Chapter 6.4
Social Networking and Knowledge Transfer in Collaborative Product Development

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ABSTRACT

Software product development requires connecting of specialized information and know-how. Therefore, planning and production are widely done in networked projects. This chapter studies inter-firm collaboration to explore the role of face-to-face meetings and information and communication technology in knowledge transfer in product development by using case studies of software companies in Oulu, Finland. Clusters are important in forming trust and mutual understanding. Thus, a compact city region and effective social networks are beneficial for inter-firm collaboration. However, information and communication technology is very valuable for routine communication and documentation, but also in distance collaboration. Geographical distance affects inter-firm collaboration in terms of practical arrangements, such as working hours, yet cultural differences bring additional challenges. This chapter considers and scrutinizes social networking in collaborative product development, and the role of clusters and information and communication technology in such development, as among the key success factors.

INTRODUCTION

In an increasingly globalized economy, the competitiveness of an urban region depends on how well firms adjust to increasing competition and growing complexity. In knowledge-based sectors, social networks of actors are considered vitally important in keeping a firm's information and know-how up to date. Besides being an individual process, learning is also a social process in a specific social context (Wenger, 1998). The functional urban region of Oulu (FUR Oulu),

with a population of 210,000, is regarded as one of the most successful information and communication technology (ICT)-based economic regions in northern Europe (Oinas & Lagendijk, 2005, p. 324). Strategic decisions at the University of Oulu and government investments were the starting point for the growth of Nokia's mobile phone industry, which has with its subcontractors formed the foundation of the technology cluster in the Oulu region (Donnelly & Hyry, 2004, pp. 136-138; Männistö, 2000, p. 84). In spite of the success, the 'Oulu Phenomenon' could not be understood without Nokia's development (Männistö, 2002, pp. 2002); additionally a small group of skillful people with strong mutual trust and a shared goal have been in a crucial role in that development (Donnelly & Hyry, 2004, pp. 135-136; Tervo, 2004, p. 86).

The high technology cluster in FUR Oulu consists of five different branches, of which information technology is covering over a half of the enterprises. Other technologies are multimedia, health and wellness, biotechnology, and environmental technology (Donnelly & Hyry, 2004, pp. 135-136). In the region, information technology covers mostly telecommunications and software. However, classification of different technology cluster is complicated, since a remarkable amount of telecommunication is assessed to belonging to a software cluster (Männistö, 2002, pp. 199). The software cluster, with strong connections to telecommunication and also wellness sectors, is expected to develop rapidly in FUR Oulu (Männistö, 2002, pp. 184). Moreover, software products are complex products that require many combinations of specialized information and know-how. Therefore, planning and production are more likely to take place in networked projects (Miettinen et al., 2006, p. 26).

Nonetheless, the region meets new challenges along with global development, as Nokia among other long-standing successful firms is increasingly moving its production abroad, mainly to the Asian countries, where production expenses are lower and human resources abound. Nokia still plays an important role in investment in research and development (R&D), but there is a significant increase in the investments of small companies (Lassila et al., 2006, p. 31). The software industry has grown rapidly also other parts of the Finland, and the sector is considered a future possibility for economic growth (Finnish Software Business Cluster, 2006). Software production does not require transporting of heavy materials; the crucial issues are skilled labor and good infrastructures, so in principal the sector is well suited for a peripheral high-cost region such as northern Finland. By peripheral region, I mean in this case its physical location as the northernmost inhabited region far away from the main market areas, and even though Oulu is sixth largest city (130,000 inhabitants) in Finland, it is a small place globally. Moreover, northern Finland outside FUR Oulu is very sparsely populated (the population density of the whole region is 4.6 inhabitants per square kilometer). However, per capita investment in R&D in FUR Oulu is the highest in Finland.

Technopolis Linnanmaa, next to the University of Oulu, is the oldest technology center in the Nordic countries with over 100 high-technology firms, 4,000 employees, but also providing a good infrastructure and meeting facilities (Jauhiainen, 2006, pp. 1413). The idea of the Technopolis concept is to build a supportive high-technology business environment by providing business and development services in same premises (Launonen, 2006). Besides wireless Internet connections, these services include all kinds of practical support for business activities, from cleaning and copying to tailored packages of more demanding clerical and personal assistant services (Technopolis, 2007). Nowadays Technopolis has several buildings in FUR Oulu, located in strategically important places such as next to the University of Oulu, the city center, or close to airport (see Figure 1). Furthermore, the Technopolis has