



Seagull - an Interreg IIB project

*Work Package 3
Innovative centres and SME:s
as vehicles in regional development
Expert reports, first versions, July 2003
Report 1*

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Seagull

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Results of an inquiry to science parks and innovative
centres including technology networks in the
Euroregion Baltic (ERB), Part 1

Lars Malmberg



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Results of an inquiry to science parks and innovative centres including technology networks in the Euroregion Baltic

A questionnaire has been sent to six centres on the Swedish side, one to Bornholm and 13 to various parks or potential parks in Lithuania, Latvia, Poland and Russia (Kaliningrad). The questionnaire can be found in the appendix.

Before going into the results something must be said about definitions. In this study the emphasis is on centres with a system where new companies are created in a university close relation. A lot of (or not to say most) companies develop out of ideas coming from inventors, people employed in existing companies and ordinary new-starters in for instance retailing. These are not subjects of this study.

The definition of parks below follows the standard set up by the union of Science Parks in UK, UKSPA.

1. Different parks according to their mix of research and manufacturing

RDD = research, development, design.

Name of park	Location	Mix of RDD and Manufacturing
Research Park	urban/suburban campus	RDD
Science Park	urban/suburban campus	RDD + some manufacturing
Technology Park	urban/suburban campus	RDD + more manufacturing
High Tech Park	Suburban	(RDD) + manufacturing
High Tech networks	no specific place	RDD + manufacturing
Technopoles	allocation of city or zone of to support wealth creating through invest. in Sci/Tech	support education, science, tech and advanced engineering
Incubator centre	urban building/part of campus	can be found in various parks

It will be seen from the material that the most common ones in ERB are science parks, technology parks and high tech parks. In many cases there are also high tech networks like Telecom City in Karlskrona, Internet City in Växjö and Kalmar Bioscience. These are today working as networks but the tendency is clear, they are more and more getting linked to an existing or developing park.

There is at the moment no real research park in ERB even if there are some specialized fields developing. These will be examined in the second report.

On the east side of the Baltic Sea there are established science parks in Kaunas and discussions are ongoing to develop parks in Kaliningrad, Elblag, Klaipeda and Liepaja. The situation in Ventspils is still somewhat unclear.



In many cities on the east side of the Baltic Sea there are also a specific form of developing areas called “Free economic zones” (FEZ). They would normally be referred to as industrial parks and should as such not be part of this study but in this case some of them might represent an intermediate form that later can be transformed into a technology park.

On the Swedish side it is also absolutely clear that the concept of the Triple Helix model is there to stay. The Triple Helix innovation system model, described by Henry Etzkowitz and others, simply says that if a science park wants to be successful it has to contain the elements from three sectors, the public sector, the university sector and the company sector. The three helixes will, if properly managed, help to grow the centre at a much faster pace than otherwise. In this study it is also clear that the cities are taking a great responsibility for the sustainability of the parks.

This is, however, also confirmed in international studies where for instance M Castells in a deeploading study of North American, European and East Asian science parks have found that the most interesting ones are those where public money is present.

Another remark is that in the former central planned economies there is still an unclear responsibility between the state and the cities. The cities still seem to wait for state initiatives which in turn partly reflects the lack of local resources.

Innovation centre – a brief definition

Why have all the major countries shown such an interest in innovation systems in the last two decades? I will try to outline some of these questions.

“We know that the source of wealth is something specifically human: knowledge. If we apply knowledge to tasks we already know how to do, we call it ‘productivity’. If we apply knowledge to tasks that are new and different, we call it innovation. Only knowledge allows us to achieve these two goals”.

Drucker P, Managing for the future, the 1990:s and beyond. 1992 p 26

More than 84 % of senior managers in the biggest 700 American companies recognize innovation as a significant issue for their business.

Why is that so? The new economies of information and knowledge and the fact that more than half of an age-group will continue to higher education means that the knowledge created at universities will be ever more important to a city’s, region’s and nation’s wealth.

As a consequence there is a strong tendency all over the world to support innovation through public money. This movement started in the US but has spread



to all countries except the poorest. For instance in the 80:s, Science and Technology Centres were established all over US where the emphasis was on co-operation between companies, public sector and schools. In Japan the MITI department 1979 put up a strategy for building technopoles all over the nation. In Europe most of these efforts have been national, but in 1999 EU took a step within the 5th Framework program where a special program (PAXIS) was devoted to ‘Innovative Regions’ to make clear the ambition from EU to compete with US and Japan and to do that by showing the importance of innovation systems.

South Sweden is one of 22 regions selected by the EU Commission together with e.g. Berlin, Copenhagen, Hamburg, Helsinki and Stockholm in Northern Europe.

Why is it so that US, Japan and EU are so interested? Micro-economic research has found that there is a tendency to underinvest in R&D, in relation to the public values, from private R&D investment. Economists like Ed Mansfield have shown that the public return from private investment in R&D is somewhere between 20–40 % and the public return from public R&D is even higher.

The second reason is, maybe more important, the failures in social capital. That is how to get a whole set of issues to make research accessible, to spread knowledge throughout the society, to make institutions and individuals to adopt or absorb new ideas and derive the benefits from it.

From international research on innovation there is also an increasing amount of empirical evidence supporting the phenomenon that the rate of introduction of innovations by firms seems to be increasingly dependent on their ability and capacity to cooperate with other firms.

The emphasis in this project is on innovation centres and their networking. To better describe the various steps in such a centre I will follow a model developed for the Otaniemi Science Park in Helsinki.

Firm birth	Firm stabilisation	Firm expansion	Commercial success
Research Institutes			
	Incubators	Business generators	Business accelerators
University teachers and students			

This model will be evaluated further in the second part of my project and will be one of the themes for discussions at the seminars. To illustrate it briefly I will here give an example from Kalmar:



Ideas	Birth	Stabilisation	Expansion and success
High school	Young Entrepreneurs	Entrepreneurship studies	Industrial park or hotel
University Education	Greenhouse	START	Science or Technology Park
University Research	Greenhouse	START	Research or Science Park
Technology Companies	Spin-out	IUC	High Tech Industrial or Tech. Park
Business ideas	Start Your Own Business	Jobs and Society and IUC	Industrial park
Inventions	Inventors Club	Jobs and Society and IUC	Industrial park

- Greenhouse = name of pre-incubator
- Start = name of incubator
- IUC = industrial development centre
- Start Your Own = courses for new starters

As can be seen from the matrix there are a lot of different ways to go from an idea to start a company. There are also a lot of different tools to be used like the ones mentioned. In this study the efforts will be concentrated on the road from university research and education to the creation of a company.

Innovation centres and clusters.

Globalisation has rendered the comparative advantages in traditional moderate technology industries incompatible with high wage levels. At the same time the emerging comparative advantages that is compatible with high wage levels are based on innovative activities.

There is always some problems in the discussion of clusters and innovation systems as they partly overlap. According to Porter “cluster is defined as a spatial concentration of activities within a specific value chain or a number of related chains, with a share knowledge basis”.

In the same way Asheim has pointed out that agglomerations are the most efficient basis for interactive learning and argues for the importance on untraded interdependencies and bottom-up interactive regional innovation systems and networks.

It is also good to remind us of the discussion about what is best, heterogeneity or specialisation, that has been going on at least since Jane Jacobs wrote her book 1969 about the value of cross-fertilization.

In a global world, industrial nations have come to specialize in the exports of products in which they have “technological” or “absolute” advantages but these advantages have in practice normally been found in sub-national regions. The



world of production can be described as product-based, technological learning systems rooted in the cultures of local economic actors (Storper)

Networking has been the new way to handle these situations but it is worth reminding of Harvey's comment that networking is not frictionless, networking casts much more of a local shadow that is usually presumed.

If we agree on, that it is face to face contacts that make cities the engines of economic growth, than the question arises, is the ERB to be looked upon as an urban or rural region seen from a global point of view. The Seagull Deverb project, at least, is working under the hypothesis that ERB is both an urban and a rural region.

Concept of innovation.

First it is important to point out that almost all innovations reflect existing knowledge combined in new ways or according to Porter (1998): "Paradoxically the emerging competitive advantages in a global economy lie increasingly in local things – knowledge, relationships and motivation that distant rivals cannot match.

So if face to face contacts are so important it is interesting to look at what differs a cluster from an innovation system and what role have the innovation centres in these two aspects.

First we have to look at the concept of innovation. Sometimes we do not separate the different parts of the concept which in fact is very wide. In the one end we have incremental developments of existing products and processes. Here we find all the things that make companies stay alive in day to day competition and where a cluster give the companies the possibilities to stay alert with new things but also to combine efforts in exports, marketing etc. Clusters can be local, regional or national.

In the other end we would find innovations that have the capacity to change existing techno-economic situations. We can here refer to the impact on many old and famous traditional industries when they were late to respond to the change from mechanical to electronic products. These changes will almost certainly not occur within an existing cluster but rather in a strong environment open for new ideas. These will often be connected to bigger cities and universities.

Finally we have the intermediate zone with major innovations, new products and processes. In this case we can imagine that some of these will occur even in a cluster but more common will be creations out of new knowledge created at universities or research institutes which can be seen as the ultimate sources of new knowledge for economic growth. This form of knowledge has a spill-over that appear to be rather local and within a narrow set of industries.

In the literature and debate there has been a discussion if innovation systems are international, national or sub-national. The concept of national innovation systems were proposed almost



simultaneously 1988 by various authors like Lundvall, Freeman and Nelson. However in the book "Innovation and the growth of cities" the author finds that regional innovation systems are a better description as it looks that university research normally has a relatively short range of impetus. The same appear with industry R&D.

Innovation centres can be part of a cluster and/or act as agents for new innovations. This project, the studies and discussions during the seminars ought to be concentrated on both aspects. I feel that we have an opportunity in our innovation centres to find ways to build clusters and to work with innovations in terms of working methods and knowledge. Perhaps we can do both, perhaps we have to choose.

Baltic Sea Region and the Euroregion Baltic

The situation in the Euroregion Baltic is in some ways different from other areas in the Baltic Sea Region. As have been discussed in an earlier work on Baltic organisations covering the time from 1989, I have found that three major organisations were doing a lot of network creation. The Union of Baltic Cities (UBC), Baltic Sea States Subregional Cooperation (BSSSC) and Baltic Chambers of Commerce Association (BCCA) all made a major contribution in the 90:s to build up relations and trust in the region.

On a lower level there were the different forms of twinning; cities, regions and NGO:s, which also made a lot to open up for the discussions that can now be developed further.

At the same time I found that the EU money, transferred through Interreg projects, had over time a more profound impact on the development of the region. Here can be mentioned the work done in the two major transport corridors, the 'Baltic Palette' from Stockholm via Helsinki to St Petersburg, including Tallinn and Riga and 'String' from Skåne via Copenhagen down to Hamburg.

A third, somewhat weaker, corridor has also been established between Skåne, Vorpommern and Szczecin called Euroregion Pomerania. This corridor is now extended to Berlin in the Interreg project Baltic Pearl.

The fourth region, Euroregion Baltic, probably the weakest of the four, needs a very good lift in performance to be able to compete. The region can be treated as a "subcontractor" to the bigger ones but can also establish itself as a region of its own. To be able to do that, there is a need to develop both research and higher education and to transfer that knowledge into the new type of companies.

It can be too easy to think that the cities in the new EU-countries will best compete with low salaries as seen in table 1. Of course these differences can and will be used but they will diminish over time and when the firms can no longer

compete with low salaries they will have to do it with their skills. But to build up high-tech skills take more than a decade.



Table 1. GDP per head 2000

Dollar at purchasing power parity. Financial Times, 021211.

Denmark	27 250	Germany	24 920
Sweden	23 970	Finland	24 570
Poland	9 000	France	24 420
Latvia	7 070	UK	23 550
Lithuania	6 980		
Russia			

A part of a possible success would be if the new EU-countries can learn from their Nordic neighbours to use the new IT technologies, both in doing business and in developing their administrations. One good example is to look at the excellent performance in using the Internet in Nordic countries. Table 2

Table 2. Internet users

Financial Times, 021213.

Sweden	56,4 %	Finland	43,9 %
Denmark	48,4 %	UK	33,6 %
Latvia	7,7 %	Germany	29,0 %
Poland	7,2 %	France	18,8 %
Lithuania	6,2 %	Greece	13,0 %

(In short, 1994 there were about 1000 web pages and 5 million users in the world. In 1999 there were more than 400 million pages and 100 million users. Traffic on the Internet is said to double every 100 days. Fukuyama 2001).



Short summary of the inquiry, Sweden and Denmark

City	Name	Establ ished Year	Capital	Turnover	Number	
			million €	million €	empl.	firms
Västervik	Developing Centre	1988	0,235	0,7	6-7	
Oskarshamn	Business Centre	1998	0,010	0,13	2	80
Ronneby	Soft Center	1985	0,050		6	70
Växjö	Vidéum SP ¹	1986	2,0	6,5	15	70
Växjö	Internet City	1998	-	0,13	1,5	65
Karlskrona	Telecom City	1993				32
Kalmar	Kalmar Science Park	1994	0,1	0,3	2,5	30
Kalmar	Kalmar Bioscience	1996	0,01	0,1	1	10
Bornholm	Erhvervshuset i Nexö	2001			2	5

In the final report, these figures will be accompanied by maps over the sites and cities.

The results show that the concept of science parks is relatively new and of relatively small importance at the present state. Växjö`s big turnover is due to its role as a property owner.

¹ Vidéum Växjö is also a real estate owner.



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The Swedish parks and their specialities

Växjö Vidéum	IT, telecom, environment, heavy vehicles, wood and building technology
Karlskrona Telecom city	IT/Telecom
Ronneby Soft Center	IT software
Kalmar Science Park	telecom, IT, biotech, environment technology
Oskarshamn Development Centre	Automotive, energy
Västervik, Development Centre	Polymer



Short summary of the enquiry and telephone contacts in Poland, Kaliningrad, Latvia and Lithuania

Elblag	is on its way to establish a science park in the middle of 2003.
Tri-city	Pomeranian special economic zone and Pomeranian Technology Park. Established in June 2002. Owned by the City of Gdynia and Gdansk university.
Kaliningrad	We are still searching for contacts. A business incubator is found but they have financial problems and are negotiating with the city for economical support.
Klaipeda	They are looking into the potential of opening a science park. Possible start-ups are at the Klaipeda Free Economy Zone and Klaipeda University.
Liepaja	One business incubator was established but went into bankruptcy in 2001. In Liepaja discussions are going on to open (3?) science parks.
Ventspils	Ventspils Augstskola has had a discussion both on an incubator and an innovation centre. The situation is still to be confirmed.
Kaunas	Has three well established science parks.

Wider outlook into Estonia, Latvia and Lithuania

To give the whole question a broader view we have also sent the questionnaires to other science parks in Estonia, Latvia and Lithuania. We have received one answer from Tallinn, three from Riga and one from Vilnius plus one from Telsiai (business incubator). The science parks in the capitals are all well established and we could also see the development of research parks. The only comment is that the capitals are the normal starting point for such processes because it is there the biggest universities are located and where the inward investments are done. In Estonia, we have also looked at the Science Park in Tartu on the web.



Networking

The Swedish Science Parks are all members of Swedepark, which in turn is a member of the International Association of Science Parks (ISAP).

Västervik UC and Oskarshamn BC both have contacts with the University of Kalmar. Västervik also has contacts with the University of Linköping. Västervik is involved in EU Objective 2 projects.

Ronneby Soft Center has good contacts with former Soft Center International members and have close contacts with Blekinge Technical University and is also involved in various Interreg projects. The same goes for Telecom City Karlskrona, which also has special agreements with Telecom Valley in France and Telecom Corridor in Dallas, Texas.

Vidéum Växjö is located on the University campus and covers many branches. Vidéum is involved in a lot of EU-projects like environment with Kaliningrad. Internet City can be seen as the specialised branch of Vidéum on IT.

Kalmar Science Park has three branches and is networking with members of the former Soft Center International network, Medicon Valley Academy and Sustainable Sweden Southeast.

The Science Parks on the east side have different networks. The established parks have joined ISAP and BASTIC (Baltic Association of Science/ Technology Parks and Innovation centres). They have also offices for the IRC network (Innovation Relay Centres).

The smaller parks have started their networking in various ways. Within Lithuania there is a Leonardo da Vinci project "Training Network of Lithuanian Business Incubators" with Telsiai, KTU Regional Business Incubator in Kaunas and Latvian Technological Center (Riga).

Elblag has started its development process in close contact with Soft Center Ronneby and hopefully there will more of such cooperative work through the Seagull Deverb project.

Final comments

The results so far show that the parks on the Swedish side are well under way. Bornholm has, due to lack of an own university, started more as a business centre but Bornholm has earlier shown its competence to work in EU-projects.

The bigger cities in the east, like Kaunas, have also started but the smaller cities are in a very early phase.



In the subreport to VASAB 2010 +, called 'Urban systems, urban networking' (where I represented UBC) there was a clear description on the need of technology transfer programme in the greater Baltic Sea Region. This has been accomplished by the states in the 'Wismar declaration' 20th September 2001.

There was, among other important issues, the need for development of the southeast Baltic corridor mentioned.

The results of this small study will be used in the seminars of Seagull WP3 and will also be the basis for the final report. That report will be more detailed in the description on the models earlier mentioned but will also reflect the ongoing process where a lot will have happened to the middle of 2004.

It shows so far a need to help the new centres through advice and knowledge transfer, which will later lead to exchange of knowledge through the newly built network.

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