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The Nordic-Baltic cooperation

By Eero Heinäluoma

2011 is a year of special significance for Nordic-Baltic cooperation. Estonia, Latvia and Lithuania celebrate the 20th anniversary of regained independence and the restoration of diplomatic relations between Nordic countries. Twenty years ago the path for new cooperation was opened.

The Nordic Countries were among the strongest supporters of the Baltic countries twenty years ago. They were the first to open their borders and re-establish diplomatic relations.

In the early years of regained independence the Nordic countries supported the integration of the Baltic countries into the European and transatlantic structures, particularly the European Union and NATO.

Consultation mechanisms between the countries were developed. The "Nordic –Baltic eight" (NB 8) cooperation found its form, and the gradual integration of the three Baltic states into the existing frameworks of Nordic cooperation began. The five Nordic countries have a history of cooperation which dates back several decades and reaches into all levels of society. The Baltic countries were welcomed to this family of nations.

The Nordic-Baltic cooperation (NB 8 format) is flexible. It also expands to include third countries when appropriate. Certain topics are discussed in a format including Germany and Poland, some others with the United Kingdom or the United States.

Economy and democracy

The NB countries are world leaders in regional cooperation, social and environmental sustainability, and in economic prosperity. Together they are also influential and highly regarded players in the global political and economic fora.

The Nordic economic model has proven to be functional. For decades it has combined high taxation rates with high competitiveness, and it has been very successful. The Baltic countries on the other hand have time and again overcome great economic difficulties and proven to be among the most dynamic economies in the world.

To combine those two aspects would be remarkable. The combined Nordic-Baltic economic model would create societies which are open, tolerant and equal; societies that keep everybody on board and spur economic activity, entrepreneurship and investment.

Economic integration offers great opportunities and benefits, but it also poses many challenges. One of the most important challenges is the transformation that already takes place in the labor market. Also in Finland there are numerous examples of underpaid and undervalued labor flowing in. These workers end up in questionable conditions with poor rights. This is a serious problem, which degrades the individuals, disregards the labor regulations and undermines the welfare state. Everyone's economic growth is hindered by this parallel economy. Nevertheless, no-one wants to live in a society

where the salary and working conditions are dependent of your country of origin. Therefore, the issue should be put on the agenda of the NB8 cooperation.

Environment and sustainability

Economic growth can be sustainable only when it is socially just and environmentally sound. The Baltic Sea is common to all NB countries and it is made unique by its low salt content and shallow waters. In this regard, any changes in the ecosystem will take long to have an effect.

Right now the Baltic Sea is burdened with decades of environmental degradation. The tide has to be turned and provided with decades of environmental rehabilitation. Agriculture and poor waste water management are major sources of the eutrophication of the Baltic Sea and this must be addressed.

The Nordic-Baltic countries all operate in several different forums around the globe. The countries have a common ground to rely on; they have shared values and common interests. In several multilateral organizations regular NB consultations take place. These include the European Union and the United Nations, but also the World Bank and the International Monetary Fund.

Simple mathematics prove that eight votes are better than one, and eight voices in unison carry further than eight voices separately. Nevertheless, there is one forum where NB coordination is lacking. I.e. within the European Parliament. The significance of the European Parliament is continuously growing; an increasing number of important decisions is passing through Brussels and Strasbourg. It would be fruitful to introduce Nordic-Baltic cooperation there as well.

The future of Nordic-Baltic cooperation is described in the so called "Wise Men Report". The report, compiled by Mr Birkavs from Latvia and Mr Gade from Denmark, contains 38 concrete recommendations on how to enhance the NB 8 cooperation. Finland is firmly committed to take forward the recommendations of the report.

The Nordic-Baltic cooperation has grown and expanded in the past twenty years. In the future, the cooperation will give excellent opportunities for strengthening openness, tolerance and equality in the societies of NB countries.

Eero Heinäluoma

Speaker of the Parliament

Finland



The importance of the Baltic Sea region for Germany – priorities of the German presidency of the Council of Baltic Sea States (CBSS) 2011/2012

By Guido Westerwelle

The Baltic Sea region has always occupied a special place within German and European history. It used to be at the core of the vast trading network established by the Hanseatic League; it has witnessed decades of political and ideological division during the Cold War. Today, it is rapidly regaining its status as a genuine trade hub within Europe.

In recent years, regional economic integration has been greatly facilitated by the fact that the majority of riparian parties have become members of the European Union. Due to these favourable circumstances, the region as a whole accounted for one third of the European Union's GDP in 2009. Given that trade relations within the region continue to expand at a dramatic pace, the region could become one of the most flourishing and competitive areas of the European Union. Germany too, has become densely intertwined with the other littoral states. In 2009, both German imports and exports from and to the region amounted to the substantial sums of about €70bn and €75 billion, respectively. Especially the northern federal states have established intense economic and human ties due to their geographical proximity. For example, the trade volume between Mecklenburg-Western Pomerania and the Baltic Sea region has more than doubled in the years between 2002 and 2009, while trade from the Free and Hanseatic City of Hamburg has grown at a rate of about 40%.

Still, it is important to notice that trade with the Baltic Sea region is not only flourishing in the north of Germany. All of the sixteen German federal states, including the most southern ones like Bavaria and Baden Wurttemberg, are able to record considerable trade flows from and to the region. Regarding the mere facts and figures, the Baltic Sea region certainly can be seen as one of Germany's key partner regions.

However, there is more to this partnership than purely economic considerations.

Founded 20 years ago in Copenhagen, the Council of the Baltic Sea States has become a pioneer of cooperation, a crucial player within the region linking today the concerns and interests of its members in central areas, such as sustainability, civil security and the fight against human trafficking, culture and the strengthening of regional identity, education and energy cooperation. All of them are long-term priorities of the CBSS.

In July 2011, Germany has taken over the rotating presidency of the CBSS for one year. Given the potential and significance of the region, the German presidency has drawn up an ambitious programme of work. Whilst the great efforts of the Norwegian predecessors shall be continued and the Council's long term priorities are the foundations upon which every presidency's agenda must be build, Germany has decided to pay particular attention to two additional topics.

Despite the fast regional integration of the Baltic Sea region described above, there is still room for improvement when it comes to the South Eastern Baltic Sea Area. Therefore, one of the important focal points of the German CBSS presidency will be its modernization, paying particular attention to improve and intensify links between Kaliningrad area and the surrounding regions. The process of economic, cultural and educational cooperation must be driven forward. One example would be the establishment of a common tourism concept, creating a thread of attractions and a network of tourism centres that highlight the common history and presence of the Baltic Sea Area. Given the consecutive German and Russian presidencies of the CBSS, we can lay a good foundation for a programme oriented to the medium term. A close cooperation with all CBSS-member states is crucial for advancing common goals on this sector.

The second main point of attention shall be a joint initiative to encourage public-private partnerships, in order to promote private investment and to create incentives for further economic development within the region. This kind of cooperation is meant to further the sense of the shared responsibility public and private agents hold to support sustainable economic growth.

In sum, The Baltic Sea region is a central partner for Germany in trade, transport and energy cooperation, and yet, the region's significance goes far beyond mutual commercial interests.

With the Council of the Baltic Sea States, the member states have created an institution the importance of which lies also in creating a forum for political dialogue: in the beginning of next year, Minister Westerwelle shall invite the Foreign Ministers of the CBSS; in the end of May, Federal Chancellor Merkel will invite for a Baltic Sea Summit.

Besides that, the CBSS is offering the foundation for a broad network of cooperation between regional and local authorities, universities, schools, NGO's and cultural actors. The CBSS has the capacity to bring together citizens of all the coastal countries. It is contributing to the forging and strengthening of the Baltic Sea Region's shared identity and is increasing the people's identification with its history and its culture.

Dr. Guido Westerwelle

*Federal Minister of Foreign
Affairs*

Germany



Germany's future energy policy

By Ingrid Nestle

The summer of 2011 was a turning point for Germany's energy policy. After the tragic natural disasters in Japan which caused a meltdown in three reactors at the Fukushima Daiichi power plant, public pressure on the German government to phase out nuclear power mounted. Rapidly, eight of Germany's nuclear power plants were shut down. In addition, a law to phase out nuclear power once and for all by 2022 passed parliament with bipartisan support. Three decades of public protests and campaigns against nuclear energy have thus successfully influenced all parties of the German Bundestag and accomplished a historical change in energy policy.

Nevertheless, against the background of what is at stake, this historic decision is only one important step towards our long-term goal: energy supply based solely on renewable energy sources. More precisely, the German Greens are aiming at cutting Germany's green house gas emissions by at least 40 percent by 2020 and 90-95% by 2050 compared to 1990 and to more than double the amount of electricity from renewable energy sources within ten years to cover substantially more than 40 percent of our electricity needs. With a supportive political framework we strive to obtain all our electricity from renewable sources already by 2030. Until 2040 the traffic and heat sectors shall follow. While this will affect all aspects of Germany's future energy policy, let me briefly outline what I see to be the main challenges with regards to electricity.

Challenges ahead:

To set our electricity sector on the path of sustainable energy, we need no less than to radically change the way energy is produced, distributed and consumed.

Production:

In the medium-term, the central challenge is to rapidly increase the share of renewable energies and at the same time adapt the remaining conventional capacities so as to best complement the renewable production. Many decisive decisions were already taken a decade ago by the then governing coalition government of the Social Democrats (SPD) and the Green Party (Bündnis 90 / Die Grünen). The Renewable Energy Act from 2000, for example, gave priority to energy from renewable sources and granted a fixed feed-in tariff which spurred investments in renewable energy at an astonishing pace, the construction was a lot faster than all the political targets previously set. Consequently, the flexibility of energy production facilities will become increasingly important to balance the cyclical nature of renewable energy sources. In the transition period from conventional energy sources to renewable energy, flexible and highly efficient Combined Cycle Gas Turbine (CCGT) power plants will be needed to bridge gaps in demand and supply fluctuations. It is crucial to avoid a technical lock-in through the construction of new coal fired power plants that would need to be shut down long before the end of their technical life time. This would lead to very high costs for society.

Distribution:

As far as the distribution of electricity is concerned, the extensive use of renewable energy requires better infrastructure to maintain grid stability and to make use of new energy sources as efficiently as possible. The electricity grid

needs to be reinforced to allow the different renewable plants to complement each other. Thus, it will be a lot easier to assure renewable supply at every second, even if the wind is not blowing or the sun not shining. In the long run a strong pan-European electricity grid will be very helpful. This is not only a huge technical, logistical and financial challenge, but also a politically sensible task which can only be accomplished by allowing for public participation at an early stage of the planning process. People are much more willing to accept new infrastructure when the benefits for renewable energy sources are transparent and convincing.

Consumption:

On the consumption side, the central strategy is to increase energy efficiency. Every single kilowatt hour of energy savings is good for the environment and saves money. In Germany, we could save one fifth of electricity consumption through cost-efficient measures within a decade. Important efficiency gains could be made, for example, by setting the most energy efficient appliances as the national standard (in a so-called top runner programme). In addition, more easily available information and financial support are necessary. Furthermore, the use of smart meters could enable consumers through price incentives to respond to fluctuations in the energy supply and, thus, to contribute to grid stability in the renewable world.

Shortcomings of the current administration

The central challenges I have briefly described above will require the full commitment of all stakeholders involved. Indeed, when taking into account the potentially dramatic consequences of anthropogenic climate change, the urgency and significance of our task must not be underestimated. The majority of politicians and decision-makers have come to realize that Germany's future energy policy is inextricably interlinked with climate and environment policy. It is consensus among all parties that at least 80% of electricity production shall be switched to renewable energies within a few decades. So far, however, the Conservative-Liberal coalition government has not yet presented appropriate policies and measures to reach their own goals. The government's long-term planning is without courage and more ambitious initiatives from the European Commission for example with respect to energy efficiency are frequently watered down – in spite of the large potential benefits for the German economy that would arise out of a further expansion of sustainable energy markets. It has been shown in numerous studies, that Germany can switch to 100% renewable energies within a few decades – and not only remain a leading industrial nation, but actually profit from its head-start in the future, leading green technology markets and increasing our independence of rising fossil fuel prices.

Ingrid Nestle

Member of the German Bundestag

Spokeswoman on energy industries of the Green Parliamentary Group

Germany



Finnish business and the Baltic Sea region

By Mikko Pukkinen

The Baltic Sea region traditionally plays a significant role for Finnish business and it is often described as expanded home market. In recent years the main focus in international business news has been on emerging markets. However, this should not by any means undermine the importance of the Baltic Sea region.

Merely 15 years has passed since the business leaders of the eleven Baltic Sea countries signed "The Stockholm Declaration on Growth and Development in the Baltic Sea Region". The declaration states: "There are, in the Baltic Sea region, no alternatives to a well functioning market economic system. But a market economy can only flourish when participants feel confident that there will be peaceful relations between countries and people in the region and that there will not be any destructive changes or threats to life, liberty or property."

The preface sounds historical but later on the declaration identifies nine elements for growth and development, which are topical even today: "rule of law, less bureaucracy and better public administration, free trade, integrate Europe, stable monetary systems and prudent economic policies, greater flexibility – a necessity for the future, links in the Baltic Sea Region – improve infrastructure, development must be sustainable and human capital – a natural resource".

Priority market

Economic growth and prosperity in the Baltic Sea region are of crucial importance for Finnish companies, though they have tremendously increased their activities all over the world and especially in the emerging markets.

The Baltic Sea countries remain a priority export and import market as well as location for foreign direct investment. Internationalisation of Finnish companies has traditionally started from expanding activities to Sweden and other countries around the Baltic Sea. Today this is true especially for the SMEs.

In 2010 the total share of Sweden, Denmark, Germany, Poland, Lithuania, Latvia, Estonia, Russia, Norway and Iceland amounted to 41 percent of Finnish exports, 51 percent of Finnish imports and 53 percent of overnights by foreign citizens in all Finnish accommodation facilities.

January-June 2011 recorded further growth. The share of the eleven Baltic Sea countries reached 42 percent in exports, 53 percent in imports and 55 percent in tourism overnights.

Sustainable economic development

National economies of the Baltic Sea countries are in many respects complementary. Some are strong in production of energy and raw materials, others in manufacturing machinery and equipment, production of daily consumer goods and providing various services. This, together with geographical proximity and liberal market access policy, has significantly facilitated sustainable economic development and growth of prosperity in the Baltic Sea region. At the same it has fostered development of world-leading companies in many business areas.

The world is shrinking and businesses have during the last two decades become increasingly interlinked with development of third country economies. The Baltic Sea countries have been pioneers of cooperation and symbol of regional entity, like the title of the current German Presidency of the Council of the Baltic Sea States so right describes. The Baltic Sea region has in an excellent manner combined best performing European liberal economies and growth of emerging markets.

Blurred future

Business in the Baltic Sea region has become daily bread for internationalized Finnish companies but the role of the Baltic Sea regional cooperation is blurred.

The recent economic crisis was difficult, but with the help of stimulation packages it was possible to quickly return to a growth

path. Unfortunately this meant growing indebtedness, which is not easy to stop without cutting expenditure, which in turn has negative effect on economic growth. Thus the new lurking recession is a great challenge for the whole region.

All means should be used to keep business running. Strengthening regional cooperation is perhaps not the first priority but should not be forgotten either. The 2009 EU Strategy for the Baltic Sea Region and its Action Plan concentrate to a great extent on environmental cooperation. There are though many issues to be tackled in regional cooperation for the benefit of economic growth and prosperity.

In their input for the EU Strategy for the Baltic Sea Region, Nordic and Baltic Sea business organisations proposed several measures for development of business environment in the Baltic Sea region:

- Further harmonisation of laws, regulations, customs and other procedures and their uniform implementation;
- Cutting red tape and developing e-government to offer more public services in internet;
- Increasing productivity in public services and their opening for free competition whenever possible;
- Developing transport and communication infrastructure, promoting diversification of energy supplies and investment in transnational energy networks;
- Addressing environmental issues and maritime safety in close cooperation with the business community to avoid excessive financial burden to businesses (high cost of the reduction of ship fuel sulphur content to 0.1 %);
- Close cooperation with neighbouring countries and especially north-western Russia;
- Consolidation of resources by redefining regional institutions, their missions, tasks and priorities by merging organisations or their functions.

There has been positive development in several issues, but the progress should be faster to safeguard competitiveness and secure economic growth and prosperity of the Baltic Sea region economies.

Need for strong leadership

The 2010 Baltic Sea States Summit stated its conviction that the Baltic Sea Region, on the basis of respect for democratic principles, human rights and the rule of law, active civil societies, increasingly integrated and interdependent economies, developed social dialogue and social cohesion, has the potential to become one of the most prosperous, innovative and competitive regions in the world, using the strengths of the Council of the Baltic Sea States and other existing Baltic Sea regional cooperation frameworks.

The Baltic Sea regional cooperation seems to loom somewhere between international, EU and domestic affairs. The expectations from the 2009 EU Strategy and its Action Plan are meagre. Conferences come and go too often without notable results. Without active structures that constantly remind on need for action there is not much to expect either. The Baltic Sea cooperation is in need for strong leadership. The history of the Baltic Sea regional cooperation is impressive but keeping the Baltic Sea countries pioneers of cooperation and symbol of regional entity in the coming years should not be taken for granted.

Mikko Pukkinen

*Director General of the
Confederation of Finnish Industries
(EK)*

Finland



Instead of three no's it is four aye's that apply to the EUSBSR

By Timo Rajakangas

The European Union decided in 2009 to adopt its first macroregional strategy for the Baltic Sea Region. The strategy was motivated by a generally held strong conviction that the challenges facing the Region were not only shared by all the Baltic Sea rim countries but also of such nature that they could not be successfully dealt with without joining the forces of all the stakeholders in the region. An added value could clearly be seen for increasing cooperation and intensifying coordination between all the relevant actors that have a role to play in activities aiming at securing the region a sustainable environmental, economic and social development.

To ensure a comprehensive, holistic and cross-cutting approach the Strategy was prepared in consultation with a multitude of stakeholders at various levels in the Region. The enthusiasm of all participants seemed to be unaffected even though the so-called principle of the three no's was applied when agreeing on the adoption of the Strategy: 1) There would not be any new institutions created, 2) no additional funds would be made available for the implementation process and 3) the adoption would take place without any new legislation. Even though the principle of three no's is strictly speaking true, it may have over time led to some misinterpretations. The Strategy's value and meaning can have been called to question if and when it has been perceived as just a new theoretical approach that has no significance in practice. It appears to lack everything normally expected from an efficient program: organisational framework, funds and legal basis.

It is true that no new institutions were established when the Strategy was endorsed and the implementation work was launched. As a matter of fact the Baltic Sea Region has already been enjoying a high degree of institutionalisation both at government, subregional, local as well as at the NGO level. Creating one more institution to govern the ongoing work in the various fields was therefore not felt to be necessary. Nevertheless, as the Strategy is all about coordination, collaboration and cooperation one of the first tasks in the implementation process has been to develop suitable frameworks and networks within which the relevant players from the BRS countries could come to interaction with each other in order to join their forces to tackle the issues at hand. Also at the national level new coordination bodies have been set up to ensure coherence of the involvement of all the parties involved in the implementation process. In other words, even if no new institutions were created EUSBSR has meant a clear YES to new coordination structures and bodies. In fact, the clear improvement in coordination and cooperation mechanisms within and across the BSR countries can be seen as one of the first concrete results that the Strategy has produced in the first two years of its implementation.

As the Strategy came into being in the middle of the ongoing financial period of the EU, there was of course no other realistic alternative to the "no new funds" principle. To what extent this may have dampened interest in getting involved with the participation is not clear. However, the truth is that there was not really such a compelling need to make new funds available as there already existed ample financing in place that could be used to implement the Strategy. For example, for the Cohesion Policy alone over 50 billion Euros have been allocated for the Baltic Sea Region in 2007-13.

Other EU policies and programs can likewise offer funding opportunities for EUSBSR implementation. Indeed one of the main added value features of the Strategy is that it is meant to bring more coherence and efficiency into the usage of the funds already available to the Region through various EU programs. In other words, the EUSBSR has certainly meant a YES to new funding by adopting a new approach in channelling funds from existing sources to projects supporting the Strategy.

It is certainly also a fact that the Strategy was adopted without any new Directives or Regulations being passed. It was not necessary as the existing EU legislation already provided the necessary legal framework for Commission and the Member States to intensify their efforts in addressing the challenges the Baltic Sea Region has been facing. This does, however, not mean that EUSBSR would in the end not bring about any legislative changes. To the contrary, when endorsing the Strategy the Council clearly expressed the wish that the integrated approach and the cross-sectoral coordination would eventually give input to new policy initiatives and not only in the Baltic Sea Region but at the EU level as well. Naturally, time needs to be allowed for the Strategy work to cultivate ideas through its new forms of horizontal and multi-level cooperation before they can be expected to become ripe for policy level conclusions and possibly lead to new legislation as well. However, first signs of the implementation process feeding into the legislative level have already been seen with respect to the need to introduce legal changes to limit the use of phosphates in detergents used by households. With time we will most certainly say more and more often YES to legislative changes brought about by the EUSBSR implementation.

Besides the apparent misconceptions concerning the three no's concept there seems to exist one more false perception related to the Strategy. As the EUSBSR is an internal EU strategy it was naturally developed in close consultation between the Commission and the Member States of the Region. The intention was, however, never to make the EUSBSR an exclusive, closed or discriminatory club of the Region. After all, the underlying principle of the Strategy is the conviction that only through coordination, cooperation and collaboration between all the relevant stakeholders the Region's almost 100 million inhabitants can be guaranteed a prosperous and sustainable future. In other words, EUSBSR is meant to signify a firm YES to welcoming the participation of all countries of the Region in this joint exercise that we all not only need but also stand to benefit from.

Timo Rajakangas

Ambassador for Baltic Sea Issues

Ministry for Foreign Affairs

Finland

Stockholm calls for greater commitment to the well-being of the Baltic Sea

By Sten Nordin

The marine environment in the Baltic Sea is a priority for the Swedish government. The Baltic Sea region has always been important for Sweden since about 90 percent of the Swedish population lives within 100 kilometers of the coast. The majority of the country's industrial centers are also located by or close to the coastline. Due to the critical situation of the marine environment, the regions' economy and well-being are critically at stake.

As Mayor for the nation's capital Stockholm, I can assure that the city is committed to the environmental challenges that we face in this important region. To invest in the protection of its ecosystem is an important investment for the future. Trade, tourism, the fishing industry and important shipping routes are all depended on the well-being of the Baltic Sea. The Baltic Sea Action Plan (BSAP), which Sweden is committed to, is currently the most comprehensive internationally agreed rescue plan for the Baltic Sea. We need to make a giant leap forward because there is a lot needed to secure a healthy and environmentally sound future for the region. The need for concrete effective action is growing ever more urgent. Hopefully the BSAP will prove to be the giant leap needed.

Stockholm has a long history of working for clean water. The city, which is built on several islands, is proud over the water which surrounds her. The city annually awards The Stockholm Water Prize. Its purpose is to promote, support and award outstanding achievements in water related activities. Clean tap water has always been a treasured commodity which is taken for granted by all our inhabitants. We are committed to do everything needed to make sure clean tap water remains a reality for coming generations.

The well-being of the Baltic Sea is also vital for the Stockholm archipelago and its thousands of islands. The archipelago is one of Sweden's grandest treasures and everything must be done to protect it. Stockholm therefore supports a wide range of co-operations dedicated to the environmental concerns and challenges that we face. In 2008, Stockholm signed on to the Baltic Sea Challenge. The initiative, which started in Finland, consists of several cities and municipalities as well as local groups and organizations dedicated for a healthier sea in the region. It is important that we in a wider shared effort work on all local levels to protect this important sea which is shared by so many interests.

The environmental concerns are reasons enough for these co-operations to exist. However, the economic benefits are also important to consider. It has always been easier to push legislation and initiatives through when financial benefits outweigh costs. Health costs and loss of income from tourism would devastate several areas throughout the region if we do nothing and simply let the sea's wellbeing deteriorate. The tourism industry is increasingly growing around the Baltic, especially tourism amongst those who travel by cruise ships. This is a welcomed development and yet another reminder the important benefits to work hard for a cleaner Baltic Sea.

One of the major challenges is how we can come to grips with hazardous substances. The source for these substances span from abandon shipwrecks to planned

criminal activities such as illegal dumping of oil. The Swedish Environmental Protection Agency continually works to detect the sources of hazardous substances. This work is important so we know where we need to devote our resources. Investments have therefore been made on equipment for aerial surveillance and tracking. Being able to track illegal oil dumping and pollution violations from ships or other industries over a wide area is crucial to enforce these important laws. In this area I fear that we still have a long way to go in order to successfully deter those committing these crimes by increasing the risk to suffer legal consequences. To live up to the commitments made in the BSAP we will need to improve the knowledge within industries and authorities to work with heavy metals and dioxins. Unfortunately banned particles continue being detected in the Baltic Sea. One example is TBT which is still being used as an undercoating on ships even though it was banned a long time ago.

In some areas, great progress has been made in regards to reducing emissions and hazardous substances. For decades we have been aware of environmentally dangerous waste and emissions. We have taken action and recovered from damages caused by DDT and PCB waste. Industrial plants in Sweden are operating with environmental technologies recommended and required in accordance with environmental agreements. Proper handling of waste is improving and hazardous leaks are also on the decline. This shows that we can achieve positive results when we act. With approximately 90 million people from well developed countries with a lot of expertise and financial resources live in the region. The challenges we face are dire but far from impossible.

Sweden currently holds the presidency of HELCOM (Helsinki Commission - Baltic Marine Environment Protection Commission). HELCOM is one of the oldest regional seas conventions and a global model for regional cooperation. Since 1974 it has been working to improve the environmental status of the Baltic Sea. The main priority during the presidency will be to follow up and make sure that countries take responsibilities and live up to its commitments. Due to the long coastline and large marine areas, Sweden bears great responsibility for the region. I was encouraged that the newly appointed Swedish Minister for Environment, Lena Ek, mentioned at her first press conference that this was one of her top priorities. Hopefully this bodes well for the Swedish presidency becoming a success as we continue to move from words to action in this very important and challenging task ahead of us.

Sten Nordin

Mayor

City of Stockholm

Sweden

Post crisis economic growth in Kaliningrad region

By Vladimir Kuzin

The main manifestations of world economic crisis in Kaliningrad region showed themselves in 2009. Especially strongly the crisis affected the industry. The anti-recessionary measures in the region were mostly of social character, particularly provided support for the labor market. The measures to reduce budget expenditures led to deterioration in demand, which negatively influenced the situation.

Since 2010 an economic growth started to be fixed in the region, and this tendency continued in 2011. According to the results of January-June 2011, the rate of some economic rates in the region exceeds an average Russian level. The index of industrial production in mining operation reached 250% (in Russia – 102.5%). In manufacturing activity the index was 154% (in Russia - 108%), in electricity production and distribution, gas and water distribution – 137.9% (100.2%). Also to compare with the average rate for the whole country the growth of the following indexes was fixed higher: freight in road transport – 143.5% (in Russia – 109.4%); the volume of construction – 132.4% (in Russia – 100.9%); retail trade - 132.4% (in Russia – 105.35).

The manufacturing sectors of economy demonstrated the significant growth rate. Since the beginning of 2011 their input to the growth of production volume manufactured in the region is estimated in 79.1%. In the first part of 2011 the highest growth rates were in high-tech sectors: production of autos (1.9 times); receiving television equipment (1.7 times), as well as production and design of reinforced concrete structures and prefabricated elements (1.7 times), sausages (1.6 times). In general for the first 6 month of 2011 the manufacturing production to compare with the pre-crisis period of January - June 2008 increased and amounted 171.5%.

The growth is determined by the recovering of domestic demand. In June 2011 in comparison with December 2010 has been fixed growth of index of prices industry goods producers (104.6%), that testifying of the increasing of demand on industrial production. However there was no increasing of demand on all types of goods, which producing in region.

In the mining production growth in the first half of 2011 to January-June 2008 amounted to 173%. During the same period in the production and distribution of electricity, gas and water grew 66.7%. It confirms the fact that the growth of industrial production is associated with an increase in working load of enterprises.

However, production volume for a number of economic activities decreased to compare with the same period of the last year, including: textiles and textile products (94.6%), production of machinery and equipment (99.1%), production of electrical and optical equipment (91.0%).

Positive changes in the economy stabilized the situation in the employment and labor market. As of the 1st of July 2011 the number of registered unemployed was 10.5 thousand people. Compared with the beginning of 2011 (16.9 thousand) the level of unemployment decreased 38%.

Average monthly nominal wages per one employee (for large and medium-sized enterprises) in the region in January-June 2011 compared with the corresponding period of 2010 increased 9.4%. The growth of wage fixed in almost all types

of activities. In absolute value the average wage was 20.5 thousand rubles. (about 500 euros) per month. From the beginning of the year wage differentiation in different economic activities has not undergone major structural changes and remains high. Concerning the level of wage the mining operation and financial activity still remain the leading ones.

Real income of population in the region in the first part of the year was 94.6% as of the similar period of the last year, although growth of 4.9% was fixed a year ago. At the same time the expenses of population exceeded the income 4.6%.

From the beginning of the year the regional index of consumer prices reached the level of 4.9% (last year - 4.2%). At the same time prices of food products increased from 6.4% to 6.7% and of non-foods - from 1.6% to 3.7%. Besides in absolute terms prices on many goods of every day demand were higher in Kaliningrad region than in neighbor countries - Lithuania and Poland. Now the agreement on visa-free cross-border exchange is being worked out, due to its ratification the expenditure switching for goods from neighboring countries is possible to take place.

In 2011 the investing in the regional economy decreased. The capital investment in the first part of the year was only 60.4% as of the level of the first part of 2010. It happened due to several factors: reduced of budget investments, high level of uncertainty regarding investment decisions in terms of crisis and change of the Governor of the Kaliningrad region, which occurred in 2010.

By the results of the first half of 2011 the volume of construction (data for large and medium-sized enterprises) exceeded the same period of last year 1.4 times. Taking up of volume in construction in January – June 2008 as 100%, for the same period of 2011 this figure is estimated 78.1%.

The situation in investment sphere demonstrates, that economic growth have fickle disposition and in future will be determined by a number of different factors, among which the one unique factor is to emphasized only for the Kaliningrad region. Now most enterprises of the region use custom preferences of Special Economic Zone regime, which will terminate in 2016. According to various estimates, from 30 to 50% of companies are considering moving to other regions of Russia, which facilitated access to consumers after the cancellation of customs preferences.

Vladimir Kuzin,

PhD in Economics

Head of the Economic Development Department

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Russia

Immanuel Kant Baltic Federal University as an example of EU-Russia cooperation

By Andrey Klemeshev

The university in Kaliningrad began its life as Kaliningrad State Pedagogical Institute in 1947. In 1966, it acquired university status. In 2005, the University was named after Immanuel Kant. In 2011, it attained federal status.

The I.Kant Baltic Federal University is one of relatively small universities of the Russian Federation. Due to its geographical location and firm links with both Russian and European universities, the University became one of the winners of the competition among Russian universities, implementing the national project "Education" in 2007-2008. The University presented its strategic development programme "The development of the University innovation and education infrastructure aimed at strengthening the competitiveness of the exclave region of Russia". The main aim of the programme was to provide specialists for the innovative development of the Kaliningrad region, the exclave region of Russia. The programme was financed from the federal budget, with the total funding of 9,7 million EUR. The University co-funding amounted to 2 million EUR. The implementation of this programme was a precondition for obtaining federal status and becoming one of 8 Russian federal universities. Only two other Russian universities, Moscow State University and St-Petersburg State University, have a higher status.

The federal status of the University means that the University will get additional state funding of 25 million EUR per Year during the period of 5 years (2011-2015). This money will be spent on purchasing teaching and research equipment, renovation and maintenance of the University buildings, the training of trainers and the elaboration and introduction of new bachelor and master programmes. This will allow the University, aiming to become one of the world leading universities, to raise the quality of education and training and give an additional boost to fundamental and applied research.

The programme for the development of the University identifies the following priority areas:

- energy saving, energy efficiency and energy security;
- nanosystems and material engineering;
- IT and telecommunication;
- transport, logistics and recreation technologies;
- medical biotechnologies;
- social changes and social-humanitarian technologies;
- rational environmental management;
- urban spatial planning.

The University of today is a higher education institution of regional and federal importance. It is the leading educational, research and cultural centre of the Kaliningrad region. The University trains specialists in 50 fields. More than 200 education programmes are implemented there. The University employs 1,500 staff. The number of students exceeds 14,000. The academia of the University carry out research in 36 fields of science. More than 100 monographs, 240 course books and 5,000 articles have been published during the past 5 years. The University runs a number of postgraduate programmes and has more than 600 doctoral students taking their PhD courses in 38 fields of study. There are 10 doctoral dissertation panels in 17 fields of science.

The majority of the University students are residents of the Kaliningrad region. However, the number of students from other regions of Russia, the CIS and neighbouring countries (Latvia, Lithuania, Kazakhstan and Belarus) is annually rising. The University has exchange students and PhD students from Poland and Germany. The number of master programmes taught in English is growing. It will allow the University to attract students from abroad.

The I. Kant Baltic Federal University represents the system of Russian higher education in Europe and acts as a bridge between Russian and European education spaces for the benefit of all Russian regions. It is a bridge that has been chosen as a logo of the University. The University continues time-honoured traditions of Russian higher education, and learns from European education experience.

The University strives to maintain and spread academic and research traditions of Königsberg University "Albertina". Albertina, one of the oldest Universities in Europe, has a 467 year history. Hamann, Herder, Bessel, Helmholtz, Hilbert, Jacobi, Linderman, Gurvits taught in Albertina University. Donelaitis, the father founder of Lithuanian literature read Theology there. Hoffman, the famous writer and composer, attended lectures in Philosophy in Albertina. The University's greatest alumnus is Immanuel Kant, the world-famous philosopher. The name of I. Kant forever linked the city of Königsberg and Albertina University with the spiritual heritage of humankind.

Regionally, the University sees its mission in integrating the system of education in the region and raising its competitiveness in the light of the Bologna process.

Nationally, the University aims to strengthen Russian stateness and promote Russian culture in the Russian exclave, given the EU enlargement.

Internationally, the University accomplishes the mission of holding an open dialogue between Russian and European higher education institutions and promoting students' academic mobility. Dynamically developing, the University has become a large education, research and cultural centre of the Kaliningrad region, a true representative of the Russian system of higher education in Europe. It has partnership agreements with more than 50 universities from 16 countries. The University is a member of the European University Association, the Eurasian Association, the Baltic Sea Region University Network. Internationalisation of higher education has always been a priority. The University aims to develop new forms of international cooperation, thus facilitating the harmonization of Russian and European systems of education.

Andrey Klemeshev

Dr of Political Science, Professor

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(Kaliningrad)*

Russia

The University of Gdańsk – the largest institution of higher education in Northern Poland

By Bernard Lammek

The University of Gdańsk was founded on 20 March 1970. Currently is the largest educational institution in the Pomorze region. We have eleven faculties with almost thirty-three thousand students, doctoral students and post-graduates, who are taught by one thousand seven hundred academic staff. In such fields of study as Biology, Biotechnology, Chemistry, Oceanography, Quantum Physics, Pedagogy, Psychology, Law and Economic Sciences, the University of Gdańsk is one of the best institutions in Poland. One of the assets of the University of Gdańsk is its relationship with the sea. The reputation of the university in marine matters is built on its excellent research stations with their international reputations: the Hel Marine Station of the Institute of Oceanography and the Bird Migration Research Station. The marine image of the university is also enhanced by its fields of study, specialisations and scientific research connected with the sea and with the Baltic coast in particular. The University of Gdańsk implements its motto of *in mari via tua*, and serves the development of the Pomorze region, whose wealth is the very sea itself.

The University of Gdańsk cooperates with universities, tertiary colleges and scientific and research institutions in almost every country around the world. This allows us to broaden our range of courses and the knowledge of our academic staff, and to expand the University of Gdańsk. An important aspect of our mutual activities is the implementation of projects within the European Union's Framework Programmes. From 2002 to the end of 2010, the University of Gdańsk participated in over 170 European and international projects. The membership of Poland in the European Union has opened up new possibilities for Polish science and scholarship in the area of financing activities, including the exploitation of structural funds, such as the European Social Fund, the European Regional Development Fund and community initiatives. During the 2007-2013 programme period, the University is implementing a total of 37 projects within the framework of the following Operational Programmes. Scientists and scholars at the University of Gdańsk also obtain other European and international grants, for example within the framework of the European Economic Area Financial Mechanism and the Norwegian Financial Mechanism, the European Territorial Cooperation and the Lifelong Learning Programme. Because of the development and the activities of its academic staff, the University of Gdańsk has become an incubator for entrepreneurship in such areas as Biotechnology, Biology and Chemistry.

As part of its commitment to the idea of creating the European Higher Education Space, the University of Gdańsk, as the first such higher education institution in Poland, introduced in 2005 the full range of the Bologna system of education (three-cycle higher education), enabling students to study and opening new perspectives for obtaining a degree. In accordance with the principles of the Bologna Declaration, the University of Gdańsk offers doctoral studies and has a functioning e-learning internet portal. The University also offers lifelong learning programmes with a wide range of post-graduate studies and courses, as well as the University of the Third Age.

The University of Gdańsk offers courses in over 40 fields of study, with over 180 specialisations. Every year, new fields of study are added and the range of courses is adapted to meet the needs of the employment market. Combining theoretical knowledge with practical skills broadens the possibilities of the students at the University of Gdańsk on the employment market, and is an integral part of the idea of the constant improvement of the quality of education.

The current development strategy of the University of Gdańsk is concentrated on the expansion of the university on three campuses: Oliwa (the Baltic Campus of the University of Gdańsk), Sopot, and Gdynia. Among the plans for the development of the University of Gdańsk in the years 2007-2013 is the extension of the university's campus in Gdańsk-Oliwa within the framework of the programme entitled "The Construction of the University of Gdańsk's Campus in the years 2007-2013". Plans call for the construction of a series of new buildings for the Faculties of Biology and Chemistry, a new Modern Languages building for the Faculty of Languages, the building of an Informatics for the Faculty of Mathematics, Physics and Informatics, a Biotechnology building for the Intercollegiate Faculty of Biotechnology of University of Gdańsk and Medical University of Gdańsk, and also a University Centre for Sport and Recreation, as well as a students' hostels. Part of the programme for the Baltic Campus of the University of Gdańsk, a project entitled "The Construction of Buildings for the Faculties of Chemistry and Biology of the University of Gdańsk", is on the List of Key Individual Projects for the Operational Programme "Infrastructure and Environment". The University of Gdańsk has received financing of 236 million PLN for this investment. This will permit new buildings to be constructed for the Faculty of Chemistry and for the Faculty of Biology. The University of Gdańsk's Faculties of Biology and Chemistry already train high-class specialists in pure sciences. The new modern study and work conditions for scientists will in the future influence the development of personnel in the administration and economy of the Pomorze region and of the whole Baltic Sea region.

The construction of the Baltic Campus of the University of Gdańsk is an opportunity to create in Pomorze one of the strongest academic and scientific centres in the Baltic Sea region. The Baltic Campus, located in Gdańsk-Oliwa, will play the role of the scientific, teaching and student centre of the Three Cities of Gdańsk, Sopot and Gdynia.

Bernard Lammek

Professor, Rector

University of Gdańsk

Poland

The importance of fishery

By Edgar Öhberg

About the Foundation

The Åland Foundation for the Future of the Baltic Sea, also known as The Baltic Sea Fund, was founded in 1989 through a private donation of FIM 3 million, corresponding to a half a million Euros. The initiator and donator was the businessman, nowadays appointed Councilor of Commerce, Anders Wiklöf.

The purpose of the foundation is to promote and support research and other activities regarding the protection of the environment of the Baltic Sea.

The Baltic Sea Fund awards prizes, scholarships, and subsidies within the fields of scientific research and technology, as well as for publishing activities, and measures, initiatives, and other actions promoting the protection of the environment of the Baltic Sea.

The Baltic Sea Fund, which is an independent organisation, works for the entire Baltic Sea region by drawing attention to actions for the benefit of our common and sensitive inland sea. An important part of the activities is to disseminate information and knowledge about the environment of the Baltic Sea to the 85 million inhabitants of the region. The activities are supervised by a delegation of seventeen members elected for a term of office of three years.

The following topic is of great importance for the future of the Baltic Sea.

Fishery

The lack of cod in the Baltic Sea is an environmental issue. It is indisputable that fish make up a large part of what is the Baltic Sea environment and that fishing has a great impact on the environment. Efforts to strengthen Baltic Sea cod stocks will aid stock recovery and limit massive algal blooms.

Fish is an integral part of the Baltic Sea ecosystem. From time immemorial, people have caught fish for food. In many countries, fishing and the fisheries industry is commercially significant and fish is a significant source of protein. Over thousands of years fishing has been small-scale and near the coastline, during which it did not influence fish populations other than marginally. Already at the turn of the century, but primarily since World War II, fishing methods have undergone a technical revolution. Larger boats and new tools for more effectively catching fish in larger quantities have been developed. In the Baltic Sea the development has been similar - in the 1920's the total catch in the Baltic Sea was 50 000 tonnes annually. Today it is 1 million tonnes annually.

Global problem

Overfishing is a global problem despite the fact that scientists have regularly warned against overfishing and its consequences. It has not been possible to implement sufficiently stringent restrictions which ensure sustainability. Management of fisheries has been characterized by short term interests, where economic gain has weighed heavier than ecological function and sustainability.

Cod in the Baltic Sea

The Baltic Sea is a productive sea. When the cod stock reached its historical peak, during the 1980s, roughly 22 percent of global cod catches were landed from this tiny sea! Cod is a bottom-dwelling, cold-water species, originating from waters, where salinity is far higher than in the Baltic Sea. The Baltic Sea cod is specially adapted – reproduction can only be successful if oxygen and salinity levels are sufficiently high. Human activities around the Baltic Sea also affect cod reproduction and survival. Eutrophication has contributed to increased oxygen consumption at larger depths, which decrease the potential for cod eggs to survive. However, eutrophication has also contributed to the growing production of cod. When eutrophication accelerated in the 1970s, there was a substantial increase of cod. 160 000 tonnes is the scientific recommendation marking the lowest acceptable level for the eastern stock. The stock has been below this lowest level during most of the 1990s and during the 2000s. With the disappearance of predatory fish, there is a risk of upsetting the balance in the ecosystem. In the Baltic Sea there is an intricate relationship in the food web, uniting cod (predator) and sprat and herring (forage fish).

Cod - decisive role in the ecosystem

Now it is time for everyone to put a strong focus on protecting the cod stock since it has a decisive role for the entire food chain in the Baltic Sea. In short, the relationship looks like this: the nutrients in the water promote growth of microscopic phytoplankton, phytoplankton are eaten by zooplankton which are barely visible, zooplankton is eaten by small fish such as herring and sprat and the small fish are eaten by larger fish such as salmon and cod. This is a self-regulating system where production varies from year to year but is generally stable. When cod stocks are low sprat stocks benefit, resulting in a sprat-dominated system, reducing the occurrence of zooplankton. Reducing zooplankton, in turn, creates favourable conditions for phytoplankton and algae blooms become more abundant. The toxic blue-green algae, which in recent years have been found floating in masses is a result of such excessive production. Algal blooms are an annual phenomenon, but when they become excessively abundant it is a sign that the system is out of balance.

Edgar Öhberg

Director

The Baltic Sea Fund



The Baltic Boutique and the future of air travel

By Mika Vehviläinen

Aviation is a tough business. Heavy operating expenses, poor bargaining power with suppliers, vulnerability to all kinds of external conditions outside of anyone's control: These are among the reasons that led Warren Buffett to once declare, "a durable competitive advantage has proven elusive ever since the days of the Wright Brothers." The legendary Pan Am executive Marty Shugrue once complained about his industry rather more colourfully: "If we got into the funeral business, people would stop dying."

And yet we're still here, alive and well – and growing. According to Airports Council International, global passenger throughput increased by 7.1 percent in 2010, despite continuing economic uncertainty and the ash cloud crisis that affected traffic worldwide. While Asia and Latin America account for much of this expansion, a fair portion also comes from Eastern Europe and Russia, which reported double-digit growth in air traffic. In the formerly Communist portions of the Baltic Region, especially, the lack of quality infrastructure for other modes of transport – it can take upwards of 30 hours to get from Warsaw to Tallinn by train – makes flying essential. Even after the high-speed Rail Baltica project comes online later this decade, and the region's roads and highways are eventually upgraded, there is no doubt that modern economies will require robust networks of flight connections more than ever before. The EU's European Commission on Mobility & Transport projects an overall doubling of air traffic in Europe by 2020 from 2000 levels.

At the same time, the Nordic and Baltic area – as the last region of Europe before heading on to East Asia on polar flight routes – is also poised to receive more international traffic generated by the rapidly growing economies of the Far East. In anticipation of the rising Asian tide, Finnair with its hub at Helsinki expressly designed for transfer traffic, is planning to double its flights to Asia to 140 per week by 2020 and has tailored its European schedules for onward long-haul connections. There is no question that opportunities for market share await those who are prepared.

A consolidating industry

In Europe, though, worldwide growth in air traffic does not shield companies from fierce competition, nor from the severe consolidation pressures acting on the industry. Economies of scale matter greatly in a business as expensive to operate in as aviation, which is why we're likely to see the emergence of a few strong regional players in the European space despite increased traffic. It is this logic that drove Finnair to recently acquire, together with UK-based carrier Flybe, Finnish Commuter Airlines and create Flybe Nordic, which specializes in short haul routes around the Nordic and Baltic region and feeds in directly to Finnair's larger international network. We own 40 percent of the new airline and routes appear in our schedules, effectively allowing us to provide a better, more extensive service while also reducing costs.

Keeping that cost base as lean as possible is essential to stay competitive and healthy. The airlines that survive and thrive will focus on core competencies – transporting passengers and cargo – and choose the right partners from other fields, such as ground handling or repair work, who can step in and lower costs with their own economies of scale. We'll also see more airlines maximizing the potential of their

fleets with codeshare partnerships and the strengthening of global alliances like oneworld, to which Finnair belongs.

In the short term, there is no denying that a shakeout is underway in Europe. Some cherished national flag carriers have either vanished already or are seriously at risk. But as quality, reasonably priced alternatives develop in a freer marketplace, in the long term I believe that governments and indeed passengers will agree that this is a good thing. The situation is analogous to the telecommunications industry, where nationally defined, state-owned companies eventually transformed into private, cross-border enterprises. Services are considerably better and less expensive as a result. Market forces prevailed then and they'll prevail now.

A value-added, designer approach

These market forces are pushing airlines in two different directions, however. Confronted by aggressive challenges from newer budget carriers, incumbents face a choice: Do they compete on price or on customer service? While Finnair's fares remain reasonable, I believe that the path to sustained profitability is with a designer approach focused on human experience rather than mere maximally efficient process. Especially in air travel, where that process often leads to a stressful, claustrophobic and altogether unpleasant flight experience, differentiating your brand by becoming a very desirable alternative is the only way to save yourself from the commodity price trap of low margins and undue exposure to economic cycles. But that difference has to be real – not just a slogan or a marketing campaign.

That is why Finnair has embraced its Finnish design heritage while investing considerably in a reassessment of the existing consumer aviation experience that maps precisely the customer encounters that matter most. A very collaborative and creative internal process of discovery and implementation, led by our Service Design Unit and called Peace of Mind, has seen negative customer feedback decrease by 16 percent since 2010. Unprompted positive feedback – always a rare thing in any business – has meanwhile quadrupled. We've also risen dramatically in *Travel + Leisure* magazine's annual rankings of the world's best airlines, from No. 28 to No. 12, and this year SkyTrax declared us the best airline in Northern Europe. Internally, there's a really positive buzz about a long-term, permanent shift in company culture that is really just getting started.

And so we're striving to be a desirable, boutique airline – from an area that, viewed from a global perspective, can be seen as something of a desirable, boutique region. Indeed, embracing our human potential and creativity to add value is surely the best way for all of us – not just those in the aviation business – to create a "durable competitive advantage" long into the future.

Mika Vehviläinen

President and CEO

Finnair



EU-Russia cooperation in promoting innovation

By Anneli Pauli

Research and innovation are at the top of the political and economic agendas in both Russia and the EU. In June last year, the EU's leaders endorsed the Europe 2020 strategy for the creation of a sustainable market economy. At its heart is the conviction that innovation is central to getting Europe out of the current economic crisis and to build long-term sustainable growth. In essence, it proposes to transform the European Union into an Innovation Union, and to build economic growth on the generation and exploitation of knowledge. There are strong parallels with the Modernisation Programme for the Russian Federation, launched by President Medvedev in late 2009. This Modernisation Programme aims to diversify and modernise Russia's economy and society, and to reduce the country's dependence on oil and gas by creating a smart economy, based on knowledge, innovation, new goods and technologies.

The similarity in thinking is also reflected in the priorities of the Europe 2020 'Innovation Union' Communication and the draft 'Innovative Russia – 2020' strategy drawn up by the Russian Ministry of Economic Development: both call strongly for increased international research cooperation. Collaboration in science, technology and innovation (STI), therefore, plays a prominent role in the EU-Russia Partnership for Modernisation, which was agreed at the EU-Russia Summit in June 2010 and sets out a shared agenda to help bring about economic and societal reform.

The EU and Russia have a strong history of successful and mutually beneficial cooperation in STI both at the level of the European Union and through bilateral actions between Russia and individual EU Member States. The EU funding programmes for research and technological development – the Framework Programmes – are fully open for EU researchers to work in collaboration with international partners. In the current Seventh (FP7) and all previous Framework Programmes, Russian researchers and research organisations have been involved in more successful projects than any other international partner country. In FP7, to date, over 400 Russian research organisations are involved in more than 270 projects receiving over 45 million euro of EU funding. In addition, more than 140 Russian nationals have been awarded Fellowships through the FP7 Marie Curie actions or hold one of the prestigious grants of the European Research Council, including Konstantin Novoselov, the recent Nobel Prize winner for Physics.

At the same time, Russian research programmes and foundations, such as the Russian Federal Targeted Programmes (FTP) for Research and Development, the Russian Foundation for Basic Research and the Foundation for Assistance to Small Innovative Enterprises have increasingly involved EU researchers in their activities. For example, since 2007 European research organisations have participated in over 150 projects funded under the FTP; indeed, there is a greater level of collaboration with EU researchers under the FTP than with any other international partner. It is clear that for collaboration in science and technology, the EU and Russia are natural partners of choice.

This collaboration is underpinned by a robust and structured dialogue, through a sectoral agreement between the EU and Russia for cooperation in scientific and technological research, which has existed since 1999. Several joint thematic working groups have been established for policy exchanges or to discuss research topics of potential mutual interest. These topics are then implemented through calls for proposals under FP7 or through the FTP, or increasingly through coordinated calls where the European Commission and the Russian Ministry of Education and Science issue parallel calls for proposals, with matching financial commitments, to fund projects working in close collaboration. Eight such coordinated calls have been funded to date, in topics including health research, nanotechnology and aerospace, with the EU and Russia each contributing over 30 million euro. Full information on the actions under the Cooperation Agreement is given in a jointly produced 'road-map' for cooperation.

Many EU Member States have concluded analogous bilateral inter-governmental or inter-institutional cooperation agreements with Russia. An overview of the financial support and opportunities that are available for researchers under these bilateral programmes and at EU level is set out in an easy to use guide – the Compendium on S&T Cooperation between the EU and the Russian Federation – drawn up by the EU Delegation in Moscow and the Russian Ministry of Education and Science.

The EU and Russia both wish to build on the strength of the current cooperation and to develop a strategic partnership in research and innovation, to contribute to tackling global and societal challenges of common interest, help with the modernisation of our economies and to strengthen the international dimension of both EU and Russian innovation policies. This will involve stepping up the scale and scope of our cooperation, with a focus on a smaller number of specific STI areas of strategic importance, for increased collaboration and investment. Identifying and agreeing on these areas will be the focus of discussions over the coming year under the S&T Cooperation Agreement, and through the Partnership for Modernisation.

One such strategic area could be support for the establishment and operation of global research infrastructures. EU Member States and Russia are partners in a growing number of international research infrastructures including: the International Thermonuclear Experimental Reactor (ITER); the International Space Station; the European Organisation for Nuclear Research (CERN); and, the Russian Joint Institute for Nuclear Research (JINR). Indeed, work is ongoing, involving both the EU and Russia at G8-level through the Carnegie Group of Science Advisors, to categorise research infrastructures and to identify national research infrastructures which could be opened at international level.

At the same time, we will increase our dialogue on embedding innovation in all aspects of research policy, in line with the Innovation Union and Innovative Russia strategies, to improve the conditions for delivering innovation and reducing the time to market. This could cover for example: industry-led research strategies through collaboration between the Technology Platforms which have been established in both Russia and the EU; the framework conditions for driving innovation, such as in transforming public procurement into a driver for more innovative products and services; collaboration in pre-normative research to establish common standards; or the development of indicators for innovation.

With similar and complementary thinking on the strategic development of STI policy, there is clearly a great potential for the EU and Russia to increase collaboration, develop a mutually beneficial strategic partnership, boost research and innovation in the EU and Russia, and to create smart, sustainable and socially-inclusive societies.

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Significance of international activities to the research system

By Riitta Mustonen

The international element of science and the research system is often highlighted in recommendations set forth in evaluations of research and innovation policy. This is by no means unfounded, as internationality – besides being an intrinsic value – is also a key tool for upgrading the quality of research, networking researchers, promoting researcher training, advancing research careers and developing cutting-edge and high-impact research environments.

Internationality is a fundamental element of all research for many different reasons. A research theme in itself can concretely cross national borders. Examples of cross-border research include a number of phenomena associated with nature and the environment, such as atmospheric research or marine research. On the other hand, for mathematicians, linguists or even economists, the best partner may be found just about anywhere in the world.

From a researcher's perspective, however, international research collaboration is definitively nothing unfamiliar – it is a built-in and integral part of all research. This may make it difficult for researchers to understand the internationalisation measures taken at the system level, aiming at greater advantages than at the level of individual researchers or research teams.

Besides excellent collaboration opportunities, the ever-increasing internationalisation of research also means that researchers can expect to face much fiercer competition: international competition for resources (money and top-level postdoctoral researchers) and competition to be the first to solve a complex problem, to present an important new theory or a novel application, and to publish or be granted a patent. It even involves competition to have access to the best networks or be granted an ample amount of personal funding

As a rule, international competition is much tougher than national competition, but the available resources – particularly compared to small economies – are also much more abundant. Success in securing international funding can therefore help researchers to substantially increase their funding. Over time, this translates into top researchers significantly increasing the resources of the national research system, although their primary aim is to promote their own research and research team.

Money is most often a limiting factor in publicly funded research, both nationally and internationally. A particular policy objective is to aim towards an international division of labour, when appropriate, and to avoid overlapping. In practice, however, such objectives have proved most challenging. It is difficult – impossible even – to dictate what researchers should research, so integral is the idea of the freedom of research. As such, however, this objective is important and every effort should be made to achieve it, because successful international collaboration and a successful international division of labour ensure a more efficient use of resources. Efficiency can be converted into savings but it may also enable faster problem-solving or provide the best possible human resources, for example. As a result, decision-makers (researchers, research teams, organisations, ministries, Parliament) can reallocate resources either to the research system or to some other purpose they consider important.

In the internationalisation of the research system, research infrastructures play a special role. The building, upgrading and maintenance of research infrastructures require long-term planning and strong economic commitment. Research infrastructures are often very expensive, and the investments they require are much too large-scale to be covered by individual countries. Research infrastructures should therefore be viewed as part of an entire system of international research infrastructures.

Researchers need up-to-date research infrastructures and all researchers should have access to or an opportunity to use research infrastructures at least on the basis of competition. At the research system level, state-of-the-art research infrastructures provide a good tool to raise the standard and improve the competitiveness of research, accelerate its capability for renewal and increase its interdisciplinarity. Top-level infrastructures attract researchers from all over the world and promote the international networking of researchers.

Networking offers a natural avenue for disseminating research results much faster than through conventional publishing. Networking also contributes to the establishment of joint research projects based on the different strengths of researchers and research teams.

Without internationally active researchers there would be no international research environments or research systems. Internationalisation does not happen automatically and it takes more than just a handful of researchers, even though, in the end, researchers are the actors within the research system with whom everything culminates. What we need are concrete actions from government actors.

International mobility is highly important at the early stages of the research career, particularly in terms of career advancement. It is at this early stage that the competencies and skills needed to become a member of the international scientific community are created. For young researchers, international mobility provides an opportunity to gain independence and improve their knowledge and skills, to learn new research methods, for instance. At the postdoctoral stage in particular, a new environment also offers a better opportunity and an easier way to change research topics. Also, we should not underestimate the benefit of learning about the cultures of different countries and nations. At that particular moment, the benefit may not be the researcher's primary aim, but it might be crucial at a later stage of his or her career.

Despite the obvious and well-known advantages of international mobility for research and research careers, there are still many obstacles to researcher mobility left to be removed. Money should follow researchers, but in many countries this principle still faces legislative obstacles. Other obstacles include complex immigration legislation, work permits and difficulties associated with accompanying family members (e.g. the position of the spouse and children, and healthcare, social security and pension benefits for family members). A further obstacle is the uncertainty associated with the return to one's home country: Do I have a place to return to? Cooperation between different administrative sectors to solve these problems is difficult even at the national level – and even harder at the transnational level. A key argument here is

that no privileges should be granted to representatives of one profession only, in this case researchers.

The Academy of Finland is the leading source of funding for scientific research in Finland, and the international element permeates all its research funding. The Academy actively encourages and supports the international mobility of Finnish researchers in many different ways and promotes the recruitment of foreign researchers with a view to further improving Finnish research environments.

The Academy also actively cooperates with other countries and international research funding agencies, for example by funding research projects in jointly agreed fields or themes. The aim is to promote the internationalisation of the Finnish research system with a view to raising the overall quality of Finnish research. This will also improve the chances of Finnish researchers of securing research funding from international sources and thereby increase national resources as well.

In the Nordic countries, research funding agencies have a decade-long tradition of cooperation. NordForsk, established in 1995 and operating under the Nordic Council of Ministers, is a prime driving force behind the Nordic Research and Innovation Area (NORIA). NordForsk is both a strategic expert organ and a research funding body. The Nordic research funding agencies also contribute to research funding together with NordForsk. By facilitating and promoting research collaboration and mobility in the Nordic region, NordForsk aims at supporting research that

is seen as having considerable potential to result in long-term knowledge-based progress.

The Academy of Finland is also intensely involved in the development of the European Research and Innovation Area (ERIA) and expects synergy benefits from European cooperation. The European Commission has recently launched the ERA Framework Public Consultation with a view to identifying areas and issues linked to under- or unexploited cross-border synergies in Europe. This process will hopefully reinforce the partnership between the EU and its Member/Associate States in order to fully exploit the common European Research Area in which researchers, scientific knowledge and technology circulate freely.

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German-Russian collaboration in research and innovation

By Michael Schlicht and Marion Mienert

Strengthening the Russian-German cooperation in the field of applied, industry-oriented research is a major concern of the existing strategic partnership between Russia and Germany in education, research and innovation established in 2005. Common strategic interests are one important cornerstone of this partnership. In fact, the German High-tech Strategy 2020 and the Russian Strategy for the Development of Science and Innovation in the Russian Federation 2015 share a common vision. Both intend to adjust their national innovation systems to the challenges of the global economy, e.g. by creating lead markets, providing favourable framework conditions for innovations and by improving the collaboration between science and industry. The Russian strategic priority areas for innovative development match to a certain extent the focus areas and key technologies defined in the German High-tech Strategy, such as nanotechnologies, information and communication technologies and biotechnologies.

Furthermore, both countries have a long tradition in research collaboration, reflected in the agreement on Scientific and Technological Collaboration (STC) of 1987 as well as in a number of ministerial agreements concluded for individual research areas. The German-Russian Year of Education, Science and Innovation launched in May 2011 by the Federal Ministry of Education and Research (BMBF) and the Russian Ministry of Education and Science (MON) celebrates the good scientific relation between the countries, highlights the rich variety of best practice examples in research and innovation and reaches out for a new quality of their long-standing cooperation.

A fairly new initiative in this relationship is the joint funding programme between the Russian Foundation for Assistance to Small Innovative Enterprises (FASIE) and the Federal Ministry of Education and Research (BMBF). According to the recent OECD-report on the Russian innovation system, the founding of FASIE is considered to be one of the most successful initiatives of Russian innovation policy in the past years. Established in 1994 as a non-commercial state organisation by the Russian government, its mission is to support small innovative Russian companies in their efforts to develop new high-tech products by providing financial and informational support and creating an infrastructure for Russian SMEs.

The common aim of FASIE and BMBF is to stimulate German-Russian cooperation in innovation by supporting collaborative projects in the field of applied and industry-oriented research. Since 2008 annual funding competitions for German-Russian projects in applied research have taken place. Applicants are SMEs and research organisations from Russia and Germany. So far, a total of 42 German-Russian innovative projects have received funding in the amount of up to 100 000 Euros (4 million Roubles) per project from the Russian and the German side each. These projects have led to promising technological developments on the Russian and German markets.

Due to good results, this German-Russian initiative has recently been raised to the European level. In February 2011, funding parties from six European countries and Russia have jointly launched a multilateral funding competition for innovative SMEs and research institutions within the ERA-Net RUS initiative under German lead. Participants besides Germany (BMBF) and Russia (FASIE) have been France, Turkey, Greece, Israel and Switzerland providing a funding budget of 3.6 million Euros. In September 2011, ten projects were selected for funding.

Coming back to the German-Russian Year of Science, one of its major objectives is to stimulate effective German-Russian innovation partnerships and to bring together academia and industry of both countries. Some of the recent developments in the Russian innovation policy open up promising perspectives and show new collaborative potential to support this objective. The ambitious Skolkovo initiative – the creation of a Russian Silicon Valley outside Moscow – for instance, provides German industry and scientific institutions with multiple opportunities to start innovation partnerships with Russian organisations. And in fact, German companies such as Siemens are already involved, and several German research institutions have expressed their interest to commit themselves to this project.

The new Association of Innovative Regions in Russia established in 2010, is an interesting candidate for German-Russian innovation partnerships on the regional level. It unites eight Russian regions – Irkutsk, Kaluga, Novosibirsk, Tatarstan, Mordovia, Krasnoyarsk, Perm and Tomsk – with the common objective to foster the economic development of these regions by creating an innovative environment in the legal, economic and social creative spheres and promoting joint innovative, scientific and technological projects. The regions intend to involve international experience in the field of regional innovation strategies. A first step in this direction was taken with the Russian-German-French regional innovation conference in Novosibirsk in September 2011. Among the participants were representatives of German federal and regional authorities. A follow-up delegation of Russian regional representatives to German regions and clusters is being arranged for December 2011.

The establishment of innovation partnerships with Russia is also relevant on the European level. Cooperation in R&D and innovation is one of the objectives of the EU-Russia modernisation partnership agreed on in 2010. In view of the European growth strategy “Europe 2020” and the related flagship initiative “Innovation Union”, Germany plans to team up with Russian and other European partners to streamline current political initiatives in Russia towards dedicated innovation activities. This is especially relevant in order to strengthen Russia’s role in the upcoming European Research Framework Programme “Horizon 2020” which will bring closer together research and innovation, prioritise enabling technologies and address global challenges. Germany regards itself as one of Russia’s natural strategic partners in this venture.

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Economic development based on the economics for quality

By Vladimir V. Okrepilov

International experience suggests that maintaining stable economic growth and high competitiveness are possible only through the innovative development of economy, involving continuous quality improvement. Quality is the key to success, facilitating the reduced costs, production upgrade, promotion of the employees' initiatives, effective reproduction and industrial modernizing, improving the investment attractiveness of not only individual companies but also the entire regions.

Today economy can develop only through innovations. As the president of Russia Dmitry Medvedev highlighted in his article "Russia, go forward!"¹: "Within the upcoming decades, Russia shall become a country which welfare is ensured not only by the raw material resources but more by the intellectual ones: "smart" economy, creating unique knowledge, and the export of innovative technologies and products."

Primarily, the above requires establishing conditions that would allow implementation of the scientific, technical and technological developments existing in Russia in order to create products and technologies with high competitiveness.

A strategy for developing science-and-innovation sector, meeting the economy needs, as well as the mechanisms for investing and stimulating innovation process shall be formed.

As an example of such activity at the federal level we should mention the establishment of the "Skolkovo" Innovation Center, initiated by the Russian President Mr. Medvedev.

Strategic objectives of "Skolkovo" are as follows: high-tech industries development and overcoming dependence on natural resources as a driver for economic growth; improving the international competitiveness of Russia through innovation; giving new impetus to entrepreneurship development; changing legislative and investment environment of Russia in order to attract long term investments.

Achievement of these objectives is ensured by the specific legal regime of the "Skolkovo" Innovation Center, which provides tax and customs privileges, as well as simplification of procedures for urban construction, sanitary and fire safety rules, rules of technical regulating and terms of interaction with public authorities.

Total financing of the project is estimated at 120-180 billion rubles. In December 2010 the first 16 projects with the "participant" status were identified, 11 of which have received grants for implementation with a total amount of three billion two hundred million rubles.

Companies of the North-West region are already involved in the "Skolkovo" projects. In particular, in the project on establishing a Research Center on thin-film technology in the energy sector at the Physical-and-technical Institute n.a. Ioffe. The second project, to be implemented with the participation of St. Petersburg scientists is the development of original drugs to treat viral etiology infections and methods of viral diseases diagnostics.

Since innovations are aimed at improving quality, when evaluating the economic effects of their implementation, one can simultaneously assess the economic impact of quality improvement. As for the goals of innovative development, particularly of a region, they can be identified based on the objective of improving quality of products, services and activities.

Moreover, using modern methods of the quality science any problem at any level can be solved, regardless of the type of social system, ownership forms, production type, size and number of personnel of a company. Long-term experience of the author in the field of quality within different socio-economic systems (planned economy, transition economy, market economy), convincingly proves the validity of the above thesis.

In particular, using methods and approaches of such scientific field as the economics for quality, topical economic and organizational tasks related with the development of the "Skolkovo" Innovation Center can be achieved.

Economics for quality is a part of economics, which studies the interrelation between the qualitative characteristics of objects or phenomena and the economic indicators, covers all areas of economic science and extensively involves the natural, social and technical disciplines (mathematics, physics, chemistry, sociology, psychology, jurisprudence).

Economics for quality is a unique phenomenon: being one of the branches of the economic science, it is an integral part of all other areas, which focuses on the need on incorporating quality characteristics, studied in various aspects. This also applies to labor economics, economic statistics, regional and sector economy.

The ultimate goal of economics for quality as a science is the formation of models, adequately reflecting the role of quality in the natural, technical, social and legal mechanisms of the economic systems functioning.

Current results of research in the field of economics for quality form the basis for assigning the status of a scientific school to a team of specialists involved in research of the economics for quality problems in relation to key areas of socio-economic development of society.

Implementation of economics for quality methods and approaches, including those developed on the basis of quality management methods, will allow to:

- Ensure optimal use of enormous financial resources, allocated and being invested into the "Skolkovo" Innovation Center, preventing their inefficient spending;
- Efficiently organize the entire process of developing and manufacturing high-tech products of the Innovation Center.

Thus, given the current economy, innovations shall be evaluated not only in terms of scientific and technical level of the project, but also in terms of quality, thereby evaluating the possibilities of implementing a project and the expected effectiveness from its application. This approach is based on the principles of total quality management, which were developed by scientists of many countries within the International Organization for Standardization (ISO). The first step towards implementing the above approach is the introduction of quality management system. Such system allows controlling and effectively organizing the process of innovative products development, the financial resources consumption and, therefore, ensuring a high quality of the results.

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¹ "Russia, go forward!", published on 10 September, 2009, on the official website of the Russian Federation President: www.kremlin.ru

Russia-EU partnership for modernisation – words and reality

By Frank Schauff

The modernisation of society and the economy has become a hot topic on the Russian political agenda. As a result the attitude towards overseas companies has changed. Unlike in the past, European investors are seen not only as profit takers, but also the drivers of much needed technological innovation. Nowadays, it is easier for European companies to operate in the country. However, the Russian government must provide further support to foreign investors to make their words a reality.

What Russia desperately needs is modernization. Despite this, some foreign investors think Russians seem to be less interested in technological progress when oil prices go up. Membership in the WTO, which could stimulate competition and economic growth, is just one of the proposals for modernisation. Hopefully the WTO accession process will be completed sooner or later. However, many sectors, such as the automotive industry, are already competitive thanks to a number of state programmes supporting foreign investors and joint Russia – EU ventures.

Power of ideas: modernising Russia's government

The term "modernisation" was introduced to the Russian political discourse in 2009, after the global recession cut prices for Russia's major exports, such as oil and gas. Since 2005 Russia has been in talks with Germany over a "modernisation alliance," which could go beyond a few state supported infrastructure projects, such as the Nord Stream gas pipeline. However, it was the global crisis that gave Russia a final push towards a closer cooperation with the EU.

The concept of a modernisation partnership has definitely helped European companies to facilitate a dialogue with Russian authorities. Because of this western industries have already benefited from the idea of technological innovation as such. It has given them an opportunity to develop more co-operative relationships with local governments. In some regions, such as Kaluga, the changes were dramatic and they resulted in the rapid development of several different industries. Beginning in 2006, this new policy has attracted over \$4 bn of foreign investments.

According to the State Statistics Service, in 2010 Kaluga saw industrial growth of more than 43 percent (the national average in Russia is around 4 percent). Volkswagen, Samsung, General Electric and many other companies came to Kaluga to implement their projects. Furthermore, European business is still expanding in the area. In September 2011 Volvo Construction Equipment said it would invest approximately \$52 mln to build a new 20,660-square-meter excavator plant in Kaluga on the 15 hectares of land the company acquired in 2007. Volvo plans to begin production in the first quarter of 2012.

Can innovation thrive in isolation?

No doubt, Russia cannot be modernised without European companies, even though a few years ago the Russians had ambitions to develop the necessary technologies on their own. However, later they realised it is more expensive and time-consuming than to purchase them abroad. According to the Russian nanotechnology corporation Rosnano, the share of enterprises introducing new technologies in Russia is only 9.6 percent compared to 40-50 percent in most countries in Europe.

There are a number of obstacles for modernisation within the country, and most of them are obvious. Firstly, there is a brain drain: starting in the end of 90s, qualified people began leaving the country. Secondly, the system of education cannot meet the expectations of modern business. Unlike in the west,

Russian universities are only educational institutions, not research institutions which are linked to industries to fulfill their needs. Thirdly, the state budget for research is rather low in comparison with most European states. Only 1 percent of new technologies are sponsored by the government. Russian state spends 0.5 percent of GDP on science compared to 3.5 percent of GDP in neighbouring Finland.

However, there is another problem. In Germany, for example, the idea would be that the universities should work closely with the best foreign institutions to generate innovation. Russia, however, is not included in the international dialogue. Why? The Cold War and the isolation of the Soviet past, as well as a language problem might be some of the reasons. Also, for quite a while the Russian government has been focusing on the major state projects, such as Skolkovo and Rosnano, ignoring small and medium size business ventures.

Gradual change in not progress

At the last Forum of Russian and European businesses in St Petersburg, organised by our Association, most investors were quite sceptical of this policy. SME are the drivers of economic modernisation in the EU, generating 70% of GDP in comparison with 17% in Russia. The chief representatives of E.ON Ruhrgas, Enel, Fortum, Roca Rus, Specta, who spoke at our Forum, represent a variety of industries. However most of them expressed similar concerns regarding the need for the right environment for economic modernisation, including reliable institutions, high quality infrastructure and respect for individual initiatives.

The Russian government may have already realised that top-down modernisation is not the best approach. Speaking at the Russia Calling investment forum in October 2011, Vladimir Putin said the state's direct presence in the economy will continue diminishing on a step-by-step basis. He promised the government will gradually withdraw from state-run corporations and privatise its controlling stake. Also, major projects will be supported by an array of developmental institutions, such as Vnesheconombank (the Bank of Foreign Economic Activity) and the Russian Fund of Direct Investments. But only time will show if this "gradual change" Mr. Putin promised can actually help Russia's oil and gas export based economy. Is "slow modernisation" within the current political system enough for an emerging economy still far behind the developed markets? Only time will tell.

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Russian Technology Transfer Network – gate to Russia's innovations

By Oleg Luksha

One particular challenge to Russia's ability to translate intellectual capital into economic opportunity – a challenge that is not only surmountable but also has the potential to alleviate other innovation barriers – is the lack of networking skills among Russian technology and R&D organizations. A culture of innovation based on open networking and information sharing, attributes that characterize innovation hubs like Silicon Valley, has yet to fully develop in Russia. Such a culture is crucial for successfully seeking and collaborating on international projects and bringing innovation to the market. The current dynamics of Russia's innovation culture are by and large the legacy of the Soviet system, which kept information centralized and closely guarded. Many post-Communist researchers, professionals and policymakers – regardless of their talents and the sincerity of their efforts to build an innovation economy in Russia – grew up under this system and do not have the necessary networking skills to leverage relationships both within Russia and, most importantly, beyond its borders. Support is needed to nurture new ways of networking, sharing information, and creating an innovation infrastructure across Russia.

Understanding these challenges and taking steps to proactively address them were the driving forces behind the creation of the Russian Technology Transfer Network (RTTN). Since its founding in 2002, RTTN has worked with the global business and research community to tap into the scientific and technological advances made in R&D centers and universities across Russia. RTTN, with its coordinating team based in Obninsk, Kaluga Region, is an association of over 90 Russian innovation centers from more than 40 regions of Russia and the CIS that aggregates information on R&D offerings and requests in Russia and neighboring states and serves as an entry point for potential technology partners. Given Russia's vast territory, its potential language barriers and information gaps between Russian regional and foreign entities, RTTN's work is a critical element to developing the country's national innovation infrastructure.

RTTN has two main objectives:

- To facilitate technology transfer between Russia's science and technology sector and various industry players through information dissemination. This is achieved through the organization's online database of technology offers and requests, which includes information coming from the local databases of RTTN members across Russia and the CIS.
- To help its members, which are mostly Russian SMEs and R&D organizations based outside of Moscow, build the capacity needed to identify and pursue international partners and cooperation opportunities. This is done through various networking opportunities and capacity-building initiatives, including conferences, brokerage events and workshops for RTTN members, partners and clients.

Rather than being created by government initiative, RTTN was developed from the ground up, and its growth has been reinforced by the will of its members. The network was initiated by the Obninsk Center for Science and Technology, a leading Russian R&D center located in Obninsk, in partnership with the Koltsovo Innovation Center, which is located in the Novosibirsk Region. To build the network's capacity, the centers sought cross-border collaboration opportunities through various EU entrepreneurship programs, including the Technical Assistance to the Commonwealth of Independent States (TACIS) program, which is currently integrated with EuropeAid. Since 2008, RTTN together with other two networking organisations in consortium – Russian Union of Innovation Technology Centers and Russian Agency for SMEs support, became a member of the Enterprise Europe Network (EEN), a group of more than 580 regional business support organizations from 47 countries (EU member states, associated countries and third countries), including chambers of commerce, technology centers and research institutes that provide

integrated business and innovation support services for SMEs. Through the national project Gate2RuBIN (Gate to Russian Business and Innovation Networks) EEN Russia consortium attracted the best business and innovation support organisations from Russia to EEN activities being one of the most active third countries partners in EEN.

To specifically address the lack of networking savvy, RTTN developed and published a networking guide entitled, "How to Effectively Network/Communicate in International R&D projects." The guide, available in both English and Russian, was created under the framework of FP7 ISTOK -SOYUZ project, which is an EU project designed to promote R&D cooperation and knowledge transfer between the EU and Eastern Europe and Central Asia. Inno Group, a Europe based consulting company that designs and implements innovation strategies, was also instrumental in helping RTTN establish itself and launch such initiatives as the guide.

As a result of RTTN's initiatives, RTTN centers have become the backbone of the innovation infrastructure in many of Russia's regions, especially driving forward international cooperation initiatives. The Novosibirsk-based company Dia-Vesta, which has produced sugar-free, vitamin-fortified muesli bars and other health foods since 1999, serves as an excellent example of the importance of building an international networking capacity.

A few years ago, Dia-Vesta turned to RTTN's Novosibirsk affiliate, Innovation Center Koltsovo (ICK), to find a partner to jointly manufacture muesli bars with prebiotics and probiotics and market them in Europe. Under the guidance ICK and with the active support from other Gate2RuBIN consortium members, Dia-Vesta participated in the 4th Taste-Nutrition-Health International Congress, which was organized by the EEEN in Dijon, France in March 2009. ICK provided a package of marketing and business services to equip Dia-Vesta for the event, including developing the company's technology profile, creating presentations, commercial proposals, hand-outs and advertising materials, assisting with obtaining visas, and finding Russian-French interpreters. As a result, Dia-Vesta successfully established contact at the event with the Slovenian company Fructal, which sells fruit juices and fruit-based snacks throughout Europe. Following additional negotiations in Slovenia, Dia-Vesta and Fructal agreed to partner.

Such success stories are proof that innovation and intellectual capital are quickly becoming key factors for regional competitiveness in Russia, replacing more traditional factors like natural resources endowment, location and physical labor capacity. Through the work of RTTN and similar initiatives, Russia is creating an innovation infrastructure and re-defining its R&D culture from the ground up.

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Finnish-Russian Innovation Centre – main results of activities

By Igor Kuprienko

The Finnish-Russian Innovation Centre (FinRusInno) was established in beginning of 2008 as the joint initiative of Finnish Innovation Centre «Finnnode Russia» and municipalities of Lappeenranta and Imatra. The main goal was defined as: to promote international cooperation in the field of innovations by attracting partners and public funds in Russia and Finland. The Centre activities are focusing on innovations in ICT field, nanotechnologies, forestry, energy efficiency in construction and real estate management, transport, logistics, enterprises, researches, education etc.

In fact, FinRusInno has become the cooperation platform between Finnish and Russian local authorities, companies and organisations, universities and R&D institutions. Around 6000 persons were visited the Centre during this time. About 1000 Russian and Finnish companies have learnt how to work together. Nearly 100 of St.Petersburg based companies have made the decision to explore the European market by establishing the business in Finland.

FinRusInno is intensively supporting the commercialization of innovations activities. Number of competitions, training sessions, consulting activities was done. Lappeenranta Innovation together with Finnnode Russia and group of partners has initiated the remarkable project, which is focusing on Commercialization of Russian innovative companies. Already in the middle of project lifetime, 3 companies have started its operation on European market. More that 300 companies has applied to take part in the project, and accessed to the commercialization process.

Above mentioned digits are demonstrating the quantity results. Beside the digits, the Centre has made a huge influence on integration of Finnish and Russian Innovative systems. This experience has moved to EU-Russian level. One of Important event is European-Russian Innovation Forum, which is yearly organized in Lappeenranta. First Forum is famous by remarkable visit of the Prime Ministers of Finland and Russia. During visit of Mr. Putin, number of bi-literal agreements was signed. Second Forum was mainly focused on business cooperation. The Third Forum will be organized in June 2012 in cooperation with European Business and Innovation Centres Network (EBN). Organizers are expecting nearly 1000 participants from all around Europe and Russia.

Moreover the European-Russian Innovation Forum is organized in close cooperation with City of St.Petersburg and logically connected to St.Petersburg International Innovation Forum, which is traditionally organized in a last week of September in St.Petersburg. FinRusInno team in cooperation with European-Russian InnoPartnership are actively supporting the St.Petersburg Forum by bringing the European speakers and organizing the Forum events focusing on EU-Russian cooperation in innovation field.

FinRusInno is an initiator of development the cooperation between Finnish and Russian Universities. The alliance of Finnish and Russian Universities were formed in 2009 with a name of Finnish-Russian Innovation University (FRIU). For a moment 3 Finnish and 6 Russian universities are developing the joint programmes in education and R&D. Universities – members of FRIU – have several Double Degree education courses, which provide the

possibilities for students on having two diplomas from Russian and Finnish University.

Although, FinRusInno is providing the services to all Finnish and Russian companies and organisations, the special focus is on cooperation between St.Petersburg and Lappeenranta can be illuminated. Two Lappeenranta municipal companies and two founders from Russia have launched the common company – European-Russian InnoPartnership (ERIP), which is essential part of the development the cooperation on cross-border environment. ERIP, FRIU and FinRusInno are forming the Regional Open Innovation Platform. The Platform is providing similar services for innovative companies from both sides of the border, assisting on internationalization of the business and easy access to cross-border markets.

Activities of FinRusInno has clearly demonstrated that innovation system of Finland and Russia has strong differences but provide added value to each other. Russian innovations are lacking the demand on local market and exploring the worldwide opportunities. As the newcomers, they meet the challenges, which are not in common practice in Russia. The Finnish innovators have those experiences, which are lacking from Russian side. Another important advantage is a strong support of innovations by Finnish government. Both of these opportunities are motivating the Russian innovators (primary St.Petersburg based) on choosing Finland as the first step to internationalization processes. The activities of Finnish-Russian Innovation Centre is the important daily process supporting economies of both countries by initiating and assisting to new innovative companies and organisations on start-up and growing stage.

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Innovation and journalism – convergence

By Turo Uskali

Innovation journalism, a phrase coined in 2003 by Dr. David Nordfors while working at Vinnova, the Swedish National Agency for Innovation Systems, refers to a type of journalism covering innovation, innovation processes, and innovation (eco)systems.

Nordfors noticed that news organizations are vertical institutions that organized news production in silos of special focus area such as politics, business, culture, and science. Since news organizations did not have a silo for innovations they could not report properly on the topic. Nordfors also realized that to conduct good journalism about innovations, all the special focus areas of journalism should be combined.

Furthermore, any new 'thing' always needs a name, as well as metaphors and narratives in order for it to be discussed. Journalists play an important role in both innovation discussions and innovation communication. Journalists invent, test and spread the new words and narratives so that new things can be discussed and introduced.

Nordfors put his observations into practice, in 2004 by founding the innovation journalism fellowship program for mid-career Swedish journalists in Sweden.

Silicon Valley in Northern California is globally the leading innovation hub and is the location of the world's leading innovation ecosystem involving academic centers of research excellence, innovative hi-tech enterprises (Hewlett Packard, Intel, Oracle, Cisco, Google and Facebook), a skillful workforce and venture capital. Furthermore, Silicon Valley is home to a variety of traditional new organizations (the San Francisco Chronicle) and digital start-ups (Venture Beat).

A natural progression of Nordfors' innovation journalism project was a move from Sweden to Stanford University in Silicon Valley in 2004. The innovation journalism (INJO) program combined practical news-room work (Silicon Valley, New York, Boston and Washington D.C.) that the participants both greatly appreciated and highly valued, and lectures on innovation theory. In 2006, Helsingin Sanomat Foundation and Sitra began co-funding Finnish journalists to participate in the INJO program at Stanford University. During the seven years that Stanford University hosted INJO (the program closed abruptly in June 2011), Swedish journalists (40) and Finnish journalists (15) formed the core of the journalists who completed the program and shared their experiences of best practices at the annual INJO conference at Stanford University.

Fortunately for INJO style programs, innovations in the digital era disseminate at high speed, and by the time Stanford University ended the INJO program in 2011, several Finnish initiatives had matured or were in the process of maturing. In 2004, the first Finnish innovation journalism course for mid-career journalists was launched at the University of Tampere. In 2005, for the first time anywhere, an INJO style course for undergraduate journalism students was provided at the Department of Communication, University of Jyväskylä. In 2007, an association for innovation journalists was founded, in Finland; in 2009, the University of Helsinki organized the first Scandinavian conference on innovation journalism, and in 2011 the first text-book about innovations and journalism was published in Finland.

Innovative concepts leading to concrete innovations are globally accepted as being necessary for societal welfare and development. Yet, Finland being the sole global provider of tertiary level INJO courses reflects the low-level priority both media institutions and enterprises place on innovation journalism.

Due to the global use of high-speed Internet and mobile telephony communications, we have entered a period of open innovation ecosystems, which offer new opportunities and challenges for communication professionals. A key prediction is that the next era will be a ubiquitous networking society based on real-time mobile social media communications, data streams and The Internet of Things (which refers to the fact that more machines and things are already connected to the Internet than there are human beings living on earth). All these new technologies and their implications should be constantly analyzed and discussed by innovation journalists.

In this context any European journalists who participated in Stanford University's INJO program, or have the opportunity to participate in INJO style courses in the EU are valuable assets for the future of European journalism and European innovation ecosystems.

Therefore, I propose that a special center or institute for studying the interplay between innovation and journalism should be created in the Baltic region. The main aim of the center would be to build networks and activities for researching and educating future communication professionals about innovations.

While Swedish and Finnish journalists and researchers who have completed the INJO program in either Sweden or Silicon Valley could be considered as potential leaders of an initiative to create an INJO center, the location requires, perhaps, an innovatory approach. Around the Baltic Rim are nations whose media developed their use of ICTs in parallel with the development of computer hardware and software since the 1980s (Scandinavia and Germany). There are also those countries that have since 1991 either had to play ICT catch-up with their neighbors in the Baltic region (Latvia, Lithuania and Poland) or planned and executed an outrageous tiger's leap (Tiigrehüpe) into the future, which ensured that Estonia within fifteen years became the most Internet-ready nation in the Baltic and perhaps the EU. Where better than to locate a center of innovation journalism, but Tallinn?

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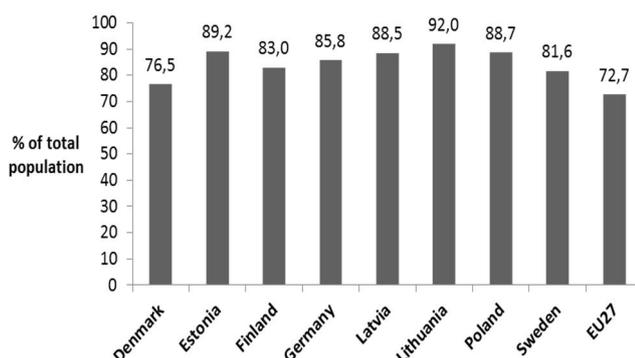
Innovations – a key to the future competitiveness of the Baltic Sea region

By Hanna Mäkinen

The economic, political and strategic significance of the Baltic Sea region (BSR) has been constantly growing. While the region has grown more prosperous, both the merchant shipping and passenger traffic on the Baltic Sea have increased. Despite of its small size, the Baltic Sea is currently among the world's busiest sea areas, accounting for up to 15% of the world's cargo transportation. The Baltic Sea countries have intense import and export relations with each other and the trade within the region is of great significance for the BSR countries. The Baltic Sea region is also an important centre of economic power in Europe – for instance, the EU member states in the region account for some 30% of the EU's GDP. The significance of the BSR has been acknowledged also in the EU that has adopted a Strategy for the Baltic Sea Region – the first EU strategy for a macro-region – aiming to facilitate the development of the region.

However, to maintain its global competitiveness in the future, the Baltic Sea region needs to preserve and improve its technological capability and innovativeness. Nowadays innovation is regarded as a central component of the knowledge economy and essential in meeting the challenges of the global economy. Innovations emerge from research and expertise. These, on the other hand, require educated people and investments in research and development (R&D) activities. As shown in Figure 1, the BSR countries have strong potential in well educated people – in all countries (excluding Russia on which the data is not available) the share of population that has completed at least upper secondary education is above the EU27 average.

Figure 1 Population between 25–64 having completed at least upper secondary education in the BSR countries*, 2010



* Data for Russia not available
Source: Eurostat.

The proportion of GDP spent on research and development, however, varies in the BSR countries (Table 1). In Denmark, Finland and Sweden it is more than 3% which is one of the five headline targets of the EU's growth strategy "Europe 2020". On the other hand, in Latvia, Lithuania and Poland the share is well below 1%. Indeed, a disparity between eastern-western / northern-southern parts of the region is still visible here. A similar difference can be seen in the proportion of employment in high technology sectors compared to total employment. However, the proximity of knowledge intensive economies of the BSR, such as Finland and Sweden, can benefit the three Baltic States, Russia and Poland. The transfer of knowledge and information within the BSR can help the countries to reinforce their R&D capacities in the future.

Table 1 R&D expenditure as a percentage of GDP in the BSR countries, 2005–2009

	2005	2006	2007	2008	2009
Denmark	2,46	2,48	2,58	2,87	3,02
Estonia	0,93	1,13	1,10	1,29	1,42
Finland	3,48	3,48	3,47	3,72	3,96
Germany	2,49	2,53	2,53	2,68	2,82
Latvia	0,56	0,70	0,59	0,61	0,46
Lithuania	0,75	0,79	0,81	0,80	0,84
Poland	0,57	0,56	0,57	0,60	0,68
Russia	1,07	1,07	1,12	1,03	1,24
Sweden	3,56	3,68	3,40	3,70	3,62

Sources: OECD, Federal State Statistics Service of Russian Federation, Statistics Lithuania, Central Statistical Bureau of Latvia.

Still, qualified labour force and investments in R&D are not the only preconditions for innovation activity. A climate that encourages innovation, creativity and a certain level of risk-taking is an important part of a successful innovation system. The Knowledge Economy Index (KEI) takes into account whether the environment is conducive for knowledge to be used effectively for economic development (Table 2).

Table 2 Knowledge Economy Index (KEI) of the BSR countries, 2009

Country	KEI	conomic Incentive Regime	Innovation	Education	ICT	orld ranking in 2009	hange in rank from 2000
Denmark	9,52	9,61	9,49	9,78	9,21	1	2
Sweden	9,51	9,33	9,76	9,29	9,66	2	-1
Finland	9,37	9,31	9,67	9,77	8,73	3	-1
Germany	8,96	9,06	8,94	8,36	9,47	12	3
Estonia	8,42	8,76	7,56	8,32	9,05	21	7
Lithuania	7,77	7,98	6,70	8,40	7,99	31	3
Latvia	7,65	8,03	6,63	8,35	7,58	32	4
Poland	7,41	7,48	7,03	8,02	7,09	37	-2
ussian Federation	5,55	1,76	6,88	7,19	6,38	60	4

Source: World Bank.

Moreover, for an innovation to succeed, it is important that it will respond to the needs of customers – simply to make an invention is not enough. Thus, instead of only relying on a research-centred approach, market oriented innovation development and commercialisation of innovations is needed, which requires cooperation between public and private sectors. In the BSR countries, the innovation systems differ: Whereas in Denmark, Finland, Germany and Sweden the business sector actively participates in innovation process, in Latvia, Lithuania, Poland and Russia – and to a lesser extent in Estonia – the role of the private sector still remains limited.

Some sectors in the Baltic Sea region hold particular potential for innovation development. The region in general appears to be specialised in some technological fields, particularly ICT and biotechnology. Medicon Valley, a life science cluster that spans the Greater Copenhagen area in Denmark and the Skåne region of southern Sweden, is one example of a successful high-technological inter-regional cooperation in the BSR, which is not limited within national borders. The creative industries sector (particularly software consulting), on the other hand, has experienced significant growth in Baltic States. In the future, energy and

environment could arise as a special focus area as there is great innovation potential in renewable energies. Moreover, climate change and energy are priorities of both Europe 2020 and the EU Strategy for the Baltic Sea Region. The environmental issues are particularly important for the Baltic Sea region countries, as the Baltic Sea is one of the world's most polluted seas whose main challenges derive from the conditions of the maritime environment. Thus it would seem that a clear demand for innovations related to sustainable development exists in the BSR. Furthermore, common specialisations could create synergy advances for the whole region.

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Financial constraints on the modernization of the Russian economy

By Richard Connolly

Not for the first time in history has the modernization of the Russian economy been a subject of intense public discussion, both inside and outside Russia. The most recent iteration of this discussion can be traced back to the period immediately before the onset of the Great Recession in 2008. Even as the prices of Russian exports soared in 2007-08, government officials were preparing a blueprint for the future diversification and modernization of the Russian economy, eventually articulated in the 'Concept of Long-term Socioeconomic Development of the Russian Federation to 2020'. However, before the Strategy was even signed into law, the ruptures associated with what was at first primarily a global financial crisis sent Russia into a sharp and deep recession. Of all the G-20 economies, the recession suffered by Russia during 2008-9 was the most severe; not only did the economy contract by 7.9 per cent in 2009, but because its pre-crisis growth rate of 8.1 per cent (in 2007) was so high, the 'swing' in performance over 2007-09 (minus 16 per cent) was among the worst in the world.

The Russian experience of the Great Recession prompted the leadership to address the issue of economic modernization and diversification with increased urgency. This occurred as the factors that had contributed to the rapid pace of expansion before the crisis showed signs of exhaustion: industrial capacity utilization was reaching its limits, signalling an end to the investment-light years of growth; the average productivity level in the economy remained low by international standards, notwithstanding wide regional and sectoral differences; the role of the state in the economy had increased gradually since 2002; the dependency ratio was projected to begin its inexorable rise in 2010, heralding an era of fiscal weakness; and the shortage of modern infrastructure was reaching chronic levels. Added to Russia's well documented institutional weaknesses, the list of challenges facing the Russian economy looks extremely daunting.

There is, however, a common solution to these problems: a sustained increase in the level of private investment. Higher private investment should, all things being equal, facilitate the diversification and modernization of the economy, relieve the pressure on the level of industrial capacity utilization, raise productivity levels, and enable a smaller and older population to generate higher levels of output. Unfortunately, the rate of investment in Russia has been comparatively low. Investment as a proportion of GDP declined over the 1990s, reaching a post-socialist low of 14.4 per cent in 1999, before rebounding to 22 per cent in 2008 after a mini investment boom between 2005-08. Amongst major low- and middle-income countries, only Brazil had a lower rate of investment. If Russia is to modernize, this will have to change.

But what is holding back private investment in Russia? There are a number of apparently plausible explanations, including the poor business environment, declining levels of human capital, and archaic infrastructure. All these explanations, however, are constants in Russia's post-socialist history; as such, it is difficult to sustain the view that they explain the variable rate of private investment in Russia, especially that observed in the years before the crisis. Put simply, if the business environment in Russia

has always been poor, if human capital has been on a downward trend since the 1990s, and if infrastructure that was bad to begin with has only got worse, how can they explain the resurgence in private investment that occurred after 2004? (Incidentally, the year after the Yukos episode.) It is likely that while these obstacles are surely undesirable, and do play an important part in deterring investment decisions in some cases, they are not decisive. A better explanation of what is holding private investment back in Russia needs to explain why investment increased between 2005-08. In short, one needs to identify an explanatory variable that moves in line with investment. The only explanation that satisfies this requirement lies in the poor state of Russia's financial sector, suggesting that restricted access (not necessarily cost) to finance is the binding constraint on private investment in Russia.

An examination of survey data from a variety of sources reveals that firms consistently report that access to finance is one of the most problematic factors for doing business in Russia. Furthermore, the reporters in these surveys are existing firms, with the sample excluding firms that would have *existed had the binding constraint been removed*. As such, reporting firms may have been politically well connected, part of larger financial-industrial groups, or large enough not to have required finance from banks. This suggests that while access to finance is acknowledged to be a problem in existing firms, it may be an even bigger problem for unobserved cases that failed to get started in the first place or, if successful in starting, perished soon after. Moreover, according to data from the World Economic Forum, Russia's financial system is extremely poor by international standards, with Russia ranking 125 out of 139 countries in 2010, with Russia's ranking worsening over time. Evidently the quality of financial intermediation in Russia is extremely poor. Why is this so?

There are four main factors underpinning the weakness of the financial sector in Russia. First, the state plays too large a role in the allocation of surplus savings due to its overbearing presence in the Russian banking sector. Second, the Russian banking system is composed of many small and ineffective banks, and a few large, state-controlled banks, that favour lending primarily to large enterprises, or those from selected regions of the country; in both cases, the recipient firms are often politically well connected. Third, the financial system is bank-centric, with few sources of non-bank finance. Finally, there is a low level of market penetration by foreign banks. Because real interest rates are negative, and because of these structural flaws within the financial system, demand for credit exceeds supply in Russia, leading to credit rationing that favours larger, more established organizations, and discriminates against newer, smaller entrants. As a result, the size of the Russian banking system is extremely small when compared to other emerging economies (see Figure 1).

In the years before the crisis, significant institutional reform and reorganization within the banking system resulted in the constraints on access to finance being relaxed, resulting in an episode of rapid credit expansion that caused investment to rise and drove Russia's pre-crisis economy, more so than even rising prices for Russia's natural resource exports. What is important to

note is that as Russia's banking system began to do what banks are supposed to do – channel savings into profitable investment opportunities – so private investment grew at a healthy rate, an episode that needs to be repeated and sustained if healthy rates of economic growth are to return to Russia in the near future. This also suggests that further reform of the financial sector should be placed at the centre of any strategy for economic modernization, ahead of the expensive and potentially ineffective state-led initiatives to foster knowledge-based industries.

Dr. Richard Connolly

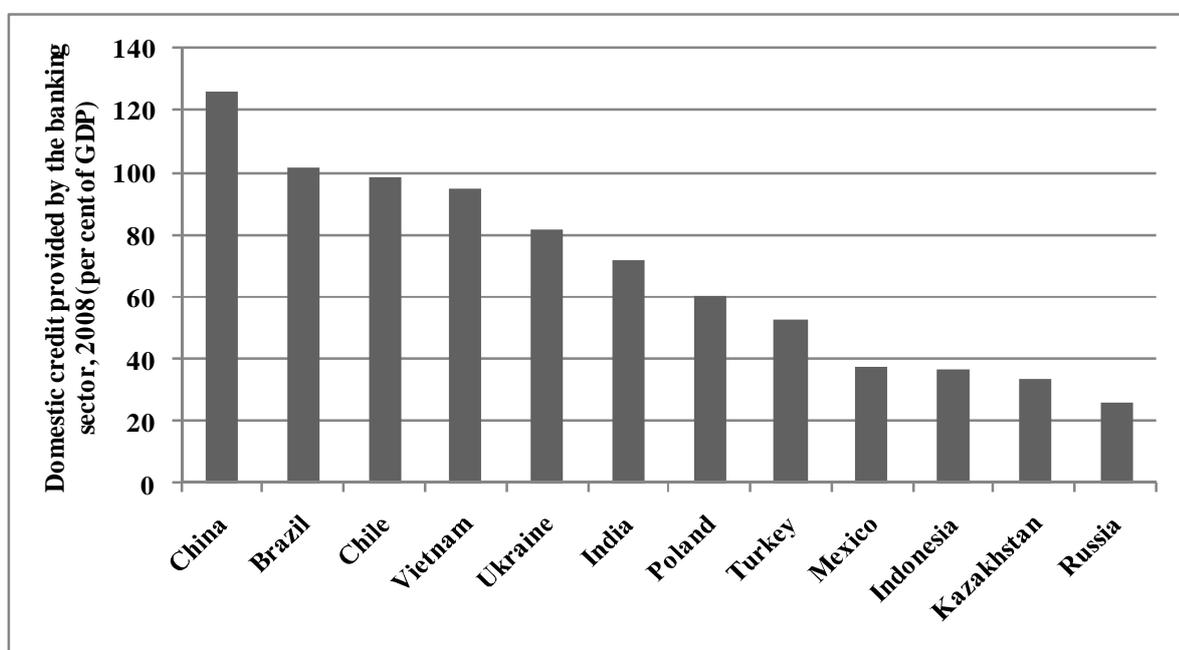
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Figure 1. The Relative Size of the Russian Banking Sector, 2008 (domestic credit provided by the banking sector to the private sector as a percentage of GDP)



Source: World Bank (2010)

Using Foresight as an instrument for constructing future vision for key sectors of Russian economy – results and lessons

By Alexander Chulok

Forecasting of long-term economic development is becoming more and more popular in Russian's innovation and industrial policy agenda. Practical implementation of more than thirty forecasting projects was launched recent years¹. Main objectives for such projects were: identifying key drivers and trend for Russian economy, identifying most critical technologies, elaborating scenarios for key sectors and science directions, policy recommendations, science priorities, regional plans, building expert networks based on federal institutes, technology roadmaps for science directions and key sectors. In the fairway of such initiatives most big Russian companies² activated development of long term innovation strategies, scenarios and plans.

As a basic instrument for meeting such goals Foresight conception can be used. Developed and developing countries have been using Foresight for about fifty years for constructing common vision at corporate, industrial and national level between key stakeholders³.

Within one of the key Foresight projects in Russia "Forecast of S&T development of Russian economy by the period of 2030"⁴ main object was the determination of necessary technologies and technologic solution, in accordance with scenarios of key Russian economy sectors.

The results for sectors were highly diverse due to different sectoral structures and a number of sectors⁵. What we can do in brief is to show some examples of some results for several sectors.

We constructed the expert pull to provide sectoral information on the interested questions which combined for each sector:

"Synthetics experts" – high level experts, industry strategies designers, consultants;

"Industry experts" – top- and production managers of the main private and public companies;

"Science experts" – leading academic institutes representatives.

As a result for each key sector we got four to eight prospective scenarios. We used in-depth interviews, focus groups, and surveys to provide communication with the expert pool. To discuss preliminary version of the visions and present final results we used round tables and conferences.

As an example of sector scenario demonstration we can provide description of two basic models for pharmaceutical and medical industries. We defined common and specific key characteristics of each model. Then we divided main perspective technologies according to these models and defined those which are invariant to the models and those which are specific.

Some interesting lessons and conclusion are:

Russian sectors are multistructural, they are characterized by obviously many different beneficiaries and actors, different technological and economic structure – as a result the Government should switch from the policy of unique instruments, towards the personalized innovation policy, taking into account the specification of each sector (sub sector);

For some sectors (ferrous and non ferrous metallurgy, ICT) it's not possible to get to the desired future directly: one should get a "bridgehead" fist, and then through the "switching models" archive the final vision;

Difficulties with codification" of obtained results: one should construct a "meta language" of the project which could translate expert materials at list from two languages: technical and economic;

Insufficient level of contribution from federal and regional authorities in formation of visions and scenarios: quality of the project depends essentially on experts involvement in application of technologic modernization policy buildup at a level of interested ministries;

Lack of "success stories" and good demonstration examples restricts potential demand from business society for participation in foresight and forecast projects.

¹ Starting from the year 2006 forecast and foresight projects were launched by the key Russian Ministries (Ministry for Science and Education, Ministry for Communications and Informatization of the Russian Federation, Ministry of Industry and Trade), state-owned corporations (Rosatom, Rosnano) and some Russian regions (Tomsk, Saint-Petersburg).

² At least those who had state capital were obliged to develop the "Innovation development plan" by the Government prescription.

³ Most recent definition of Foresight considers it as "an open and collective process of purposeful, future-oriented exploration, involving deliberation between heterogeneous actors in science and technology arenas, with a view to formulating shared visions and strategies that take better account of future opportunities and threats" (Keenan, M. and Popper, R. (2007), Research Infrastructures Foresight (RIF), ForeIntegra, Brussels: European Commission).

⁴ Supported by the Ministry for Science and Education of Russian Federation.

⁵ We investigated ten key sectors: energy, iron and nonferrous-metals industry, agriculture, chemical industry and pharmaceuticals, aircraft industry, commercial shipbuilding and information sector.

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Figure 1. General logic of scenario generation within the project “Forecast of S&T development of Russian economy by the period of 2030”

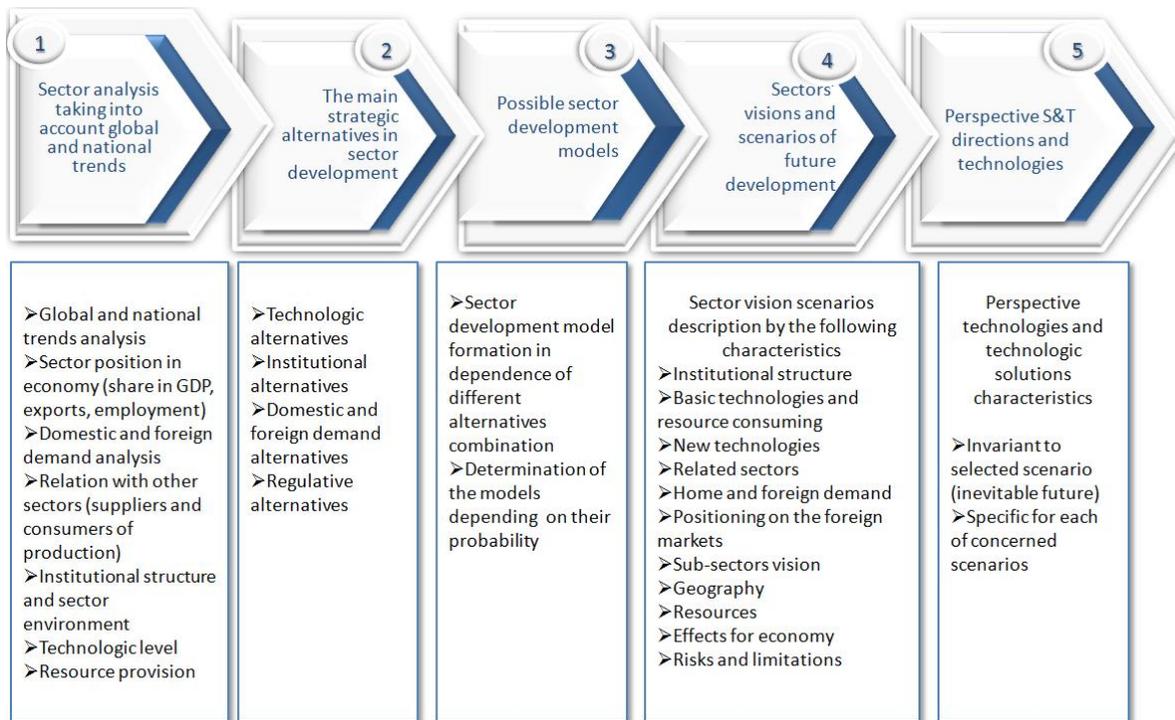
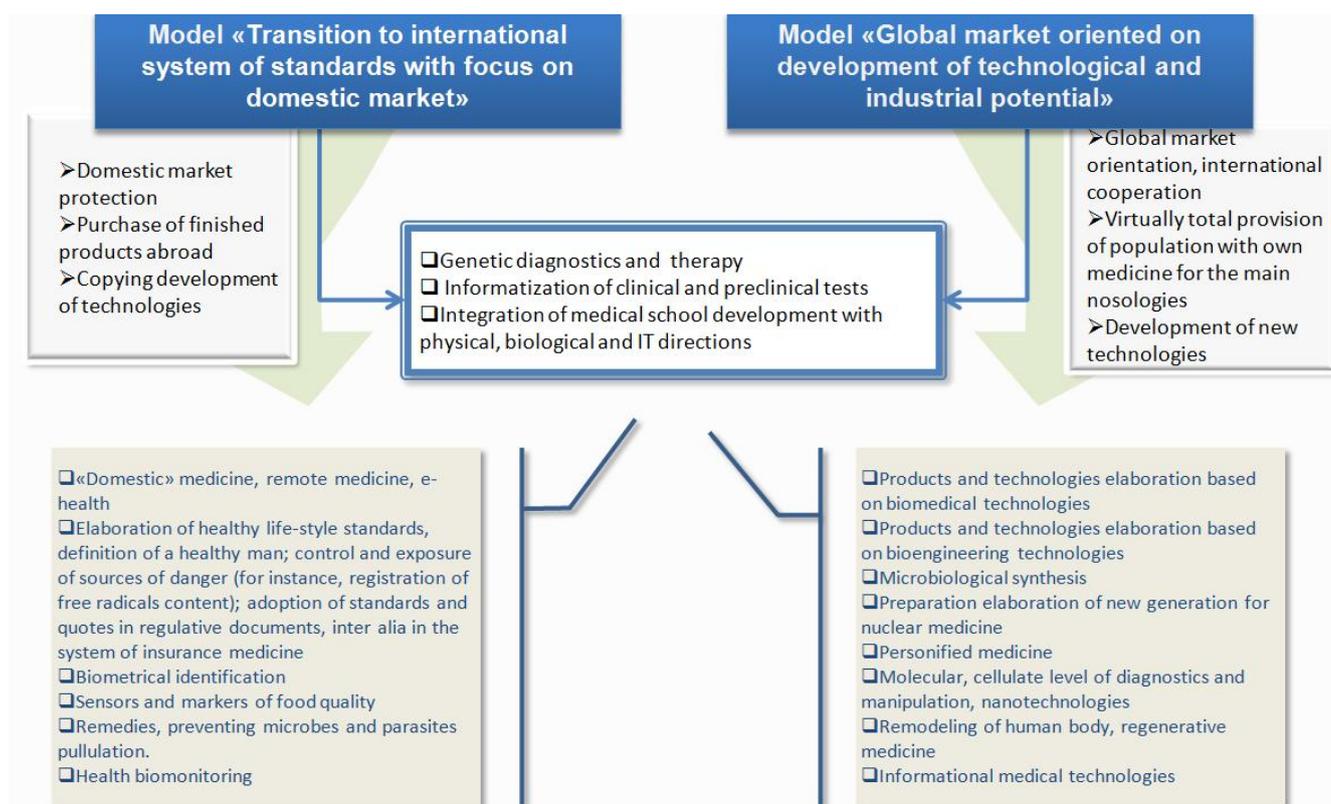


Figure 2. Summary characteristics of long-term perspectives for key investigated sectors*

	Ferrous metallurgy	Nonferrous metallurgy	Agriculture	Chemical industry	Medicine and pharmaceuticals	Aircraft industry	Commercial shipbuilding	Information sector
Interactions with other sectors								
Demand for products and services from other sectors	Metallurgy Energy sector Machine building Transport	Cargo shipping operations Electric energy in all industry Fuels in all industry	Chemicals, fuels and lubricants Electricity and gas	Oil-producing and oil-refining industries Gas extractive industry Ore mining and processing enterprises S&T complex	Agriculture Special metallurgy Electronics Chemical industry ICT S&T complex	Almost all industries S&T complex	Ferrous and nonferrous metallurgy Machine building Chemical industry	Electronics Educational system S&T complex
Main consumers	Metallurgy Machine building Construction Transport Energy sector	Machine building Ferrous metallurgy Construction	Food industry Pharmacy Energy sector Householders	Machine building Construction Residential consumption Householders	Health-care system Householders	Air transport	Sea and river transport	IT- electro energy, IT- finance, ICT, Oil and gas industry Householders
Perspectives for development of domestic market and new market niches								
Perspectives for development of domestic markets	Medium growth for mass production Rapid growth for ultimate consumpt.	Medium growth for mass production Rapid growth for ultimate consumption	Medium growth Rapid growth for crops	Rapid growth for most segments, especially in ultimate consumption	Rapid growth	Medium growth	Slow growth	Rapid growth
Possibilities of new significant niches	Low probability	Low probability	Medium probability (organics, bio fuels)	Medium probability (low tonnage and fine chemical products, packaging)	High probability (cure schemes, drugs with delivering)	Low probability	Medium probability (medium tonnage cargo boats, oil platforms)	High probability (electronic services, 5G, GRID systems)
Specificity and technological characteristics								
Level of technologies (quality/ efficiency)	High / Low	High / Low	Medium / very heterogeneous	Medium / heterogeneous	Heterogeneous/Low	Medium / Heterogeneous	Low / Low	Medium / heterogeneous
Investment projects	Long- term projects (30-50 years)	Long- term projects	Medium-term projects (3-6 years)	Long- term projects (10-15 years)	Long- term projects (15-20 years)	Long- term projects	Long- term projects	Medium and short-term projects
Organizational structure of the sector								
Current structure in Russia	Mass demand – big vertically integrated comp. and horizontal integ. comp.	Mass demand big and huge companies, vertical integration	Big agro holdings and enterprises as well as house farms and small companies	Large-tonnage chemical- big companies	Small and medium enterprises	Big companies, vertical integration	Big companies, vertical integration	IT – SME Telecommunication sector- big companies
Main trends in Russia and other world	Mass demand- mergers; global market cartels, optimization, new global players	Combining of productions, located in different world countries	Development of farmers	New players from Asia. Increasing comp. role of small (low-tonnage chemicals)	Increasing of M&As; creation of integrated comp.; new players from China and India	New world players from Brazil and China	New players	Increasing of new small firms; Big comp. go to services markets

* Estimations made for 2009-2010 years

Figure 3. Basic models for pharmaceutical and medical industries



Science as an engine of integration – academic environments as common public spheres

By Anders Björnsson

The integration of the Baltic Sea region after the Cold War is truly a success story. The system shifts within the former Soviet empire were relatively peaceful. To be sure, economic growth was interrupted in some quarters with the global crisis of 2008–2009, but there are countries in Europe that were hit far harder than the states along the Baltic shores. Just as industry tends to consolidate through merger as well as competition, one can speak of a *political* convergence. Various types of problems involving minorities remain (on this matter, the Scandinavian countries have no reason to boast), but, generally, relations around the inland sea that is the Baltic are more relaxed than they have been for many generations.

Collaborative projects have also been legion, to the point that it would be difficult even simply to summarize them. An entirely new NGO culture, with missions whose scope matches that of a state, has grown up in all the coastal countries, while the traditional party system seems to be in crisis almost everywhere. Who is doing what where is not always easy to see. Faced with real or imagined threats to the democratic social order (which in some places is quite fragile), state or supranational control of citizens has been reinforced. Fragmentation and political contraction seem capable of going hand in hand. This is not very healthy for the long-term legitimacy of power in our societies.

If the Baltic has once again become a sea that is common and available to all, this wider region, viewed from the inside, is still a community of elites. It is by no means under any popular supervision. Attempts to create an all-encompassing Baltic identity have not been particularly successful. "Balticness" has remained a fashionable term in a touring conference circus, where commercial branding has been the linchpin. The reason is probably quite simple: there has been no sounding board. That such a sounding board doesn't exist is a result of the absence of a vigorous and engaged public. Special interests have been playing their cards, but in the back room.

There are of course numerous obstacles, among them linguistic, to establishing a public sphere of "Balticness". But they are not insurmountable. Allow me to give an example.

In early 2011 there was a debate in my home country, Sweden, about the need for a new opera house in the Swedish capital. The existing building, the Royal Opera House, is barely a hundred years old. At the same time, modern opera houses have been erected relatively recently in the other Nordic capitals: Copenhagen, Helsinki, Oslo. This could speak just as well against as for yet another one in Stockholm. It's not just that there are excellent stages for operatic art in Swedish provincial cities such as Gothenburg, Malmö, Karlstad, and Örebro; they can also be found in Riga, in St. Petersburg, cities that, for geographical reasons, are just as easy to reach for many Swedes as any of the aforementioned. The venues of culture are essentially international. The real distances are shrinking constantly.

Culture and its diverse creations are the basis for serious discussion. Those who have seen the same exhibition have a number of common points of reference. Science must be numbered as an element of culture in the broadest sense, and the roll of science in modern societies is constantly expanding. It is no longer an elite project, it works as a force of production. Its mission is to produce material and intellectual utility. Think! More and more professions are being "academized", thus enhancing their professional status. Nearly half of any given age cohort today will engage in some form of academic study. Research produces innovations that transfigure our existence, and it has become part of the economic base of society. It is in all respects a phenomenon that transcends borders. It is not in any need of branding.

The journal *Baltic Worlds*, which in the fall of 2011 completes its fourth year of publication, seeks to broaden knowledge of the Baltic Sea area and its immediate surroundings – on the basis of scholarly and intellectual debate. The task does not compete with, but rather complements the tasks of others. It has no exclusive

expert character: the journal seeks to be an instrument of communication across multiple areas of expertise. In the age of mass education and mass universities, the total number of experts can actually constitute a majority of a given population. When the degree of complication in decision-making and implementation increases, democratic societies will not survive without such "elite majorities". There is also an opportunity here for large-scale rapprochement between countries with different traditions and experiences.

My suggestion is that, in our part of the world, we take seriously academic environments and scientific production of knowledge as a truly unifying factor – and as a way to strengthen communication skills in general. There is room for both competition and collaboration. Exchanges of students and researchers already exist; they are based on trans-border structural similarities in the academic systems, and this traffic must be intensified. Today, research and higher education is evaluated and ranked at the national level in many countries – is there not reason to believe that such results would be more interesting and reliable if they were compared with neighboring countries? University ranking in the larger region would be an obvious concern for research councils and independent research foundations in the individual countries. New possibilities for contact would arise.

Without making the practitioners of science into icons, one would still like to highlight certain scientific achievements as particularly interesting (and not only in the Nobel Prize disciplines). In the Nordic countries, a common annual literary prize is given out to a fiction author. This broadens the sphere of recognition for quality literature. A prestigious annual scientific prize could very well have all the Baltic countries as a "catchment area". That would automatically raise awareness of ongoing cutting-edge research. It would make public education and identity formation one and the same thing. Scientific academies would be the obvious funding source for such an effort. It would put the spotlight on science as an engine of integration for societies that want to come closer to each other.

Note. – The writer is editor-in-chief of the international quarterly journal *Baltic Worlds*, published by the Centre for Baltic and East European Studies, Södertörn University (Sweden), and holds an honorary doctorate from the University of Gothenburg.

Anders Björnsson

Editor-in-Chief

Baltic Worlds

International science and technology cooperation in Eastern European countries

By Klaus Schuch, George Bonas and Jörn Sonnenburg

National Policies and National Programmes Addressing International S&T Cooperation

In all Eastern European Neighbourhood Policy (EN) countries the national Science, Technology and Innovation (STI) policy acknowledges the **importance of strengthening International Cooperation in Research and Development (R&D)**. Provisions for this (articles, paragraphs etc.) can be found in the respective national legislations (e.g. Armenia: *Law on Scientific and Technological Activity, the Strategy on Development of Science* and Action Plan 2011-2015; Georgia: *Law on Science and Technologies and their Development*; Moldova: *Code "On Science and Innovation"*; „Moldova Knowledge Excellence Initiative” Action Plan 2008; Ukraine: *National Indicative Programme 2011-2013*). International Science and Technology (S&T) cooperation for example has a special allocation in the state budget of Belarus and receives 3-4% of budget spending for R&D annually. However, there is no distinct single policy document referring to the issue of International Cooperation in any country.

EN countries have a number of **national programmes** that are in operation. In some countries these programmes are open for foreign researchers (Belarus). In other countries R&D programmes are basically open for international collaboration but funds are provided only to domestic researchers (e.g. Georgia and Moldova: *The State Grants for Fundamental and Applied Studies*), while there are also cases where programmes are more restricted (like in Armenia).

Also in the Russian Federation enhancing internationalisation of the R&D sector has been identified as one important aspect for improving the quality and results of Russian R&D in the last years. Internationalisation beyond the geographic limits of the former Soviet Union, however, starts – like in most Eastern European Countries - from a low level. In Russia still many R&D organisations are isolated from each other and from the outside world. Data on Russian co-publications show that the USA and the EU countries Germany, France, UK and Italy are **the top collaborating partners**. Co-operation with China and South Korea is quickly increasing.

To counteract **brain drain**, Russia also recently implemented within the frame of its “*Scientific and Scientific-Pedagogical Personnel of Innovative Russia for 2009-2013*” an initiative to attract emigrants back to Russia or to develop various kinds of linkages. Moreover, in June 2010 another targeted programme¹ aimed to attract foreign scientists was launched. A few Russian R&D programmes are also open for participation of EU researchers². The main access obstacles for international researchers, however, are a lack of information about Russian RTD programmes, linguistic barriers and financial and legal issues.

Bilateral Agreements and Programmes

Eastern European Neighbourhood Policy (EN) countries have a number of **bilateral agreements** mainly with other Commonwealth of Independent States (CIS) countries and countries of the EU. Some countries have also signed agreements with other non-EU countries such as USA (Armenia), Argentina (Armenia), China (Armenia, Belarus, Moldova), India (Armenia, Belarus) and Venezuela (Belarus). Moreover, bilateral agreements have also been signed by

research institutions (mainly the National Academies of Sciences) with similar counter parts abroad.

Also Russia has bilateral agreements and programmes with many states all over the globe in place. The EU is an important partner for Russia’s R&D internationalisation attempts. Russia has concluded bilateral S&T agreements with a broad range of EU Member States and countries associated to the European Framework Programme for Research and Technological Development (FP). Agreements have also been established at the level of research funds. At the level of research organisations, especially the Russian Academy of Sciences has a dense network of cooperation agreements in place.

Findings of a survey conducted under the ERA.NET RUS project proved that bilateral cooperation is focussed on basic research. The most frequently used instrument is mobility support. Thus, not surprisingly, the budgets of bilateral agreements are mostly small scale and annual investment is usually below €1 million. Most recent trends show a shift from mobility towards more substantial R&D projects, a higher propensity for supporting applied research and innovation and an evolution of bilateral towards multilateral schemes.

(Sub-)Regional Cooperation

Regional cooperation is based on the numerous **bilateral agreements** that exist between the countries as well as between specific research institutions (academies, universities, research centres) in the Eastern European region. Historically, collaboration with Russia is characterized by the highest indices (e.g. in Belarus 55% of the National Academy’s international projects are carried out with Russia). Russia has concluded bilateral S&T agreements with all Eastern European and Central Asian countries except Turkmenistan³. In 2011 an intergovernmental programme for cooperation in the sphere of innovation within the Commonwealth of Independent States (CIS) was adopted. R&D cooperation within CIS is facilitated by the fact that Russian is considered as lingua franca among the scientific communities. In addition to the strong traditions and ties within the CIS, R&D cooperation with other Asian countries rapidly increases. RFBR for instance regularly runs joint calls with the Japanese Society for the Promotion of Science, the State Fund for Natural Sciences of China and with the Indian Department of Science⁴.

Furthermore, some bilateral programmes between the EN countries serve to enhance the cooperation in the sub region (e.g. Call for joint bi-lateral basic research projects 2011 between BRFFR (Belarus) and the State Committee of Science of Armenia). Overall, regional cooperation is mainly driven by past personal or institutional links often inherited from Soviet times and current political initiatives and programmes (BSEC, GUAM, CIS, ENP/ENPI, etc.).

Regional cooperation also benefits from **cross border programmes** under ENPI (especially the Black Sea cross border cooperation programme 2007-2013, the Black Sea Basin Joint Operational Programme 2007-2013). Other international programmes/projects with EU countries mainly under FP7 provide opportunities for regional cooperation in science, technology and innovation. Also important for fostering regional cooperation in STI is the participation of

¹ The name of the programme in English is “*Attracting leading scientists to Russian universities*”.

² See <http://www.access4.eu/index.php> for more information

³ Taken from <http://mon.gov.ru/work/mez/dok/1075/>

⁴ Information taken from Spiesberger, M. (2008): *Country Report Russia An Analysis of EU-Russian Cooperation in S&T*. Prepared on behalf of the CREST OMC Working Group

almost all ENP countries in regional organisations such as BSEC and/or GUAM which provide fora for political dialogue in various sectors including STI (see above).

Agreements and Implementing Programmes between the EU and the Eastern European Region

All EN countries - except Belarus - have **Partnership and Cooperation Agreements (PCAs)** with the EU. These form the legal basis for EU relations with each country. The PCAs establish the institutional framework for bilateral relations, set the principal common objectives and call for activities and dialogue in a number of policy areas including S&T. In specific cases (e.g. in Armenia, Moldova, Ukraine) the PCA has led to the approval of concrete Action Plans listing precise commitments of the targeted country in order to meet EU standards.

All EN countries participate in **7th EU Framework Programme for RTD (7FP)** as International Cooperation Partner Countries (ICPC). It is expected that Moldova will attain the status of an associated country by January 2012. Up until the end of 2010 the majority of countries had a quite limited number of successful proposals and the EC funding for EN participants under FP7 ranges between €1-3m per country. The only exceptions are Ukraine and Russia. Ukraine had 103 successful proposals with a EC contribution reaching approximately €12 million. Until the beginning of FP7, Russia has had consistently the highest project participation among the group of "third countries". Now its leading status is contested by the USA. Under the framework of FP7, Russia, which has concluded an S&T agreement with the European Commission for the first time in 1999, implements several "co-ordinated calls" with the EU, which are jointly defined and funded. Since 2001 S&T agreements between the EU and Russia are also in place for EURATOM covering fission as well as fusion oriented research.

All EN countries are covered by the **European Neighbourhood Policy Instrument (ENPI)**. For each country tailor made ENP Action Plans have been drafted taking on board differing national needs. With regards to STI a common goal for all countries is closer integration to the European Research Area through more active participation of local research organisations in the EU Framework Programmes. In general, however, **funding through the ENPI** focuses on strengthening democratic structures and good governance, supporting regulatory reform and administrative capacity building and on poverty reduction. The European Commission offered more than €900m for financing the activities in the EN countries for the period 2007-2010. Indeed STI is not seen as a priority area for funding as such but can benefit through for example regulatory reform and capacity. Few activities within ENPI are related to different scientific topics directly.

According to European **Competitiveness and Innovation Framework Programme (CIP)** regulations the programme is open to third countries as well. From the EN countries Armenia and Ukraine⁵ participate in the Enterprise Europe Network of CIP (a network of regional consortia providing integrated business and innovation support services for SMEs) without however receiving financial support from the programme. In addition, Moldova and Ukraine participate in the Intelligent Energy Agencies initiative of CIP again without financial support from the programme. All other EN countries have not been involved yet with CIP.

All EN countries are engaged in the **Lifelong Learning programmes (LLL)** and in particular in TEMPUS which is the older one and in which the EN countries have a higher success rate, and in ERASMUS MUNDUS which is becoming more popular but is still relatively new, with limited participation (e.g. 48 Master Courses Students and 23 projects for institutional

cooperation and staff exchange in the six EN countries in 2011).

In general, international mobility especially for young researchers remains low, with the exception of programmes in ICT area where a positive trend is recorded (Belarus). Visa remains an issue for the scientists in some countries (Ukraine), but in some others (Georgia) recently implemented visa procedures will make it easier, shorter and cheaper for scientists to travel to the EU.

Another framework for intensifying cooperation between Russia and the EU in particular had been agreed in 2003 with the "**four common spaces**", which comprise a common space of research and education, including cultural aspects. Hereunder a series of measures to facilitate Russia's integration into the European Research Area are implemented.

Eastern European, especially Russian scientists participate also in projects of the **European initiatives COST and EUREKA**. Among all non-COST member countries, Russia has the highest participation in COST actions. Russian participation in EUREKA, however, is comparatively low, which confirms the limited innovation capacities of the country.

Through the **International Science and Technology Centre (ISTC)**, founded in 1992 as an international organisation by USA, Japan, Russia and the EU, substantial support to the Russian R&D sector is provided with the aim of conversion of military to civilian research.

The latest joint **EU-Russia initiative** is a "*modernisation partnership*", agreed in spring 2010. It includes cooperation in R&D and innovation. Regarding the latter, certain emphasis is on aligning technical regulations and standards and on enforcing IPR.

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⁵ EEN Members: <http://www.enterprise-europe-network.ec.europa.eu/about/branches>

War and conflict in the Baltic Sea region – a historical perspective

By Vejas Gabriel Liulevicius

A key fact in historical analysis of the Baltic region is this: the way in which this area has been of great strategic significance in the past is proved by the record of how often war and conflict has touched this area, even when the seismic causes of those disruptions have been remarkably far afield, their causes seemingly remote and peripheral. This fact, tragic and unfortunate in human terms, means that Baltic history is a valuable ground for research into the interactions of war and society, how conflict has shaped politics, economics, and social organization, and which attempts to resolve conflict and achieve stability and independent life have been most successful and promise most for the future.

An exhaustive list of wars that have raged in the Baltic region over the past thousand years would fill page after page, so here we might mention just a few paradigmatic cases of large conflicts touching the lands around the Baltic region.

The age of the Crusades, launched by Europeans into the Middle East from 1096, involved a mobilization of warriors for religious war. As Eric Christiansen's *The Northern Crusades* makes clear, from 1147 and for centuries after, the Baltic region turned into an additional theater for this religiously motivated conflict, as campaigns against pagan peoples (Slavic, Prussian, Lithuanian, Latvian, and Estonian) in the Baltic were fought by German and Scandinavian princes and religious orders like the Teutonic Knights.

In the nineteenth century, this pattern again recurred, as the Baltic region once more was affected by a conflict actually centered on the Middle East. The Crimean War (1853-56) pitted the Russian Empire against the Ottoman Empire and its British and French allies. At the core of this conflict was the so-called "Eastern Question", of who would dominate the Middle East and southern Europe. Yet this war also had a Baltic dimension, as British and French warships plied the Baltic waves and bombarded the Russian-held fortress of Sveaborg (Soumenlina) outside Helsinki in 1855.

When the First World War broke out in 1914, ignited by a terrorist act in southeastern Europe, this modern "total war" eventually redrew political boundaries in the Baltic region, in particular leading to independent nations around the Baltic Sea: Finland, Estonia, Latvia, Lithuania, and Poland. In the troubled aftermath of the world war, as a civil war raged in the former lands of the Russian empire, the Baltic theater was a crucial site in this many-sided conflict. As the work of Karsten Brüggemann (*Die Gründung der Republik Estland und das Ende des "Einen und unteilbaren Russland"*) shows, the fate of the White Russian forces hoping to capture Petrograd from the Bolsheviks from 1918 to 1920, and thus reverse Lenin's rule, was tied to and finally frustrated by the rise of a new Estonian republic.

For a final and especially significant example, the Second World War in the Baltic region also had a distinctive trajectory. It was the pact between Hitler and Stalin in 1939 over the division of Poland and the Baltic States which led to the outbreak of the war, with devastating results for the communities there. In the Baltic, this war continued long after the defeat of Nazi Germany. It continued without pause into the desperate guerrilla conflict of the Baltic Forest War, until the 1950s. Men and women

took to the wilderness areas of Estonia, Latvia, and Lithuania as partisan fighters for independence, numbering perhaps 170,000 over the years, and supported by ties with the local populations. These resistance fighters hoped in vain for assistance from the West, and appealed to the democratic ideas of the Atlantic Charter. Although their long struggle was not successful, it testified to the determination of these communities to regain independence. In the context of the global Cold War, stretching over decades, here was an important area of operations, unfortunately not as well known today as it deserves to be.

At the same time as the historical record shows this constantly recurring phenomenon of often far away conflicts making an appearance on the Baltic stage, there is another intriguing and opposite phenomenon to be observed as well. These are attempts at peace-making or resolution of conflicts that likewise make repeated appearances, and perhaps hold promise for the future. These include ideas of regional federation, Scandinavianism, and those ideas of Baltic federation explored by the historian Marko Lehti in his study, *A Baltic League as a Construct of the New Europe: Envisioning a Baltic Region and Small State Sovereignty in the Aftermath of the First World War*. In the period between the world wars, a special capacity for conflict resolution was also shown by the international arbitration concerning claims to the Åland Islands in the Baltic Sea. Finally, in the Baltic "Singing Revolution" from the late 1980s to 1991, Estonia, Latvia, and Lithuania regained their independence by tactics of nonviolent protest and social mobilization.

Historians of the Baltic region, focusing on war and conflict, as well as on strategies for establishing peace and independence, have unique contributions to make. Gathered into international learned societies like the Association for the Advancement of Baltic Studies (an organization which I have the honor to serve as current president), scholars of the Baltic can make a significant impact, given the richness of the historical material before them.

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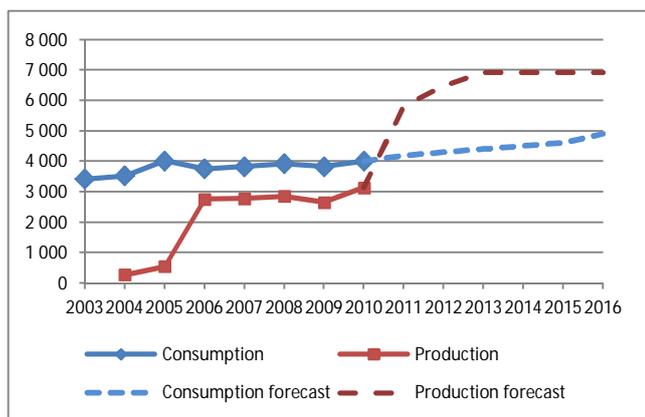
Kaliningrad Nuclear Power Plant – economics and geopolitics

By Artur Usanov

Russia is a strong proponent of nuclear power and actively expanding its nuclear capacity. In September 2011 it had 11 nuclear reactors under construction – only China had more.¹ None of these projects, however, has caused so much international controversy as the Baltic (or Kaliningrad) Nuclear Power Plant (NPP), which is being built in Kaliningrad Oblast, an exclave Russian territory on the Baltic Sea coast bordering Lithuania and Poland.

Until 2005 Kaliningrad Oblast produced less than 10% of electricity it consumed with the balance supplied through the Lithuanian grid. The situation started to change after unit 1 of Kaliningrad's CHPP-2 plant² with capacity of 450 MWe³ was brought online in October 2005. When plant's second unit came online in December 2010 it finally made Kaliningrad⁴ self-sufficient in terms of electricity generation (see chart). The total installed capacity in Kaliningrad now significantly exceeds demand. Even if one assumes that electricity demand in the oblast will grow by 3.5% annually – at the same rate as in 2000-2008, which was the period of exceptionally rapid economic growth and would be difficult to repeat, existing capacity in Kaliningrad would meet its electricity demand until at least 2025.

Figure 1. Electricity Production and Consumption in Kaliningrad, million kWh



Source: Rosstat, forecast for 2011-2016 from Kaliningrad Regional Government

This why the announcement in April 2008 that Rosatom, Russian state nuclear corporation, is going to build a nuclear power plant with two 1200 MWe reactors in Kaliningrad came as a surprise. The size of the plant – even one reactor is far too large for Kaliningrad's electricity demand – clearly indicated that export of electricity was its main priority. The Government of the Russian Federation

¹ PRIS Database of the International Atomic Energy Agency: <http://www.iaea.org/programmes/a2/> (accessed September 25, 2011)

² CHPP means combined heat and power plant – it supplies electricity and heat at the same time. CHPP-2 is built based on the natural gas combined cycle technology.

³ MWe - megawatt electrical

⁴ I will use the Kaliningrad Oblast and Kaliningrad interchangeably.

approved the project in September 2009 and preparation works on the site, which is located next to the Lithuanian border, started in February 2010. The first unit is planned to come online in 2016 and the second one – in 2018.

The motivation behind the project is quite obvious. Under pressure from the European Union Lithuania had to finally close down its Ignalina Nuclear Power Plant in December 2009. The shutdown turned Lithuania from a significant electricity exporter into a net importer. Other countries in the Baltic Sea region might also become potential markets for electricity generated by the Kaliningrad NPP. Poland, which is heavily dependent on coal-fired power plants, is likely to retire some of them to comply with the European greenhouse gas emission targets. Germany was also expected to be a net electricity importer even before its post-Fukushima's decision to retire all nuclear power plants by 2022. To increase chances that electricity generated by the Baltic NPP will find its customers Rosatom offered foreign investors up to 49% equity in the project, which is a novelty in the Russian nuclear generation sector. The participation of a well-known western company in the project would also significantly enhance its respectability.

However, none of Kaliningrad's neighbors has so far shown any intention to buy electricity from the Baltic NPP. Furthermore, back in 2006 Lithuania and two other Baltic countries – Estonia and Latvia⁵ – signed a memorandum of understanding on construction of a new nuclear power plant in Lithuania. The new plant is to be called Visaginas after the nearby city of that name. Negotiations between parties have not proceeded smoothly and there is no final agreement yet. After the tender for the construction of the plant failed in 2010 the Lithuanian government decided to conduct negotiations with potential investors directly and selected Hitachi GE as strategic investor in May 2011.⁶

This does not guarantee that the Visaginas NPP is going to be built. Financing of a nuclear power plant in a liberalized electricity market is a very difficult task. Nuclear power projects are very capital intensive, and a limited experience with new nuclear construction in Western countries in the last two decades makes the risk of cost overrun quite high. Recent cases show that new nuclear power plants are typically built by large utilities that have some monopoly power, strong balance sheet and are often backed by the state. One exception is the Olkiluoto-3 project in Finland (under construction now) which has unusual capital structure where large consumers of electricity are also shareholders in the project and take their shares of electricity at cost.⁷

For a potential investor in the Visaginas project there are additional complicating factors. If the Baltic NPP is

⁵ They were later joined by Poland, see World Nuclear Association, Nuclear Power in Lithuania (updated July 2011). At www.world-nuclear.org/info/inf109.html (assessed September 25, 2011).

⁶ Op. cit.

⁷ World Nuclear Association, Nuclear Power in Finland (updated June 2011). At www.world-nuclear.org/info/inf109.html (assessed September 27, 2011).

finished significantly earlier than the Visaginas plant⁸ then the former would be able to lure customers by offering long-term contracts thereby undermining the market for the Visaginas. The Baltic NPP could sell electricity at low prices since construction cost becomes sunk cost once a power plant is built – it makes commercial sense for the plant to produce as much electricity as possible if the electricity price is high enough to cover plant's variable cost (which is relatively low). Rosatom is 100% state owned and do not face capital market pressures unlike any commercial investor in Visaginas. In addition neighboring Poland and Belarus also intend to build nuclear power plants on their own thereby increasing competition even more.

This, however, does not make the situation for the Baltic NPP risk-free. Betting 5 billion euro or so on the project that does not have customers is probably too much of a gamble even for Rosatom. Despite numerous press reports on negotiations with such companies as Italian Enel, Spanish Iberdrola and German EnBW none of them has confirmed its intention to become a shareholder in the Baltic NPP. Plans to pour the first concrete seem to be postponed and the project is still listed as "planned" not as "under construction" both in IAEA's and WNA's databases. In addition, Lithuania is trying to contest construction of the Baltic NPP on the ground that it represents safety and environmental risk.⁹

The current situation reminds the classical "game of chicken" extensively studied in game theory.¹⁰ Two players in this game are on a collision course and prefer not to yield to each other but if they keep their course it will result in the worst possible outcome for both of them. Cooperation in such a game would lead to a much better outcome for both players.

One compromise solution that could probably resolve the problem and help both sides to avoid unnecessary economic losses would be for Lithuania to buy Russian nuclear technology and build a new power plant using Russian-designed reactors. Russia would in turn indefinitely postpone the construction of the Baltic NPP. Finland, for example, has been using much older Soviet VVER-440 reactors (outfitted with Western control systems) at the Loviisa plant for more than 30 years with a remarkable success. However, political feasibility of such an alternative seems to be not very high.

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⁸ Even if everything goes very smoothly the Visaginas plant will start operation at earliest in 2018 – two years after the planned date for the Baltic NPP.

⁹ This in itself is unlikely to derail the project but might delay it. Russia has not ratified the Espoo Convention on environmental impact assessment in a transboundary context and a new Russian reactor design has significant safety improvements (e.g. core catcher) compared with the previous generation of reactors.

¹⁰ The name of the game comes from its original interpretation in which two drivers drive towards each other on a narrow road. If they do not swerve they might die in the crash; but the one who swerve would be called "chicken" and lose the game. See [http://en.wikipedia.org/wiki/Chicken_\(game\)](http://en.wikipedia.org/wiki/Chicken_(game))

The electricity market around the Baltic Sea – still political

By Pekka Salomaa

Around the Baltic Rim, the Nordic countries, Germany and Estonia are already part of the common electricity market, with Poland, Lithuania and Latvia probably joining it in the near future. A vast leap has been taken from the electricity supply of the past.

Traditionally, the electricity systems have been separate for each country. Although the national systems have already been connected to one another to a varying degree, the need to safeguard electricity for each nation and national industry with domestic production plants has been high. Therefore, state regulation, and in many countries also state ownership, have been common.

The great project for the European internal market in the 1980s did not apply to electricity. The deregulation and integration of the electricity market was not launched until in 1996 with the first internal market directive for electricity. However, the development has been fairly slow up to recent years.

In the Nordic countries, the transmission network has been built between various countries. However, the inter-connectors are often congested on many borders, and the internal network is rather weak, especially in Norway.

The Nordic countries have long traditions in many forms of pragmatic co-operation, such as the exemption from the requirement of passports since 1954. Therefore, the electricity market place, the power exchange, which was already operating in Norway, expanded first to Sweden in 1996, to Finland in 1998 and to Denmark in 1999. This created the first international power exchange in the world. The exchange also takes care of congestion management in transmission lines, i.e. how electricity is generated, consumed and transmitted efficiently in terms of national economies.

The connections between the Nordic countries and Central Europe are modest in view of the size of both systems. In the past few years, cross-border trade and the management of transmission connections have developed in the same way as previously between the Nordic countries, i.e. now also within Central Western Europe and between this area and the Nordic countries. The changes are partly due to legislative pressure, partly to the needs of the markets. In many cases, the interests of various parties differ from one another, and it is not easy to find common solutions among the power exchanges, transmission system operators and national regulatory authorities.

Decision-making has become easier in the past couple of years with the common view between the European Commission, European regulators, grid companies, power companies, etc. on a target model for a European wholesale market for electricity. The first area to implement this target model is the co-operation between the Nordic countries and Central Europe.

Although price formation and congestion management will become more effective, the physical reality will not change: the transmission connections have their limitations. The price of electricity will vary in different areas also in the future. For example, while writing this in late September 2011, the price of electricity is considerably low in Southern Norway due to the high supply of water, and although electricity is transmitted elsewhere as much as possible, it is more expensive already in Sweden, let alone in Denmark.

On the other hand, at the beginning of their EU membership, the Baltic countries were totally detached from the rest of the EU. The first and so far the only transmission connection is the Estlink cable between Finland and Estonia, commissioned at the end of 2006. For example, there are no inter-connectors between Lithuania and Poland.

As a legacy from the Soviet era, the Baltic countries are strongly connected to the Russian grid. Often all electricity used in the Baltic countries could be supplied from Russia. The main connection in the North is to Estonia from the so-called Leningrad nuclear power plants (Sosnovy Bor) and the Southern one from Smolensk to Lithuania via Belarus. The connections form a circle starting and ending in Russia, with a branch to the Kaliningrad enclave belonging to Russia. Also Finland is connected to the Russian system, but the capacity is only about 1/10 of the peak demand.

The distance of the Baltic region from the rest of the EU and its dependence on Russia were emphasised when Lithuania had to close also the second reactor in the Ignalina nuclear power plant in late 2009 in accordance with its EU accession treaty. Electricity is constantly imported to the Baltic region. The situation has turned difficult even from the political point of view.

Each Baltic country has its own special characteristics in its electricity procurement: Estonia has a lot of production based on oil shale, which is burdened by the emissions trading scheme; Latvia is hydro-dominated but significantly in deficit; and finally Lithuania has been strongly dependent on natural gas and electricity imported from Russia since the winding down of its nuclear power operations. Each country still has a dominant traditional integrated electricity company, and the reality of market deregulation has been debatable.

The European Commission and the EU countries in the Baltic Rim have taken on this challenge with the so-called Baltic Energy Market Interconnection Plan (BEMIP). The plan aims to, e.g. integrate the electricity market and connect the Baltic countries better to the power system of the rest of the EU.

In BEMIP, deregulation of the market and especially integration were set as the condition for receiving EU funding for new transmission connections. This way, there has been some progress. Since 2010, Estonia has been a price area among others on the Nordic power exchange. Latvia and Lithuania are expected to join during 2012, although the process has been arduous especially in Latvia. Of the transmission connections, at least the Estlink 2 project between Estonia and Finland is expected to be implemented in 2014, and a cable is due to be laid between Lithuania and Sweden in 2015. The Lithuania-Poland link has been under preparation for some time.

Furthermore, the Prime Ministers of the Baltic countries have requested an investigation on detaching the countries from the synchronous electricity system of the so-called CIS countries (e.g. Russia and Belarus) and joining the continental European system (UCTE). As mentioned above, there is no transmission connection whatsoever between Lithuania and Poland, i.e. the Baltic countries and Central Europe. This is an idea for the very long term, reflecting the concern over 'central control from Moscow.'

Lithuania is currently investigating the possibility of building a new nuclear power plant next to Ignalina. In addition to the dominant electricity companies in the Baltic countries, Poland has also been involved in the discussions. Other nuclear power plant projects have also been considered in the region, e.g. in Estonia and Poland.

The design for a plant in Kaliningrad in Russia is more advanced, a project of two 1,150 MW reactors. The foundation for the first reactor is already being built in the area, with promises of commissioning the reactors at a rapid pace, in 2016 and 2018. It seems strange that the plant would have much bigger capacity than the Kaliningrad area would need, and the neighbours have not been keen to purchase electricity from there, either.

Major future challenges for the Baltic Sea electricity market include the way the interface between the EU and Russia will be organised. Another great challenge is how the network and market will adapt to an increasing amount of renewable, often intermittent energy.

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Master of the house – Putin, the presidency and political myth in Russia

By Bo Petersson

In March 2012 Russia will be facing the first round of the presidential elections which will decide who will be the incumbent of the highest political office in Russia for the next six years. As most observers expected him to, the current Prime Minister Vladimir Putin, who was President between the years of 2000 and 2008, has now accepted the invitation by the current President, Dmitry Medvedev, to run as the presidential candidate for the political party of United Russia. Given Putin's persistently high poll ratings, little seems to be able to stop him from winning the elections already in the first round. If re-elected, and if his health, power and popularity do not fail him, he is legally entitled to stay on in office for two consecutive terms, which would take him into the year of 2024. This article attempts to offer an explanation of why Putin is enjoying such popularity, and why it seems to be a foregone conclusion that he will again become the President of the Russian Federation.

In contemporary Russia there is an intimate link between the widespread idea that Russia is always bound to be a great power with a definite say in world politics, on the one hand, and the fundamental tenets of Russian national identity, on the other. Putin once said that either Russia will be great, or it will not be at all. In saying this, he deftly captured a deeply entrenched popular sentiment. Not even in the years of economic and political downfall during the Yeltsin presidencies of the 1990s did this preconception sway. Among voters and elites alike, Russia was still a great power at the rhetorical level. As Putin, lucky with timing and greatly assisted by the almost unprecedented price hikes in oil and gas during the mid-years of his presidencies, managed to project an image of a Russia that was externally and internally strong, his popularity figures soared to a high level and stayed there.

My contention is that these developments should be seen in relation with the concept of political myth, which denotes a societal belief that regardless of whether it is true or false is *believed* to be true and is acted upon as if it were true by a large number of people. Such political myths bind people together, provide them with something to believe in jointly, and give them yardsticks for individual and collective action. Political elites who act in accordance with the myths have their legitimacy enhanced, and those who oppose them run the risk of being penalized by the public opinion. I would say that the idea that Russia is predestined always to be a great power is precisely such a political myth.

However, it is not the only one that has an impact on political discourse in contemporary Russia. There is another influential myth which offers an explanation of why Russia has so often throughout its history fallen short of realizing its great power potential and not always been able to occupy her supposedly rightful place in the world. This is the myth about the cyclically recurring Times of Troubles (*smuta*) in Russian politics. According to this myth, periods of deep unrest come and go in Russian political history, and, depending on political perspective, these can be exemplified by the Civil War, the entire Soviet period, the Great Patriotic War, the Gorbachev years, and the Yeltsin presidencies. Otherwise, the Time of Troubles that gave rise to the name started in 1598 and was characterized by political disorder, social chaos, and foreign occupation. The collapse of the Russian state seemed imminent, and internally a number of false pretenders tried to use the political vacuum to make it to the throne of the Tsars. In 1612 a popular uprising in Moscow under the dual leadership of a nobleman and a commoner finally achieved the ousting of the foreign powers. The coronation of the young Mikhail Romanov in 1613 marked the end of the original Time

of Troubles. Mikhail became the founder of the Romanov dynasty which later would see Peter the Great as its most renowned descendant. More than anyone else Peter came to symbolize the attainability of the Russian quest for great power status. During his reign Russia became feared due to its successful power projection in Europe, and was respected because of its progress and gains in the internal economic development.

There is indeed an intricate interplay between the two myths, as the one hinders the full realization of the other, and vice versa. The *smuta* myth thus explains why Russia despite its inherent greatness has often not been given due recognition by the outside world. On the other hand, the overcoming of the Times of Troubles testifies to the superb qualities and moral stamina of the Russian people, which are in turn major foundations of Russia's great power claims. Given these qualities, all that it takes for Russia to rise again from the Times of Troubles is the appearance, in the nick of time, of a bold and resourceful leader, who manages to gather the people around him and lead the country out of the crisis, put an end to undue foreign influence and restore Russia to greatness.

My conclusion from all this is that Vladimir Putin has successfully managed to tap into both myths, as well as the interplay between them. The latest instance of *smuta* was the Yeltsin years of the 1990s, marked by their dependence on loans and subsidies of the Western powers, by internal unrest and centrifugal tendencies. Separatist Chechnya dealt a humiliating blow to Moscow, in practice defeated the Russian army, and gained for a brief spell in the late 1990s *de facto* independence. At this stage Putin made his entrance. When taking up his office he promptly declared that 'the state has to be strong, but it has become weak', and started to act accordingly. Concepts like 'dictatorship of the law' and the need for 'sovereign democracy' were coined by him, manifesting his wish to strengthen order inside the Russian house and show to the world that Russia was the master of its own destiny. The new and hard line was most clearly demonstrated in relation to Chechnya which was forcibly brought back into the fold through a renewed and bloody war effort. Overall, Putin's program appealed to the voters, and earned him the reputation of being the strongman who ended the contemporary *smuta* and restored Russia to greatness. These achievements seem to engender his lingering popularity and legitimacy, and will, I argue, help him along to the presidency in 2012 and beyond.

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Is Russia still a bric country – exports to Russia during the global crisis from German perspective

By Konrad Popławski

The crisis is changing the German perception of trade with Russia. German enterprises still treat Russia as a prospective market, but they are disillusioned with the slow liberalization of trade, stagnation of modernization initiatives and excessive concentration of the economy on the exports of natural resources, what makes it very vulnerable to the next crises. The planned return of Wladimir Putin to the position of president of Russia eliminate any chances for improvement of the situation. Therefore, rising risks of trading and investing in Russia can make them more oriented on other BRICS countries. Especially the small and medium enterprises which constitute the essence of German economy can be less interested in exporting to Russia, what can result in weakening of political ties between two countries.

Development of German exports to Russian market

The development of German exports to Russia was very promising for the enterprises as during the period 2000-2008 the annual growth rate amounted to 24%, achieving its peak in 2009. For Germany the trade with Russia was attractive, because as a meaningful importer of natural resources the German economy often recorded a negative trade balances with Russia. Moreover, there are in Germany many experts in favor of close relations with Russia lobbying among the government members for intensification of trade. Such initiatives are often undertaken by the influential the Eastern Commission. The proofs for close political proximity constitute also the annual meetings of government representatives of both countries under the framework of Petersburg Dialog.

German exports to Russia are dominated by traditional goods. In 2010 53% of German goods exported to Russia were generated from the machinery, chemical and automotive industries. The German companies belonging to this sector are big enough to cope with institutional deficiencies of the Russian market. Although the Russian economy has rebounded quite dynamic, German exporters are still very careful and the value of goods exported to Russia is lower than before the crisis.

The crisis shown new risks for German exporters concerning Russian market, as duties on some goods such as cars were raised. German companies have been awaiting the Russian entrance to the World Trade Organization for many years, therefore the constant delaying of this process by Russia makes them impatient, as the trade with this country tends to be very unpredictable due to often introduced embargoes and duty levels variability. The German state tries to ease those risks for the firms exporting to Russia which granted the highest share of the state trade guarantees. In 2010 the transaction for over 3 billion euro were guaranteed in such way, what accounted for 10% of all the guarantees sum distributed in 2010.

The crisis changes German exports paradigm towards Russia

The German companies treated Russia as an increasingly attractive market hoping for the progressive liberalization of the Russian internal market to foreign investors. Germany's intention was to transform institutional foundations of Russia by soft power and through meetings of politicians and representatives of business. However, the crisis destroyed those illusions. First of all, Russian economy turned out to be very vulnerable to the consequences of the global crisis slumping by 7,9% in 2009, whereas the other BRIC countries so Brazil, India and especially China went through the period of the global recession barely experiencing some slowdown in production growth. That meant for German companies that in case of second wave of the crisis the trade with Russia would probably not account for a source of diversification for its exports, which are the main motor of the German economy. That conclusion is even more important as the trade within the eurozone due to the sovereign debt crisis is expected to stagnate.

The second disappointment concerned the attitude of the Russian leadership to the foreign investors and the process of liberalization. Although the program of "partnership for modernization" was introduced already after the outburst of the crisis, today it seems clear that it rather constituted more a rhetoric exercise of Russian leaders than a real eagerness to reforms. The Russian politicians preferred to use it as a good PR tactic raising the foreign investors interest and the main project accounted for the pompously advertised over the world the building of the technological city Skolkovo, which does not make big difference from German perspective. That is a big setback for Germany, which counted for better chances for German small and medium enterprises (SME) to enter the Russian market. SME companies, which account an essence of the German economy generating about 40% of German turnovers and employing about 60% of labor force, are unsatisfied with present principles ruling the Russian market. Such deficiencies of Russian market as corruption, unclear and very variable legal framework and excessive influence of the state and politics are a burden especially for smaller companies as big German multinationals can cope with that using their political connections.

Is Russian market still prospective for German exporters?

The image of unproblematic trade relations between two countries becomes less prospective, when the holistic view of German trade partners is taken into account. Russia actually has been constituting an attractive market for several years, nevertheless Russia is still outside the first 10 German exports markets. Moreover German exports to Russia is continuously lower than too much smaller Poland. Poland is good example of a country, which greatly benefited from the good conditions for German investors as SME of both countries cooperate very intensively. In case of Russia the financial crisis recalled an obvious fact that its model of growth bases only on resources and when the prices go down, the economy slumps as in 2009. Therefore Germany cannot count on exports to such a country in case of the long-term stagnation, whereas the other BRIC countries are not so vulnerable. Since 2006 the German exports to China rose by 95%, to India by 45% and to Brazil by 76%, whereas in the same period exports to Russia increased by 6%. Russian is still more meaningful market for Germany than India or Brazil, but if the stagnation of Western Europe keep the prices of resources low for the next few years, Russia will cease to be a BRIC country for Germany. In such case the relationship between two countries will evolve in the direction of resources partnership. Germany will be still interested in keeping close relations, but will pay much bigger attention to the other BRIC countries, intensifying political ties with them. Such way of reasoning of Germans can be proved by the political agenda of this year. The officials of China and Germany met several times and the first bilateral consultation of the countries took place in July, when many topics where concerned. In case of Russia the this year consolation was rather not very prospective and oriented mostly on energetic cooperation.

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The challenges of forecasting Arctic energy projects

By Urban Wråkberg

In the Arctic energy scenario, analysts attempt to identify and enter the relevant social, economic and technological factors into interdisciplinary predictions on their future sum effect. The increased melting of Arctic sea ice facilitates northern maritime transport and saves time, money and energy. A more efficient use of energy in human settlements in cold regions also reduces energy consumption, but the foremost energy interest in the north is that these regions contain much of the world's remaining untapped sources of hydrocarbons.

The US Geological Survey stated in 2008 that the Arctic appears to harbour approximately 13% of the world's undiscovered oil resources and 30% of its undiscovered natural gas. The Norwegian Petroleum Directorate estimates that after 2030, domestic oil and gas production will mainly be based on sources that have not yet found, and 37% of these finds are believed to be located in the continental shelf of the Barents Sea.

Estimating the overall reserves of hydrocarbons in the Arctic is important, but to be able to evaluate the potential of a specific promising reservoir formation, with good quality source rock, one needs to consider its geological history. This is relevant for understanding the continental shelf of the Barents Sea, where the effects of the latest ice age are profound in certain regions. Moving glaciers have scraped away sedimentary rock close to the shore. The land and coastal seabeds were depressed under the weight of the ice cap on the Scandinavian and Kola peninsulas during the latest ice-age, but they have been slowly rising in a post-glacial rebound since the inland ice melted away approximately ten thousand years ago. This process has produced several faults in the rock under the seafloor and has caused pressure changes in the hydrocarbon-bearing strata. This so-called Champagne effect means that promising structures, which normally form traps for oil and gas, may be dry close to land, where the costs associated with exploiting these resources are the smallest.

The economic impact of peak oil and the future diminishing supply of hydrocarbons on the global market depend on how efficiently market forces and strategic decisions bring new energy sources on-line within a proper timeframe in various contexts. Further socio-economic research on the issues involved would be useful to inform policy-makers and public debate. Pressing problems have resulted from the current malfunctioning global financial system. If these issues persist, fewer investors will face larger costs when raising capital for Arctic energy projects.

The reliability of alarmism in producing a media sensation seems to be part of the appeal of scenarios that are indicative of a polar meltdown, not only of ice but also metaphorically of the hitherto stable number and positions of the northern geopolitical players; unleashing as it were a global scramble for Arctic natural resources. This line of thinking underestimates the confluence of the geo-economic interests of the Arctic coastal states. It was serendipitous that the UN had begun work on its Convention on the Law of the Sea so that it and the UN's Commission on the Limits of the Continental Shelf became operational already in the 1990s. Thanks to this suitable tools were available, before polar melting became a major concern, to establish, for example, the Exclusive Economic Zones of the Arctic coastal states. The maritime zones with disputed national jurisdiction that exist in the Arctic have been co-managed with remarkable success so far.

The recent declarations by Sweden for assuming the chairmanship of the Arctic Council may further improve the political climate of the high north. Sweden's ambitions include improving the council's public outreach and opening it to new observer states with more clearly defined roles. Nevertheless, due to difficulties in reaching a consensus on admitting new observers among the full members, major states will have to wait at least two more years for the next round of discussions regarding their admittance. The European Union needs to pursue its interests by stepping up activities in its own northern instruments, specifically the Northern Dimension partnerships with Russia, and by increasing funding for its new northern research coordinator of socioeconomic sciences at the Northern Dimension Institute.

The greatest challenge in the Arctic energy scenario is predicting the effects of technological change and of the path dependency of technoscience. Innovation or the transfer of technology to new applications may strongly impact hydrocarbon prices and the feasibility of Arctic energy projects, as will socioeconomic and technological lock-in effects. These effects will be most obvious in the infrastructure, where the absence or existence of technological systems, such as pipelines, harbours and railway lines with different gauges, may determine the probability of different scenarios. Redirecting or expanding such systems will require large investments over long periods of time.

Horizontal drilling and hydraulic fracturing of shale deposits of natural gas is a new important technological innovation in hydrocarbon extraction that strongly influence energy scenarios on the Arctic, despite that it is not likely to be used there at all. It has so far mostly been practiced close to customers in densely populated regions of traditional fuel importing economies. The environmental effects of this new technology include ground water contamination and methane leakage into the atmosphere, but it will substantially reduce the US's need to import liquefied natural gas (LNG) and it will turn, for example, Poland into a new energy exporter.

However, shale gas will mainly affect the timetables and the setting of capacities for the extraction of other conventional deposits. The declining production of mature oil fields in, for example, the North Sea and the mega gas deposits that feed Gazprom's on-land distribution systems at Urengoy and Yamburg will drive the industry towards the Arctic offshore scene. Opening the Yamal Peninsula is needed in the meantime to increase the up-stream capacity of the new Nord Stream gas pipeline between Russia and Germany. Norwegian Statoil's Snøhvit gas deposit and its new Melkøya LNG production plant at Hammerfest on the northernmost coast of Norway are already producing. Statoil's recent gas find at Skrugard and French Total's production tests of the Norvarg find in the Barents Sea this summer have been deemed promising. The main Barents Sea operators Statoil, Total and ENI need to develop new routines for working at high latitudes. In the case of Russia, the whole package of arctic offshore technology and know-how must be acquired. Environmental protection, new difficulties, such as icebergs, and a rescue organisation that can cope with Arctic conditions are all best handled jointly across national borders. These issues are already driving the multilateral partnership across the Circum-Arctic.

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The work of German environmental organization in the Baltic Sea region

By Mai-Brith Schartau

The Baltic Sea has a very sensitive ecological system; it is also one of the world's most polluted waterways. Waste substances flow in the form of municipal and industrial effluents and from farming and forestry as well as from ships. The management of these problems requires close cooperation between all countries in the region. New forms of governance that reach beyond the nation state are needed if results are to be achieved. Participatory governance is often identified as a remedy for dealing with environmental problems at the regional level. Since the early 1990s, social science literature emphasizes the importance of civil society for democracy and sustainable development. Environmental organizations are often seen as the politically most active part of civil society.

Environmental organizations are normally divided into two groups; traditional groups whose aim is to secure improvements in legislation and those ecologically oriented groups who want a more fundamental restructuring of the society. This distinction is important since the last group will be less likely to participate in policy networking, as this necessitates ideological compromises.

A large number of Germans regard the environment as the most important issue on the public agenda today. This is reflected not only in the Federation of Citizens' Groups for Environmental Protection, founded 1972, but also in the huge number of local, national and trans-national environmental organizations.

One characteristic, which typifies the German environmental organization, is its effort to conduct research. To invest in expertise is of great importance. In the larger organizations a growing number of specialists have been appointed. Therefore, environmental organizations serve as a source of expertise for different decision-makers.

Traditionally, there have been few opportunities for groups to participate in the policy-making process. The corporatist style of policy-making in Germany has decreased the possibility for "outsiders" such as environmental NGOs to participate in and influence decision-making. This has changed since the 1980s. Ministers of the environment are now turning to different organizations in order to claim the support of public opinion so as to strengthen their position in their negotiations with other colleagues in government. This is, however, not a radical change towards more power to NGOs, participants from environmental groups have complained about being marginalized in meetings whenever business organizations are present.

With limited opportunities to influence policy decisions on the national level and taking the huge environmental problems connected to the Baltic Sea into consideration, it seems natural for some organizations to try their luck in the international arena of the Baltic Sea Region. This regional engagement is, however, restricted by the fact that the German interest in the Baltic Sea Region in general is limited and that people in the German county that borders the Baltic Sea, Mecklenburg-Vorpommern, face many other problems typical in the post-Soviet era. Their GDR background also means that they have experiences from civil society activity different from those in the former West Germany.

Here I will give a few examples of German environmental organizations working in the Baltic Sea Region. The first is the Baltic Environmental Forum whose principal aim is to strengthen the cooperation between the Baltic regional, national and trans-national environmental authorities. This is done via different kinds of seminars, training programmes and publications. In order to strengthen and develop the Baltic Sea Region environmental networks, new NGOs have been

established in five of the surrounding countries, in Germany under the name Baltic Environmental Forum Deutschland. Together, these NGOs develop projects mainly in the Baltic Sea Region but also, to a minor extent, in their own countries. The members of the NGOs do not regard themselves as belonging to environmental pressure groups but rather as facilitators and supporters of dialogue, policy implementation and awareness raising. Beside training and workshop programs, they carry out expert analyses on behalf of different authorities and monitor legislation and its implementation. Like the Forum each covers a wide field of expertise.

My second example, BUND (Bund für Umwelt und Naturschutz Deutschland) is one of the most influential environmental organizations in Germany. A special subdivision, BUND Arbeitsgruppe Ostsee, covers the Baltic Sea Region. Its members are a mixture of volunteers and professionals working in the field. The work of this organization varies depending on immediate needs. Current topics of concern are fishery, offshore wind power plants, the controversial gas pipeline and protected marine areas. The organization is a member of Coalition Clean Baltic.

WWF-Projektbüro Ostsee works together with WWFs in other Baltic Sea Region states, as well as a great number of other organizations, both NGO and public. The Project Bureau is involved in several projects aimed at protecting Baltic Sea Region nature. It put pressure on governments to establish nature reserves and to maintain sustainable development.

The purpose of Naturschutzbund Deutschland, my final example, is dedicated to promote the conservation of nature, of landscape maintenance and of species protection. This is done by research, information campaigns, public events and by participating in planning processes and trying to influence legislation and administration within the field. The Naturschutzbund networks with a variety of organizations with the same goals.

These examples show three things. First, the German organizations do not work alone. They are all embedded in networks consisting of other environmental organizations as well as public authorities. Second, they use several different methods in order to influence policy makers and to provide public inform on environmental matters. Third, their expert role in relation to their nation, government and public is evident in all four cases. This last point confirms the scholarly premise that civil society organizations always reflect their nation state origins, adhering to the traditions from the home country even as they operate on an international arena.

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Joint Biotechnology Laboratory, twenty-two years Finnish-Russian successful collaboration in biotechnology

By Timo Korpela

Background of JBL

My scientific background is in biochemistry at the University of Turku (Ph.D, 1979). I participated in an enzyme conference 1983 and was offered to organize the next conference in Finland. Academician A. Braunstein (Moscow) was one of the authorities in the field. I wished to go to invite him personally and to introduce myself. He, in turn, introduced me to the key scientists in Moscow. We also started student exchange already 1986. Since that time, I have had unique position to view Russian biosciences from insides.

The conference in Turku realized 1987, at the time of very tight "iron gate" around USSR. During the conference, the Soviet delegation suggested to establish a bilateral "Joint Biotechnology Laboratory", "JBL". Clearly, the initiative was not politically organized. A group of scientists, headed by the present Academician, K. Skryabin, came to Turku 1989 with a draft of Collaboration Agreement. The final Agreement was signed 26.10.1989 between University of Turku and the Soviet Academy of Sciences.

The problem of the new organization, "JBL", appeared to be in its novelty: similar collaboration model was not tried anywhere else, especially, over such a political wall. The real collaboration had to be established experimentally – the iron had to be still forged. But, JBL was even bigger challenge to officials who, still after many years, feverishly tried to understand how to position JBL. Creative scientists did not care about it, but the uncertainty had negative impact to the funding and official status. The positive side was that the operation had to be based on the very financial realities.

The same scientists who were establishing JBL, were on 90's the initiators of the European-Russian plan for "Laboratory-Without-Walls" (LWW). It was supported by our former scientific colleague, Prof. P. Fasella, who was Science Director of EU at that time. JBL was aimed at to be the pioneer example. LWW, however, vanished rather soon, apparently because it was too innovative, cold war was not yet enough far, and because it was based on only on governmental funding. Today, the model of LWW is evident to all; well-doing science centers are not just buildings but international networks of scientists.

JBL organization

JBL is based on two economically independent units, one at the University of Turku and the second in Moscow. However, the Moscow unit never fully realized. Only now there are hopes to establish the Moscow unit. The first article of the Agreement states: "Laboratory fulfills the collaboration according to the rules decided by the Board of Directors". The Board consists of 4-5 members (on very high level) from both sides. Russian Academy of Sciences ratified the Agreement 1993 and it was renewed 2002. Since that, the world has again drastically changed and we are renewing the Agreement against the background that globalization is big challenge for Russia and Finland. New cards of the success for the future will be dealt during next few years. We are willing to share our long experience with third parties including EU countries.

Prerequisites for collaboration

The basic principle of mutual collaboration is that all parties must benefit - and enjoy – one or another way, short or long-term. Too many have a secret attitude to benefit only one-sidedly. It may be possible by exploiting the weak situation of the other party or to use dishonest methods. This is "short business" and the benefits are usually marginal or often negative in the longer run. Occasionally, there are individuals who act beyond the common rules and, then many non-guilty will suffer from that. After the collapse of USSR there were people who wanted to make quick money. The Soviet doctrine that private business is immoral seemed to realize itself on 90's. This situation is clearly improved till now, however.

The collaboration partners must trust to each others and be motivated to work. If only one in a group does not work properly, it will destroy the whole work moral. If so, group leaders must immediately stop the game. Trust must be earned. It can be earned only so that all agreed things are done promptly with agreed manner. Scientific merits or financial outcomes must be shared justly. It may be difficult to be objective. Scientific merit cannot be counted like coins. It is easy to recall that "actually I invented that" even the idea was generated in a common meeting when many thoughts were crossing in air. Or even, "actually I did the work". Marriage is not bad comparison for collaboration.

The benefit of collaboration is that when our attitudes to our colleagues and things are correct, the situation itself releases extra energy - and all will benefit; $1+1 > 2$. Unfortunately this psychology is not easy to internalize because we have been used, or systematically taught, to individual and group egoism, which is opposite to good collaboration principles. Asian cultures are less egoistic. An individual or even a group may have "mind blocks" which prevent seeing solutions to a problem. Fresh outside view can trigger the release. Unselfishness can be rather unstable stage of mind and may turn to opposite. If the harmony is breaking in the working society, the results can be drastic. A wise leader should see the signs beforehand.

Potentially, the multicultural interphase generates even more synergy. It is the extra bonus for the international collaboration. Multicultural nations and societies seem to manage in creative tasks better than monocultures. Monocultures should invest more to international collaboration.

When people from different cultures work together, there is always a danger of misunderstandings leading to exacerbated relations. This may origin simply from language problems or cultural differences. This should be taken into over-careful attention. Written documents are recommendable even for simple things, but, in addition, one must ensure that all parties understand exactly the details. Mere signature is not any guarantee of avoiding heavy quarrels. Not directing thoughts to wrong rails by my above comments, my experience is that Finnish and Russian people, after all, do not differ so much and good collaboration is easy.

JBL's outcomes

I will briefly summarize the main results from JBL during the last 22 years. This will give also some image for operative strategies.

Projects. > 35, length 2-6 years, with practically all Finnish biotech companies and/or public funding, in many fields of biotechnology, applied and fundamental. Little Russian funding until now.

Patents. > 50, protected into different degrees and widths.

Scientific publications. About 200 Peer-reviewed papers, mostly in English language. Among them, there are about 20 reviews and one book.

International conferences. > 35. Conferences have often been international. Finland is small country which can respond to Russian proposals only in specific areas. We could increase the attraction of Finland by proving joint way to third countries.

International collaboration networks. JBL has very wide and valuable collaboration networks in Russia and lesser in other countries. This is result from systematic work. Illustratively, there are statistics for 22 years stating for 90-140 short-term (1-7 days) foreign visits to JBL annually.

Commercial companies. 8 companies established. Many (unknown number) other companies established by previous scientists of JBL (in Finland and in Russia).

Conclusions

JBL has been useful for many Russian scientists visiting JBL because it has been the first experience for foreign countries and language and the international skills have improved. Visitors have normally returned back to Russia and managed there well and created good scientific or business careers. In the long run, the "difficult-to-measure" social and educational role of JBL may appear more important than expected. Some of the Russian scientists have decided to stay permanently in Finland. They have got good positions up to from company directors to professors. Their contacts to Russia continue benefiting both countries. So far as I know, any of the visitors to JBL who stay in Finland are not unemployed. JBL shows that it is possible to create well-working collaboration which can produce high-tech scientific and commercial outcomes which make benefit to both countries - even monetarily - distinctly more than what has been invested.

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Some ecological and political challenges for the Baltic Sea

By Erik Bonsdorff

Why should one worry about the state of the sea? Water is abundant everywhere and 71% of the surface of the earth is covered by oceans (and oceans stand for about 97% of all water on earth). With an average depth of 3800 m, there is actually about 300 times more space for life in the seas than on land! Over 50% of global primary production and $\frac{3}{4}$ of global consumer production is found in the oceans, so regardless how we look at the seas, their importance for us all is very large. Biodiversity is also very high in the oceans, and new phyla, taxa and species are recorded continuously! Just like in the rainforests on land, we are currently threatening the wellbeing of the entire global marine environment, while we do not even know what we are destroying. Hence, there is a strong need for coupling the ecological challenges with political and economic demands.

In the Baltic Sea, we are faced with a complicated environmental picture: we have a land-locked water body that is surrounded by a watershed roughly four times the area of the sea surface, draining water from no less than 14 independent countries, 9 of which have coasts on the Baltic Sea. Different political systems, languages, cultures and currencies, problems and relations to the environment all contribute to the vast problems of joint management that would consider the basic rules of sustainable use of natural resources. Different opinions as to what the sea really is in terms of an ecosystem of its own right and in terms of producing ecosystem goods and services, such as fisheries, transport routes, recreational areas etc further complicate the picture. We know that the current environmental state of the Baltic Sea is a product of an unfortunate cocktail of multiple stressors (natural and anthropogenic), with additive and unforeseeable effects that have been dramatically escalating since the mid 20th century.

The Baltic Sea drainage area is inhabited by almost 90 million people producing many stressors to the marine. The Baltic Sea suffers from large-scale hypoxia/anoxia (annually an area roughly of the size of Denmark, or anything from 40-60.000 km² is devoid of higher life due to oxygen concentrations below 2 ml/l), the system has been a dumping ground for toxic wastes for well over a century, and for the last 50-60 years, gross nutrient over-enrichment (eutrophication) has become a major problem. Harmful algal and bacterial blooms have become annual phenomena affecting the livelihood of millions of people, filamentous algal mats suffocate shallow water coastal and archipelago areas, and the nutrient pool is now so large, that even if effluents from land have been greatly reduced, positive effects still remain to be seen in the marine ecosystem; this 'internal loading' will maintain a very high level of primary production and pronounced cyanobacterial blooms for decades to come. Added to all of this, overfishing is a serious threat, not just to the individual fish stocks (cod and salmon being the prime examples), but indeed to the entire ecosystem through a phenomenon known as 'trophic cascades' where effects in one end of the spectrum (in this case both reducing the presence of top predators – the so called top-down effect; seals and large fish - and increasing the amounts and availability of the limiting nutrients, namely phosphorus and nitrogen, i.e. bottom-up effects) will influence throughout the entire trophic network ('food chain') of the ecosystem. These regime shifts in the marine ecosystem have opened the floodgates for invasive non-native species into the Baltic Sea, and currently some 120 species of non-Baltic origin have viable populations in this low-diversity system. Thus the marine ecosystem of the Baltic Sea today is very far from what it once was, and in our efforts for a better Baltic Sea we must bear this fact in mind when we set

the targets we want to achieve! To complicate matters even further, there is the issue of climate change to consider: warmer water, less sea ice in winter, and reduced salinity due to higher runoff from land in combination with ocean acidification may alter the entire ecosystem structure in that many species will have to adjust their ranges of distribution. Simultaneously, the expected physical changes of the water mass may enhance the effects of eutrophication by strengthening stratification of the water column, increasing hypoxia and anoxia even further, giving rise to even higher leakage of phosphorus from the sediments. In other words, the ecological, political and ethical challenges for maintaining a balanced and diverse marine ecosystem in the Baltic Sea are enormous. It is vital to keep the management of all components of the ecosystem within the same toolkit, as previous experience shows that when for example fisheries have been dealt with independently, the cascading effects have largely been neglected.

Thus, for the Baltic Sea, it is generally agreed that eutrophication, effects of overfishing, harmful substances, traffic, loss of habitats and general threats to biodiversity are some of the main problems, and that these problems are further enhanced by ongoing climate change, likely to dramatically affect the Baltic Sea within the next 100 years. Alterations in the structure of the entire ecosystem have already caused major functional changes (often referred to as regime shifts). Such drastic change puts limits on what to save and protect, and raises important questions about how we define and agree upon what might be acceptable change. It also raises questions about how to define the aims and goals of what the Baltic Sea might be like 100 years from today, and how to achieve this goal. Decision makers in the countries bordering on the Baltic Sea agree that strong measures are needed in order to counteract the negative trends. Hence, irrespective of the strategies currently proposed and implemented, we need to combine knowledge and expertise from several disciplines, and tackle the problems from multiple perspectives simultaneously in order to achieve truly integrated management options for sustainable solutions both for the entire Baltic Sea and its specific regional problems. We must ask ourselves if the concept of sustainable use of the marine resources is possible at all with a growing demand, and we must identify the gaps in our knowledge where science can provide some answers: Science can only show the potential outcome of different environmental scenarios; the final responsibility lies with society at large: the informed citizen, the areas with specific local or regional interests, and the decision-makers, politicians and managers.

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Baltic Sea region rides on the green economic wave

By Mia Crawford

The biggest economic opportunity in a generation is heading our way! The next economic wave is that of the green economy. We already see great new creative innovation and development in our region in the field of renewable energy, sustainable food, transportation, forestry and low carbon building, clean technologies and so much more. The financial and economic crises that hit the region hard in 2008 have paved the way forward for new green thinking about economy, one in which material wealth is not delivered at the expense of growing environmental risks, ecological scarcities and social disparities. Many governments are in these times of financial and economic crises looking into ways and means of levelling the play field for greener products and services such as reforming policies and providing new incentives, redirecting public investments and greening public procurement.

Green economy focuses primarily on the intersection between the environment and the economy. The United Nations Environment Programme defines a green economy as one that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities"¹. In a green economy, growth in income and employment are driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

Despite great progress on sustainable development, it is apparent that a global economy based on the current patterns of consumption and production is placing heavy stress on many ecosystems, not only in our own region, but also throughout the world. Sustainability challenges in the Baltic Sea Region are linked to climate change, demographic change and a growing gap between urban centres and rural communities, and the lack of integrated natural resource management, to mention just a few pressing areas of concern². In order to tackle these challenges, we need to foster solutions that consider all three pillars of sustainability, namely economy, environment and society. Strengthening energy efficiency is one such example. Investing in energy efficiency not only benefits the environment and climate, it is increasingly paying off economically as well. In addition, energy efficiency, such as that in the building sector, can create jobs for a great many people with a wide range of qualifications and it also improves the living conditions for people. Good examples of how to do this are now readily available and should be scaled up and disseminated throughout the region³. Moreover, the Baltic Sea Region has a great potential for sustainable production and use of

bioenergy⁴. There are vast biomass resources at hand in our region and only a fraction of these are utilized. However, it is important that the production of bioenergy has to be sustainable, and in balance with production of food and fiber, and other products and services that the forests and agriculture land offers. Sustainable bioenergy production can stimulate positive developments both in terms of economy and socially in rural areas in our region and at the same time ensure healthy ecosystems.

Growing prosperity has made it possible for us in the Baltic Sea Region to invest in solutions to many environmental problems. In fact, no other region in the world has such a strong track-record when it comes to sustainable development, in both principle and practice. But despite the Baltic Sea Region's clear commitment to sustainability, we still have a long way to walk towards ensuring prosperous economies, healthy societies and dynamic ecosystems in a balanced and integrated manner. This is the overarching objective for the CBSS Expert Group on Sustainable Development – Baltic 21 and during the German Presidency in 2011-2012, Green Economy will be one of its priorities. During the upcoming year, we will focus on five areas of critical importance to fostering green economy, namely green public procurement, corporate social responsibility, public private partnerships, integrated natural resource management and sustainable production through eco-innovations.

We want to promote green public procurement. Local public authorities are often large economic actors in local markets with many employees and a great demand for energy, goods and services. By using the criteria of sustainability in their purchasing practices, public authorities trigger a growing supply of sustainably produced goods and services. A Green Public Procurement network has been set up in the Baltic Sea Region and a project has been developed to increase the level and uptake of green public procurement in the Baltic Sea Region by increasing the knowledge and expertise amongst procurement professionals.

We want to strengthen Corporate Social Responsibility (CSR) among SMEs. Business impact on society and environment can be improved through CSR. Fostering CSR activities among SMEs can contribute to more competitive enterprises and the development of more sustainable business models, as well as numerous advantages in terms of staff retention and motivation, in addition to reduced energy costs. In this area we are currently in the process of developing a new project.

We want to enhance Public Private Partnerships for sustainability⁵. Public Private Partnerships are often referred to as cooperative ventures between public and private sectors. We see a potential in fostering Public

¹ Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. Published by UNEP in 2011 and available on-line: www.unep.org/greeneconomy/Portals/88/documents/ger/GER_synthesis_en.pdf

² Council of the Baltic Sea States Strategy on Sustainable Development 2010-2015. Published by CBSS in 2011 and available on-line: www.cbss.org/Environment/baltic-21

³ City of Tallinn has improving energy efficiency in apartment buildings. A description of the good practice used is available on-line in the EcoRegion good practice database: www.baltic-ecoregion.eu/index.php/Reconstruction-of-an-apartment-building-in-Ta;110.52/1

⁴ Baltic 21 Lighthouse project Baltic Sea Bioenergy Promotion serves as a platform for cross-sectoral and transnational networking to facilitate information and knowledge exchange, policy development and application of bioenergy promotion instruments. More information on the project is available on-line: www.bioenergypromotion.net/

⁵ 8th Baltic Sea State Summit in Vilnius, Lithuania, 2010. Vision for the Baltic Sea Region 2020. The declaration is available on-line: www.cbss.org/Summits-and-Council-Ministerials

Private Partnerships to support, amongst others, modernization in Russia and the South East Baltic Area.

We want to move towards a more resource efficient region. The aim is to use all types of resources in a more efficient way. In particular, we will stress integrated natural resources in the agriculture and forestry sector. We have to gather climate smart solutions in these sectors, as well as to explore the full potential of renewable energy, such as bioenergy. The Baltic Landscape project seeks to work with these integrated solutions at the landscape level in a handful of model areas in many countries in our region.

Finally, we want to support sustainable production through eco-innovations. Eco-innovations can create competitive advantages and new business opportunities, which at the same time reduce negative environmental impacts. Through the SPIN project, we will test appropriate incentives for SMEs to apply eco-innovations and to increase the exploitation of the innovation potential of SMEs. Best practices or eco-innovation highlights have been collected and are being disseminated throughout the region⁶.

Next year, the international community will come together in Rio de Janeiro in Brazil to reinforce our global commitment to sustainable development. Green economy will be one of the main themes of the conference. One possible outcome of this high-level meeting is a UN Green Economy Roadmap. The tools and good practices on green economy that have been devised and tested in the Baltic Sea Region may constructively contribute to this Roadmap.

Green economy presents an opportunity for the Baltic Sea Region to create thousands of new green jobs. It is an opportunity for us to leverage our knowledge and experience in clean technologies to a world desperate to seek new solutions to climate change and ways to cut carbon emissions. I say let's ride on the green economic wave!

Mia Crawford

Senior Adviser & Head

Council of the Baltic Sea States Secretariat

⁶ The eco-innovation highlights are available in a database on the SPIN website: www.spin-project.eu/

From voluntary to legally binding measures in the Baltic Sea

By Eero Yrjö-Koskinen

The Baltic Sea has been a source of environmental concern for decades. During this time, the public debate has been dominated by discussions on eutrophication, hazardous waste, maritime safety and the decline of biodiversity.

While some positive results have been achieved, the wider picture remains unchanged: the state of the Baltic Sea is still fragile and its ecological balance continues to be threatened from all sides.

During the past decade, several initiatives have been made to tackle the problem. In 2005, the Helsinki Commission (Helcom) launched the preparation of the Baltic Sea Action Plan (BSAP), which set a number of ecological objectives to achieve "a healthy marine environment, with diverse biological components functioning in balance, resulting in a good ecological status and supporting a wide range of sustainable human activities".

Since its approval in 2007, the BSAP has been supported by a number of politicians representing all countries in the Baltic Sea coastal region. So far, decisive action remains to be taken.

In order to reach its "clear water" objectives, the BSAP aims to cut 42 per cent of the phosphorous and 18 per cent of the nitrogen inputs to the Baltic Sea by 2020. However, achieving these goals will be difficult if the actual costs involved vary dramatically between the different countries.

A Swedish professor of environmental and resource economics, Ms Ing-Marie Gren, compared in 2008 the costs per capita of implementing the BSAP in the Baltic Sea region. Based on purchasing power parity, professor Gren came up with a puzzling result: the BSAP costs varied between 104 euros in Lithuania and 4 euros in Finland. The rest of the countries received the following results: Poland 96, Latvia 52, Denmark 19, Russia 17, Estonia 14, Germany 12 and Sweden 9 euros, respectively.

This may explain why Helcom participants have been reluctant to take decisive action in order to meet these targets. At a time of financial constraints, few politicians consider the state of the Baltic Sea as a priority. This applies to all countries, regardless of their initial input per capita to implement the BSAP.

Another problem relates to the fact that the BSAP remains a set of voluntary recommendations without any legal clout. Experience has shown that environmental concerns seldom bypass economic interests, unless the two are interlinked. The Baltic Sea is not an exception. Major improvements are unlikely as long as Helcom signatory states do not have to worry about the legal consequences of inaction.

The third problem concerns the legacy of the Soviet era, which paid little or no attention to district and industrial wastewater treatment. Consequently, nearly half of the households in Poland are still outside of the wastewater infrastructure, and all of the wastewater in Kaliningrad is drawn directly into the Baltic Sea without any treatment.

Fortunately, this problem can be solved relatively quickly through international campaigns, such as the one implemented by the John Nurminen Foundation, which had a key role in building the new sewage plant in St. Petersburg.

The same cannot be said about the Common Agriculture Policy (CAP). As from 2014, Central and Eastern European countries will receive the same benefits as the old member states (EU15). If the current CAP practices were implemented in full in Poland, nutrient emissions to the Baltic Sea could increase by 100 per cent. Needless to say, this would have a dramatic impact on eutrophication: an additional 5,600 tons of phosphorus and 113,000 tons of nitrogen per year from Poland alone. It would invalidate any gains achieved from district and industrial sewage water instalments in eastern Europe.

Hence, new practices are needed if we ever intend to reach the BSAP objectives. Markku Ollikainen, professor of environmental and resource economics at the University of Helsinki, suggests the introduction of market-based instruments, including international nutrient taxes or a specific emission trading scheme for nutrients, such as the one that is currently implemented in water protection in the United States.

In short, environmental protection needs to move from voluntary to legally binding measures in the same way as in the EU water framework directive or the marine strategy framework directive.

Similarly, the costs and benefits of environmental protection need to be balanced between the Baltic Sea states before we can expect the approval of a legally binding maritime treaty.

This would require either the revision of the current status of Helcom or new intergovernmental structures in the Baltic Sea region. Neither one seems likely in the immediate future.

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Fisheries governance, equity, and externalities in post-crisis Iceland

By Niels Einarsson

Fishing accounts for much of the backbone of the Icelandic economy and politics are shaped by this fact. The economic and social crisis of 2008 sharpened public awareness of the importance of the fisheries and fuelled the debates on future arrangements in governance, including issues of property rights, privatization and enclosure of commons, as well as human rights and social justice. These debates have made it clear that Iceland needs to widen the choice of questions raised and assumptions made regarding good governance beyond narrow economic assumptions and establish a fisheries-governance system which meets criteria of effectiveness, fairness and sustainable human development.

The Icelandic fisheries-management system has developed into an economic system organized in the form of *de facto* private, transferable property rights, with mortgages based on present and future catch shares or fish-stock quotas. The privatization of common property resources in the fisheries proved to be instrumental in exposing Icelandic domestic economics to the vagaries of international monetary markets and financial globalization.

The period in the 2000s, when private Icelandic financial institutions grew at an extreme rate and expanded outside Iceland to tap into international markets and countries abroad, was called *Útrás* ("outward attack") in Iceland. During this period the size of the Icelandic financial firms became nine times that of the entire annual national budget of Iceland. Unfortunately, the Icelandic state was the guarantor. The *Útrás* was a development characterized by insufficiently regulated and undisciplined financial expansion guided by an ideology of *laissez-faire* policy with the support of many Icelandic authorities. It was also based on overconfidence in the Icelandic "Business Vikings" who, supposedly with superior and aggressive economic behaviour and tactics, outwitted the traditional and, by comparison, more conservative bankers abroad. The *Útrás* came to an abrupt end in the autumn of 2008 with economic disaster for the Icelandic nation and with long-term societal consequences in terms of quality of life for present and future generations.

The privatization of the fish stocks in Icelandic waters, embodied in the Individual Transferable Quota (ITQ) system, was a major precondition for the *Útrás* and therefore contributed directly to the bubble that burst and caused the downfall of the national economy. How did this happen? The contribution of the ITQ system to the overexpansion of the Icelandic banks and financial companies had to do with the fact that companies and individuals with property rights in fishing licenses were allowed to use them as monetary collateral, as "paper fish" so to speak, and thus could greatly expand the asset value of their companies on the stock market, and, more importantly, also use the collateral to borrow large sums of money for whatever purposes they saw fit. Before the introduction of the ITQ system in 1984, and especially the controversial 1997 act that, in effect, allowed the use of fishing rights as collateral, the only value in fishing firms consisted of boats, fishing gear, and facilities on land. With the possibility of using fishing rights as collateral, the value of firms' assets multiplied, and the price of stocks and markets in the 1990s and 2000s appreciated substantially. The use of "paper fish" was also important to the private banks, because they needed to show that they had substantial assets and solid equity to be trustworthy and to provide high credibility in the eyes of foreign investors.

The collateral the banks acquired in the fishing rights was thus crucial in creating a source of capital in a tangible asset. Iceland had few other assets and resources that were of the kind that could be manipulated into capital assets of collateral equity. But the danger facing financial institutions lending to the fishing industry using fishing rights as mortgages had, however, been known for some time. In its newsletter, the Central Bank of Iceland already by the year 2000 had warned against the inherent dangers of lending to the fishing industry, and quota holders; with collateral in quotas, the market price of fishing rights was already deemed unrealistically high or inflated, not reflecting the inherent value of

quotas. Lending based on an inflated value of quotas was judged to be very risky; it was likely to lead to high risks for collateral and the likelihood of lost loan payments, unless, of course, people were willing to take the risk that quotas would keep rising or at least maintain their value. At that time in 2000, the price of so-called "cod equivalents" was just over 800 Icelandic kronur per kilo, an unsustainably high and unrealistic value according to the Central Bank. The price went up to an incredible 4400 kronur per kilo before the collapse in 2008, a far higher price than any existing fishing operator, or especially a new entrant, could pay for investment in catch rights or to start or sustain a viable business. The total value of fishing rights or quotas in the Icelandic fisheries reached, in 2007 and 2008, what one economist called a "ridiculous" level of approximately 2000 billion Icelandic kronur or 50 times the annual profit of the fishing industry, thus reflecting the willingness of the banks to offer loans to quota acquisitions in the industry, rather than the real value of the fishing rights. At the time of the economic meltdown, when the flow of money dried up, the price of permanent quotas was halved. The "paper fish" asset "bubble" had burst.

The fact that so many of the assets of the newly refinanced banks in the post-economic meltdown of the Icelandic economy are also tied to quota collaterals, and the ability of the fishing industry to claim, nearly free of charge, property rights and to pay back their loans to banks, makes it more understandable why the banks are so particularly concerned about changes in fisheries governance. There seems to be a real fear of another financial collapse in the banks and, by default, among political decision makers who have been given the hard task of restoring the nation's economy. The rebuilding and strengthening of the financial system has been a central issue in the adjustment programme Iceland underwent with the International Monetary Fund.

Given the current predicament, the present government is finding it hard to change the fisheries governance law in accordance with election promises, popular demand, and the UN Human Rights Committee ruling in the case of 1306/2004, which called for recapture and equitable and fair reallocation of the nation's fish stocks, now, in practice, private property of powerful quota holders. The Icelandic lesson with externalities of privatizing common property rights in fish stocks is relevant not only to Iceland but also to the wider international community, not least in times of crises in fisheries, when ITQs in some form are seen by important players such as the European Union as a promising solution to problems of ecological and economic inefficiency.

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After two years of implementation – The EU Strategy for the Baltic Sea region at a crossroads?

By Wolf Born

The adoption of the communication on the EU Strategy for the Baltic Sea Region (EUSBSR) by the European Commission on 10 June 2009 marked the preliminary end of a comprehensive public consultation process. From spring 2008 till the 2nd Stakeholder Conference in Rostock in February 2009, member states, regions, inter- and non-governmental organisations gave their opinions on priorities and activities to be considered in the elaboration process of the strategy. One of the major drivers in this process was the will of the stakeholders to develop an integrated cross-sectoral policy framework within a region whose cooperation structures comprise a multitude of organisations and institutions, networks and projects, partly ignorant of each other, partly cooperating and in some cases even competing with each other.

In analyzing the situation in the Baltic Sea Region, Dr. Rikard Bengtsson in September 2009 saw the EUSBSR confronted with an efficiency challenge and a governance challenge.¹ The first one referred to the lack of a “functional division of labor” among the actors in the region. With the adoption of the EUSBSR, a certain commitment of the actors that actively participated to the elaboration process of the strategy - in total more than 100 contributions were received by the European Commission – was to be expected to improve this situation.

The key question in this regard is if these actors are willing and able to agree on more efficient patterns of cooperation within their setting of competencies. According to Rikard Bengtsson, one of the reasons why this process did not take place before the EUSBSR came into existence was the lack of political will. With the elaboration of the EUSBSR, a momentum towards more and better cooperation was created. But has this been enough to change the attitude of the actors in the region who could have strived for the same objectives also without the EUSBSR?

The second challenge to the EUSBSR is to be seen in its basic governance principles. One of its major features is the lack of a specific budget allocation for the strategy. Instead, existing funding instruments were requested to be aligned to the objectives of the strategy and its action plan. In the practice of implementation, this demand is first of all addressed to the transnational EU Baltic Sea Region Programme where it was well received. After the fourth and presumably last call, 36 out of the 80 projects are related to flagship projects of the EUSBSR. Of course, not only the Baltic Sea Region Programme but all the managing authorities of ERDF co-financed programmes in the region were asked by the Directorate-General for Regional Policy (DG Regio) to support the implementation process and to label the projects and grants that correspond to the objectives of the EUSBSR.

From the point of view of the coordinator for Priority Area Tourism in the EUSBSR, these two challenges described by Rikard Bengtsson still persist. In the case of the efficiency challenge, the first cooperative action for priority area tourism might be a useful example to illustrate the current situation. It states the objective to “highlight and optimize the tourism potential of the Baltic Sea Region” by establishing a common tourism strategy that should include a joint marketing of the region. Indeed, from a rational BSR point of view, it might be beneficial to the whole region to promote itself as a tourism destination, especially in source markets outside the EU. Nonetheless, it has to be acknowledged that Denmark, Norway, and Sweden successfully market themselves under the brand “Scandinavia” while the readiness to develop a common brand seems to be higher in the southeastern part of the Baltic Sea Region. In this case, there might not even be a common baseline among the tourism

stakeholders on how an efficient division of labor could look like. Accordingly, objectives stated in the action plan should not be considered to be confirmed by the relevant stakeholders but should be verified in close contact with those who have the genuine operational and budgetary responsibility in the EU Baltic Sea Region member states for the areas in question.

The above-mentioned cooperative action also refers to the cooperation on projects and the development of similar projects in different parts of the Baltic Sea Region. An analysis shows that within the programmes of the European Territorial Cooperation objective, better known as INTERREG, there are currently more than 90 tourism related projects in the Baltic Sea Region for which the financial support of the ERDF amounts to a 100 mio. Euro. But the scope of these projects is mostly limited to the smaller areas of the cross-border cooperation programmes and the involvement of the projects into the EUSBSR implementation is not part of the underlying grant agreements.

Accordingly, there is no financial incentive for these projects to share their results with others from outside of their programme area. In operational terms, it would be useful to create an instrument to cluster projects that receive funding from different programmes on a voluntary basis. In principle, the approach is already pursued for projects within the Baltic Sea Region Programme. It should be further developed and opened. By doing so, the benefit of resources invested in these projects could be potentially multiplied and thus used more efficiently. A lot will depend on whether or not the actors in charge are ready to walk new ways and to think in terms of the whole Baltic Sea Region. At this point, the challenges of efficiency and governance meet: How can a new division of labor look like and how do we use available resources to promote jointly the Baltic Sea Region? Those who dispose of the resources should be concerned with the EUSBSR and through a common effort make it relevant. The labeling of projects is reduced to a window-dressing exercise unless it becomes tangible in the implementation process. Objectives without resources are likely to become irrelevant. This is especially true in the coming years of transition between the programming periods. Ongoing projects may help to bridge the expected funding gap in the coming years and those who are involved in setting the priorities for funding after 2013 should bear in mind that the success of the EUSBSR does not come as a free lunch. In fact, it should be considered to anchor the EUSBSR as a common interface in the different objectives and strands of the ERDF funding in the future.

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¹ Rikard Bengtsson, An EU Strategy for the Baltic Sea Region: Good intentions meet complex challenges, Swedish Institute for European Policy Studies, European Policy Analysis, September Issue 9-2009, 10 p.; http://www.cespi.it/Nuovo%20Site%20CESPI/GOVMED/Swedish_institute_rapport_baltique.pdf

Turku Airport

By Juha Aaltonen

Turku is a pioneer city in Finnish civil aviation: the country's first civil aviation airport was inaugurated in Artukainen, a district of Turku, on 8 September 1935.

Since that day, aviation as a means of transport began to expand rapidly. While the size of aircraft also started to grow, this gradually began to place increasing demands on airport equipment, facilities and location. Consequently, a new Turku Airport was built and opened in its present location in northern Turku in 1955.

The steady growth of air traffic continued and new routes were opened. This trend was further boosted by the local business community's interest in developing the Airport and air traffic in general.

A new passenger terminal was opened in 1978. As passenger volumes continued to grow steadily, the Airport had to further upgrade its infrastructure in order to meet increasing customer needs, as well as keep abreast with the general development.

Meanwhile, air cargo traffic also saw solid growth. Turku Airport commissioned an air cargo terminal and apron to safeguard efficient operation and transport of air cargo from Turku to the rest of the world.

All of the airside areas and aprons were re-asphalted in 1995. The passenger terminal was extended in 1999 and continues to operate efficiently with respect to present passenger volumes.

Simultaneously, air cargo operations boomed as Turku Airport proved a competitive player in its field due to its excellent location and the other means of transport available nearby to complement it. Consequently, another air cargo terminal was built. Furthermore, a new Airport Maintenance Centre was constructed to meet the Airport's present operating model and safety needs.

Meanwhile, the City of Turku launched logistics projects that involved new players and provided new opportunities for the future development of Turku Airport.

A number of budget airlines have entered the market in the last few decades. Therefore, Turku Airport needed to establish an operating model that enables the operation of all airlines while also benefiting the Airport. After analysing its opportunities to welcome budget airlines, Turku Airport decided to renovate the old Maintenance Centre building for the needs of these new players. In 2008, the first budget airline started to operate from Turku Airport.

Today, Turku Airport is a modern, unique and versatile airport that continues to develop its operations based on customer needs. Its modern equipment and systems enable operation in all seasons on a 24/7 basis. Although other modes of transport compete with air travel, it is difficult to find one that could really compete with air transport.

The various players operating from Turku Airport include traditional commercial airlines, budget airlines, general aviation companies, skydivers, the Finnish Air Force, the Finnish Border Guard's Air Patrol Squadron, rescue services, and cargo, charter and taxi services.

Our extensive route network enables rapid and smooth transport of passengers and goods from Turku to all around the world. In 2010, passenger volumes at Turku Airport increased by 28% year-on-year. The first half of 2011 showed an 8% growth over the previous year. Moreover, a 2% year-on-year increase in the number of operations

proves that aircraft occupancy rates have improved. We are proud of our performance since profitable growth provides new opportunities to further benefit from our route network and other services that we provide to airlines, passengers and other companies operating at the Airport.

Due to this profitable growth performance, a comprehensive land use plan has been created for the Airport area. This enables efficient operations of both existing and new players while providing opportunities for future expansion. In this way, especially companies already operating at the Airport can continue to operate profitably and even expand operations according to their needs.

Today, Turku Airport provides a highly competitive operating environment for all players.

Turku Airport focuses on excellent service and smooth travel to the rest of the world, and back.

For its customers, Turku Airport continues to be a reliable partner that implements Finavia's strategy and operating plan enabling growth.

Thanks to its excellent location, Turku Airport provides an efficient and profitable operating environment in the field of air traffic for the whole economic region of Turku.

Turku Airport continues to develop its operations from the customer's perspective in collaboration with the City of Turku, the surrounding subregions and the whole economic region.

Smoothly to the rest of the world

Juha Aaltonen

Airport Manager

Turku Airport

Finland



Russian tourists in Finland – national success story of Finland

By Arto Asikainen

The history of free Russian tourism abroad is relatively short. In May 1991 the Supreme Soviet of the USSR approved the law which guaranteed free exit for the Soviet citizens from the country. Two years later, in January 1993, the new Russian passport law enabled everybody to freely apply for passport and make individual trips abroad without ultimately having a so-called exit-visa. Since this liberalization, the development of the Russian foreign tourism has been very rapid and Russia has become one of the main outbound tourism markets in the world. In 2010 Russians made nearly 40 million trips abroad. Finland is the number one destination for Russians. In 2010 Russians made 3,3 million trips to Finland. Russia is the leading source country of travellers to Finland as more than 40% of all foreign visitors come to Finland from the eastern neighbor Russia.

For the Baltic region as a whole and especially for tourism industry in Finland, the opening of the eastern frontier has meant the beginning of a whole new era which has brought prosperity and money in many areas, but required also great change in the attitudes towards Russian tourists and Russian people as such. When the first Russian individual tourist groups appeared in Finland in the early 1990s, the confrontation between the non-experienced Russian tourists and the local people was apparent. Russians, who were hungry to see the world beyond the iron curtain, often had only a small travel budget and hence made all possible effort to earn some extra money by selling alcohol, tobacco or other Russian products openly at the market places in the Finnish cities. In the eyes of the local Finnish people these so-called Red Squares hardly supported the development of any positive image of Russian tourists. Low budget travellers were not considered as attractive clients for retail shops either and some of them even made limitation to the number of Russian customers visiting their shops. In addition, the language barrier was obvious. There was hardly any service available in Russian. The official Finland did not make the first steps for the development of tourism from Russia to Finland any easier. Finnish diplomatic missions – due to insufficient number of visa officers – made artificial daily quotas for the number of visa applications which one tour operator could leave to the consulates per day. But no restriction could stop this development which turned out to be a success story for Finland.

The first Russian tourists raised a kind of shock effect at all levels of society in Finland. Very rapidly, however, the retail trade and the Finnish tourism industry realized that a great number of Russian tourists coming to Finland are not poor and do not need to make extra money by selling items to the local people at the Finnish market places. Many of these “New Russians” had a thick wallet and a great will to exchange its content into good products or services. Russians came to Finland to buy products which in their own country were either still unavailable or the price level was much higher at home than in neighboring Finland. Tourist resorts in Finland also realized that Russian customers spend money much more generously than European tourists which had traditionally been the main client groups in Finland. Suddenly, the stereotypic image of a Russian tourist had changed drastically: Russians were seen as extremely rich and a very large number of Finnish

tourist resorts started considering this group as welcome, however, still preferably during the low seasons when the other nationalities don't come to Finland. Also the official Finland started promoting the country as a tourist destination in Russia. In 1995 the first representative office of the Finnish Tourist Board was opened in Saint Petersburg and a year after the second one in Moscow. Together with Austria, Finland was the first pioneer to start promoting tourism in Russia at national level.

At the end of the 1990s and in the beginning of the 2000s, the new stereotypic image of the rich Russian tourist led to some unhealthy spark-overs in the pricing policy of tourist services in Finland for Russians. Despite the short period of economical crises in Russia in 1998, the number of tourists to Finland continued growing and Russians were expected to come to Finland at any price. During the top season, the Russian New Year period, the price level, however, was raised many years consecutively without any changes in the travel package as such. After three “crazy” consecutive years of the Millennium, the roof was reached leading to the decrease of Russian tourists and strengthening the image of Finland as being an expensive travel destination during the New year season. In the name of honesty one must, of course, remember that a number of Russian tour operators also raised the prices of the tour packages to Finland on their own account in the hope of bigger profits. With better marketing efforts, wiser pricing policy and a mutual learning process of the behavior of Russian customers, however, the situation improved and Finland succeeded in turning the development to a new growth again.

In the year 2000, according to the Finnish Boarder Interview Russians already became the biggest nationality visiting Finland. Furthermore, in 2006, the Statistics of the registered overnights showed that Russians had occupied the first position. Two years later in 2008, Russian registered overnights surpassed 1 million limit for the first time. In 2011, the number of Russian overnights alone is practically the same as the two second largest tourist groups, Swedes and Germans, together. Moreover, in 2010 Russian travellers left 653 million euros in Finland covering more than 30% of all foreign travel incomes to Finland. As a result, the growing number of Russian tourists means prosperity, work and new opportunities for the Finnish travel industry and other travel-related industries in the country.

Finland has a very positive country image in the eyes of Russian tourists. The older generation still remembers the Soviet times when the Finnish products were considered of a very high quality and good relationships between the neighboring countries also guaranteed a peaceful co-existence of the two economical systems. The brand work of Finland which was done during that period still bears great fruit in Russia. Also, the geographical and mental closeness of the two countries and nations enables favorable development of tourism, because the common border makes it very easy for Russians to visit Finland. Especially for inhabitants of Saint Petersburg and the Leningrad region Finland has become a one day- or short break destination within easy reach. With the introduction of the new high speed Allegro train even the Finnish capital is only three and a half hours away from the center of Saint

Petersburg. Russians consider Finns to be much closer to their own mentality than Swedes or Norwegians for instance, perhaps due to the common history when Finland was part of the Russian Empire. Moreover, the Finnish climate is similar to the northern part of Russia and hence the vacation in Finland does not need any acclimatization. All these factors together make the border to the neighboring "old autonomy" for Russian tourists very low.

But not only the old reputation, geography nor mental closeness alone bear fruit for Finland. The Finnish travel industry has also made great efforts in the field of product development and marketing. Finnish travel product is suitable for all tourist categories: individuals, families with children, couples or corporate clients. Also budgetwise Finland offers travel products for each wallet. Finland is a "universal destination", as very often quoted by Russian tour operators.

There are two travel products, though, that raise above all in popularity among Russians: cottage holiday and the New Year season products. Dachas - the little allotments with a modest cottage outside of the cities in Russia, have always been kind of a refuge for the Russians, although weekend in dachas very often means more work than relaxation. Cottage holidays in Finland satisfy the basic needs for the most Russian tourists who want to be in nature and enjoy forest, lake, peace and safety in a high quality cottage with all the comfort and total relaxation. Fishing, being one of the favorite hobbies in Russia, is an additional plus during the cottage holiday. Finnish cottages have only few competitors abroad and Finland is undoubtedly the leading destination in this segment in Russia.

The second big success story for the Finnish travel product in Russia is the New Year season. As the Russian winter holiday period starts from the New Year, the Finnish holiday resorts have been able to extend their Christmas season until the second half of January. Thanks to the Russians the first month of the year has become high season. The Finnish New Year travel product offers good and variable winter activities and experiences for families with children which is the main target group of this season. Thanks to the common border with Russia, Finland can also be reached by a numerous charter trains departing from Moscow during the New Year season. For many Russians train is a more preferable mean of transport than

airplane and Russians are used to long train trips in their own country.

During the past twenty years Finland has been able to enjoy the favorable development in the field of Russian tourism. New records are to be made and new success stories to be written in the future. The Russian economy develops positively and most likely the number of Russians who can afford holiday trip abroad is expected to grow. In 2011, only some 12 million Russians had a valid passport. 79% of all Russians had never been abroad in their life. Only in Saint Petersburg and Leningrad area there are some 5 million people who have never been able to travel abroad. When their economical situation improves and a vacation abroad becomes reality the nearest foreign country to visit is Finland. In Finland we must, however, make constant efforts to guarantee the growth and make sure that our travel product suits Russians and remains requested in the future. We must learn from the errors done earlier with the pricing policy, invest sufficiently on marketing and ensure the quality of travel services. Quality also means service in Russian language. But the best promotion and marketing action which Finland, the Baltic area and Europe as a whole could do in Russia, is changing the visa policy by raising the requirement for the entry visa. This would mean real freedom for Russians to travel abroad and would increase considerably the number of Russian tourists in Finland. When visa free travelling from Russia to Europe finally comes true, it will be the final step in the developments which started in May 1991.

Arto Asikainen

Area manager

*Finnish Tourist Board
(Visit Finland)*

Finland



EU information services in the Baltic Sea region

By Juhana Tuomola

Low level of knowledge and interest of the European general public in EU issues has been a popular topic for public discussion. They have been a cause for worry especially at the time of elections for the European Parliament or EU referendums when the voter turnouts have been low. Information and communication are seen as primary tools to attract the interest of the people in the EU. The Baltic Sea Region has an extensive network of EU information services but they face many challenges at the moment.

“EU? - couldn't really care less!”

The European Commission has carried out Eurobarometer surveys on various topics since the 1970s. Attitudes of Europeans towards the EU are measured yearly and therefore Eurobarometers give a fairly reliable picture what the general public feels and knows about the EU also in the countries surrounding the Baltic Sea.

The latest Eurobarometer 74 from February 2011 clearly states that most Europeans (66%) feel ill-informed about European matters. Almost half of Europeans (46%) feel that they do not understand how the European Union works. There is, naturally, some variation between countries, age groups and professional backgrounds. The unemployed and the very young tend to feel less-informed than people in higher socio-professional categories.

When asked where people look for information on the European Union, the television comes out as the primary source for more than half of Europeans (56%). It is the only media that is followed daily by the majority. Daily newspapers and the Internet have more or less the same importance (about 30%). Thereafter come radio, “off-line” social networks such as discussions with relatives and friends and various publications plus other sources. Surprisingly only a very low percentage of Europeans actively look for EU information by attending training courses, seminars or other events or by taking contact with specific EU information services.

EU information services in the Baltic Sea region

The Commission has Representations in the capitals of the member states. The European Parliament has also its own information offices in the EU member countries. Both carry out active information activities and also offer traditional “question-answer” type EU information service. The European Agencies located in the Baltic Sea Region EU countries are also becoming more active in information and communication.

The Commission supports Europe Direct network with almost 500 regional EU information centers in the member states in order to better reach people not only in the capitals but also in remote areas. The Europe Direct Information Centers serve the general public and approximately one hundred Europe Direct Information Centers are located in the Baltic Sea Region. Europe Direct Information Centers have various host organisations such as municipalities, regional public bodies or NGOs. The EDICs are for the time being the only extensive EU information network that is present in all the Baltic Sea Region EU member states. But the EU also supports other EU information networks such as the EURES European Employment Services, Enterprise Europe Network for SMEs and specific EU libraries attached to many university libraries around the Baltic Sea region. A good number of public libraries also offer EU information as an integrated part of their information services. Thus, one can say that in almost all of the regions around the Baltic Sea there is EU information service available in some form.

National authorities in the Baltic Sea Region have different arrangements on how to inform their citizens about the EU. Many focus on not only informing about general EU issues but also communicating and explaining the EU policy of the country.

For example in Sweden EU information is offered by *EU-upplysningen* which is an EU information service of the Swedish Parliament, *Riksdagen*. In Denmark there is a resembling service with *EU-Oplysning* in the *Folketinget*. In the Baltic States there are similar services. In Estonia EU information on the national level is offered by the Government Office *Riigikantselei*. Finland has a

somewhat different arrangement with a network of regional EU information offices called *Eurooppatiedotus*, Europe Information, of the Ministry for Foreign Affairs.

The changing EU information services landscape

Due to the present economical situation affecting many public bodies around the Baltic Sea Region, there is a growing pressure to cut costs and optimize the use of resources. This affects also publicly funded EU information services. In Finland, for example, the national Europe Information network is being reformed with regional information offices gradually closing and services being coordinated largely from the capital. Also, there seems to be currently less interest on the part of the municipal or regional authorities to host Europe Direct Information Centers around the Baltic Sea.

There is also another, yet a more serious challenge. The latest Eurobarometers clearly reveal how the way we look for information is profoundly changing. This not only affects EU information services but all manners how we communicate and look for information in present day society. Reliance on the traditional media as the preferred source of information on the EU is slowly declining. Television seems to retain its strong position as the primary EU information source but the use of daily press has clearly declined. The winner is and without doubt will be the Internet.

Generally in Northern Europe the use of the Internet when searching for EU information is greater than elsewhere in Europe. Internet penetration has a very high level throughout most of the Baltic Sea Region when compared with many other parts of Europe. Also, the differences in Internet consumption between age groups is smaller than elsewhere in Europe.

But the Internet is changing rapidly too. Various online social networks like Facebook and Twitter are becoming more popular also as “serious” sources for information. So far online social networks are used by less than half of Europeans but the numbers among young people are very high.

It can be argued that to reach especially the young with EU information one should focus more on the social media in the Web. People also debate and discuss EU issues all the more in online social networks. Many European institutions and national authorities are already participating and offering EU information in the social media. Interestingly enough a great number of Europeans (37%) still feel that information on political affairs from online social networks cannot really be trusted. Thus remains the challenge: how to be a credible yet interesting EU information service in the ever more complex virtual world of the Internet.

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Information Officer

Europe Information

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Multidisciplinary university and societal interaction

By Petteri Siika-aho

The increased emphasis on the universities' societal interaction (aka *the third mission of the universities*) and the demand to ensure high levels of student employability has forced the universities to change their attitudes and to increase their understanding of, and relationship with, interest groups. Relationships take place both at organisational level through central initiatives and at the individual level. The universities benefit from the collaboration at least in the following ways: opportunity to spread the research results and know-how to society; feedback and perception about the trends and the needs of business life and other interest groups; financial resources through commissioned research.

International competitiveness, which is a concept well known in political and economic life, is one of the main background motives for increasing the universities' societal interaction. In this light, one would think that societal interaction highly interests the academic world. The new Finnish Universities Act from 2009 aims to enhance university autonomy by encouraging universities to supplement their basic funding with donations and business activities. As a result, Finnish universities were detached from the state budget although the Ministry of Education and Culture continues to grant core funding to the universities for their statutory public duties. Most universities, including the University of Turku, were granted an independent legal status as corporations under public law. Two of the Finnish universities became foundation universities under private law.

The legislative responsibility to participate in societal interaction was first included in the previous Universities Act in 2004. Societal interaction has always been integrated into research and education, but it is fairly new as an administrative task. On one hand, societal interaction is axiomatic and it has always been an integral part of those fields that educate to a certain profession. On the other hand, it is so manifold that it seems unclear and hard to get a grip on. In any case, today one of the most measurable and important dimensions of societal interaction is *innovation activity*, which is defined as the utilisation of scientific or scholarly knowledge in creating better products, processes, technologies or ideas.

Knowledge transfer between universities and interest groups is essential in increasing innovativeness. Knowledge is transferred via degrees and adult education, but also in project research. When a company orders a research project from the university and can thus utilise the knowledge that researchers have accumulated, we talk about *commissioned research*. The results of the research, including the intellectual property rights (IPR), are transferred to the orderer in the way defined in the contracts. In most cases, this kind of commissioned research is started because the researchers in the enterprises and the university's researchers know each other, that is, they network in congresses and so on.

Jointly funded research projects, where enterprises take part as so-called industrial partners, are more research-oriented than commissioned research. According to the contracts, the companies receive a priority to negotiate on the commercial right to use the IPR emerged in the project and the know-how of the enterprises increases through participation. The majority of the external research financing the University of Turku annually receives is directed towards jointly funded activities.

Selling and licensing IPR has been challenging from the university's point of view. A more workable model for the university is to create start-up enterprises in so far as it is possible to form an adequately strong substance base for an enterprise of the IPR and the knowledge, and the challenges of financing can be solved. The university has defined its policy

concerning these matters in its Financial and Business Strategy 2010–2012. The Act on University Inventions (2006) provides universities with the possibility to assume the rights of inventions based on specific criteria. The rights of inventions made in joint research projects can be acquired by the universities, while the results of open research activities, i.e. research with no involvement of external partners, can be kept by the researchers themselves.

There have been some difficulties in promoting societal interaction, for example, accountability on the time spent on non-education related activities, or cultural barriers such as the mind-set of the teaching staff, very strong theoretical focus and lack of a business minded attitude in some cases. There is not yet a comprehensive reward system for societal interaction, but as regards inventions, the University of Turku uses a compensation system to reward those who make an *invention notification*. The most remarkable initiative is that the inventors are to be paid a minimum of 50% of the financial net benefit, for example, in the context of license selling. In addition, to further improve the productisation of the university units' activities, the University of Turku takes part in the new TEKES programme *Prerequisites for innovation prowess*.

The significance of research as a source for innovations varies between businesses. Consequently, the faculties are also in different positions. This, of course, means that societal interaction should not be seen only in the light of innovation activity though it is important in many senses. For a long time after the WWII, science and technology policy was dominated by the *linear* innovation model, where basic research and universities were seen to generate new ideas, which were then converted into inventions and innovations that produce financial benefit elsewhere. Later on, the importance of doing and learning together as well as interaction have been emphasised in the emergence and development of innovations. This idea can also be applied to other areas of societal interaction. According to the *Policy principles of the OECD innovation strategy*, the policy makers should ensure that education and training systems are adaptable and can evolve to accommodate the changing nature of innovation and the demands of the future. This will require curricula and pedagogies that enable students to develop the capacity to learn new skills throughout their lives. In other words, universities should encourage their staff and students to solve problems in the surrounding society although this will not always lead to commercial innovations.

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Industrial business parks – SMSE employment platform in Russia

By Timo Koivumäki

In their hopes of Russia joining European society and economic system, too few western opinion leaders seem to pay attention to the elementary cultural difference between nations around the Baltic's. The lack of understanding the differences in mentality has led to continuous disappointments both in political and economical questions. The same goes on a practical level of everyday business.

Western democracies' attempts to monopolize determining global ethics and human rights should be critically discussed. I am not saying democracy is a bad system; it just has one general flaw in it, human nature. It is the same nature that drives the leaders to hope for unrealistic integration of Russia in to Western economy. When we should seriously be thinking of the future of western economy, maybe our future is in the east.

Russia is consciously floating between democracy and dictatorship. Western leaders may criticize elections there to be unjust, but most of the people in Russia don't. Majority of the citizens agree that this regime is what Russia needs. Partly it is a matter of choice, but also subconsciously steered by cultural history. One has to remember that mentally Russia is more Asian than European, religious history is in Byzantine Empire, trading history on Silkroad and administrative tradition to a great deal in clan culture. Recognizing this foundation the people may be right.

Now with western economies lagging again many companies are turning their heads to Russia. What makes it more promising is that Russia's business climate has been relatively stable over three last electoral terms and it apparently is continuing. Although at this point it is needed to stress that most of ordinary business men in the country say that bureaucracy and authority arbitrariness has gradually increased over entire Putin's regime.

The cultural shock across Finnish - Russian border is tremendous. In Transparency International's Corruption Perception Index of 2010 Finland and Sweden scored 9,2 and Russia 2,1 on ten point scale, placing Finland and Sweden on shared 4th place with second highest grades, whilst Russia is number 154 among 178 reviewed nations. This is of course only one attribute and might not be the main issue when considering establishing in Russia.

Especially SMSE's find Russia a difficult business environment. But all this does not mean that one cannot run a successful business in Russia. And there is business for taking. It only takes enough will and humbleness to seek help in doing it. There is a lot to learn from Russian entrepreneurs. One thing is the personal networking. Secondly it is required to come in to terms with your own ethics and values. Some sectors in Russia just don't work without sharing the benefit, or call it bribery if you will. But there are also many other sectors, where running an all legal business is possible and profitable, and some where it is even a must. This is something that, no matter what, we most probably will not be able to change from outside.

Regardless of all above Russia remains an interesting market with an evident growth potential.

Also Nordic governments have promoted business cooperation across the border. Now that other export and domestic markets are slow it is even more important direction to grow. Already in 2006 Finnish – Russian cross government SMSE's supporting program EuroRussia set a

target to establish industrial business parks adjacent to the border. None of them seem to have really succeeded yet. Nevertheless these business parks could be an important foundation for SMSE's, specially the ones located at the border zone. These can provide much easier control and border crossing for operators with limited resources.

Their strength is in offering a safe environment where business security can be maintained by providing relevant services and public support. The business logic of current parks has to be rethought. It has to be based on solving operational questions and the services thereof rather than being property driven as most of them today are. For the western entrepreneurs as users here's the place where they can and have to learn from their Russian colleagues about networking. Sharing resources and knowledge enables labor intensive industries to expand across the border and take significant share of the growth potential in Russia. There are only limited Russian government determined strategic sectors where it nearly impossible for an SMES to operate. Serving these sectors then might be lucrative if the business. Also automotive industry is in focus of many interest groups. Automotive has been a forerunner in practically all markets when it comes to SMSE production and subcontracting networks. It is a rising sector in Russia too and it will set new standards and business models for many payers around. It can in near future provide subsistence to over 100.000 people.

Public sector must take a more active role in financing the parks and SMSE's operating there in, because these are off corporate world and thus not interesting for private banking sector today. In Russia it also must be understood that innovation activity is not necessary multibillion nano-space technology. In most cases it is a small improvement in an ordinary volume business enabling significant cost saving. SMSE industrial business parks would create welfare and security on the border zones and entire Baltic Rim.

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Writer is a Finnish business consultant and entrepreneur with close to 25 years of experience in running business in Russia. He is also active in an industrial business park development in North-West Russia.

Efficiency gains through combination of oil spill recovery, icebreaking and cross-border cooperation

By Tero Vauraste

By converting Finnish icebreakers to perform new tasks, tens of millions of euros can be saved. There is potential for closer cooperation in the Gulf of Finland region.

In recent years, the risk of oil spills in Finnish territorial waters has multiplied, as oil transports in the Gulf of Finland have steadily increased in volume. This trend is likely to accelerate in the coming years, as construction of the Ust-Luga oil terminal, located on the coast west of St. Petersburg in Russia, is completed.

This risk has been widely recognised. Authorities and non-profit organisations alike are doing valuable work to ward off the threat.

However, as reported by the Finnish Ministry of the Environment, insufficient capacity is currently reserved for oil spill recovery. According to the Finnish Environment Institute, the authority coordinating oil spill response preparedness in Finland, a capacity of 30,000 cubic metres per day is currently required in the Gulf of Finland; one of 20,000 cubic metres in the Finnish Archipelago; and 5,000 cubic metres in the northern reaches of the Gulf of Bothnia. Naturally, prevention is the best form of risk management. In this respect, progress is being made as new maritime traffic management and reporting systems are introduced. However, this does not change the fact that the authorities need to be prepared for catastrophes.

Along Finnish coastlines, seventeen larger vessels, suitable for oil spill recovery, are available. The Finnish Environment Institute estimates the combined capacity of these ships to be approximately 6,500 cubic metres. In July 2010, this capacity was increased by 2,000 cubic metres overnight when Kontio, an icebreaker in Arctia Shipping's fleet, was converted for oil spill recovery capability.

According to the Finnish Ministry of the Environment, there is a need for an additional six vessels, each with a capacity of

1,000 cubic metres. The cost of such a vessel is 50 to 60 million euros, raising the total cost of six new ships to approximately 300 to 360 million euros. An annual operating cost must be added to this sum.

The previous winters have provided a harsh reminder of how extreme conditions in the Baltic can be. Sea ice grew thick during the long cold spells; the wind piled up the ice to form large expanses of pack ice, which were especially treacherous in the narrowest section of the Gulf of Bothnia. Icebreakers operating in the area could help merchant vessels to force a way through the ice only one ship at a time. Easterly winds, which normally ease such conditions, were not in evidence for an astonishing nine weeks.

Arctia's icebreaking service sets itself the goal of assisting 90 per cent of merchant vessels in need of assistance without a waiting time. Should delays occur, the average waiting time per ship should be less than four hours. Last winter, Arctia's icebreakers came close to achieving their 90 per cent goal, but the average waiting time remained at over 12 hours; in other words, three times higher than the set goal. With an average age of approximately 27 years, Arctia Shipping's entire icebreaker fleet will reach the end of its lifespan in the early 2020s. One of the icebreakers, Voima, which was commissioned in 1954, must be replaced earlier.

According to long-term scenarios provided by the Finnish Meteorological Institute, ice breakers will remain necessary in Finnish waters for decades to come. For instance, in the region around the northern Gulf of Bothnia, industrial plants will remain in operation, while the expanding mining business will create more demand for sea transport. Since the cost of a new icebreaker is around 100 to 20 million euros, Arctia faces a sizable investment programme.

However, it is possible to combine oil spill preparedness with an ice breaking role in a way that is efficient from the point of view of the national economy. Instead of ordering new oil-recovery vessels, current icebreakers can be converted for oil spill recovery

duty, as evidenced by the already converted Kontio icebreaker. Indeed, what ship is better suited to oil recovery operations in winter than an icebreaker? This would mean a need for four to six new icebreakers rather than eight.

In the first phase, two to four ships in the current icebreaker fleet can be converted. If existing ships are converted for oil recovery tasks, instead of building new ones from scratch, expenditure can be limited to 5 million euros per ship instead of 50 to 60 million. Because the current icebreakers are fairly large in tonnage, the capacity requirement of 1,000 cubic metres per vessel, as set by the Ministry of the Environment, can be easily achieved and probably exceeded.

Under commission by the European Maritime Safety Agency, most crew members on Arctia's icebreakers have now been trained for oil spill recovery tasks. Consequently, no additional personnel need to be recruited or trained in order to maintain the level of preparedness and capability of operating the ships. Furthermore, ship maintenance costs are minimal compared to new investments.

The major investment programme for building a new oil recovery icebreaker fleet must also be spread over a long period. This programme should be launched well ahead of time, before the life span of the current ice breakers expires. To ensure maximum gains from large investments, new vessels must be suitable for year-round operation.

To ensure continuity, the investment programme should span several consecutive governments and budget periods. The ensuing cost savings will ease political endorsement of the programme.

Last winter, the Urho icebreaker remained berthed in Helsinki for almost two weeks, awaiting operational tasks, while north-westerly winds kept pushing the sea ice into Russian territorial waters. At the same time, over one hundred ships lay ice-bound off St. Petersburg. Several Russian icebreakers were operating in the area. In addition, Russian authorities ordered the Vaigach icebreaker, stationed at the time in Russian Arctic waters, to enter the Gulf of Finland and assist traffic there. To avoid such situations in the future, companies providing ice breaking services in the Baltic should agree on joint use of capacity in the region. Russian authorities have taken an active and positive stance towards this initiative. Both the Finnish and Russian parties are striving to get these ideas off the drawing board as soon as possible.

In sum, enhancements in capacity utilisation can be gained through converting existing vessels for new tasks, adopting new cooperative models and introducing new, innovative technology. All of these elements are needed in order to safeguard a clean Baltic and unobstructed fairways for competitive sea transports.

Tero Vauraste

President and CEO

Arctia Shipping Ltd.



Towards environmental friendly and productive agriculture – Yara’s solutions for a cleaner Baltic Sea

By Tero Hemmilä

One of the main challenges of agriculture today is to cost-effectively and efficiently produce a sufficient amount of food for the rapidly growing world population in an environmentally friendly way.

With a fast growing population the arable land per person decreases markedly in the near future. Mineral fertilizers play a fundamental role in the world food production. Producing more food per hectare of arable land in Europe with good agricultural practices in a sustainable way will reduce the need for food and feed imports into Europe and therefore help preserve the environment without turning more forests or virgin lands into agricultural land.

At the same time the Baltic Sea region faces major environmental challenges of which nutrient enrichment in the Baltic Sea is one. Too high concentrations of phosphorus and nitrogen in water promote excessive growth of algae and approximately 50 percent of the phosphorus and nitrate load of the Baltic Sea is caused by agriculture.

One of the environmental targets set in the EU strategy for the Baltic Sea region¹ is to reduce nutrient leakage to the sea to acceptable levels without losing the competitiveness of EU agriculture. The two paramount goals set by the EU can be reached through good agricultural practices and innovation.

As a leading provider of mineral fertilizers Yara supports the importance of promoting a healthy and competitive EU agricultural sector based on environmental responsibility. Yara is committed to providing solutions to these challenges through research and development as well as agricultural services and advice.

Yara has developed several new innovations as solutions to reduce eutrophication in the Baltic Sea. The solutions include new technology to improve fertilizer use efficiency as well as crop knowledge. Yara’s latest innovation is a solution that markedly reduces phosphorus leakage from fields into waterways.

Phosphorus is an essential nutrient, plants need it to grow. The problem is that rainfall and runoff detach soil particles and transports phosphorus containing soil to waters - thereby causing eutrophication. So farmers need specific tools to control phosphorus leakage to be able to keep the phosphorus in the field for the plants to use.

The solution lies in spreading gypsum on the field. Gypsum is calcium sulphate, which infiltrates into soil with water, improving particle aggregation and dissolved phosphorus retention. Better soil structure means that the earth better resists rain and melting snow and therefore prevents erosion and phosphorus leakage. Another important advantage is that gypsum improves the plants’ ability to utilize soil phosphorus reserves.

The solution is in line with the EU’s strategy for the Baltic Sea region. Yara’s solution gives farmers the possibility to continue farming according to best practices also on vulnerable soils.

The solution is based on Yara’s TraP research project, which tested the use of gypsum to trap phosphorus in fields. The tests were done in laboratories and as full-scale field tests, in cooperation with farmers around Finland. The project was co-funded by Yara and Tekes. The project has been carried out together with among others SYKE Finnish Environment Institute, MTT Agrifood Research Finland.

¹ Pillar 1, point 1: To reduce nutrient inputs to the sea to acceptable levels

The studies demonstrate the efficacy and applicability of gypsum. According to field results, gypsum has the potential to decrease particle-bound phosphorus discharge by 60 percent.

Yara is dedicated to help farmers use the optimal quantity of fertilizer products that provide a balanced nutrition of all required plant nutrients. Yara has therefore further developed the concept of precision farming, which helps farmers optimize yield and reduce negative environmental impact. This is achieved by combining crop knowledge through the Yara Crop Nutrition concept with advanced sensor technology.

Yara offers a device called the N-Sensor – a technology, that mounted on the tractor cabin detects areas of different nitrogen supply and adjusts nitrogen fertilizer rates accordingly on-the-go. This way the nitrogen rates are adapted to crop demand on every spot of the field and both over- and under-fertilization can be avoided. This way farmers are able to conduct precision farming, i.e. applying the correct nutrients, the correct amount at the correct time for optimal yield and minimal environmental impact. As a result the farmers get improved nitrogen use efficiency through yield increase and or fertilizer savings. The crop quality gets more homogeneous (e.g. protein content of grains) and the risk of nitrogen losses to the environment is reduced.

In addition to the solutions mentioned above to reduce the nutrient leakage into the Baltic Sea, Yara guarantees that the carbon footprint for fertilizers produced by Yara sold in Finland, Sweden, Denmark and Norway is below 4 kg CO₂-equivalents per kg nitrogen applied.

Another environmental target set in the EU strategy for the Baltic Sea region² is to mitigate and adapt to climate change. From the total nitrogen load to the Baltic Sea 25 percent is airborne. Yara’s offers solutions to reduce nitrogen oxides emissions from powerplants and trucks. Yara’s AdBlue high quality urea transforms NO_x into harmless nitrogen and water, reducing emissions by over 90 percent.

Only an increasingly resource efficient agricultural sector, answering to the environmental concerns of society, can be sustainable in the long run. Agriculture plays a key role in mitigating climate change, and must be seen as a part of the solution.

Tero Hemmilä

CEO

Yara Suomi Oy



² Pillar 1, point 5: To mitigate and adapt to climate change

Enough food to feed the world?

By Pasi Lähdetie

A constant hot topic in the media during the last few years, since 2007 food crisis has been "is there enough food"? Numerous summits and all kinds of seminars have been held around this important theme in Finland and elsewhere in the world. It is necessary to have this discussion, as the humankind is facing a huge challenge in attempting to guarantee the daily food and fresh drinking water for everyone.

World population is growing with increasing speed. Every three weeks there are as many more mouths to feed as is the entire population of Finland, i.e. 5 million. Simultaneously in the developing countries the standard of living is rising with accelerating speed and more and more people are changing to a western style diet. Of the current seven billion people only one billion earns more than 10 000 dollars a year. This income level is also considered to be the limit when a person's diet is starting to consist, for a great part, of protein from meat and dairy products. Beneath this income level the diet is mainly carbohydrate based and the proteins come from vegetable sources. It has been estimated that the world population in year 2050 will be nine billion and accordingly the number of people enjoying the western diet will have grown from one to two billions. This is a very challenging equation. A question of calculation: how much should the production of food and especially the production of grains and oil- and protein plants grow in order to suffice? Answer: it should be doubled. It is beginning to seem, if not impossible, at least one of the greatest challenges for mankind.

The green revolution was based on fossil energy forms

A so called green revolution began in the sixties. As a result of it the world's production of field products, especially cereals and protein and oil crops became threefold within 25 years. The growth rate of productivity has since slowed down. The green revolution was not as green as it sounds. It was based on fossil fuels, especially on unlimited supply of oil and natural gas and their cheap price. The most important plant nutrient, i.e. nitrogen, is even today produced using the over 100 years old Haber-Bosch technology, whereby with the help of natural gas the nitrogen from atmosphere is transformed to inorganic nitrogen fertilizer. Phosphorus and potassium fertilizers are quarried from the ground and are returned only to a minute amount from food chain back to field fertilizers. The world's phosphorus reserves that can be utilized with current technology will be exhausted within the next few decenniums.

Only one per cent of world's water resources are fresh water. Of this fresh water 70 % is used in agriculture. In many parts of the world, especially where the population growth and the rise of the standard of living are the speediest, there is shortage of clean drinking water and use of water for irrigation within agriculture has to be limited. This, in its turn, lowers yields. The other key factor in the green revolution was the increase of irrigation in agriculture. In extreme cases the direction of flow of rivers was changed in order to get water for irrigation.

The third key factor was the development of technology. The mechanization (use and development of farming machinery) really began in the 1960's. From the use of horses, powered by "biofuels" there was a transition to tractors using fossil fuels. Plant protection grew: herbicides could be used to fight against weeds, insects and plant diseases. The production of plant protection substances is chemical industry based on fossil fuels.

The evolution of production, stocking and logistics within the food chain has been enormous. More and more warehouses are being built, the cold chain ensures that the food stays fresh and furthermore the preservation methods are becoming better all the time. However, wastage of all food produced in the world is nearly 40 % before it's even on the plate. Proportionally, the wastage of food biggest is in the developing countries. In these countries most is lost already on the fields, but some also during bad storing.

The green revolution was thus based on fossil fuels and use of fresh water in irrigation. The green revolution ensured food for the

fast growing world population and it has been a valuable phase in securing peoples' food supply. In the future, however, new doctrines are needed.

Fields, water, plant nutrition and the sun

The world food supply is based on simple factors. What you need is arable land, plant nutrients (nitrogen, phosphorus, potassium, sulphur, ...), fresh water, solar radiation for photosynthesis and technology, with which to enable the crop to grow and finally be processed into different food products on the plate.

The world food production is facing major changes. From the old ways and philosophies one has to turn to more natural ways of production. This does not mean going back to self-sufficiency in farming or what is nowadays defined by law as organic production, but one has to seek for ways of future food production through improved energy and material use efficiency. In field production we will be going towards a closed circulation. In the food chain recycling the nutrients back to the field and intensifying the efficiency of the nutrients are essential from the point of the environment. The leaching of nutrients into the water ways and the emissions of greenhouse gases into the atmosphere will be reduced. Raisio has developed the concept of Closed Circuit Cultivation CCC® for measuring the environmental effects of farming.

Even more critical is the sufficiency of clean fresh water. When the temperatures rise with the greenhouse effect, there just won't be enough water for irrigation in the important farming areas, such as California, where farming is based on irrigation. The use of water for farming is these days already being severely restricted in those areas. The situation is much the same in France, where during last summer's dry spell irrigation was forbidden in large areas.

More farm land is being cleared but a corresponding field area is lost to desertification and urbanization. The biggest reserve for clearing new farming land is in Brazil. Taking rain forests to farming use presents huge risks globally, but also for Brazil's own farming.

As the Amazon rain forest border moves North East while new farm land is being cleared there, the South Eastern part (Sao Paulo area) is starting to suffer from draught, since the rains from the rain forest no longer reach that far.

Finland is a super power of water

The answer to the original question, will there be enough food for everyone even though food production will have to be doubled by the year 2050, is fairly easy to give; yes, there will be. Within the agriculture there will be a real Green Revolution and in peoples' diets there will be a shift towards a more plant based diet. The relative share of animal based proteins in the diet will diminish.

Finland is a super power of water. Precipitation is bigger than evaporation. We have clean fresh water in abundance. Whereas, in f. ex. the Mediterranean countries water will become an even more critical factor. In livestock production lots of water is needed. In the global distribution of food chain work Finland will be a naturally good area for dairy as well as meat production. In Finland we have enough arable land, water, and food chain know-how to rise to the challenge of future food production. The future is what we make of it.

Pasi Lähdetie

Vice President, Green Economy

Raisio Group

Affect peoples energy consumption by design?

By Elisabeth Lind

Is it possible to affect people to consume less energy by design, and at what extent? With an innovative and curious approach, and in the same time well aware of our customers demand that technique should be easy to use, Bostaden now try to find out by developing individual measuring. One thing is to develop the technique, but the question of design is a much bigger challenge for a holding company to handle, as it also involves emotional interpretations.

How it all started

Bostaden as a real estate concern have worked for several years with saving energy and succeeded well by reclaiming and finely adjusting heating, saving water in different ways, changing illumination, changing to energy-saving washing machines and lowering the safety plugs for engine warmer. Using collective measuring of energy, which is quite simple, gives good results with a reduction of 35 percent.

In 2008, we began to work more intensively with this by implementing an ecological program. With one of the goals to lower the energy consumption with 20 percent until 2016, Bostaden have to find out which strategy's gives the best effects both on the climate, for the individual (i.e. the tenant) and in the same time is economic on a company level. We want to develop the tools for this, and by joining the project Green Citizens of Europe, financed by EU Life+, we have the opportunity to do that.

Bostaden a big actor on the local housing rental market

AB Bostaden in Umeå is the biggest actor on the Umeå housing rental market, with a market share of approximately 45 percent. The company is owned by the public and has also a large stock of student housing. The town Umeå in the north of Sweden, with a population of 113,000 people and an average age of 38 years, is a town with 35,000 students and 11,000 companies in the municipality. Umeå has also been appointed as European Capital of Culture 2014. Preparations are in full swing. One of Umeå's objectives as The European Capital of Culture is to strengthen the role of culture as a driving force for sustainable development of society. It is in this context Bostadens aim to affect people's behavior by design, in order to act more responsible with energy consumption, should be seen.

Terminals for individual measuring in apartments

Bostaden have, together with the company Abelko, developed a display terminal for apartments called Echolog, which shall be installed in 500 of our new apartments at the end of 2014. Only 10 of them are in renovated apartments, as the solutions we have today are too expensive to motivate installation in renovated apartments. The reason is that the buildings are too fragile so it is necessary to install new pipe systems. Until a more cost-effective solution is found out, Bostaden intend only to install terminals in new buildings. So far 221 apartments have the Echolog, and the result already clearly shows that individual measuring makes people consume considerably less energy: 32 percent lower energy consumption than in a reference area.

The Echolog



There is a statistics view, where the user can compare the current consumption to earlier data. In Echolog equipped apartments, the tenants pay individually for their consumption of electricity and hot and cold water - in Sweden only electricity is normally charged individually.

What we aim to do

An evaluation of the interface of the displays is expected to give leads on how design can affect and improve a change of behaviour. And prove how it is possible in the future to design both for usability and encouragement. For this we have engaged students from Umeå Institute of Design who have produced alternative design. We also have consumption data for the apartments that have had the Echolog installed since 2009 to proceed with.

Benchmarks

We have chosen to use a so called Open Source-solution to get the best opportunities to develop the terminal, and to find the most visible design for our users, the tenants.

Important for us is that the display should be simple and easy to understand for the tenants, since they will be encouraged to save energy. It is important that all the energy and media figures are presented in real time. All information in the Echolog, such as room temperature, hot and cold water, electricity and communication, and more, is therefore saved in real-time from Bostaden's database. The Echolog also display the current forecast and the outside temperature. It is also suitable for example to install additional service like timetables for buses and start the engine warmer.

The terminal is placed inside each apartment, usually in the hallway so that tenants quickly and directly can see their consumption in everyday life. The consumption of each apartment is unique in the system. The Echolog is constantly building a statistical average for this particular tenant's apartment. The statistics is displayed in real-time. Each apartment will be charged for the consumption through a separate specification on the rent. This is done by automatic transfers of figures each month.

Challenges

A new standpoint about installing the terminals in older buildings can be taken if an ongoing development project is successful. Together with the company Ostnor AB, Bostaden is trying to find out how a so called datum oint could be installed directly on the taps not clear. If that is possible the costs for an installation can be heavily reduced. This is experiences that can be very interesting for example among other housing corporations.

Tests and studies for an answer

We are now preparing for a comparative survey to get a result that is a substratum for the deeper qualitative survey that is going to take place in the next two years. We are going to prove four alternate interfaces on the Echolog, to find out if one of them has more impact on individuals than the others.

So by the end of 2014 we should be more capable of answering the question if design can affect people to save energy, and in what extent. And that also gives us a ground to evaluate if the strategy for the future should be to invest in terminals for individual measuring in our apartments.

Elisabeth Lind

Communication and
Marketing Manager

AB Bostaden in Umeå



A better solution for waste management

By Katri Savijärvi

Growing waste volume is one of the many factors increasing the burden on our environment and on the world's climate. Molok's Deep Collection System is doing its bit to manage waste collection more effectively, thus reducing the impact on the environment and climate – with Molok's innovative products being used by millions of people in numerous countries today.

Like many innovations, Molok's Deep Collection System is based on a very simple idea. In this case, the waste collection capacity of traditional surface containers is increased many times over by utilizing a vertical design that allows for waste to be stored underground and out of sight.

Gravity compresses waste towards the bottom of the deep containers used in the Molok approach. As well as saving space, the natural coolness of the ground helps reduce the spread of unpleasant odours.

Less need for collection

Thanks to their vertical design and large capacity, Molok Deep Collection containers need to be emptied much less frequently than conventional surface containers, thus reducing truck usage and fuel consumption, which makes for more pleasant surroundings for residents as well.

For example; the reduction in environmental impact offered by a typical Molok installation at a residential location can translate into hundreds of fewer kilometres driven by waste collection trucks. Repair and maintenance costs are reduced while fuel savings can amount to hundreds of litres of diesel annually, which translates into a reduction in a system's carbon footprint.

Encouraging people to sort and recycle

A clean, efficient, easy-to-use Molok system encourages people to sort and recycle their waste more effectively, promoting a greater recycling awareness by allowing each individual to be an ambassador for a cleaner planet.

A typical Molok collection point includes separate containers for paper, glass, biodegradable waste, as well as mixed waste – all designed for decades of heavy use in various or extreme weather conditions.

The small footprint of the Molok Deep Collection System also benefits residents by enabling them to utilize the space saving for other uses, such as; playgrounds, gardens, or natural areas.

Solutions for numerous locations

Thanks to a continuous programme of product development, Molok can offer a range of solutions for various needs, including a product designed for collecting glass bottles intact. Containers are complemented by a specially designed collection truck and crane.

The wide range of Molok capabilities, coupled with its narrow environmental footprint, makes Molok the perfect system for parks, parking and picnic areas, scenic spots, and resorts.

Maardu – the town where Molok containers thrive

Maardu is a small town close to Tallinn in Estonia, which a decade ago was known for its derelict factory buildings and poorly maintained high-rise apartments commonly served by rusty metal waste bins.

Waste management, together with the whole urban appearance has improved considerably as Maardu rapidly becomes the first Estonian town where wastes are collected almost entirely in Molok deep collection containers.

Currently, the city has installed and operates a total of 124 Molok containers. The result is that almost 70% of the apartment house areas of the city make use of deep collection waste management.

Deep Collection paves the way in Estonia

Maardu is also significant for the reason that Molok representative Adelan Prygiveod Ltd installed Estonia's first container there in 2006.

Maardu City Council has always been a strong supporter of the Molok program. Additionally, Mayor Georgi Bystrov has personally highlighted Molok benefits and encouraged residents to adopt the deep collection system.

Molok containers have now been a familiar sight in Maardu's streets for five years. The satisfaction with Molok was confirmed last summer with the installation of ten additional Molok CityScape waste containers in the city parks and pet exercise areas.

"The town's appearance has improved"

"Our city is considerably cleaner since the introduction of Molok containers. The containers and the high-rise surroundings now stay in really good shape, while the improved cleanliness has a positive contribution to waste disposal discipline," assesses Maardu's municipal finance officer **Guido Liisma**.

"Maardu residents are quite satisfied that neat Molok containers have replaced the ugly metal bins. Additional benefits have included more parking spaces, fewer trash truck visits as well as faster and quieter emptying," adds Liisma.

"In fact, the only problem in Maardu emerged during installation when finding that water and electric utilities were not marked on the excavation maps."

Reputation as a Molok-town

Municipal finance officer Liisma, considers that in the light of present experience, further expansion of deep collection in the town is natural.

"Hopefully Maardu will soon be the first town in Estonia widely known for its investment in deep collection and Molok containers," envisages Guido Liisma.

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