

## Chapter 16

# Simulation on Knowledge Transfer Processes from the Perspectives of Individual's Mentality and Behavior

**Jiangning Wu**

*Dalian University of Technology, China*

**Na Liu**

*Dalian University of Technology, China*

**Zhaoguo Xuan**

*Dalian University of Technology, China*

### **ABSTRACT**

*Knowledge transferring between people within an organization leads to varied results due to individuals' distinctive mentality and behavior. In this study, mental and behavioral factors, such as the prestige and reputation of individual and the movement for people within the organization, are introduced to examine their impact on knowledge transferring between individuals. A conceptual model is proposed which involves two actors in the process of knowledge transfer, knowledge sender and knowledge recipient, their corresponding disseminative capacity and absorptive capacity, as well as mental and behavioral factors. Accordingly, a network model is constructed in which nodes act as the knowledge senders or recipients. The process of knowledge transfer on the network is inspected from two mental aspects—the prestige and reputation of individuals. The degree of impact of the factors on knowledge disseminative will or knowledge absorptive will of actors is measured. A personnel movement mechanism is also introduced to simulate the dynamic processes of knowledge transfer within the organization. The simulation results show that the positive mental factors for individuals can promote the disseminative capacity of knowledge senders, accelerate the processes of knowledge transfer, and improve the knowledge stock of the organization.*

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## INTRODUCTION

Knowledge transfer is defined as a communication process with information processing activities, where the actors involved can carry out the transfer of knowledge using an appropriate mechanism (Albino et al., 1998). Since knowledge transfer is pivotal to the improvement of knowledge stock and competence of the organization, it has been considered to be one of the important topics for knowledge management researchers as well as practitioners. It is believed that both the knowledge disseminative capacity of knowledge sender and the knowledge absorptive capacity of knowledge recipient have a great impact on the performance of knowledge transfer. Therefore, it is necessary for the organization to study the way to stimulate both knowledge senders and knowledge recipients.

Drawing on the relevant literature, knowledge disseminative and absorptive capacities in relation to knowledge transfer have been paid much more attention and studied in different ways (Simonin, 1990; Cohen & Levinthal, 1990; Zahra & George, 2002; Liao et al., 2007, 2009; Mu et al., 2010; Tang et al., 2010). However, little research concerns how to promote the disseminative capacity of knowledge sender or absorptive capacity of knowledge recipient. In reality, these two kinds of capacities not only depend on the actors' knowledge level, but also depend on the actors' willingness to exchange knowledge to a great extent. In other words, the actor's disseminative capacity or absorptive capacity may rely on whether they can get some returns or benefits after they send or receive the knowledge. According to the theory on organization behavior (Robbins, 2003), a group of human beings can be divided into two groups resulting from their different motivations: One group being "rational-economic" who can be motivated by material and monetary gains, and another group being "social" who can be motivated by social status and the respect from other people. In the

study, we take the latter group into consideration. For those people, we believe that they do want to disseminate their knowledge to obtain some benefits like the respect from others. Conversely speaking, they also want to absorb the knowledge from others to promote their knowledge level as a result they get a higher status. Based on this fact, we propose a conceptual model for knowledge transfer into which the mental factors of individuals about their prestige and reputation are introduced. A simulation network model is therefore constructed to examine how the mental factors influence the knowledge disseminative capacity of knowledge senders and the absorptive capacity of knowledge recipients in the knowledge transfer processes by using the designed knowledge exchange rules.

In addition, the behavioral factor of individual also attracts our attention. We know that the individuals within the organization are often in the state of the local interaction for a short term. But in the long run, the individual is always moving and his/her social network is changing constantly (Xiao et al., 2005). How does this moving behavior affect the knowledge disseminative capacity and absorptive capacity of actors? Some researchers have studied the influence of personnel mobility on the processes of knowledge transfer through some empirical experiments, such as student rotation between different groups (Kane et al., 2005), employee mobility (Franco & Filson, 2006), mobility of public researchers (Herrera et al., 2010), and so on. Considering that the empirical experiments and results almost come from the particular groups, they are not applicable to all cases. So we use a general model with the designed personnel movement mechanism to simulate the dynamic processes of knowledge transfer within the organization.

The contributions of this study are trifold. First, it reveals the relationships between knowledge disseminative capacity, absorptive capacity, individual's mentality and the performance of knowl-

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