

# Chapter 1

## Modeling Social Influences in a Knowledge Management Network

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### ABSTRACT

*The issue of knowledge management in a distributed network is receiving increasing attention from both scientific and industrial organizations. Research efforts in this field are motivated by the awareness that knowledge is more and more perceived as a primary economic resource and that, in the context of organization of organizations, the augmented management complexity of its whole life cycle requires new reference models. In this paper, we build on recent research work to propose a distributed knowledge management framework that can be used in several application domains. We characterize the dimension of social influences in terms of identity, negotiation and trust modeling them within a framework that can augment learning and cooperation capabilities through knowledge sharing and effective communication. A particular instance of the presented framework, to handle the problem of risk management in enterprise alliance partnership, is discussed as a case study that shows the practical applicability of our approach.*

### INTRODUCTION

The interoperability of organizations that engage in knowledge exchange to pursue innovation is one of the challenges of our age (Panteli 2002). In

fact, networks of organizations (NoOs) have been growing rapidly in number and scope in recent years, with the majority of business organization now belonging to at least one of such networks. Supply chain and virtual B2B are typical examples of network of organizations whose members work in close and continuous collaboration on

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projects, processes, products, services, to pursue a common strategy. Several issues push to inter-organizational networking: faster time to market, needs to guarantee availability of resources and material, etc. Issues can be solved only if ability to use knowledge distributed inside the network of organizations increases and it allows to better concentrate on the growing of core competences. Undoubtedly, network of organizations can offer risk and cost mitigation benefits when innovation programs are launched. An important contribution to the problem of knowledge exchange in a distributed system of systems is due to studies on communities of practice, social network, etc. and the interest to share knowledge in such virtual networks is continuously growing.

Despite strong motivations encourage research works in the direction of better virtual environments, conceptual barriers and limitations still exist.

A big issue is technology; it is mature enough to support communication between people and organizations, when most interactions involve exchange at data and information levels.

However, when people and organizations turn their attention to collaboration activities within the context of virtual networks (Hughirlan 2006; Priestley 2006; Baim 2006), technology must evolve to embrace social needs easing interaction oriented to knowledge sharing (KS). But technology is only the top of the iceberg in the sea of issues rising from paradigmatic differences in our understanding of what knowledge is.

“Paradigms” govern how knowledge flows between people and organizations and they affect interorganizational knowledge exchange. The debate about knowledge exchange focuses on two fundamental paradigms: *knowledge as object* and *knowledge as process*. The researchers and practitioners following the “Knowledge = Object” (“K=O”) paradigm usually exploit the concepts from Information Theory in their understanding of Knowledge. The researchers and practitioners referring to the “Knowledge = Process” (“K=P”) paradigm tend to take their concepts from philoso-

phy, psychology or sociology. This point of view is also exploited in economics studies (Boland, 1998).

Because of their different origins, the two tracks use different languages in their dialogues and thus confusion might arise. Presently, the “K=O” paradigm deriving from mechanistic world view of Cartesian Philosophy, has a widespread diffusion; it suggests us that a well done technological infrastructure might be perceived as a sufficient tool to enable exchange of knowledge. Instead, the “K=P” paradigm uses schemes that may not take into consideration wealth of human behaviours during knowledge sharing. Characteristics of domain of knowledge are important issues, as demonstrated from open source software projects experiences. In fact, Open Source activities resemble the cumulative process of science (Tuomi, 2005). Their KS success depends on the domain of knowledge that is the software development. To reach such results in KS both paradigms are useful, but they have to be integrated, as shown by the results of studies on FLOSS communities (Lin, 2005, p.3):

*“Methodologically, we need more grounded, ethnographic-oriented research for our understanding of the socio-technical practices of deployment, development and implementation of FLOSS in different contexts.”*

In FLOSS communities developers operate on a shared technical artefact (the code) that is tangible and they share the criteria for evaluating good designs. This context makes easier to build theories that work, because they construct simultaneously technical artefacts and their identity. The paradigms of KS have to be extended when they work on a further dimension, the interorganizational one, because they normally identify processes that are in place inside one organization. Processes related to KS among several organizations look very different (Chen & Duan & Edwards, 2006) being mainly based on relationship mechanisms realized inside and between at least two levels of *receiving/giving* entities: organizations and employees.

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