Borderless Biotech: Europe’s First Meta-Region Taking Shape

Børge Diderichsen*, Novo Nordisk, Copenhagen, Denmark; Wolfgang Blank*, BioCon Valley GmbH, Greifswald, Germany; Anna Podhajska*, University & Medical University of Gdansk, Poland; Bo E. Samuelsson*, Gothenburg University, Sweden (‘ScanBalt steering committee)

The Scandinavian-Baltic region is experiencing a significant increase in activities within life sciences in general and biotechnology in particular—the formation of Europe’s first meta-region as a common platform for research, education and innovation. Several major publicly-financed research centers have been set up and a number of new biotech companies are supported by considerable inflow of venture capital. To continue the development and the region’s strive for high-tech and high-value-creating jobs to ensure growth and prosperity in the future, it is necessary to establish a strong recruitment base of highly-educated people as well as co-ordinated public investments in relevant infrastructures. It is however doubtful whether any single country in the region is able to gain an internationally competitive edge on its own within biotechnology and related disciplines. There are many cultural, historical and political ties between the countries in the Scandinavian-Baltic region. It therefore constitutes an excellent foundation for closer inter-regional cooperation. A joint effort in development and application of biotechnology and related fields is an initiative that may have significant consequences for the region’s economic and social development in a “Europe of Regions”.

The ScanBalt initiative was officially endorsed in November 2001 at the 1st Baltic Biotech Forum in Mecklenburg-Vorpommern (Fig. 1, p. 24). Following the Nordic Industrial Fund’s decision to fund a pilot project on ScanBalt, a steering committee was established in January 2002 in Copenhagen. The ScanBalt BioRegion (EURO-BIOTECHNEWS 1/2002) encompasses all Nordic countries, i.e. Denmark, Finland, Norway, Iceland and Sweden, as well as Northern Germany, Poland, Estonia, Latvia, Lithuania and Western Russia (St. Petersburg, Kaliningrad). More than 85 million people reside in this part of Europe.

Higher education is substantiated by some 70 universities. More than 700 biotech/life sciences companies have been identified and give a measure of the commercial activities in this area. All current nations in the ScanBalt Bioregion have in the past been part of different state structures involving other states in the region. Accordingly, ScanBalt Bioregion encompasses countries with closely interlinked histories.

Dating back to the late Middle Ages commerce on the Baltic Sea was dominated by the Hanseatic League, which was founded around 1150. The Thirty Years’ War from 1618 to 1648 sealed the demise of the Hansa, which disappeared around 1650. The last Hanseatic Day took place in Lübeck in 1669.

The Treaty of Westphalia in 1648 that ended the Thirty Years’ War set the borders, with some exceptions, of most present nation states. The formation of the European Union in 1950 and onwards started a process of European regionalisation. We are now entering the post-Westphalian era. ScanBalt Bioregion is part of that process and the similarities with the Hanseatic League are obvious.

The modern concept of ScanBalt is to create a meta-region within which to develop existing and future clusters, networks, cooperations and co-ordinations between countries with regard to research, education, public services, innovation and to initiate a public dialogue in life sciences and biotechnology.

1 Macro-region is an evolving social level between the nation and the international, global level. The European Union is a macro-region. Micro-region is one or several adjacent transnational or subnational region(s) which within the framework of the macro-region seeks for a niche or expresses a common interest. [B. Hettne, Den europeiska paradoxen, Nerenius & Santérus Förlag, 1997]. Macro- and micro-regionalisation can therefore be seen as two sides of the same process. We define meta-region as a region of regions (between already formed micro-regions) within the framework of the European Union macro-region. Meta-regionalism, of which we believe Scanbalt is an example, is thus the process of clustering micro-regions into bigger social entities, meta-regions.
“Unhealthy Darwinism”

In 1859, Charles Darwin published “On the origin of species by means of natural selection; or the preservation of favoured races in the struggle for life”. Survival of the fittest is a concept originating in this book. As a metaphor this concept could be applied to industrial development and regionalisation. A common pattern is competition between small and medium-sized enterprises, for capital, customers and competent personnel. Quite often this leads to unnecessary company death. An alternative way would be intelligent cooperation and cluster formation. Commerce is global and electronic communication means instant access. However person to person dialogue and student, researcher and labour exchange for longer or shorter periods, even daily, is something different and cannot be replaced. Social and commercial “Darwinism” must sometimes be seen on a global meta-level based on critical mass and complementarity in the local micro-region or cluster of micro-regions. In this way “unhealthy Darwinism” could be converted to “healthy Darwinism”.

Values

If the main purpose is regional growth and prosperity, certain values have to prevail in the region. The problem of trust ought to be addressed. In spite of historical and cultural similarities, the different countries in the ScanBalt BioRegion have very different prerequisites. GDP per capita ranges between $27,700 and $7,200. Brain drain is already a significant problem. Talented students go abroad to join PhD programmes in Europe and the United States, mainly to the latter, and never return due to lack of proper job opportunities. Exchanges of students and expertise are positive phenomena, but a net export of some magnitude will ruin a country or a region. “Brain drain” has to be converted to “brain circulation” or “brain exchange”. The building of ScanBalt BioRegion has to be founded on a common trust in the goal of being beneficial to all ScanBalt inhabitants.

The young generation of students have through recent years tended to abandon biotech and science, although in some countries the negative trend seems to have stopped. Fear for pollution, global warming, nuclear radiation, all generated by science and biotech, are some of the reasons. The concepts of sustainable development and sustainable society have to be a basic framework for all ScanBalt activities to reclaim or maintain the trust of the younger generation of students. Ethical issues are more or less self evident nowadays but still have to be spelt out. To be a member of ScanBalt one should conform to the values agreed upon.

Network of Networks

ScanBalt is considered to be the first network of networks of its kind. Within the region defined there are already a number of bionetworks like Medicon Valley, Biocon Valley, MedCoast Scandinavia, and BioTurku (see Fig. 2, p. 25). All have the purpose to promote biotech/life sciences in their European micro-region. All
these bionetworks are extremely important and essential in themselves, but all are too small to be competitive on the global scene or even within Europe. ScanBalt is thus a coordinating meta-network with the purpose of promoting biotech/life sciences from this European meta-region on the global scene. ScanBalt has the purpose to create new opportunities, filling gaps, removing hurdles and should rather be seen as a process or movement than as an operative structure.

**ScanBalt Projects**

The Nordic Industrial Fund has funded a project with the overall title: “ScanBalt – network of networks in biotech” with some €340,000. It is a project for the development of infrastructure and has the following subprojects:

1. **Organisational model:** elaborating the new organisation.
2. **Biotech – one click away:** establishing a multi-purpose interactive web site.
3. **Educational mobility:** facilitating educational mobility by identifying hurdles and promotion exchange mechanisms.
4. **Economic barriers:** identifying rules and regulations that are counter-productive as well as funding opportunities for trans-regional collaborations.

The Nordic Industrial fund has additionally funded a project with €36,000 to establish ScanBalt IP (intellectual property) Center. The purpose of this centre is to build an intellectual property infrastructure, which means the development of property concepts and IP strategies, development of legal rights concepts and of contractual business relations. The Center is under establishment and so far incorporates activities in Copenhagen and in Göteborg. The outcome of this project is important for future progress of ScanBalt.

A ‘Marine Biotechnology’ network has been established so far incorporating eight marine biological stations and institutes in Norway, Sweden, Germany, Poland and Russia. Very few places in the world could add up to this cluster of expertise and resources. Another network of biobanks is being established with the purpose to coordinate activities and the basis for a network in nanobiotechnology is being investigated.

**The ScanBalt University/Academy**

Universities are key players in the building of a bioregion. Education and research, closely linked together in the concept of knowledge formation are instrumental for the development. The European university system needs however to improve on flexibility, in cluster formation ability and in openness towards industry and society in a new way without jeopardizing their important role as an actor of free and critical thinking. As a result we are in the process of establishing a ScanBalt University/Academy for undergraduate to postgraduate education in biotech/life sciences. The University/Academy is thought to be both physical and virtual and based on exchange of both students and teachers. Political stakeholders in several countries within ScanBalt as well as officials at the European Commission have expressed a substantial interest and also indicated possible financial support.

One of several important issues is the forming of new curricula. Trans-disciplinary, flexibility, formative evaluation and dialogue between researchers, teachers, students and societal actors must be the guiding principles. Another important issue is the governing of such a new academic structure. Classical academic hierarchy should be avoided and societal actors given insight and influence on appropriate levels. There is no need for another traditional university.

**Expertise and Knowledge Mapping**

The generation of scientific problems has been postulated to be highly influenced by ones “concept of the world”. One can say that the “concept of the world” is a major driving force for many social activities including research. For the promotion of the ScanBalt process and movement it is important that the concept of the region is true and shared by many. When such a concept is established it will be an immense driving force and it will also create visibility for the ScanBalt BioRegion. It will also be a tool to align political activities of importance for the development. In this respect ScanBalt BioRegion can be regarded by the European commission as a model case for the development of a truly trans-national, European research and development area. A process of finding financial support and partners for such mapping of expertise and knowledge is advancing.

**Perspectives & Advantages**

The Scandinavian and Baltic sea countries are facing two major opportunities:
- To use biotechnology to increase wealth and health in the century of life sciences.
- To build an economic powerhouse of global prominence based on regional co-operation.
ScanBalt is intended to help countries in the region meeting these opportunities including the following potential perspectives and advantages:
- Establishment of a new growth and knowledge region in Europe as a vantage point for global competition.
- Implementation of plans to meet shortages of well-qualified personnel within biotechnology and related areas, including health services and medical technology.
- Creation of new trans-regional clusters of expertise and partnerships between public and private institutions.
- Focus on cross-disciplinary innovation combining biotechnology, information technology, communication technology, medical technology, microelectronics and nanotechnology.
- Promote the application of biotechnology for the benefit of the general public within health services, drug development, food quality and environmental protection.
- Facilitate public dialogue on the opportunities and dilemmas of the applications of biotechnology.
- International prominence to attract capital and bright people from all over the world.
- Consortia of countries from ScanBalt will be strong applicants for EU funds since EU 6th Framework Programme encourages inter-regional cooperation.
- Expansion of ScanBalt networks will tie the region’s eastern parts closer to well-established European co-operations, thus adding to the prospects of lasting peace and prosperity.
- ScanBalt may become a pioneer example of a new type of inter-regional co-operation in Europe with potential perspectives for political and popular developments.

ScanBalt - a Success Story?
The principles of ScanBalt are something we firmly believe in. The European Union has to distil from its more than 200 microregions to less than ten to be able to compete on the global arena. Biotech and life sciences are perhaps the best areas for such an integrative venture and ScanBalt may be the first of the new enlarged meta-regions within the European Union. Universities have to realign their activities with cluster formations with each other and with societal actors in a new way without perturbing the issue of autonomy. Values have to be incorporated into strategies. Trust and win-win are major issues. To produce and disseminate a meta-perspective is part of the process. Whether or not ScanBalt has been so far, or will be a success story is for others to judge. The truth is that the process and movement has released considerable enthusiasm and energy and the speed of action is high.

Organisation
The meta-network ScanBalt is co-ordinated by a steering committee (www.scanbalt.org).

Fig. 2: ScanBalt BioRegion - a network of networks - comprises different types of organizations. In addition to the depicted networks and bioregions individual universities like Gdansk University, Gothenburg University, Lund University, University of St. Petersburg, University of Southern Denmark, Ålborg University and Århus University are also members. In the Baltic States, Poland and Western Russia, organisations like Estonian Genome Foundation, Latvian Genome Foundation, the Russian Leontief Centre and Lithuanian Institute for Biotechnology are members. Technology Parks like the Innovation Centre Hedmark and other organizations are also presently being organized in this area. The Norwegian Trade Council and Frederiksborg County (Denmark) are examples of other types of organisations. Novo Nordisk and Novozymes are examples for companies. Biomedico Forum, Health 'n' Tech Research Center (both from Denmark) and SIK (Swedish Institute for Food and Biotechnology) are further examples.

The chairman of which is currently professor Bo Samuelsson, the former rector of Gothenburg University, Sweden. The secretariat of ScanBalt is hosted by Medicon Valley Academy (www.mva.org) in Copenhagen.

So far ScanBalt has mainly been funded by the Nordic Industrial Fund both for the purpose of building infrastructure and for specific projects. Within a few years ScanBalt has to rely on own merits and is thus in the process of elaborating a new organisational structure. A proposition suggesting ScanBalt to be a membership organisation with a chairmanship including a secretariat, an executive board and a forum will shortly be presented for the present steering committee.

Contact
Prof. Dr. Bo Samuelsson
ScanBalt, Chairman of Steering Committee
eMail: Bo.Samuelsson@adm.gu.se
www.scanbalt.org