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Nordic Innovation Centre

October 2009

Mid-term evaluation of Nordic innovation policy 2005–2010

- How established is the Nordic element in national/Nordic innovation policies?
- How well have the Nordic countries dealt with the global financial crisis according to global innovation rankings made before and after the outbreak?
- Read the report and get the answers!



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Summary



Regions, nations and companies that are capable of changing and adapting to new circumstances will over time have the best chances of sustaining a healthy balance between growth and prosperity within their societies. It is by no means given from nature that the Nordic countries should be among the richest societies in the world. But the Nordic countries have, especially since the breakthrough of the industrial and modern age, shown themselves capable of steady development and renewal. Co-operation between industry, government, academia and civil society has been one of the defining characteristics for the Nordic countries' development in this achievement. Nordic co-operation is in this sense a natural ingredient to the Nordic way of development.

In 2005, the Nordic Council of Ministers formulated a common Nordic innovation policy, with the goal of strengthening innovation within each of the Nordic countries as well as for the region as a whole, including the Baltic countries and neighbouring regions. The Icelandic chairmanship has prioritised an assessment of the achievements for the Nordic innovation policy for the last 4–5 years as one of its initiatives during its chairmanship for 2009. In addition the assessment should encompass a number of chapters dealing with future trends that seem likely to shape the Nordic and global agenda for innovation.

The assessment of the previous 4–5 years Nordic innovation policy reveals that much has been achieved at the operational level.

More and more Nordic innovation institutions do co-operate on innovation projects and in some cases this co-operation has been established in relation to EU Framework programmes. The key institution driving this kind of co-operation forward at the Nordic level has been the Nordic Innovation Center (NICE) in co-operation with National Nordic stakeholders and its Nordic sister organisations.

Looking at the Nordic countries' global rankings in 2005 and 2010 on a number of selected innovation parameters like access to venture capital and overall innovation show that the Nordic region in general has been able to remain within the best performing nations in the world. Nevertheless, there have also been setbacks. For instance, the recent Nordic Innovation Monitor study shows that the Nordic countries have weaknesses within the area of entrepreneurship, a high priority area for Nordic innovation policy.

At a more strategic innovation policy level the goal of Nordic co-operation has been to establish higher levels of national co-ordination for innovation funding and programmes within a Nordic framework, and to create a Nordic research and innovation area (NORIA) as a Nordic parallel to the European Research Area (ERA). Bibliometric studies among main Nordic government innovation white papers show that the concept of NORIA has gained less impact than anticipated in 2005. This raises the question as to whether it would be better to establish a Nordic innovation area (NIA) within NORIA and thereby strengthen both NORIA and innovation.

The development of stronger integration between each of the national Nordic innovation systems into a more unified and coherent Nordic innovation system has been another goal for Nordic innovation policy. Based on the assessment it is difficult to make clear conclusions as to the achievements for this goal. On the one hand, if the measure of success is some kind of institutionalised framework for co-ordination among the key actors of the Nordic innovation systems, the goal has not been met as such. On the other hand, there might very well have been increased informal co-ordination and exchange of policies and programmes, and the establishment of common Nordic reference groups for studies such as the Global Innovation Index and the Nordic Innovation Monitor point to some level of co-ordination and development of Nordic perspectives.

Yet, goals like integration of innovation systems and innovation policies are probably always going to be more elusive to assess, measure and achieve than, for example, the development of clusters around a particular technology or industry. Hence, it is recommended that a future Nordic innovation policy takes the aforementioned elusiveness into consideration when formulating the next generation of Nordic innovation policy.

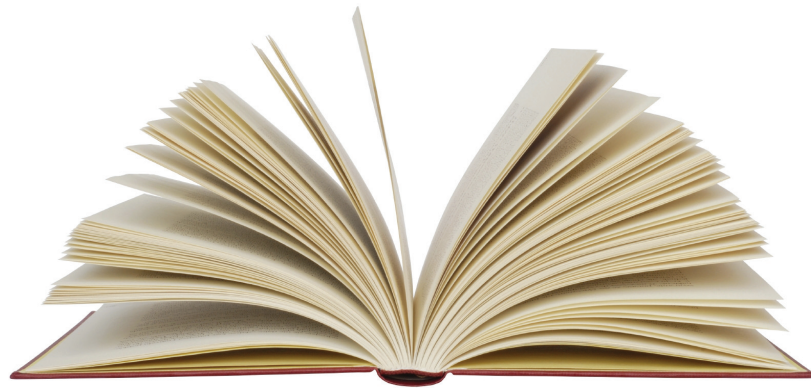
The Nordic Council of Minister's work in the area of innovation also encompasses Estonia, Latvia, Lithuania and St. Petersburg, all which have Nordic offices and are mentioned as regional partners for innovation. The mid-term evaluation is partly based on an assessment of developments from 2005–2009 and partly based on a survey among central decision makers from Nordic and Baltic innovation environments. The survey shows that there is generally a high degree of recognition about Nordic innovation policy, and it plays a role in national Baltic innovation policies. There are, however, also comments stating that Nordic statements and agreements for co-operation need more action in order to become truly significant.

Another general observation from the assessment is the relatively strong institutional role of government and academia in Nordic innovation co-operation and the relatively weak role of industry. In the White Book on Innovation it is stated that a new policy arena for growth oriented innovation policy has emerged, and that the ambition is to develop and improve the co-operation between the tripartite actors from government, academia and industry, where the innovation policy has the aim of creating sustainable growth in Nordic business environments.

The evaluation has been written by Nordic Innovation Center. The evaluation has been in hearing among national Nordic key stakeholders e.g. innovation agencies and other organisation as well as the Nordic Council of Minister's Business and Industry Committee. The comments from national Nordic stakeholders and the Ministerial Council's Business and Industry Committee have been implemented in the evaluation. The views of the evaluation are the responsibility of the author and Nordic Innovation Centre.

The mid-term evaluation was undertaken as an initiative under Iceland's chairmanship for Nordic Council of Ministers 2009, and it was carried out in accordance with the stated goals of the Book of Innovation and the Nordic co-operation programme for innovation.

The book of innovation



The Ministerial Council prioritised the following actions for a Nordic innovation policy 2005–2010¹: A policy aimed at bringing about a Nordic innovation environment that is internationally competitive and well adapted to companies' needs should be built up around the following priority areas:

1. Cross-national co-operation at the strategic policy level with the aim of developing a mutual learning process that promotes a more innovative innovation policy in the Nordic countries.
2. Cross-border interplay between the innovation systems operating nationally with the aim of creating greater opportunities for companies and other important innovation players to exploit a broader spectrum of financial resources, contact networks and knowledge irrespective of where in the Nordic countries their home base is.
3. High profile cutting-edge initiatives in highly visible networks of companies built up around products, topics, geographical clusters or innovative ideas intended to illustrate the positive synergistic effect of result oriented Nordic co-operation.

¹ Förslag til nordisk innovationspolitiskt samarbejtsprogram 2005-2010: Huvudrapport, Norden 2004. Kbh.

In order to succeed with these priority areas it was recommended that the Ministerial Council should enact the following actions:

Priority area 1: Strategic Policy Co-operation for global excellence and the national good
Responsibility for implementation: MR-K/N with adm. Support from NICE.

- The Ministerial Council's secretariat was charged to set up a high level Nordic Innovation Policy Group. This group should have responsibility for coordinating Nordic innovation policies. The group was appointed by MR-N, but in such a way that the education sector (MR-U) was given the opportunity to appoint its vice-chairman.
- The Ministerial Councils' secretariat had the responsibility to establish a combined secretariat and networking function in close collaboration with the policy development group and Nordic Innovation Centre (NICE) in order to carry out a systematic evaluation of the Nordic innovation environments.
- Support the growth of a Nordic-based leading international forum on policy expertise and analysis within the innovation policy field.

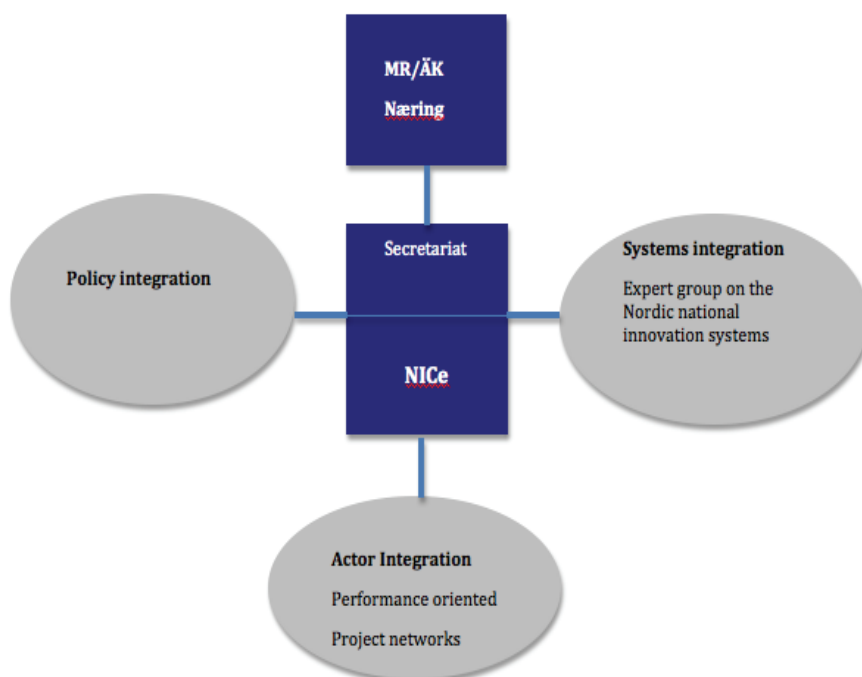
Priority area 2: Towards a frontier-free Nordic Innovation system
Responsibility for implementation: NICE and representative of the operational national innovation systems (with support from AK-N)

- The Ministerial Council should enhance more operationally-oriented collaboration by commencing the systematic abolition of those legal and administrative barriers that have the most restrictive effect on the highly important cross-border flow of players, resources and ideas between Nordic countries' various innovation systems.
- The Ministerial Council should appoint a panel of centrally located civil servants whose task is to pick out key areas in which voluntary amendment of the legislative framework will bring about reduced lock-in effects and greater openness, and hence increased opportunities for positive synergistic effects and productive division of effort between the national innovation systems.
- The panel of experts have been tasked to come up with proposals for concrete changes to the national legislative systems concerned and to the procedures within the affected areas.

Priority area 3: Nordic synergy in creative networks and cluster formation. Responsibility for implementation: NICE and the authorities concerned

- The Nordic Innovation Centre (NICE) should develop and expand its activity as the hub of a number of cross-border network projects that at a practical level demonstrate the national added-value from Nordic collaboration. Project activity should be built up around the following types of Nordic innovation networks:
- Geographical cluster formation in Nordic border regions
- Corporate and research networks involving technology and research intensive innovation projects
- Corporate and skills networks involving production areas that are not characteristically dependent on scientific/technical research inputs.
- Corporate and skills networks involving projects in “creative” production development areas

The overall picture for the aforementioned proposal for initiatives and actions by the Ministerial Council for Trade and Industry is shown in figure 1 below:



The innovation policy co-operation programme stresses, that compared to earlier Nordic innovation policies, that the proposal involves the introduction of two new focuses – policy integration and system integration. In addition, the policy provides a clearer overall struc-

ture for collaboration in which a synergy-generating co-ordination between the various foci and initiatives can be achieved more easily. Moreover, it is mentioned that the structure, with its three inter-linked areas of input, also provides for a better considered and more systematically implemented cross-sector collaboration on innovation and growth policy in the Nordic countries. Special collaboration with the Nordic education and research sector is important, with specific reference to the recently launched proposal for developing Nordic collaboration on research and innovation issues (NORIA). The programme for Nordic innovation did not presuppose any new or substantially increased budgetary resources for Nordic collaboration in the industry sector. Yet, successful implementation of the programme – mainly through more national initiatives in Nordic collaboration and through greater interest by the EU/EEA in taking part in Nordic projects, might attract new resources.

The Nordic co-operation programme for innovation 2005–2010

Within the framework of the Ministerial Council's book of Innovation and the three overall priority areas The Council of Ministers for Business and Industry (Business and Industry Committee/EK-Næring) outlined an operational co-operation programme². The measures outlined in the co-operation programme were generally as follows:

Priority area 1: National Nordic added-value and global excellence

- Promotion of a well-functioning Nordic innovation culture
- Establishment of co-ordinated Nordic framework conditions for innovation
- Strengthened linkages between research and innovation within Nordic businesses

Priority area 2: Towards a borderless Nordic innovation system

- Demonstrate the added-value of a Nordic innovation system to the national Nordic key actors within innovation.
- Establishment of a Nordic task force (with strong representation from analytical and research institutions) with the task of doing a systematic mapping of key sectors for successful Nordic co-operation.
- Stronger anchorage of Nordic innovation policy with the often financially stronger national Nordic innovation actors as a precondition for giving Nordic resources and initiatives higher impact (*a kind of gearing*).
- Secure high-activity levels in the long-term by making national Nordic actors cover their own costs for involvement in Nordic co-operation at an operational level.
- Establish an expert group of high-level and centrally positioned Nordic innovation officials with the purpose of identifying barriers for the development of a Nordic innovation system, and suggest actions for removing such barriers. The expert group should from

² Nordisk næringspolitisk samarbejdsprogram 2006-2010. Nordisk Ministerråd, 2006. Norden. København

the outset focus on the following areas for increased Nordic co-operation:

- Venture capital and business angels
- Consultancy and competence development for SMEs in relation to their expansion in Nordic/international markets
- Access to financing programmes within the border-regions' innovation systems and institutions.
- Nordic cross-fertilisation of larger national innovation- and industrial development programmes.
- Co-operation in order to open-up services within national and regional Nordic incubator environments.
- Better possibilities for borderless utilisation of public procurement with the aim of developing new products and so forth.
- Co-operation with the aim of removing certain technical barriers to trade (conformity assessment)

The expert group's mandate is to work on the abovementioned areas throughout 2005–2010. The expert group should regularly report its findings and proposals to the Ministerial Council. Changes accrued from the expert group's work should be reported in connection to the annual ministerial meetings for Nordic co-operation.

Priority area 3: Nordic synergy in creative networks and cluster formation

Nordic Innovation Centre should continue its work as key-driver for:

- The development of Nordic and cross-border regional green-field networks in order to open-up the national innovation systems and illustrate the advantages of engaging in Nordic co-operation as opposed to purely national ones.
- Pursue projects where not only the national and Nordic benefit is demonstrated, but also EU co-ordinated projects such as those within the Nordic Food industry. Such networked project activities should focus on the following types of innovation-networks:
- *Geographical* cluster buildings in the Nordic border regions (Øresund, Vestnorden, with linkages to Denmark, Norway, Scotland, Uleåborg/Umea-Luleå, Stockholm-Uppsala-Åbo/Helsingfors/St. Petersburg/Tallinn, and North Western Russia.
- *Industry*: clusters around businesses and research within technology and research-intensive innovation projects.

- *Non-technical based industry*: clusters around business areas, which are not primarily based on natural sciences and technological research input (maritime transport and extraction of natural resources in certain areas).
- *Creative industries*: cluster formation and competence networks within creative industries (design, fashion, entertainment and music). Financing of the priority three actions is based on NICE's own budgets in combination with the involved project partners. NICE should report the results to EK-Næring (i.e. Business and Industry Committee).

The priority list and related actions should start a process providing Nordic companies and industries with a world leading innovation environment. The co-operation programmes emphasise also that the main new instruments for Nordic innovation policy are policy integration and systems integration.

Evaluation – main findings



The methodology behind the evaluation of the Nordic book on Innovation and the innovation co-operation programme is twofold. Firstly, it is based on a statistical comparison between the situation as it was, at the outset of the book of Innovation and co-operation programme in 2005, and how the situation has developed four years later (2008–2009) for the Nordic countries on a selected number of indicators relevant for the overall innovation capacity and competitiveness of the five Nordic countries. The second part of the evaluation is based on a survey carried out among senior decision makers from the Nordic and Baltic innovation systems, notably industry federations, government officials and academics.

In the first part of the evaluation, World Economic Forum's World Competitiveness Reports from 2004–5 and 2008–9 and the recently released Nordic Innovation Monitor are used to assess the developments for the Nordic countries on a select number of indicators. The indicators selected for comparison are those mentioned as priority areas within the Nordic book on innovation and the innovation co-operation programme. The Global Competitiveness Report (GCR) is considered by governments, business leaders and academics to be the most authoritative and comprehensive assessment of the comparative strengths and weaknesses of national economies. Hence, it should provide a solid picture of the last four to five years of developments within the Nordic countries' innovation and business sys-

tems. Finally, national Nordic documents for innovation and research policies are compared in order to evaluate the standing of Nordic priorities in each of the Nordic countries.

World Economic Report Rankings 2005 and 2009

For the last five years, the Nordic countries have been at the top of rankings from various sources like the GCR, International Institute for Management Development (IMD), World Economic Fund (WEF) and the Economist Intelligence Unit etc. One just has to look at the press releases from both 2005 and 2009. In 2005, the press releases concluded:

“The Nordic countries continue to hold prominent positions in the rankings among the top ten most competitive economies this year, with Finland (1), Sweden (3), Denmark (5), Norway (6) and Iceland (10) all in privileged places. The largest improvement among these countries is posted by Norway with a move up from 9th to 6th place this year”.

Likewise for 2009–10 in the GCR ³ Report one could read:

“The Nordic members of the European Union continue to hold privileged positions in the rankings. *Sweden, Finland, and Denmark* hold the 4th through the 6th places. They continue to lead the rankings in a number of individual areas. The three countries have among the best functioning and most transparent institutions in the world, ranked behind only Singapore on this pillar, as in past years. Finland, Denmark, and Sweden also continue to occupy the top three positions in the higher education and training pillar, the result of a strong focus on education over recent decades. This has provided the workforce with the skills needed to adapt rapidly to a changing environment and has laid the ground for their high levels of technological adoption and innovation, which is crucial for countries at their advanced stage of economic development. Notably, amid the economic and financial crisis, all three countries’ financial markets continue to receive [...overall] high scores, with Finland and Denmark ranked 7th and 8th, respectively, and Sweden close behind at 12th”.

	Global Competitiveness Report ranking 2005–5	Global Competitiveness Ranking 2009–10
Sweden	3	4
Denmark	5	5
Norway	6	14
Finland	1	6
Iceland	10	26

As it appears from the two rankings, Sweden, Denmark and Finland continue to be in the top of global competitiveness, whereas Norway

³ <http://www.weforum.org/pdf/GCR09/GCR20092010fullreport.pdf>

and Iceland have fallen out of the global top ten. Yet, all the Nordic countries are in a globally privileged position.

Nevertheless, the development might suggest that there is a slight division with Sweden, Denmark and Finland being consistently in the top ten worldwide, whereas Norway and Iceland seem to have weaker foundations for global competition and are therefore more subject to fluctuations in their performance. Moreover, this divergence within such relatively similar countries like the five Nordic ones, suggest that the integration between the five Nordic innovation systems and the key institutions have not been developed very deeply. This is because if there had been deep integration between the national innovation and business systems, Norway would probably not have slipped down from six to 14 within just four years. However, we need to look at more disaggregate data in order to better understand which mechanisms have been at work. This means data, which has a direct bearing to the priority areas for the Nordic Council of Ministers' work with innovation.

However, the general rankings don't tell us how the Nordic countries have performed at more disaggregate levels, such as for instance the availability of venture capital, quality of math and science students. This is done in the table below, where country rankings for 2004–5 are shown in brackets with red and 2009–2010 ranking in black ink.

Global Competitive report rankings 2004–2005⁴ and 2009–2010⁵

	Sweden	Denmark	Norway	Finland	Iceland
Capacity for innovation	(2) 4	7	14	(4) 5	23
Quality of Scientific Research Inst.	(2) 6	9	20	(1) 13	24
University –industry collaboration	(3) 5	(11) 6	(23) 15	(1) 3	(20) 17
Govt. procurement of advanced tech products	14	8	30	6	20
Availability of scientists and engineers	3	18	19	1	8
Quality of math and science education	36	15	58	2	21
Quality of management schools	14	9	21	12	10
Company spending on R&D	(4) 3	(8) 6	(20) 18	(6) 7	(13) 24
Domestic market size	32	48	46	51	119
State of cluster development	10	14	21	7	48
Access to credit (04–5) & Venture capital availability (09–10)	(6) 5	(14) 17	(33) 2	(19) 6	(1) 57

It falls outside this evaluation to go into detail about all the indicators and to track their changes over time. What may tentatively be discerned from the table are the following trends:

- Access to capital *upwards*
- University-industry collaboration *upwards*
- Company spending on R&D *status quo*

⁴ The Global Competitiveness Report: 2004–2005. World Economic Forum. (www.weforum.org)

⁵ <http://www.weforum.org/pdf/GCR09/GCR20092010fullreport.pdf>

- Nordic capacity for innovation *downwards*
- Quality of scientific research institutions *downwards*

The overall goal of Nordic innovation policy in 2005 was to provide Nordic businesses with an innovation environment at the highest international level before the end of 2010. If we look at the data from the last four to five years development by the Global Competitiveness Report, this goal has not come closer, rather the contrary. There are of course many ways one can interpret such rankings, and they should therefore only be seen as indications or trends for developments. Another issue is that it is not necessarily always good to score the highest. It could for instance be argued that there is such a thing as “overspending on R&D” at both national and company levels. This is e.g. the case in relation to the argument about the Swedish paradox, which is explained later on in this report.

Venture capital and clusters

Norway and Finland have on the one hand improved tremendously on venture capital and access to credit from 2005–2009. The global financial crisis has changed that picture, especially for Iceland, but in relative terms the Nordic region is still fairly strong on venture capital. This is good news, and was one of the sub-goals of the Nordic innovation policy. University-industry collaboration has also shown a slight upward trend, which has been another of the strong priorities for Nordic innovation policy. Company spending on R&D has been status quo over the years. The state of cluster development is another area where the Nordic innovation policy has invested in programmes, as have the individual countries. In this context, the current rankings are perhaps less satisfactorily

Education and science institutions

What is perhaps more worrying from the rankings are the relatively low scores on quality of scientific institutions, just as the very low (except for Finland) scores on quality of science and math education. There is probably no historical evidence of a country or region that has upheld a high level of economic development, innovation and growth without a sound scientific educational base. Add to this the current demographics (greying population) and the Nordic region’s low attractiveness, compared to e.g. Germany, the UK and the USA to foreign science, technicians, engineering and math students, and the Nordic innovation systems and economies are facing a serious chal-

lenge. On education, one could also argue that it is not good enough from a competitive point of view that none of the Nordic countries score within the global top three on quality of management schools. The Nordic countries are, after all, among those OECD countries that invest most in education. The Nordic Innovation Monitor, an analysis of Nordic innovation, reinforces the view that the Nordic countries have a challenge within knowledge creation and human resources and have been stagnating on these indicators.

Entrepreneurship

Another area of weakness is entrepreneurship, on which the Nordic Innovation Monitor states that:

“In the area of entrepreneurship, the Nordic countries lag behind significantly. The Nordic countries have a weak entrepreneurial culture, and there is a shortage of emerging growth entrepreneurs when comparing against the best-performing countries”⁶.

In the Nordic Global Barometer 2009 it is also emphasised that entrepreneurship is a kind of Achilles heel of the Nordic countries. Yet, Finland has according to the Nordic Innovation Monitor 2009 seen the highest share of high-growth entrepreneurs and is regarded as the best Nordic country related to growth entrepreneurs. But like all other Nordic countries Finland is lagging behind leaders such as the US and Korea.⁷

The Nordic Innovation Monitor’s conclusion on entrepreneurship is, however somewhat contrasted at national Nordic levels. In the Economist’s special report⁸ (2009) on entrepreneurship, Denmark is held up as an example of a country where entrepreneurialism thrives, and the Nordic countries lead the global table for venture capital investments as a percentage of gross domestic product (GDP), indicating relatively high levels of entrepreneurship. The Global Entrepreneurship Monitor (2007) ranked Iceland as the most entrepreneurial nation among high-income countries, with Finland, Norway and Denmark just below the US level of entrepreneurial activity, only Sweden trailed behind from the Nordic region⁹.

Entrepreneurship has been one of the most important policy areas for Nordic innovation policy the last four years. NICE has focused on the issue, and the Swedish chair for 2008 had it high on its agenda, just as all the Nordic national governments have prioritized it for the

⁶ Nordic Innovation Monitor 2009, Results p. 6-7, Norden, Copenhagen 2009.

⁷ Nordic Innovation Monitor 2009, p. 38 main report, Norden Copenhagen, 2009

⁸ The Economist: Special Report on Entrepreneurship, March 14-20, 2009.

⁹ Global Innovation Monitor, 2007: Entrepreneurial Activity Across the Globe -2007.

last few years. As such the divergence between the Nordic Innovation Monitor, Nordic Global Barometer and other sources might be examined further in order to establish a consensus about the Nordic countries' performance and in view of relevant future actions.

Nordic markets

Finally, domestic market size pulls down all the Nordic countries' scores. The successful implementation of an internal Nordic market would make a big difference, and no national policies alone would be able to change the size of their market alone. Hence, Nordic initiatives are almost by definition adding-value here.

NORIA and national Nordic innovation policies

Priority area 1: Nordic Innovation Policy Integration – National Priorities

One way of taking stock of the extent to which the Nordic countries have given higher political priority to Nordic co-operation for innovation is to look at recent national Nordic white papers and strategies for innovation and international co-operation. The following presents highlights from such national innovation programmes and official innovation strategies. Moreover, a bibliometric examination of NORIA¹⁰ is made within each national policy document for innovation. The bibliometric analysis does not cover all national Nordic innovation policy documents, but a select number of recent ones. As such the analysis should be seen as an indicative assessment for NORIA's standing as a policy concept within national Nordic innovation policies. NORIA is a key concept for Nordic innovation. And as stated in NordForsk's annual report 2008:

“The objective of NordForsk's co-ordination activity is to develop the Nordic Research and innovation area into an attractive cutting-edge region for research and innovation”.¹¹

Sweden

Under the heading: Improving the innovation system there is no mention of Nordic co-operation or NORIA as a platform for future initiatives. The EU is highlighted with its initiative of the European Institute of Innovation and Technology (EIT). It is mentioned that EIT will lead to the creation of a network between European universities within various technical fields. EIT fits well into the Swedish research landscape within ICT, environment and energy...and increased resources for strategic co-operation should be given so that Sweden can assume a leading role in several of these EU initiatives. A strategy for which countries Sweden should co-operate with should be further developed¹².

¹⁰ This methodology is partly inspired by NORIA-net Nordic Bibliometrics Network project: The use of bibliometrics in research policy and evaluation activities, see: <http://nordic-bibliometrics.wikidot.com/start>, NordForsk, 2009

¹¹ Norden, NordForsk, Årsrapport 2008, p. 4

¹² Riksdagen Sverige, proposition: “Et lyft för forskning och innovation”, Stockholm 2008

Denmark

The publication *InnovationDenmark 2007–2010*, reveals a picture similar to Sweden. All measures of success and indicators for international innovation co-operation are related to EU programmes. NORIA is only referred to in a budget posting¹³. There is no reference to the Nordic innovation policy priorities.

Finland

The national Finnish Innovation Strategy states that in a global operating environment, having an influence on a European scale is not enough. Partnerships and co-operation frameworks are essential alongside leading innovation activity hubs and pioneering markets, regardless of their location. Innovation hubs crossing business boundaries will be preferred partners in international networks and play a key role as the basis for Finland's international visibility, attractiveness and fruitful innovation activity. NORIA is not mentioned in the Finnish Innovation strategy document¹⁴.

Norway

Norway's national innovation strategy *Innovasjonsmeldingen 2008 – Et nyskapende og bæredygtigt Norge* is the only recent central Nordic government strategy paper for innovation that refers to Nordic co-operation in an explicit and extensive manner. It is thus stated that, "A central institution in the Nordic business and governmental co-operation is the Nordic Innovation Centre". The globalization strategy of the Nordic Council of Ministers is another issue, which is given focus in the publication. Norway's official innovation policy document¹⁵ does not refer to NORIA.

Iceland

Iceland's document "Science and Technology Policy 2006–2009" from the Prime Minister's Office mentions under strengthening international co-operation that: Active international cooperation in science, technology and innovation opens a number of opportunities in education, training and cooperation through collaboration with many of the world's best universities, research institutions and research companies. Participation in international co-operation programmes, both Nordic and European, has been very successful which gives some measure of the strength of the Icelandic science and technology community in international competition. There is no refer-

¹³ Forsknings-og Innovationsstyrelsen "INNOVATIONDANMARK 2007-2010", Kbh. 2007.

¹⁴ Finnish Ministry of Employment and the Economy: "Finland's National Innovation Strategy", Helsinki 2008

¹⁵ Det Kongelige Nærings- og Handelsdep. St. meldingen nr. 7 – 2008-2009: "Et nyskapende og bæredygtig Norge", Oslo, 2008

ence to NORIA in Iceland's official document for its science, technology and innovation policy.

Based on the examination of the most recent Nordic countries' official governmental strategies for innovation it becomes clear, that the EU and its framework programmes and the initiative European Research Area (ERA) have top-priority, for especially Finland, Sweden and Denmark and to a lesser extent Norway and Finland. This is not necessarily a problem for Nordic co-operation on innovation, since the Nordic book on Innovation and the innovation co-operation programme state that Nordic innovation co-operation should also seek to use the EU as a platform for integration of the Nordic innovation systems. The test of the EU as a platform falls, however, outside the policy integration part, and will be dealt¹⁶ with in the sections below looking at Nordic innovation and research network formations within the EU programmes.

The fact that the Nordic Council of Ministers' innovation strategy is mentioned by neither, Sweden, Finland, Denmark, Norway nor Iceland should raise some concern. It suggests that the first pillar of "increased Nordic policy co-ordination and integration on innovation and research policy" has not really developed in line with the vision of the 2005 policy as laid out in the book of Innovation, and there is seemingly a challenge ahead in making this happen during the coming years.

Moreover, the bibliometric study of NORIA within the national Nordic innovation strategies has shown that none of the national governments have it high on their agendas for innovation policies. Given that, ERA has high political saliency in all government strategies, and given that NORIA is supposed to be the Nordic equivalent to ERA, the bibliometric results questions how the current notion of NORIA as a policy concept for Nordic innovation can be strengthened.

A future Nordic innovation strategy might consider looking at NORIA in view of the latest years' trend in innovation policies in the OECD area. It is today an established fact that innovation is not a linear process starting with research leading to new products in the market. Rather innovation stems from a number of sources e.g. customers, regulation, demographic changes, entrepreneurs, globalization, value-chain changes and research. In other words, research is just one among several sources for innovation.

In addition, global innovation surveys on sources of innovation reveal that research is seldom the most cited source for innovation among companies. For these reasons, more and more OECD countries

¹⁶ Iceland -The Prime Minister's Office The Science and Technology Policy Council: " Science and Technology Policy 2006-2009", Reykjavik 2006

are now separating innovation programmes from research and development policies. Good examples of this are policies where innovation has its own and distinct profile, and programmes for open-innovation, service-innovation, public sector innovation and user-driven innovation. Moreover, there is work going on in the EU, OECD, US dep. of Commerce, the UK, Norway, Denmark and the Nordic Centre for Innovation on how to develop new indicators for measuring innovation. This is so, because, today's indicators are primarily based on an industrial economy discarding up to 80% of activities in advanced economies like the Nordic, and based on a linear model for innovation.

With these perspectives in mind, it seems that, innovation within NORIA would benefit from a re-evaluation. It might for instance be worthwhile for the Nordic work on innovation to align itself better with these more recent political realities and see how they might be implemented within NORIA. Such an innovation focus could for example be labelled Nordic Innovation Area (NIA).

Moreover, the Nordic book on innovation had the establishment of a high-level Nordic innovation policy group, led by the Ministerial Council, as one of its main instruments for securing Nordic policy thinking in the national contexts. The innovation policy group has, however, not yet been put into operation or institutionalized. This may partly explain why a Nordic innovation dimension and NORIA have not yet gained stronger recognition in the national Nordic innovation policy documents mentioned above.

On the other hand, the Northern Dimension Working Group (NDWG), which operated from 2004–2005 and was led by the Nordic Council of Minister's secretariat, established an overview of innovation policies in the Nordic region and was instrumental in identifying and gaining national support for Nordic innovation policy initiatives within user-driven innovation and BSR-Innonet on cluster policies. These are two Initiatives which have made the Nordic region a front-runner on user-driven innovation and for policies on clusters. Another policy initiative is KreaNord which was established in 2008 by the Nordic Council of Minister's secretariat. KreaNord is based on developing creative industries in the Nordic region, and the work has participation from ministries of culture and industry from all the Nordic countries and a reference group of industry representative follows the work.

The positive results obtained at policy issue level (user-driven innovation etc.) could arguably be seen as an argument in favour of pursuing issue specific innovation policies as opposed to more overarching integrating ones. Top-down versus bottom-up policies is an old discussion between national and supra-national institutions, like the EU and Nordic Council of Ministers. And perhaps Charles de Gaulle

coined it best in saying on EU co-operation that “you cannot make an omelette with hard-boiled eggs” – by which he referred to the European nation state and how unlikely it was to be moulded into something else where it had to give up its autonomy.

Priority area 2: Towards a borderless Nordic innovation system

A key vehicle for the implementation of the priorities within priority area 2 was the establishment of an expert group of high-level innovation officials from the Nordic countries. The expert group should be operational during 2005–2010 and report annually to the Ministerial Council.

NICe established a high-level expert group¹⁷ in 2005. It was set-up on the request from the Ministerial Council’s secretariat. The expert group made a report with recommendations for actions and initiatives in 2006. The expert group ceased however to exist after its first report. Hence, there are no annual reports to evaluate, and it can be concluded that at the time of this evaluation, the high-level expert group has apparently had little impact throughout the period 2005–2009.

The fact that NIC’s high-level expert group ceased to exist within a year might also have weakened priority area 1 and curtailed the possibility for developing a significant innovation dimension within

NORIA.

Yet, one should not forget that the complexities of the industrial and societal considerations behind national Nordic priorities for future policies are partly the result of their geographical location (e.g. pulp and paper in Sweden and Finland, fisheries in Iceland and in Norway, agriculture and shipping in Denmark) partly innovations and subsequent path dependencies. Several studies on national innovation systems have proven that national trajectories are not easily changed and the Nordic countries are no exception to this rule. This should be borne in mind in assessing the two policy “game changers” (i.e. policy integration and systems integration) of the Nordic Innovation strategy from 2005–2010. The challenges in making Nordic co-operation happen are also underlined in a recent and related evaluation by Nordforsk. The evaluation looks at Nordic co-operation for research infrastructures.¹⁸

From an organisational and strategic point of view, the experience from both the high-level Nordic innovation group for policy integra-

¹⁷ EK-NE/Næring: “Mot et grenseløst innovasjonssystem – Rapport fra en arbeidsgruppe etablert av Nordisk Ministerråd EK-Næring”, 2006. The group had three meetings in 2005.

¹⁸ Norden/NordForsk: “Improving research capabilities – An evaluation of the possibilities for increased Nordic cooperation on research infrastructures”, NIFU-SEP, October 2008, NordForsk Policy Briefs 2008-7

tion and the related expert groups for system integration indicates a limited opportunity to exercise unified central authority over central aspects of the Nordic innovation and research policies. Insofar as policy and system integration requires some level of authority over the design of work processes, the co-ordination of their outputs and the development of collective capabilities for dealing with problems, adapting to change and seizing opportunities through mobilising national Nordic innovation actors, it is unlikely to be achieved by the supranational Nordic institutions. Pan-Nordic budgets for innovation and research command less than 1% of the National Nordic budgets for research and innovation. Given these realities, the Nordic Council of Ministers and its institutions like NICE might consider themselves as Nordic portfolio managers who decide to make strategic investments in particular projects, activities and policy areas.

Priority area 3: Nordic Synergy in Creative Networks and Cluster Formation

The third pillar of the Nordic innovation strategy focused on actor integration and the establishment of networks with partners from industry, government and academia. NICE was in the Nordic book on Innovation and has been given a central role for implementing this priority in the innovation co-operation programme. The account for this part is based on the actual projects and focus networks established by NICE during 2005–2009.

Although all Nordic governments and the Nordic Council of Ministers generally have viewed networking and cluster building as goals by themselves, it is worth keeping in mind the points made by the OECD at conference on open-innovation (2009), that such policies may promote networking with the nearest (Nordic), not necessarily best, partners. OECD also highlights that collaboration promoted entities like cluster initiatives, technology platforms etc. may only last as long as the public funding involved.¹⁹ This is not to say that this is the case in the Nordic region's work with clusters, but rather a reminder in the continued development of cluster initiatives.

Overview of NICE Projects with a regional Nordic/Baltic focus 2005–2009²⁰

Focus Area	Actions
New Nordic Food	6 Nordic projects
Healthy Choices	3 Nordic projects
Functional Food	6 Nordic projects
Tourism	7 Nordic-Baltic projects
Sustainable renovation	5 Nordic projects
Venture capital	5 Nordic expert studies and 3 new in the pipeline 2010

¹⁹ OECD: "How are cluster and RIS policies supporting open innovation? Symposium on Global Open Innovation Networks", 23 January 2009.

²⁰ NICE's homepage: www.nordicinnovation.net, May 2009.

Entrepreneurship	5 Nordic projects
Creative industries	6 Nordic Baltic projects
Environmental technology	5 Nordic projects
Innovation policy	Divided into three main sections pt.
- User driven innovation	- 7 projects
- Innovation indicators	- 4 projects
- InnoTools	- Pilot project with 10 Nordic-Baltic companies and with key-stakeholders from Nordic innovation systems
Micro-and NanoTechnology	8 Nordic-Baltic projects
Technology Foresight	3 Nordic projects
Borderless Nordic Region	Expert study with recommendations and ongoing work with national authorities, border regions and the EU
The Nordic and the EU	BSR-Innonet, SAFEFOOD-ERA, Mnt-era.net, ERA-BUILD
Open Call	30 Nordic-Baltic projects on innovation 2005–2010

NICE's activities within the listed focus areas and open call²¹ combine more than 100 projects, each with actors from at least three different Nordic-Baltic countries, and in most cases somewhere between 5–10 partners in each project. Moreover, when NICE had its last call for proposals under the focus area Tourism (2008), NICE received 99 project proposals of which seven could be financed within the budget. The over-subscription for NICE calls suggests that NICE has established itself as a key-network creator among Nordic innovation systems' actors. This in the sense that e.g. within the tourism call more than 300 Nordic-Baltic innovation system actors had worked on establishing proposals and partner networks in order to submit their projects.

In view of the above, NICE has fulfilled the priority of establishing new networks within creative industries (gaming and entertainment projects). NICE projects are financed on a 50/50 model, which means that NICE has secured national Nordic co-financing through the participation of the national innovation system key actors.

On the other hand it is clear from the overview, that NICE has not had any activities concerning non-technical based industries such as maritime transport and extraction of natural resources. Apart from the conference Innovation in the Marine Sector – Nordic Co-operation in Iceland on 12th May 2009, the area has not been in focus.

From an industry point of view it should be noted, that the innovation co-operation programme's classification of e.g. maritime transport and oil-exploration as non-technical and not based on input from the natural sciences and technology seems dubious. Maritime transport is highly dependent on sophisticated ICT systems and management of logistics throughout the process of delivering from A-B. Likewise, e.g. oil-exploration and deep-sea water oil drilling demands some of the best mathematicians and engineers for 3-dimensional CAD/CAM simulations and super-computers for its

²¹ NICE Economic Administrator: NICE has from Jan. 2005 to May 2009 initiated 30 projects under open call and spent around 20% of its total budget on such projects. NICE's total budget for 2005-2009 is 264 million NOK and with 48 million spent on open call project.

modelling. Hence, it is recommended that such classifications be dealt with more carefully in future Nordic innovation policy papers.

On geographical clusters and networks with border regions and Estonia, St. Petersburg etc., the conclusion is that NICE has not yet devoted direct resources to this part of the priority area. Nevertheless, the Baltic countries participate in several of NICE's projects on focus areas like tourism, creative industries etc. A more proactive involvement on behalf of the Baltic countries, St. Petersburg, Scotland etc. is however necessary if this part of the priority is to be effective.

Another area for possible improvement concerns the involvement of Nordic industry in projects. Although NICE has initiated several projects involving industry, government and academia, there has been a clear bias towards academically driven projects in the portfolio. University-industry collaboration is clearly a goal for Nordic innovation policies, yet Nordic innovation policy would benefit from stronger industry and business involvement as drivers in future projects. A recent survey²² (2008–2009) among 1500 Nordic companies supports this view, as less than 25% of the companies asked had heard about NICE.

Industry Representation in Nordic Institutions for Innovation

Organisation	Board configuration (industry rep.)
Nordic innovation Centre – Nordisk InnovationCentre	7 (1)
Nordic Research – NordForsk	9 (1)
Energy Research – Nordisk EnergyForskning	5 (0)
Nordic Centre for Spatial Development - NordRegio	13 (0)

The table shows the number of board members in each of the Nordic institutions most closely related to the implementation of the Nordic innovation policy. The table also shows in brackets that of thirty-four board members, only two are from industry. Thirty two of all the board members are from either academia or public authorities. If it is accepted that innovation primarily takes place within companies and that Nordic innovation policy should have a strong focus on the competitiveness of Nordic companies, the current industry or business representation could be considered. The Nordic Book of Innovation puts special emphasis on a Nordic effort to develop and improve the tripartite co-operation known as triple-helix between industry, academia and government²³. Finally, this is not to say that the current board member composition is wrong, but rather that as Nordic innovation and research policies evolve it might strengthen the overall implementation and national Nordic anchorage of these policies, if

²² NICE: "Kortlegging blant nordiske bedrifter" Gallup innovationsundersøgelse blant 1500 Nordiske virksomheder, Oslo, 2009

²³ Norden, innovationsboken, 2004, p. 20

the institutional ramifications are given a reality check from time to time.

Nordic and Baltic surveys



The following section presents the results of a survey carried out among key decision makers on the innovation and research agenda in the Nordic and Baltic countries. The interviewed persons were selected on the basis of decision making power for innovation within key Nordic institutions like Tekes, ministries of industry, academia etc.²⁴ The survey has been framed so that the interviewed persons are asked to agree or disagree on a number of the central issues which the Nordic book of Innovation and the co-operation programme set out as key performance indicators for success²⁵.

²⁴ See appendix for list of interviewed persons on Nordic and Baltic surveys

²⁵ Nordic survey by Capacent and Baltic survey by Nordic Poll.

Table 1: NORIA stands for Nordic Research and Innovation Area. Have you heard about NORIA as a policy concept for innovation?

	Pct.
Yes	62 % (16)
No	38 % (10)
Total	100 % (26)

Table 2: How successful would you rate NORIA as a concept for Nordic integration of research and innovation?

	Pct.
Very Successful	(0)
Successful	6 % (1)
Slightly Successful	44 % (7)
Nor Successful or Unsuccessful	25 % (4)
Slightly Unsuccessful	6 % (1)
Unsuccessful	6 % (1)
Very Unsuccessful	(0)
Don't Know	13 % (2)
Total	100 % (16)

Table 3: Do you agree or disagree about whether there has been a development towards a stronger Nordic innovations culture since 2005?

	Pct.
Agree Strongly	12 % (3)
Agree Moderately	38 % (10)
Agree Slightly	23 % (6)
Undecided	8 % (2)
Disagree Slightly	12 % (3)
Disagree Moderately	4 % (1)
Disagree Strongly	4 % (1)
Total	100 % (26)

Table 4: Since 2005, there has been a better mobility between the Nordic countries for teachers, students and researchers/scientists in the field of innovation?

	Pct.
Agree Strongly	(0)
Agree Moderately	19 % (5)
Agree Slightly	31 % (8)
Undecided	8 % (2)
Disagree Slightly	15 % (4)
Disagree Moderately	(0)
Disagree Strongly	(0)
Don't Know	27 % (7)
Total	100 % (26)

Table 5: Since 2005, there have been fewer barriers regarding the cooperation between the Nordic countries in the policy field of innovation?

	Pct.
Agree Strongly	(0)
Agree Moderately	27 % (7)
Agree Slightly	27 % (7)
Undecided	15 % (4)
Disagree Slightly	15 % (4)
Disagree Moderately	(0)
Disagree Strongly	4 % (1)
Don't Know	12 % (3)
Total	100 % (26)

Table 6: Since 2005, there has been more Nordic industry-university collaboration in the policy field of innovation?

	Pct.
Agree Strongly	8 % (2)
Agree Moderately	15 % (4)
Agree Slightly	23 % (6)
Undecided	19 % (5)
Disagree Slightly	12 % (3)
Disagree Moderately	(0)
Disagree Strongly	4 % (1)
Don't Know	15 % (4)
Total	100 % (26)

Table 7: Since 2005, the five Nordic countries have been acting more as a unified Nordic Innovation system?

	Pct.
Agree Strongly	8 % (2)
Agree Moderately	4 % (1)
Agree Slightly	31 % (8)
Undecided	8 % (2)
Disagree Slightly	27 % (7)
Disagree Moderately	12 % (3)
Disagree Strongly	4 % (1)
Don't Know	8 % (2)
Total	100 % (26)

Table 8: Since 2005, it has been easier to access innovation and research programmes in the other Nordic countries?

	Pct.
Agree Strongly	(0)
Agree Moderately	19 % (5)
Agree Slightly	38 % (10)
Undecided	12 % (3)
Disagree Slightly	19 % (5)
Disagree Moderately	(0)
Disagree Strongly	(0)
Don't Know	12 % (3)
Total	100 % (26)

Table 9: Since 2005, there have been fewer technical barriers for products and services between the Nordic countries, assuring a more Common Nordic innovation market?

	Pct.
Agree Strongly	(0)
Agree Moderately	15 % (4)
Agree Slightly	38 % (10)
Undecided	23 % (6)
Disagree Slightly	8 % (2)
Disagree Moderately	(0)
Disagree Strongly	(0)
Don't Know	15 % (4)
Total	100 % (26)

Table 10: Nordic co-operation has led to a strengthened common market for venture capital regarding projects within innovation?

	Pct.
Agree Strongly	(0)
Agree Moderately	8 % (2)
Agree Slightly	23 % (6)
Undecided	23 % (6)
Disagree Slightly	23 % (6)
Disagree Moderately	12 % (3)
Disagree Strongly	(0)
Don't Know	8 % (2)
Total	100 % (26)

Table 11: Entrepreneurship is Alfa and Omega to the health of a market economy. Nordic initiatives have done a lot to promote entrepreneurship within the field of innovation in the Nordic region?

	Pct.
Agree Strongly	4 % (1)
Agree Moderately	19 % (5)
Agree Slightly	31 % (8)
Undecided	15 % (4)
Disagree Slightly	8 % (2)
Disagree Moderately	19 % (5)
Disagree Strongly	(0)
Don't Know	4 % (1)
Total	100 % (26)

Table 12: Since 2005, there has been more development of Nordic and cross-border regional green-field innovation networks (networks from scratch)?

	Pct.
Agree Strongly	4 % (1)
Agree Moderately	8 % (2)
Agree Slightly	46 % (12)
Undecided	12 % (3)
Disagree Slightly	19 % (5)
Disagree Moderately	8 % (2)
Disagree Strongly	(0)
Don't Know	4 % (1)
Total	100 % (26)

Table 13: Since 2005, there has been a better integration in geographical cross-border innovation cluster bindings in the Nordic border regions?

	Pct.
Agree Strongly	15 % (4)
Agree Moderately	8 % (2)
Agree Slightly	50 % (13)
Undecided	12 % (3)
Disagree Slightly	4 % (1)
Disagree Moderately	(0)
Disagree Strongly	(0)
Don't Know	12 % (3)
Total	100 % (26)

Table 14: Since 2005, there has been a strengthening of Nordic clusters?

	Pct.
Agree Strongly	12 % (3)
Agree Moderately	19 % (5)
Agree Slightly	42 % (11)
Undecided	8 % (2)
Disagree Slightly	12 % (3)
Disagree Moderately	4 % (1)
Disagree Strongly	(0)
Don't Know	4 % (1)
Total	100 % (26)

Table 15: Since 2005, cluster formation and competence networks within creative industries (design, fashion, entertainment and music) have gained more recognition as a result of Nordic initiatives?

	Pct.
Agree Strongly	15 % (4)
Agree Moderately	8 % (2)
Agree Slightly	19 % (5)
Undecided	15 % (4)
Disagree Slightly	19 % (5)
Disagree Moderately	8 % (2)
Disagree Strongly	4 % (1)
Don't Know	12 % (3)
Total	100 % (26)

Nordic key-decision makers' quotes on Nordic innovation policy²⁶

"Moderate role. Now there are too many organizations trying to find their role in a top down manner and without real impact. This kind of collaboration can only function when mutual goals can be recognized and a win-win situation can be created."

"Greater Nordic focus on innovation policies and practices is important for all Nordic countries (especially in light of the ongoing financial crisis), but this requires more determined policy action and more co-ordinated approaches from the Council of Ministers and its agencies."

"The main deficiency in the Nordic policies in this area is that the common Nordic participation at FPs (EU Framework Programmes) and CIP (EU Common Innovation Policy) is not well co-ordinated, actually almost not co-ordinated at all, at the Nordic level".

"To be honest I think that the main cause for the signs showing a better research system integration at the Nordic level is just a side-effect of the much more potent policies for ERA, organised and orchestrated by EC".

"There is a long way to go for Nordic research and innovation policies, and there are many opportunities lost as the lack of co-ordination between NORFORSK, NICE and other relevant Nordic agencies are an additional barrier".

"Focusing on how to better co-ordinate innovation policies at the Nordic level is clearly not a high priority of NICE any more, which I believe is a very unfortunate development. Cluster initiatives are to my opinion the most successful area of Nordic policy action at the moment. One of the reasons for that is the visibility these actions got through the PRO INNO INNO-ACTION which NICE coordinated very well so far. Further, the natural tendencies towards greater economic integration between some distinct Nordic regions (Øresund) is also one of the causes for better clustering, but this 'natural' tendency is also backed up by sensible NATIONAL as opposed to Nordic - innovation policies".

"Denmark's decision to open its research programs to foreign researchers is audacious, but it illustrates also that ERA and EU is a far greater driver of change than the Nordic policies".

"Nordic policies and initiatives should stimulate alignment of Nordic national policies and initiatives. In particular Nordic actions should leverage Nordic countries' joint participation, action and influence in EU RDI circles. Today Nordic activities are too isolated from both national and EU RDI spheres".

"Can be important as a facilitator of cross border cooperation in research and financing and venture capital to get the markets to merge and to flow freely between the countries".

"Better funding, greater coordination between agencies and more policy focus (and will) are necessary if the Council aspires to see palpable and concrete progress towards more common Nordic innovation policies in the future".

²⁶ Source: Survey carried out by Capacent Epinion (May 2009) among high-level Nordic decision makers on innovation policy. All interviews were conducted among people from government, academia and industry federations as part of the assessment of Nordic Innovation Policy 2005-2010.

Issue statements on the role for Nordic Innovation Policy

“Should focus on the development of the knowledge base for innovation policy development.”

“Need for much stronger interaction. To make an impact all the countries have to be involved”.

“They should be a forerunner and organize joint forums. Create common research, development and innovation programming and financing. Creation of common VC markets”.

Baltic Survey

Table 1: NORIA stands for Nordic Research and Innovation Area. Have you heard about NORIA as a policy concept for innovation?

	Pct.
Yes	37 % (7)
No	63 % (12)
Total	100 % (19)

Table 2: How successful would you rate NORIA as a concept for Nordic integration of research and innovation?

	Pct.
Very Successful	(0)
Successful	(0)
Slightly Successful	15 % (1)
Nor Successful or Unsuccessful	15 % (1)
Slightly Unsuccessful	(0)
Unsuccessful	(0)
Very Unsuccessful	(0)
Don't Know	70 % (5)
Total	100 % (7)

Table 3: Since 2005 Nordic-Baltic co-operation on innovation has become a stronger priority in our national innovation policy

	Pct.
Agree Strongly	10 % (2)
Agree Moderately	32 % (6)
Agree Slightly	26 % (5)
Undecided	16 % (3)
Disagree Slightly	(0)
Disagree Moderately	(0)
Disagree Strongly	5 % (1)
Don't Know	10 % (2)
Total	100 % (19)

Table 4: We see the Nordic-Baltic co-operation for innovation as an important platform for EU financed projects.

	Pct.
Agree Strongly	16 % (3)
Agree Moderately	37 % (7)
Agree Slightly	47 % (9)
Undecided	(0)
Disagree Slightly	(0)
Disagree Moderately	(0)
Disagree Strongly	(0)
Don't Know	(0)
Total	100 % (19)

Table 5: Since 2005, there has been a better mobility between the Nordic-Baltic countries for teachers, students and researchers/scientists in the field of innovation

	Pct.
Agree Strongly	32 % (6)
Agree Moderately	21 % (4)
Agree Slightly	32 % (6)
Undecided	(0)
Disagree Slightly	(0)
Disagree Moderately	(0)
Disagree Strongly	(0)
Don't Know	16 % (3)
Total	100 % (19)

Table 6: Since 2005, there have been fewer barriers regarding the cooperation between the Nordic-Baltic countries in the policy field of innovation.

	Pct.
Agree Strongly	42 % (8)
Agree Moderately	16 % (3)
Agree Slightly	16 % (3)
Undecided	5 % (1)
Disagree Slightly	(0)
Disagree Moderately	5 % (1)
Disagree Strongly	(0)
Don't Know	16 % (3)
Total	100 % (19)

Table 7: Since 2005, there has been more development of Nordic-Baltic and cross-border regional green-field innovation networks (networks from scratch

	Pct.
Agree Strongly	21 % (4)
Agree Moderately	10 % (2)
Agree Slightly	26 % (5)
Undecided	(0)
Disagree Slightly	5 % (1)
Disagree Moderately	(0)
Disagree Strongly	(0)
Don't Know	37 % (7)
Total	100 % (19)

Table 8: Since 2005, there has been a better integration in geographical cross-border innovation cluster bindings in the Nordic-Baltic border regions.

	Pct.
Agree Strongly	21 % (4)
Agree Moderately	26 % (5)
Agree Slightly	26 % (5)
Undecided	(0)
Disagree Slightly	5 % (1)
Disagree Moderately	5 % (1)
Disagree Strongly	(0)
Don't Know	16 % (3)
Total	100 % (19)

Table 9: Since 2005, there has been a strengthening of Nordic-Baltic clusters

	Pct.
Agree Strongly	16 % (3)
Agree Moderately	16 % (3)
Agree Slightly	32 % (6)
Undecided	(0)
Disagree Slightly	10 % (2)
Disagree Moderately	5 % (1)
Disagree Strongly	5 % (1)
Don't Know	16 % (3)
Total	100 % (19)

Table 10: Since 2005, cluster formation and competence networks within creative industries (design, fashion, entertainment and music) have gained more recognition as a result of Nordic initiatives.

	Pct.
Agree Strongly	26 % (5)
Agree Moderately	16 % (3)
Agree Slightly	16 % (3)
Undecided	5 % (1)
Disagree Slightly	(0)
Disagree Moderately	(0)
Disagree Strongly	(0)
Don't Know	37 % (7)
Total	100 % (19)

Baltic key decision makers' quotes on Nordic innovation policy

What do you think the Nordic Council of Ministers can do to strengthen Nordic-Baltic co-operation on innovation and to create a more unified innovation system in Baltic Sea Region?

“Currently the Latvian cross border innovation is driven by private organizations and not state. State should be more active. Also to ensure that Nordic and EU innovation policies are aligned. Currently, main Nordic cross border organization is Vinnova in Sweden”.

“To organize or promote organization of company visits, brokerage (matchmaking) events, exhibitions for companies in the Baltic Sea Region. To promote creation of common understanding (vision) for decision makers what really “innovation system” means (workshops, conferences, etc.).”

“Nordic Council of Ministers visibility must be significantly improved. It is well known within the public sector, but very poorly recognized in private sector. Currently, most look towards EU in matters regarding cross-border initiatives, but forget the Nordic aspect. Due to EU's size it is also very very beauraucratic, whereas Nordic cooperation is more manageable and agile – and would make the work easier”.

“Establish hands-on models for innovation, operators and companies. Currently it is very theory based, and it is better to see models that are/have worked in reality. Clarity on how to initiate programs and participate.”

“Stronger development and execution of the strategy work and mobility program. Better utilization and concentrating of resources, as it currently appears very uncoordinated”.

“The awareness of innovation, programmes and clusters is very high in the public sector, however, more involvement of the private sector must be done as they are not aware of how to initiate cross border innovation or to know which programmes are available.”

“It must be recognized that there is a difference between the baltics and strong nordic countries – all the nordic countries have different agendas and that can make communication and collaboration difficult”.

“Currently innovation mostly takes place in universities, and it should be encouraged to install innovation departments in private companies”.

“Improve support system for those who do not have a system. And establish a more common support system platform, using common models and methods.”

“Nordic Council of Ministers must strengthen research on universities and institutions and create more networks and ensure cooperation. A statement about RD projects between Nordic and Baltic states was agreed last year, but nothing has happened yet, and the Council must also ensure that their statements are being initiated.”

The comments from the survey among Nordic and Baltic decision makers on Nordic innovation policies are valuable inputs for the future discussion and directions of the next generation Nordic innovation policies and strong innovation environments in the Baltic Sea Region. The comments also point to different strengths and weaknesses, and are as such, open to interpretation.

Without drawing specific conclusions, it seems that Nordic innovation policy revolves around three central issues. These issues are notably:

- How well does Nordic co-operation in general, and innovation policy in particular, presents itself towards the national Nordic

and Baltic stakeholders? What works well, and what avenues are open for improvement?

- The EU's Framework Programmes and ERA plays a significant role for all Nordic and Baltic government's innovation policies. This is underlined by the national innovation programmes and from the comments of the key decision makers. NICE has played a co-ordinating role at project level in relation to e.g. SAFEFood-ERA. Another recent example is NICE's invitation to participate in a newly established CEN working group on standardisation of innovation services, where NICE's project InnoTools was introduced as a pioneering example of cross-national use of innovation tools for benchmarking and comparison. Generally, the EU raises the question of how NICE and Nordic co-operation might assume a stronger co-ordination role in relation to Nordic-EU programmes for innovation and research policies.
- Globalisation is a third significant dimension to all Nordic government's innovation policies. The Nordic Council of Ministers' globalisation initiatives already address this issue, and Nordic innovation policy is involved with e.g. the establishment of Nordic innovation centres in Asia. However, this is an outbound measure for globalisation, and some of the comments suggest that Nordic innovation policy can play a part in relation to inbound measures like for example attracting global activities to the Nordic region as well.
- A better integration of the Baltic countries into Nordic innovation policy might also add three potential countries to EU programmes. Indeed, Nordic co-operation could consider the merit of having an EU-Brussels based person to link the Nordic dimension to the EU and back to the Nordic-Baltic stakeholders in innovation.

Recommendations

The purpose of this mid-term evaluation has been to look at the objectives of two central documents for Nordic innovation policy. The two documents White Book of Innovation from 2005, and the Nordic co-operation programme for innovation also from 2005. In view of the findings from this mid-term evaluation the following issues might be worthwhile to consider in the discussions and formulations for the next generation of Nordic innovation policies.

According to international benchmarks, the Nordic countries perform in general quite well as regards business innovation framework conditions. Access to capital and level of cluster development is generally at a high level in the Nordic countries. These are areas where Nordic innovation policy has played a role through projects like BSR-Innonet and Nordic network building through Nordic Innovation Center projects.

Another objective for the Nordic co-operation has been to strengthen integration of the Nordic national innovation systems. This objective has been pursued by applying the principle of getting support from national Nordic stakeholders in relation to larger Nordic innovation projects. It has as such worked on an ad-hoc project basis, whereas it has not been fully achieved at a more systemic level. In order to achieve a higher level of systematic alignment between Nordic innovation policy and programmes and the individual national Nordic innovation systems, it seems necessary to discuss and specify which instruments are required in the future. It is also recommended that these instruments are discussed in a dialogue with the national Nordic innovation stakeholders from innovation agencies, federation of industries and academic institutions with an interest in Nordic innovation policies.

The goal of influencing the overall innovation policy formulation among the national Nordic governments has to be viewed from the fact that the financial resources of Nordic institutions amount to less than 1% of the total national Nordic budgets for innovation. Another challenging factor is that Nordic innovation policy is contained within the concept of NORIA, and thus in context of research and development policies as well as innovation policy. It is not always clear where research ends and innovation begins in innovation policies. For this reason innovation policy might from time to time become blurred in general discussions about R&D and innovation policies. In view of the relatively limited means of Nordic innovation policy it could be relevant to have a discussion on how to maximise the

visibility and impact of Nordic innovation policy within those means. Moreover, Nordic innovation policy is part of NORIA. In order to secure that the next generation of Nordic innovation policy be timely and sufficiently forward looking a discussion of the future Nordic innovation policy should probably also include the concept of NORIA.

The EU dimension is another area that plays a role for Nordic innovation policy. NORIA has e.g. been formulated as a Nordic equivalent to the European Research Area (ERA). The discussions on the future of Nordic innovation policy might as such also take into consideration, how the EU has evaluated the results of ERA, and what lessons this may have for Nordic innovation policy.

Appendix – Survey interviews

Estonia

Tõnis Lukas, Minister, Ministry of Education and Research

Ulari Alaments, Head of Board, Enterprise Estonia

Selli Rossi, Strategist in Technology and Innovation Department Ministry of Economic Affairs, Communication and Transport

Kitty Kubo, Director, Arengu Foundation

Toomas Noorem, Managing director, Tartu Science Park

Külle Tärnov, Head of Business Unit Services, Tallinn Science Park

Aleksei Hõbemägi, Director, Federation of Estonian Engineering Industry

Carita Pettersson, Head of office, Nordic Council of Minister's Office Estonia

Latvia

Anders Paalzow, Rector, Stockholm School of Economics Riga

Dr. Jānis Stabulnieks, Managing director, Latvia Technology Park

Imants Gross, Director, Nordic Council of Minister's Office Latvia

Lithuania

Dr. Stanislovas Žurauskas, Head of Science and Technology

Dep., Ministry of Science, Technology and Education

Jūratė Devičienė, Head of International Research Programme Dep, Ministry of Science, Technology and Education

Laimutė Kalinauskienė, Director of Investment and Innovation Department Ministry of Economic Affairs

Mantas Nocius, Managing director, Lithuania Agency of Economic Development

Tomas Cermevicius, Managing director, Lithuania Science Parks

Bo Harald Tillberg Director, Nordic Council of Minister's Office Lithuania

St. Petersburg

Mika Boedeker, Director, Nordic Council of Minister's Office St. Petersburg

List of persons interviewed in the Nordic countries

Country	Field	Organization	Title	Name
Denmark	Academia	FOIN – Forskerparker og innovationsmiljøer	Formand	Lars Stigel
Denmark	Academia	Syddanske Forskerparker i Odense	Adm. direktør	Klaus Holmsberg
Denmark	Industry	Dansk Industri	Head of Research policy	Charlotte Rørhof
Denmark	Industry	Dansk Erhverv	Forskningspolitisk chef	Jannik Schack Linnemann
Denmark	Government	Erhvervsministeriet	Kontorchef	Sigmund Lubanski
Denmark	Government	Erhvervsministeriet	Innovationschef	Christian Basson
Denmark	Government	Forsknings- og Innovationsstyrelsen	Kontorchef	Thomas Alslev Christensen
Finland	Academia	SITRA	Development Director	Ossi Kuittinen
Finland	Academia	Finnish Science Park Association TEKEL	Executive Director	Kyösti Jääskeläinen
Finland	Industry	Confederation of Finnish Industries EK	Director, Innovation and Growth Policy	Hannele Pohjola
Finland	Government	Tekes	Executive Director, Technology and Research Areas	Riikka Heikinheimo
Finland	Government	Tekes	Director, Innovation Funding	Kristina Laurila
Finland	Government	Ministry of employment and the economy – innovation department	Director General	Petri Pellonen
Iceland	Academia	Rannís	Direktør	Hallgrímur Jónasson
Iceland	Industry	The Federation of Icelandic Industries	Director General	Jón Steindór Valdimarsson
Iceland	Government	Ministry of Education, Science and Culture - Department of Science and Higher Education	Director	Einar Jörundsson
Iceland	Government	Ministry of Industry, Energy and Tourism	Deputy Permanent Secretary	Sveinn Þrogrímsson
Iceland	Academia	IMPRA	Managing Director	Berglind Halgrímsdóttir
Norway	Academia	NIFU – Norsk institutt for studier av innovasjon	Forskningsleder for området Forsknings- og innovasjonspolitikk	Anis Kaloudis
Norway	Academia	Forskningsrådet	Administrerende Direktør	Per Koch
Norway	Industry	NHO	Afdelingsdirektør /afdeling innovation	Inger Aarvig
Norway	Industry	NHO	Executive Director for Industrial Affairs	Petter Haas Brubakk
Norway	Government	Innovasjon Norge	Special adviser	Knut Semmeseth
Norway	Government	Nærings- og Handelsdepartementet	Avdelingsdirektør	Bent F. Sunde
Sweden	Academia	Swedish Incubators & Science Parks	Chairman S&SP	Therese Sjölundh
Sweden	Academia	Innovationsbron	CEO	Peter Strömback
Sweden	Industry	Svenskt Näringsliv	Ansvarig Forsknings- och utvecklingsfrågor	Maria Anvret
Sweden	Industry	Svenskt Näringsliv	Forsknings- och utvecklingsfrågor	Helena Bergqvist
Sweden	Government	Tillväxtverket (NUTEK)	If chief for Europeprogrammen	Karin Hallerby
Sweden	Government	Näringsministeriet - Vinnova	Director International Collaboration and Networks	Sylvia Schwaaq Senger
Sweden	Government	Näringsministeriet - Vinnova	Tillförordnad generaldirektör	Lena Gustafsson
Sweden	Industry	Connect Sverige	CEO	Johan Carlstedt

Nordic Innovation Centre

The Nordic Innovation Centre initiates and finances activities that enhance innovation collaboration and develop and maintain a smoothly functioning market in the Nordic region.

The Centre works primarily with small and medium-sized companies (SMEs) in the Nordic countries. Other important partners are those most closely involved with innovation and market surveillance, such as industrial organisations and interest groups, research institutions and public authorities.

The Nordic Innovation Centre is an institution under the Nordic Council of Ministers. Its secretariat is in Oslo.

For more information: www.nordicinnovation.net