

## Chapter 6.3

# Supply Chain Management in the Context of Economic Area: Case Study for the Development of ICT Branch in the City of Oulu

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### ABSTRACT

*This study introduces geographical viewpoints for supply chain management (SCM) focusing on the branch of information communication technology (ICT) in the case of city and region of Oulu. The City of Oulu is a remarkable planning and administration centre of ICT branch in Finland. In this study we - instead of using commonly used cluster or resource dependence theories - utilize SCM framework to describe the development and path-dependence of knowledge-intensive geographical area, which is specialized in high tech or actually ICT business. In the context of geographical analysis, or of geographical economics, SCM is less-used viewpoint. This case study shows that SCM, and especially strategic level SC endowment viewpoint (introduced initially in Rusko, Kylänen & Saari, 2009), is valuable and useful tool in analysing the geo-economic development and path-dependence of a high tech centre. As a result, we notice that the development of Oulu is based on the development of SC endowment connected with amounts of talents and also multi-dimensional coopetition. One essential result is the observed erosion in the SC endowment of high tech Oulu, which sets remarkable challenges for city planning.*

### 1. INTRODUCTION

Supply chain management (SCM) has been used as an equipment to describe the whole product chain from the raw materials to the end users (Iskanius 2006; Scarlett, 2007). Often this supply

chain consists of several different producers and intermediaries. It is usual to describe and study geographical economic areas, specialised one or several neighbouring branches, using e.g. cluster of diamond model (Porter, 1990) and resource dependence theory (Männistö, 2002). Instead of these models or theories, we will consider here

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SCM framework as an equipment to describe the development of a geographic area specialised in the knowledge-intensive branches and especially information communication technology (ICT) branch. SCM has been used earlier as a tool to describe and analyze the geographical and economic development of a tourism destination (Rusko et al., 2009).

The analysis of Rusko et al. (2009) has been actually based on economic geography and SCM. They consider the economic development of one geographic area, tourism destination Fell Levi, in the context of SCM. In the case of tourism destination, the products are tourism services. From the point of views of tourists, the distribution channel of a service (providing experiences) is a supply chain. In the geographic area of tourism destination there are different possible supply chains. The planning activities of these supply chains (e.g. implemented by local municipalities) are, in other words, parts of the strategic level supply chain management of the whole economic area, in this case tourism destination. In their analysis especially the strategic level SCM is connected with economic geography, planning and investments of facilities and generally the requirements for the business. This same viewpoint is applied in this study to the context of business incubation of Oulu area. In the case of business incubations the supply chain is consisting on the services provided by management of incubation, e.g. municipalities and the most important participating enterprises of the centre. In the strategic level, the supply chain management of the business incubation has similar elements compared to tourism destination. This fact, basing on the analysis of Rusko et al. (2009), has been utilized in this study.

One important viewpoint, especially in the context of business incubations, is also scientific discussions of economic geography of talent, which is focused on the distribution of talent (high human capital individuals) connected with the distribution of high-tech firms. It seems that talent orients the location decisions of firms and

underpins the formation and evolution of industrial clusters. (See, e.g. Florida, 2000). In the case of whole geographical area, the application of SCM provides a new viewpoint in which the destination area generates one supply chain endowment, which consists of several individual supply chains (Rusko et al. 2009). By combining two viewpoints, economic geography of talent and supply chain endowment, we get new framework in which, for example, technology based clusters are possible to consider as talent-oriented source for different supply chains of knowhow for technology firms. In the case of business incubations the products are talents, or high human capital individuals, for the needs of research and development of customers, that is incoming or existing firms of the area. In the case of strategic level SCM, or supply chain endowment, in the context of geographic area, the focus is on the available – mainly investment based - long term resources or services of the area (Rusko et al. 2009). For example in the resource dependence theory, the focus is in the disgust of relationships and social exchange between organizations. The remarkable strategic level endowment of services for geographic area makes possible for different operational level supply chains for ICT services (or e.g. for tourism services). Thus, geographic SCM viewpoint, or SC endowment, introduced in Rusko et al. 2009, consists of hierarchical level of SCs: investment based strategic SCs and operational SCs. The more investments, facilities and infrastructure - or the amount and quality of talents - there are in the area, the more possibilities for different individual transaction based SCs there are. Neither resource dependence theory and nor cluster theory of Porter (1990) take into the account this viewpoint.

This analysis is connected with the economic area of Oulu (involving city of Oulu and its neighbouring municipalities), which is recent decades heavily specialised in branches of new economy, such as ICT and biotechnology. City of Oulu, in the Northern Finland, has a long history, it has been founded already 1605. Of course, during

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