

Chapter 20

Knowledge Sharing in Supply Chain

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ABSTRACT

This paper examines knowledge sharing in supply chain by developing analytical models to minimize knowledge sharing uncertainty. Analogies from thermodynamics are used to describe the phenomenon in supply chain knowledge sharing. The study finds that distance and sender capacity are important to reduce knowledge sharing uncertainty. Furthermore, higher contact frequency between the sender and the receiver without considering sender capacity is proven to be insignificant to reduce uncertainty. This mechanism provides a new approach to explicate knowledge sharing in supply networks. It also serves as a deep-rooted opening point for supplementary empirical assessment. The mechanism facilitates managers to expand their understanding of composite circumstances embedded into global supply networks to share their knowledge. With enhanced understanding, managers can spotlight their actions, increasing their firms' competitiveness. This study provides a deeper theoretical understanding of knowledge sharing in supply networks with a practical approach.

1. INTRODUCTION

In recent years, scholars have paid escalating concentration to the role of knowledge in gaining competitive advantage leading to the emergence and development of the knowledge-based view of organizations (Eisenhardt & Santos, 2002). The debate on knowledge sharing arises from a grow-

ing recognition of the importance of knowledge in the 'new knowledge economy' and its impact on organizational competitiveness. Since, the role of knowledge becomes more important in knowledge based organization where it competes based on knowledge intensive products/services rapidly (Chase, 1997). Recently, an increasing number of organizations are entering into relationships with other organizations to create value through continuous knowledge management

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(Hagedoorn, 1993; Robertson & Yu, 2001). Such inter-organizational knowledge management has been proposed as a fundamental strategic process and an important means by which organizations may achieve sustainable competitive advantage in the future (Contractor & Lorange, 2002; Podolny & Page, 1998; Powell & Brantley, 1992; Powell et al, 1996). However, in broader perspective of inter-organization, the complexity of knowledge becomes larger. It encourages codifiable and explicable knowledge by developing common language and ontology (Chen et al., 2000). The definition of ontology used here is that it consists of a representational vocabulary with precise definitions of the meanings of the terms of this vocabulary plus a set of formal axioms that constrain interpretation and well-formed use of these terms. Ontology use here then is analogous to use of business forms with standard operating procedures, since informational structure is represented as terminology (Kim, 2002).

A difficulty of knowledge ontology development is that some of valuable knowledge is stored in individuals that many of them are fuzzy and not possible to formalize (Polanyi, 1966). Indeed, knowledge sharing is important in inter-firms relationship since it is as social capital that support business agility and has been somewhat neglected in previous studies (Howells, 2002; Madhavan & Grover, 1998). With the result that supply chains more concentrated to maximize the benefit of information sharing by creating business architecture (Meyr et al., 2002; Disney, 2003).

In global and agile supply chains, furthermore, knowledge sharing is very important to create flexible manufacturing and product development. Effective sharing of knowledge enables supply chains for reducing time to market and developing process modularity. Communication amongst engineers in supply chains reduces product development time and enables them to develop modular manufacturing process by sharing their product interface development. This interface development will reduce incoming material inspection time and

make participants more freely to maximize their innovations. Therefore, our research question is '*How to maximize knowledge sharing benefits in supply chain networks?*'

Paper is developed as follows: Section 2 reviews some literature from knowledge sharing in supply chain perspective to give insight to readers about the challenges for knowledge sharing in supply chain. Section 3 describes the critical success factors of knowledge sharing by considering the previous challenges. Then Section 4 discussed the managerial implications for the proposed methodology. Finally, section 5 makes conclusion and discussion of how knowledge sharing must be applied in terms of global supply chains networks.

2. KNOWLEDGE SHARING IN SUPPLY CHAIN

Knowledge is recognized to be a 'justified true belief' (Nonaka, 1994). Knowledge sharing between individuals is the process by which knowledge held by an individual is converted into a form that can be understood, absorbed, and used by other individuals (Ipe, 2003). Still if the perspective in this article is on the supply chain setting, we believe that the collaborative nature of these exchange relations stresses interpersonal collaboration and sharing of knowledge. Knowledge sharing is also vital because it provides a link between the individual and the organization by moving knowledge that resides with individuals to the organizational level, where it is converted into economic and competitive value for the organization (Hendriks, 1999). Network forms of organizing economic activities have rapidly increased in number since 1990. Globalisation, increased technological complexity and the reduction of inter-organizational transaction costs through the use of the internet are some of the factors behind this development (Ford, 2002).

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