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# High-tech enterprise networks – a theme sufficiently, or too, topical to study?

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## Reflections on the past

Today, one year after the defence of my doctoral dissertation, it took me a while to recall how I ended up to study what I used to – and still do. Yet, it is quite a logical path. I have always been rather practically oriented and liked logical subjects, such as maths, but also computers. However, I never thought that those could be my main orientations with my studies. When GIS was new in our department, I grew very interested in it, even though I felt many times that it is very difficult, if not impossible, to say anything about those human-related issues that I tried to estimate with all those analyses and maps. I wanted to generate better analyses and estimators, but they did not teach me that much more about the subject, only on the computers. Even so, one thing led to another, and after several coincidences I ended up to hold the IT planner's position in the department.

A few years of doing very practical work and raising a family gave me time to rethink what I am trying to do and whether I really want to go on with my doctoral studies. However, I still felt myself to be more a geographer than a computer professional. So, when I took a fresh start for my studies and as I got the opportunity to apply for a project of Academy of Finland called "Regional development, urban networks and ICT in the Baltic Sea region" it was easy to find what to study – but it was also a relief to get a chance to use my practical work experience and my notions of how different people use computers and feel about them, and which barriers are limiting the use of various information and communication technologies. This is my geography – I thought – but, as anybody doing research knows, it is never that simple. Findings led to other findings and, little by little, my study ended up concentrating on high-technology enterprises, includ-

ing economical orientation. These aspects are, of course, impossible to avoid when studying enterprises and their activities. However, again because of my practical orientation and ontological position, these themes were precisely what I wanted to study, not topics such as policy or governmental orientation of innovation activities. What, then, is "new" in my study, and what does it have to offer for geography and society as a whole? Those questions I have already answered in my dissertation (Ala-Rämi 2007), which is why I would like to borrow some relevant parts from there.

## Positioning my study in the field of geography

As I see it, my study is positioned at the intersection of several disciplines. In the field of geography, this study lends most of its concepts and characteristics from economic geography (e.g. Keeble 1997; Maskell & Malmberg 1999; Storper & Venables 2004; Bathelt 2005; Boschma 2005; Oinas & Lagendijk 2005). However, as my major subject is in the applied geography and regional planning, more practical regional development and planning perspectives have also

been included (e.g. Saxenian 1996; Malecki 2002; Kaufmann & Tödtling 2003; Scott 2004). Moreover, my study partly operates also in the field of geography of the information society (e.g. Wilson 2001; Kellerman 2002; Lorenzon 2003; Graham 2004; Inkinen & Jauhiainen 2006), which defines its principal focus as the "spatial dimensions of the Internet and cyberspace, the nature of mobility, information technologies and their impact on social relations and community, and the policy issues associated with information society" (IGU 2007).

Connections to the research in other fields of study are also there. Recent studies in Northern Finland about the development of the ICT industy mostly focus on the FUR Oulu and include economical (Simonen 2007), historical (Salo 2003)and technical (Pikka 2007; Teräs 2008) perspectives as well as those of social sciences (Männistö 2002; Tervo 2004). Nevertheless, other disciplines' tendency to refer to geographers' studies (Pikka 2007; Simonen 2007) suggests that a geographical study may provide an important contribution in explaining the formation and success of an ICT region in a district that is geographi-

cally distant in terms of markets and other ICT "hot spots". My studies differs from earlier studies focused on Northern Finland by combining the spatial aspect to the viewpoint of actors on a practical level instead of governmental or political levels. Furthermore, instead of solely focusing on the growth pole of the FUR Oulu, this study has further geographical dimensions, covering also the most peripheral parts of Northern Finland.

## Networking, communication and mutual proximity of high tech enterprises as a research topic in geography

Networks and business-to-business collaboration in the creation of innovations are topical research areas especially in business studies and in the study of governance and management, but also in the economic and regional geography. Furthermore, Finland, especially the region of Oulu, is well-known for its ICT sector. To have a topical subject makes it easy to "sell" one's research to the audience and also to the editors and reviewers; no-one has ever suggested that my study would not be relevant. However, studying a highly topical subject has its drawbacks, too. First of all, there is an overwhelming number of different theories and viewpoints: particularly when a topic of research covers multiple disciplines, there is a huge number of different articles, books and materials that you have to read before you can even begin with your study. What is my aspect and what should I know about the thousands of different points that are related to it? And what do I have to add to all this discussion? What is my contribution to the field of geography when I am studying all this?

In spite of the considerable number of theories, they all remain quite silent in aspects such as how the people working in a firm handle the long-distance networking and collaboration. An empirical study at the company level gives a better understanding of how ICT can support business-to-business collaboration, what tacit knowledge means in terms of collaborative work and why it is so difficult to codify. I am also interested in how the CoPs come into being and what it means in practice, or what kind of factors can trigger trust formation. Most studies of industrial development and regional policies concentrate on

the successful, densely networked regions and less on the peripheral and distant regions (Tödtling & Trippl 2005:1205; Onsager et al. 2007:549; Virkkala 2007:511). But Isaksen (2005:148) is assured that "researchers should emphasize less the geography of input-output relations and focus more on the geography of R&D and innovation when studying regional clusters". Oerlemans et al. (2001:61), for their part, suggest that a company-level perspective is essential in theorizing on the relationship between networking, innovation, and proximity. Further, Oinas & Lagendijk (2005:314) argue that superficiality leads to studying the numbers of firms and innovations and patents instead of "the extent to which imaginative ideas move around in people's heads", which would explain better the diversity of innovative actions. My idea is to combine the above-mentioned viewpoints by studying the geography of R&D and innovation collaboration from a enterprise-level perspective and also on the level of individual behavior in a region that is successful, but at the same time distant, and sparsely networked.

Northern Finland has a relatively large number of high-technology enterprises and many of them are located at a distance from each other, which offers a fruitful context to address theory and practice in high technology development. Moreover, for some reason, some regions such as Northern Finland seem to overcome these challenges created by less-favored location better than others, which makes the region more interesting for the research. Furthermore, as the number of high technology enterprises and key actors is relatively small, it is possible to include them all in the research project at some level in order to present a general view of the region. My aim is also to bring the social context to this discussion. After all, it is the capabilities and knowledge of the individuals, but also their ability to effectively communicate, network and act from a distance that, along with the help of governmental support, makes one region more competitive than some other.

My contribution to this topic, then, is in the aspects that link theory and empirical context together. Importance of both networking and proximity in high-technology development has been stressed in

the international research. However, only rarely have these issues been studied in remote and peripheral areas, and even less often from an empirical point of view. Furthermore, the opinions and ideas of the individuals that actually take care of that development work in practice are often missing in these studies. Yet their personal characters and knowledge, but also their ability to adjust to the existing situation or to new challenges, is the crucial part of the success of a company, especially in the case of small enterprises. Therefore, research on such areas can bring important insights for these general findings, but also address these general concepts through the empirical findings emerging from the context. In addition, ICT is often claimed to help in overcoming the challenges rising from extended distance between enterprises when they collaborate to achieve a product innovation. Yet those studies usually tell us very little about the circumstances in which business-to-business collaboration and knowledge sharing, especially if it is tacit, is made possible by using ICT. So far, detailed studies about the impact of distance on collaboration, communication and networking have been lacking.

My aim is to contribute, through empirical research, to the key issues in theoretical discussions as regards to communication and the interplay between proximity and distance in high-technology development, especially when it comes to findings rising from remote and rather peripheral areas such as Northern Finland.

## A few concluding words

As far as I see it, my research is positioned between several different geographical traditions, but also very close to a few other disciplines as well as to practical life. Therefore, it is very close to society – my research elicits information from the level of individual enterprises to the local and governmental level so that the needs of enterprises could be better taken in account in innovation policy and programs. High technology enterprises, especially growth-oriented ones, are important for regional development and are therefore supported by national programs for regional development, such as Centres of Expertise.

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