlighted that only an observation can help to understand tacit knowledge. Most research defines Knowledge Management as the generation, representation, storage, transfer, transformation, application, and protection of organizational knowledge. Organizational memory, division of information and collaborative work are

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