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AUTHORS

Merle Krigul

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Merle Krigul (Estonia)

On possibilities to develop cross-border knowledge region: the case of Tallinn (Estonia) and Helsinki (Finland)

Abstract

The globalization of economic and social activity is testing the ability of local economies to adapt and exploit or maintain their competitive edge as scale becomes more important: economic activity continues to cluster and concentrate. Disparities in economic performance among different, even neighboring countries tend to be persistent. Still, technological change (ICT) and greater use of knowledge are offering new opportunities for regional and inter-regional development and knowledge transfer, but demand changes in local governments' governance philosophy, further involvement of innovative enterprises and participation of universities and research institutions in local environment.

The cross-border co-operation (CBC) is one of the means to raise the competitiveness of regions. In order to better promote the CBC, many regions in the EU have established CBC organizations/euroregions, such as NPA Helsinki-Tallinn Euregio was formed in 1999 with the aim to enhance regional integration between Tallinn (Estonia) and Helsinki (Finland) capital regions. Euregio is the only regional level tool between Estonia and Finland which deals with contact making between universities, enterprises and local governments and whose mission is to enhance cross-border integration between Helsinki-Uusimaa region and Tallinn-Harju county and the role is "to promote and assist co-operation inside the twin-region. Euregio supports and promotes inter-regional development and competitiveness, aiming to strengthen the regional knowledge based economic development".

Applying knowledge concepts to cities and regions is a phenomenon of the last twenty years. From a geographical perspective, Helsinki and Tallinn are among the closest capitals in Europe. A long-term vision states that the Helsinki and Tallinn regions will form a united science and education area, a knowledge region.

In the current article the author studies preconditions for creation of a common knowledge region between Helsinki and Tallinn capital regions under conditions, where a special institution Helsinki-Tallinn Euregio is a part of the process, developing innovative forms of co-operation, using complex tools and methods for advancement of regional integration.

The empirical part of the article is based on the analyses of studies conducted among Tallinn and Helsinki experts since 2003 to 2010.

The article concludes by presenting experiences this type of institution could use to assist in forming two capital regions into the integrated knowledge region.

Keywords: cross-border co-operation, cross-border knowledge region, knowledge transfer, Helsinki-Tallinn Euregio.

JEL Classification: R58.

Introduction

Globalization is a fact in the 21st century and due to that Silicon Valley, BRIC countries and Asian Tigers are next door to European gateways. Thus, theories demanding changes in an approach to economy, understanding of driving forces in economic growth and world competitiveness, are driven from the simple truth that there is no other choice as to improve the European growth and well-being capacity through knowledge and innovation, using flexible theories of management.

Lisbon process highlighted theories of knowledge, knowledge management, lifelong learning and learning organizations as future competitiveness and economic growth factors and sources. Unfortunately, the Lisbon process has not produced the expected change in pan-European world-class competitiveness (Kok, 2004). In 2004, Kok advised broader involvement of the regional and local levels

to implement the strategy (Kok, 2004, pp. 10-11). Rapid technological change and greater use of knowledge are offering new opportunities for local regional development and knowledge transfer, but demand changes in local governments' governance philosophy towards being more open, oriented to private-public partnerships and to further inclusion of citizens, further involvement of innovative enterprises and participation of universities in shaping of local environment, but also coping with the specifics and complexity of cross-border co-operation.

Cross-border co-operation (CBC) is one of the most recognized ways to develop border regions (Baldwin and Forslid, 1999; Brodzicki, 2002; Pitoska, 2006) and thereby increase territorial cohesion in Europe: according to Organization for economic co-operation and development (OECD) recent proposal for developing cross-border regional innovation policy, the hypothesis behind the proposed project is that the trans-border innovation potential is under-exploited, and constitutes a missed opportunity for OECD regions and countries (2010). Key factors in determin-

ing productivity/output, such as diffusion of technology, co-operation among enterprises, social capital development, and allocation of labor and infrastructure, are likely to be sub-optimal because the economic space is divided. Integration should remove the fragmentation that constructs the economic space.

In order to better promote the cross-border co-operation, many regions in the EU have established CBC organisations – euroregions are administrative-territorial structures intended to promote cross-border co-operation between neighbouring local or regional authorities of different countries located along shared state borders (either land or maritime borderlines) (Lepik, 2010). As one of them, NPA Helsinki-Tallinn Euregio (HTE) was formed in 1999 between the City of Helsinki (Finland), City of Tallinn (Estonia), Uusimaa Regional Council (Finland), Union of Harju County Municipalities (Estonia) and the Harju County (Estonia) and re-organized as a non-profit organization in 2003 with the aim to enhance regional integration between Tallinn and Helsinki capital regions and to develop a cross-border metropolitan region. Since 2004 the concept of Knowledge Arena has been introduced in Euregio priorities, with a goal that Helsinki and Tallinn metropolitan regions will become a united region of science, education, arts and innovative knowledge-based business. Since then, Knowledge Arena has been an integral part of the operations of Helsinki-Tallinn Euregio.

In this article CB region is comprehended as the territory of Euregio stake-holders' area in Helsinki-Tallinn capitals' region with limitation to a specific development aim: Helsinki-Tallinn CB knowledge region. Helsinki and Tallinn are the centres of higher education and R&D activities, but also concentration of investments, entrepreneurship and wealth. This offers scope for co-operation in the region and justifies the Euregio priority to enhance common knowledge region.

1. Contextual framework

Recent years have brought publications on relationships between innovation, learning, and regional economic development. This includes literature exploring the concept of a learning region (Florida, 1995; Morgan, 1997; Simmie, 1997), regional systems of innovations (Braczyk et al., 1998), the role of local and regional development policy in promoting and sustaining innovation (Glasmeier, 1999; Glasmeier et al., 1998; Lagendijk and Cornford, 2000). Applying knowledge concept to regions and cities (ideopolis) is a late phenomenon, following the concepts of innovative milieu (Aydalot, 1986; Maillet, 1992), industrial district (Becattini, 1991; Piore and Sabel, 1984) and technopole (Benko, 1991). In

all cases these notions have been used to designate the methods of arranging a community, technology, territory and organizations (Storper, 1997).

In developing cross-border knowledge region, at least two development phases should be considered: the phase of CBC, using more conservative tools for enhancing the process, like matchmaking, networking, organizing joint events or projects of different kind, all well-known tools for a co-operation-enhancing organization, and on grass-root level people's mobility either for leisure or for working. The next phase suggested is integration (OECD, 2010). The latter prerequisites special activities. Cross-border knowledge region is influenced by spatial-economic, administrative-political, socio-cultural conditions, by process and performance. (van Winden et al., 2006). There is no single opinion which steps should be taken first or which pre-conditions should be existing for enhancing knowledge region. According to the literature a group of initiators is necessary: "In each of our case studies, interviews with a wide range of actors revealed that the initial vision and initiative to develop the common cause of knowledge region development begins with a very small group of people. These were usually intermediaries or brokers, as individuals or as part of organizations, whose importance cannot be overestimated" (Reichert, 2006, p. 26).

Other necessary conditions are strategy and strategic actions. In the case of Öresund region all four city-regions spent time and effort to involve different stake-holders in the formulation of regional innovation and knowledge development strategies. This was judged to be important for urgent pragmatic reasons – to acquire additional resources from national or supra-national funding agencies, also important as enhancing mutual understanding, bringing potential conflicts into a constructive negotiation process and establishing common perspectives that can provide a solid basis for future projects (Reichert, 2006). In addition to the hard factors of critical mass of people, institutions, infrastructures, tax conditions and funding opportunities, there are important soft factors which are seen as key components of the regional knowledge strength and potential. First of all there is frequent mentioning of the importance of a high quality of life and a creative cultural environment which makes the city-region attractive to innovative individuals.

Leading knowledge regions are characterized by very high levels of tertiary education, employment in high-tech services, human resources in science and technology. As the CROSSWORKS (2008) analysis shows, leading knowledge region models compel: (1) the development of high-tech services;

(2) the development of education: knowledge workers, universities, life-long learning; (3) the development of wide co-operation and collaboration in R&D among and between triple helix actors; (4) international co-operation in R&D.

According to the collaboration and network analysis, Helsinki/Uusimaa is a leading knowledge region that also has high-tech region characteristics. Much debate focuses on the future directions of Tallinn capital region and the whole Estonian economy: to stress the potential of Estonian manufacturing, given its proximity to the more expensive production environments of the Nordic countries or shift to a contemporary service economy?

Both arguments are pertinent. With manufacturing moving out of the Nordic countries, Estonia has a good opportunity to link into the value added clusters of Nordic countries and a manufacturing culture is a prerequisite to raising the technology level of other economic sectors. The limitations of this type of development tend to be the low attraction of manufacturing among the youth and low reputation of vocational schools. Neither is engineering as attractive as a service sector profession. Prerequisites to develop high-level service sector (ICT in banking, e-services) are high.

Part of the measures for enhancing knowledge region belong to cities' administrations competence within the borders of one country, building cross-border knowledge region demands more from the initiators: vision, political support, use of new complex methods like cross-border triple helix co-operation and living laboratories' method.

Triple helix concept was developed in the 1990s. The triple helix thesis states that in addition to the knowledge infrastructure of university-industry-government relations, an overlay of communications and negotiations among these institutional partners has become increasingly important for the dynamics of the overall system. Knowledge organization and knowledge-based reconstructions can be transformed into a third co-ordination mechanism of social change in addition to the economics of the market and government interventions. The political economy is thus reshaped into a knowledge-based economy containing this more complex dynamics because of the evolutionary advantages of the combinations (Schumpeter, 1943; Krugman, 1996; Leydesdorff and Etzkowitz, 1998).

The method is easily used in cross-border negotiations even if the whole process is complicated. Still, there is another field of developments open to triple helix method: the question of involvement of public. The political contexts of triple helix arrangements

and the issue whether bridges between private and public should be crossed. "Should the public perhaps be considered as a fourth strand to be added to the triple helix model?" asked Leydesdorff already in 2002 (Leydesdorff and Etzkowitz, 2002).

Living laboratories concept may be or may not be a development phase from the triple helix model: in triple helix public may participate as opinion-maker. In living laboratories this role is different: it means being an active part of a development process, being an end-user in open innovation process in which new technologies are co-created, tested, and evaluated in the users own private context. The users are facilitated to communicate their needs and requirements on the basis of their everyday experiences.

Another important aspect of living labs' environment is the living aspect – people involved in any development project live with the process and constantly check how the process proceeds. Eriksson and others (Eriksson, 2005) define living labs as a research and development methodology whereby innovations, such as services, products, and application enhancements, are created and validated in collaborative, multi-contextual empirical real-world settings. This definition implies that humans are considered as the collaborative sources of innovation, not merely involved in testing and validating products and services. Inherent in this definition is the assumption that the involvement processes should be carried out in real-world settings and in close connection to research. According to Lepik (2010) living lab can also be considered an institutionalized form of an innovation system, where public sector, private sector, and third sector representatives cooperate. Thus, innovation can also be considered as a localized form of collaborative learning, where representatives of various sectors participate in an open exchange of knowledge and ideas.

2. Methodology

The article adopts a mix of primary research of three studies and secondary evidence provided by the literature, programs, strategic development documents (strategic plans of Tallinn, Helsinki, Uusimaa and Harjumaa), topical meetings, round-tables and fora. Evidence was collected via in-depth interviews, elite interviews and questionnaires as follows: Helsinki-Tallinn science twin-city research, 2004; questionnaire among Euregio stake-holders, 2008; elite interviews on regional development perspectives, 2009. In this article only parts of each study have been used due to limited space. Qualitative methods were used due to the complicated topic, where experts need previous knowledge on the activities of the organization and also on the regional development prospects.

The research task was to analyze preconditions and activities, to facilitate the creation of Helsinki-Tallinn cross-border knowledge region with specific focus on cross-border triple helix and living lab methods, using the Helsinki-Tallinn Euregio as an initiator.

2.1 Helsinki-Tallinn science twin-city project. The research idea originated from November 2001, when Director of Biotechnology Institute of Helsinki University, Professor Mart Saarma, Academician of the Estonian Academy of Sciences, presented his idea of Helsinki-Tallinn science bridge at the forum of Helsinki-Tallinn Euregio. The need for closer co-operation in science and high-tech business development stems from the fact that neither of the capital regions is big enough to compete alone internationally. Pooling of the resources enables to profit from the strengths of both cities and is mutually beneficial.

The data was collected by fact-finding studies, researching documents in universities, and interviews with experts, scientists, students and offices' representatives. Interviews were oral, lasted about an hour and were taped.

The questions involved statistics on Finnish students and professors in Estonia and vice versa, obstacles to mobility, perspectives of joint scientific projects and common academic perspectives, also facing the global challenges.

2.1.1. Mobility. Estonian degree students were the third largest group among international degree students in Finnish universities. The number of Finnish degree students in Estonian universities had declined since the academic year of 1998.

University of Helsinki was favored by Estonian students. Most popular Estonian university among Finnish students was the University of Tartu. Favored Tallinn-based university was the Pedagogical University (now Tallinn University).

There were concrete examples of ongoing collaboration between Tallinn University of Technology (TUT) and Helsinki University of Technology (HUT): students from TUT continue their studies in HUT (naval architecture, electrical and electronic engineering, aeronautics, telecommunication, etc.). There has also been assessment of study programs and course level co-operation, research collaboration between laboratories and exchange of administrative staff.

The research revealed several important preconditions for later knowledge region developments. To face global challenges measures were foreseen: the idea of Gulf University consortium (Baltic Ideopolis); strengthening of existing co-operation between science parks and incubators; jointly target regions

like China, India to build up strategy how to attract knowledge holders; development of clusters of universities, entrepreneurs, academy, local authorities.

The same ideas were presented again in the report, ordered by prime ministers of Estonia and Finland "Opportunities for Co-operation between Estonia and Finland" (2008), based on interviews with two vice-rectors of HUT and two from TUT in 2010 as follow-ups to previous studies, no concrete actions towards the Gulf University Consortium have been taken, also the connections to work jointly on the Asian direction are weak and universities seem to see each other like competitors. Co-operation between science parks and incubators is rising, change of incubators cross-border is ongoing process. Development of clusters of universities, entrepreneurs, academy, local authorities need further boost.

2.2. Questionnaire among Euregio's stakeholders and partners (2008). The questions involved Euregio's expected areas of expertise, influence mechanisms, supporters and co-partners. The questionnaire was sent out to 50 persons in 2008, the stakeholders and partners of Euregio: members of the general meeting, members and substitute members of the board and secretariat members, entrepreneurs, artists, university lecturers, former speakers on Euregio fora, former project partners. Out of 50 questionnaires 32 answers were received. Respondents were asked to prioritize the statements. There was other, please specify option. The numbers of the given priorities were counted and the number of points calculated.

The areas where positive cross-border changes are expected. Respondents favored innovation, education, regional development and social services, but not environment protection, physical infrastructure and energy economy.

2.2.1. Power of influence of stakeholders. Euregio is influential via top leaders, entrepreneurs, artists and media people, university representatives. Middle-level leaders (heads of departments, etc.) and officials were not considered as influential.

2.2.2. Strong connection to the respondents profession or position was noted. University and art representatives did not mention official top-leaders; official top-leaders did not mention middle-level leaders and artists. It may indicate that for official city leaders new developments in city entrepreneurship bases is not familiar and ideas of city economic bases are traditional. The under-estimation of the middle-level leaders surprised the authors as the majority of everyday practice is going on between the middle-level leaders. The answers allow to conclude that three important sectors, local government officials, univer-

sity leaders and entrepreneurs are weakly connected within one country, even less cross-border.

2.2.3. Euregio partners in the strategy process. Euregio was considered as a representation and cooperation body for city authorities, artists and media people, entrepreneurs. Politicians and common citizens were not mentioned. It may indicate the fact that mayors and vice-mayors are not considered to be politicians, and the link to common citizen is understood directly.

2.2.4. Euregio success factors. Euregio success factors were connected with fora, seminars, projects, implementing new ideas. There was a strong connection with respondents profession. University-connected respondents tended to consider Euregio as a developer of a science and arts region through people connected to universities and artists and they under-estimated local government and politicians' roles. The trend was stronger among Estonian experts. Respondents being the city or regional officials under-estimated university co-operation and pointed out co-operation between local authorities. Only one respondent indicated that success factors can be characterized by the development of co-operation between the regions, namely the number and scope of joint projects, the number of joint events, marketing and representation of the region in fairs, seminars etc., the number of joint publications, etc. Study indicated need to achieve common understanding between main stake-holders about the expectations towards regional integration as the main goal. Proceeding from these results Euregio should continue building the common knowledge region.

2.3. Elite interviews on regional development perspectives (2009). Interviews were carried out with 24 experts (university, local government, entrepreneurs) in Estonia and in Finland to find out is there understanding and perception of need towards regional integration, especially towards forming a knowledge region.

Results of the in-depth elite interviews:

1. Integration between the two regions will deepen via television and e- and m-services, integration of university and science institutions, joint city and regional planning activities, job mobility, joint festivals, joint marketing, joint television programs. Still there is no clear twin-region self-identification (18).
2. Joint integration will not happen at all. The cities and the regions will follow different paths and the present interaction and networking will be stopped either by internal or by external forces (2).
3. A new entity Helsinki-Tallinn twin-region will emerge: a twin-entity may correspond to many features, for example joint universities between

the cities, joint city councils, joint city departments, joint services in the region (social services, health care, procurement, etc.), joint resources, joint transport networks (tunnel), joint spatial planning (general and regional planning), etc. A new dialect (like stadia) might emerge. But this will not happen in short-term perspective (14).

The investigation indicated the belief in regional integration, still the self-identification of the region as a twin-region is not foreseen, knowledge region is more easily accepted. The number of respondents, who believe in positive qualitative developments, indicates that Euregio activities and goals correspond to interviewed partners' expectations. High-tech and innovative e-, m- and digiservices serve as a perspective bases for the knowledge region.

3. Discussion

The article indicates problems in developing CB knowledge region.

Relationships between local authorities and universities differ in Tallinn and in Helsinki. The City of Helsinki has been more successful in developing tight co-operation links with research institutions than Tallinn. There remains a question of who should lead the initiators group, weather universities, local authorities or is Euregio strong enough to take the role? The role of local authorities in developing knowledge intensive entrepreneurship together with universities demands further research.

Practicalities of formulating and implementing a coherent cross-border strategy should be objects of further research.

Horizontal alliances between different public organizations, especially from different countries are difficult to design and need thorough research.

Possible limitations to implementing the CB knowledge region vision require also thorough research.

Changes in local governments' governance philosophy towards being more open, orientated towards further inclusion of citizens, but also towards CB initiatives, are expected. Further involvement of innovative enterprises and participation of universities and research institutions in shaping of local environment is an initial part of CB knowledge region development.

Conclusions

The studies proved that pre-conditions exist for development of Helsinki-Tallinn knowledge region. Relying on research and literature, steps to be taken might be as follows.

Firstly, political decisions should be taken on as high level as possible: in mayors' offices, but also on the governmental level. Existing initiating group alone is not enough as the policies co-construct the knowledge-based innovation systems by introducing infrastructure, human resources, and public demand into the innovation processes.

Secondly, three sub-goals should be decided: (1) knowledge and technology transfer-type of co-operation should develop further using triple helix principle; (2) based on win-win principles Estonian and Finnish institutions (for example, in living labs) should form bodies to conquer markets of scale; (3) inter-regional physical connections should be improved (tunnel or rail-ferry).

Thirdly, a CB joint strategy for development of the CB knowledge region should be worked out, with

most high-level decision-makers and experts participating. Until now Euregio has been the only institution with the task to enhance CB regional integration. Euregio-type organizations should be part of the process, being initiators of it, also finding innovative ways for knowledge transfer and regional development, like triple helix or living labs' methods.

The findings of the research allow to state that horizontal co-operation within one organization, among other organizations in one country and furthermore across borders is very complicated to implement.

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