

NEED TO KNOW

Nordic innovation
policies
for the future



Preface

The Nordic Industrial Fund has, through its initiative in the SME Forum, completed the first round of seven projects linked to the Nordic countries' innovation and enterprise policies. This report offers a short description of the projects together with results. Our objective in this undertaking has been to make a contribution to the development of innovation policies in the Nordic countries.

A number of policy implications and recommendations have come to light. Naturally, it depends on the reader's position in the Nordic countries' innovation systems as to whether all conclusions and recommendations will be of interest. Nevertheless, in my view, all these projects offer valuable insights to those in ministries and organizations who have development of effective innovation and enterprise policy measures as their domain.

From The Nordic Industrial Fund's perspective, the following conclusions are of particular interest.

- The Nordic governments should give higher priority to the development of a holistic innovation policy that cuts across the still-disconnected and disjointed policies for industrial and economic policy, education and research policy and regional development policy. It is time for action.
- It is especially important to develop a policy for entrepreneurship that can combine all the disparate measures and incentives aimed at creating more entrepreneurs and a higher rate of growth in existing young enterprises. Only in this way will it be possible to change the low level of entrepreneurial activity in the Nordic countries.
- The music industry is one specific example of a growth sector, in its own right and relative to other sectors in the Nordic countries. However, only when policy-makers understand the need for coordinated policies for this diverse - even fragmented - sector will it be possible to realize the full value-added potential of this particular branch of the Nordic entertainment industry.
- The risk capital market in the Nordic countries is indeed immature. In particular, there seems to be a scarcity of investment potential in the early stages of product, process or market development. Knowing that substantial financial resources are presently bound up in investments offering low returns, it seems only logical to propose that mechanisms should be developed to revitalize this capital.
- It seems to be a common opinion that high-tech spin-offs are a significant contributing factor to value-added growth and innovation. However, a recent study suggests that high-tech spin-off is in many respects a rather marginal phenomenon. Policy-makers should re-evaluate current measures in the light

of such findings, and consider whether alternative use of resources might yield better results.

- Universities and other higher educational institutions are often said to provide a vital stimulus to the business environment. Not necessarily. Only if these institutions possess technical faculties and curricula capable of satisfying present and/or future demand for competencies in the region they can play a significant part in promoting regional growth.
- Finally, but perhaps most important of all, there is a need for competence and capacity building in policy-making authorities and organisations. These need to develop strategic plans for policy learning, plans that include life-long learning, new forms of cross-organisational working groups and the creation of social arenas. Only then will it be possible to design and implement the most cost-effective measures aimed at improving general and specific conditions of the innovation systems.

It is my hope that the synthesis attempted in this report will inspire further study of the individual underlying reports.



Kjetil Storvik

Managing Director
Nordic Industrial Fund

Introduction

The projects presented in this report have a basis in "good-practice" in the innovation policies of the Nordic Countries. We have chosen to set up the projects within relevant thematic subjects in the continuing debate on policy formulation. In these projects the Nordic Industrial Fund has employed some of the leading analytical and research organisations in the Nordic countries.

The seven projects presented in this report are listed under the following titles:

- Good practices in Nordic Innovation Policies (GOOD-NIP)
- Towards an entrepreneurship policy - a Nordic perspective
- SMEs and the new role of academic research in four Nordic countries
- Behind the music - profiting from sound: a systems approach to the dynamics of the Nordic music industry
- High-tech spin-offs in the Nordic countries
- Nordic SMEs and regional innovation systems
- The role of universities in regional innovation systems

The projects were commenced in the spring of 2002 and completed by summer/autumn 2003.

The Nordic Industrial Fund considers it important to create a Nordic platform for the exchange of experience and to initiate joint Nordic projects in order to build up knowledge relating to innovation and SME/enterprise policies. The SME Forum is the Nordic Industrial Fund's conduit for this work. The work is directed at individuals with responsibility for developing innovation and SME/enterprise policies. The target groups are primarily government and private parties within national Nordic innovation systems who are responsible for developing and implementing policy. Recipients of the project results include, for example, government departments, industrial and commercial organizations, the higher educational sector, research organisations etc.

It should be emphasized that the projects utilize existing knowledge of the topic studied as their point of departure for establishing an increased understanding of the issues at hand. But most of all it should be stressed that the researchers behind the reports have been asked to give priority to the presentation of recommendations for developing and improving future policies. For this reason the projects mainly focus on the composition of existing knowledge/competence: they do not therefore have the character of research projects.

The Nordic Industrial Fund places great importance on the distribution of results to the relevant users. In addition to this synthesis report the Nordic Industrial Fund has, within the framework of SME Forum, initiated and carried out a range of information activities, including seminars, workshops, newsletters, the distribution of reports, e-mail transmissions, project web sites, etc.

In the following pages we have chosen to present the seven projects very briefly. In such a brief presentation it is easy to do injustice to the researchers, as the nuances could be lost. However, we are of the opinion that this synthesis report accurately reflects the projects' main conclusions.

We invite interested readers to a closer study of the documentation.
Reference is made to the home page of the Nordic Industrial Fund:
www.nordicinnovation.net



Projects



Good practices in Nordic Innovation Policies (GOOD-NIP)

Modern innovation theory presents a systemic approach to innovation - an approach often seen by policy-makers as the backbone of their endeavour to foster innovation and growth.

The project "Good practices in Nordic Innovation Policy" maps different Nordic innovation policy measures. The comprehensive analysis is a resource for Nordic policy-makers looking for information on how relatively similar countries have pursued relatively similar innovation policy challenges.



Towards an entrepreneurship policy - a Nordic perspective

Entrepreneurship represents one of the most important areas for growth and development not only in the Nordic countries but internationally. Newly established enterprises are one of the most important sources of added value and employment. The establishment of new enterprises is also often related to the existing "entrepreneurial culture" in the country in question and how this culture is stimulated.

The aim of the project has been to bring to light good examples of entrepreneurship policy, to discuss the latest research in the area and to clarify the significance of the differences among the Nordic countries in this policy area.



SMEs and the new role of academic research in four Nordic countries

Small and medium-sized enterprises (SMEs), especially new technology-based firms, play a distinctive and increasingly important role in innovation systems.

The main objectives of the study are to examine the policies and institutions designed to promote the commercialization of academic research and/or knowledge exchange between SMEs and universities. The study also examines what are the main drivers of and/or obstacles to the commercialization of academic research in the four Nordic countries.



Behind the music - profiting from sound: a systems approach to the dynamics of the Nordic music industry

The music industry in the Nordic countries represents a profit sector with great potential for increased export and further growth and development. Commercial studies directed at the production of music are, nevertheless, relatively new fields in economics and the social sciences.

The future success of the music industry will depend on collaboration between the different players in the value chain. This study seeks to expand existing knowledge of how the music industry functions in the Nordic countries, and how best to organize innovation policies for the industry.

High-tech spin-offs in the Nordic countries

High-tech spin-offs have been the subject of great political interest in a number of countries - and in particular when it comes to newly established enterprises originating from higher educational facilities and research institutions.

This project studies the creation and performance of start-ups and new enterprises in the Nordic countries, utilizing register data compiled by the national statistical agencies. Among the many different aspects brought up during the study, a central theme is the performance of new establishments that can be identified as "high-tech spin-offs".

Nordic SMEs and regional innovation systems

Regional innovation systems involve collaborative innovation activities between companies and knowledge creating and diffusing organizations such as universities, colleges, training bodies, R&D institutes, technology transfer agencies, business associations and funding institutions.

The aim of the research project is to carry out a Nordic comparative research on SMEs, regional innovation systems and innovation policy. The full project report contains a state-of-the-art overview of regional innovation systems and related policies, comparative analyses of selected regional innovation systems (or clusters) in the Nordic countries, and a synthesis of the cases including policy implications.

The role of universities in regional innovation systems

Universities and colleges have come to play a much more important role as sources of industrial renewal. They are a significant force in the regional innovation system, which also comprises the regional business community, local and regional authorities and national and international agencies.

In reality, however, different universities and colleges are not equally successful in their role as drivers of the regional innovation system. In some cases, universities and colleges contribute to comprehensive change; in others, the regional impact is insignificant. What makes the difference? In particular, it is the aim of the project to study what is required for a university or college to play a dynamic role in the regional innovation system.





Good practices in Nordic Innovation Policies (GOOD-NIP)



“A holistic innovation policy assumes that different policy areas interact with and support each other more effectively than is now the case and that policy-makers understand the importance of learning within and between the policy-making organizations.”

Per Koch,
Project Leader (per.koch@step.no)



Background

Modern innovation theory presents a systemic approach to innovation - an approach often seen by policy-makers as the backbone of their endeavour to foster innovation and growth. Innovation is seen as the end result of complex interactions within an innovation system taking in a wide range of constituents: these include corporate customers and suppliers; R&D institutions, financial institutions; public policy measures, institutional and regulatory frameworks, and various forms of other knowledge-based infrastructures.

The project "Good practices in Nordic Innovation Policy" maps different Nordic innovation policy measures in the light of this systemic approach.

The comprehensive analysis is a resource for Nordic policy-makers looking for information on how relatively similar countries have pursued relatively similar innovation policy challenges.

Scope, goals and participants

The main objective of Good Practices in Nordic Innovation Policies has been to produce a survey and analysis of Nordic innovation policy instruments that directly or indirectly target small and medium-sized enterprises (SMEs). The project aims to provide Nordic policy-makers with information to be used in the development of new or modified policy instruments at national or Nordic level.

Policy implications

Innovation policy measures:

GoodNIP proposes that national authorities take a close look at their innovation policy instruments to see whether the following areas of intervention are covered, either separately or within existing programmes or institutions:

Improving the absorptive capacities of firms

Small firms find it hard to set aside resources for systematic learning and use of R&D. There is a need for instruments that can strengthen SMEs ability to organize their activities towards this end. Governments should consider new mechanisms for this purpose.

Broaden the activity base of firms

During recessions, companies have a tendency to focus on their core competences, and to avoid investing in more risky but potentially rewarding projects. The authorities can respond by making high-risk capital available and by finding potential partners that can help to bring innovations to the market.

The following researchers have taken part in the project:

- Per M. Koch (Project Leader),
- Johan Hauknes,
- Marianne Broch,
- Siri Aanstad,
- STEP, Norway,

- Staffan Larsson (Team Leader),
- the Swedish National Board for
- Industrial and Technical
- Development (NUTEK), Sweden,

- Lennart Norgren,
- Jennie Granat,
- VINNOVA, Sweden

- Juha Oksanen (Team Leader),
- VTT Technical Research Centre of
- Finland,

- Jørgen Lindgaard Pedersen
- (Team Leader),
- Søren Jensen,
- Kasper Edwards,
- Technical University of Denmark,
- Institut for Produktion og Ledelse
- (IPL), Denmark,

- Thorvald Finnbjörnsson
- (Team Leader),
- Rannsóknarrá_ Íslands
- (RANNIS), Iceland,

Target unborn industries and technologies

Current policy instruments normally serve existing types of firms and technologies, with boards often manned by representatives of traditional industries. This makes it hard for newcomers to get the support they need. Policy-makers should develop policy instruments that will also put the more radical entrepreneurs in touch with sources of finance, R&D institutions and commercial partners. All governments should take note that a lack of high risk venture capital is a major stumbling block for innovation and entrepreneurship. Thus governments should consider setting up public schemes for risk financing.

Improve the interaction between knowledge institutions and industry

In order to make it more likely that large public investments in education and research will pay off, policy-makers should look at alternative ways of facilitating knowledge transfer and cooperation. This applies to all educational institutions, including research institutions, universities and colleges. All Nordic countries should implement a university and college intellectual property right (IPR) policy that encourages researchers to patent and commercialize their inventions. Also, existing legal frameworks should be re-assessed. All Nordic countries should develop policy measures that encourage interaction and cooperation between companies and relevant academic bodies.

The future role of the institute sector

Policy-makers should look beyond the focus on industry/university relationships, and take all knowledge institutions into consideration when developing their innovation policies. This especially applies to the research institutions. Such institutions normally carry out applied research and development work or function as advisers to companies and public institutions. The fact that they are closer to the market than most university departments may give them a better understanding of the practical needs of companies. They can also function as bridges between academia and industry. Hence the institutes can play a valuable role in innovation that is quite distinct from that of the universities and colleges.

The need for development of a holistic innovation policy

The governments will have to develop a more broad-based, holistic innovation policy that goes beyond the traditional areas of industrial and enterprise policy, research policy and regional development policy. GoodNIP recommends that all the Nordic countries launch policy initiatives in this area. To ensure visibility in political and public forums, such new policies should be presented in separate government White Papers or action plans. Developing cross-ministerial policies is a demanding process: hence the need for dedicated strategies aimed at policy learning within the organisations.

Capacity building inside policy-making organizations

GoodNIP proposes that all relevant ministries and agencies develop strategic plans for policy learning, including:

Life-long learning

Policy institutions should make active use of workshops, sabbaticals, courses and other forms of training. There should be staff exchange programmes for limited periods, enabling policy-makers to become familiar with other institutions than their own. Recruitment policies should be more radical in order to avoid the "clone" problem - the tendency of leaders to employ people of similar background and outlook - and to promote a more balanced distribution of age, gender and educational level. Such learning processes should be made obligatory in work descriptions and employment contracts, and the institutions should earmark resources for these purposes.

Strategic use of participation in international cooperation and at conferences

More policy-makers should be encouraged to participate in international and professional gatherings. International travels should not be seen as a fringe benefit for senior civil servants, but as a tool for training new employees. It is important that the experience gained by these policy-makers is shared with others.

New forms of cross-organizational working groups and social arenas

Informal networking is an important part of a policy leaning, but should not be the only form of collaboration across departmental and organizational boundaries. High-level forums are also important tools for making the necessary policy decisions, but often fail to provide opportunities for in-depth discussions and insights. One improvement would be to establish ad hoc or permanent medium-to-low level working groups charged with formulating policy analysis and recommendations. Not only might such working groups lead to policy learning in themselves, they might also help to lower the fences between institutions - as would the informal networks often arising as spin-offs from such groups.

Coherent procedures for commissioning innovation research and evaluations

All the Nordic governments make extensive use of evaluations and commissioned reports. However, these are often carried out on an ad hoc basis, without taking into consideration the needs of other relevant policy institutions. Coordinating such commissioning activities more systematically would be helpful in some (though not all) areas. A more systematic approach to existing evaluations and reports is also important to ensure that they are distributed to all relevant policy-makers.

Closer interaction with relevant research institutions

Research institutions should not be considered "report factories" that can produce policy advice on a fully independent basis. Innovation policy research institutions should indeed uphold the standards of unbiased and critical research, but they cannot gain an understanding of policy development without a close interaction with policy-makers. Such relationships also benefit policy-makers, as they are more easily kept up to date on the latest developments in innovation theory, methodology and research.



Notes:



Towards an entrepreneurship policy - a Nordic perspective

«Entrepreneurial policy must be an integral aspect
of innovation policy, and drawn up in accordance
with the requirements of the entrepreneur.»

Anders Lundstrøm,
Project leader (lundstrom@fsf.se)



Background

Entrepreneurship represents one of the most important areas for growth and development not only in the Nordic countries but internationally. Newly established enterprises are one of the most important sources of added value and employment. This is evident as more and more countries, not just the Nordic countries, focus on entrepreneurial policies as a separate subject in its own right within the broader scope of innovation policy. Effective measures for encouraging more new and growing enterprises are important. In this connection we can ask how best to improve access to capital and competent advice while removing legal and administrative barriers; proper evaluation and analysis of growth potential is fundamental.

The establishment of new enterprises is also often related to the existing "entrepreneurial culture" in the country in question and how this culture is stimulated.

Scope, goals and participants

This project deals with the development of entrepreneurial policies in the Nordic countries. A starting point for the project has been an assumption that conditions would be roughly similar in the various countries.

The aim of the project has been to bring to light good examples of entrepreneurship policy, to discuss the latest research in the area and to clarify the significance of the differences among the Nordic countries in this policy area.

Policies involve different efforts to motivate potential entrepreneurs, to make knowledge available to them and to create the best possible conditions for as many as possible to start up and run their businesses. The project describes best practice and explains in concrete terms how a country can design its efforts in this area and also how to follow-up and measure the results of such efforts.

Policy implications

Make policy based on the real needs of entrepreneurs, not on myths

In many cases it is far from obvious that a project or programme has been drawn up in order to meet the needs of entrepreneurs. Take these two examples: "One-stop shops" are not automatically desirable, according to surveys of entrepreneurs; nor is it obvious which types of expertise – to be supplied by publicly funded consultants – are lacking among entrepreneurs.

The following researchers have participated in the project:

- Frank Skov Kristensen,
• Søren Qvist Eliassen,
Technological Institute, Denmark
- Vesa Routamaa,
Vaasa University, Finland
- Berglind Hallgrímsdóttir,
• Charlotte Sigurdardóttir,
IMPRA Innovation Centre,
Technological Institute, Iceland,
- Sven Are Jenssen,
• Lars Kolvereid,
• Eirik Pedersen,
• Beate Rotefoss,
Handelshøyskolen in Bodø
together with Knowledge Park,
Bodø, Norway
- Håkan Boter,
Handelshögskolan at Umeå
University, Sweden
- Anders Lundström,
(Project Leader)
The Forum Foundation for Small
Business Research, (FSF)
Sweden

Formulate an individualized integrated policy based on a Nordic perspective

There are certain conditions specific to the Nordic countries which must be taken into account in shaping an integrated policy. First of all, there are special situations that apply in the respective countries. The Nordic countries are not smaller copies of, e.g., the USA. Consequently, policy-makers must to a greater extent boost entrepreneurial activities within the public sector, expand the role of the private sector as a source for generating a higher-value public investments, and cultivate an outlook that is more regional as well as international.

Integrated innovation- and entrepreneurship policy measures

All countries emphasize measures and incentives for developing the innovation system and R&D sector. Entrepreneurial policy should therefore be integrated with innovation policy, if we are to allow for the different stages in the development process germane to both these policy areas.

Develop a policy grounded in knowledge from the research community

To develop an integrated policy it is of the utmost importance to make use of policy-oriented research. This project provides numerous examples of inadequate use of information that already exists in different areas of entrepreneurial policy. Many of the so-called problems concerning policy are more to do with the pronouncements of interested parties and myths generated in the system.

Set goals that can be analysed and evaluated

Objectives set are often too generally formulated to be of any value in assessing whether different measures have been valuable or effective.

Change of attitudes is indeed important in the Nordic context

In several studies, e.g. Global Entrepreneurship Monitoring (GEM), the Nordic countries show low scores in the so-called TEA index (Total Entrepreneurial Activity for those individuals pushed into entrepreneurship because they have no better alternatives for work). The TEA-index number has even fallen in Finland and to some extent also in Sweden. With the possible exception of Iceland, the Nordic countries thus need an entrepreneurship policy aimed at boosting motivation.

Efforts should be increased within the area of administrative burdens.

If this area is considered important, more resources should be devoted to it. So far, only small investments have followed political statements on the importance of smoother regulation for the development of small businesses and numbers of entrepreneurs.

Policy learning and policy development

The structure of e.g. small enterprise policy has scarcely changed over a long period of time. Many of today's programmes and projects have been going on for many years. "Add-on policy-making" is true not only of entrepreneurship policy but for policies aimed at existing small enterprises. Projects and programmes have been added but few have been terminated. There is a lack of learning inside the systems. Additionally, there are many similar programmes in the Nordic countries which offer the opportunity to learn from each other.

**Notes:**



SMEs and the new role of academic research in four Nordic countries



"First and foremost is the continuing across-the-board challenge at a general level to facilitate development of the relevant human, financial and institutional resources. One outstanding example is the need to improve public support for the growth and development of the private venture capital market"

Merle Jacob,

Project leader (mj.lpf@cbs.dk)



Background

Small and medium-sized enterprises (SMEs), especially new technology-based firms, play a distinctive and increasingly important role in innovation systems.

Over the last decade or so, Nordic countries, in keeping with global trends, have been individually developing policy frameworks for supporting the development of their respective national innovation systems. Cooperation between universities and industry, and the commercialization of academic research in particular, have been assigned a central role in this work.

Scope, goals and participants

The main objectives of the study are to examine the policies and institutions (formal and informal) designed to promote the commercialization of academic research and/or knowledge exchange between SMEs and universities. The study also examines what are the main drivers of and/or obstacles to the commercialization of academic research in the four Nordic countries.

This involves an extensive review and analysis of the policies and the academic literature on the subject in Denmark, Norway, Finland and Sweden, supplemented by case studies of SMEs in each country.

Policy implications

Develop the academic merit system so as to provide incentives for commercialization

Universities need to develop the academic merit system in order to create incentives for individual academics to engage in commercialization activities. Cooperation at the Nordic level may help to reduce the level of uncertainty for individual institutions and reduce the risk of staff migrating to other institutions.

Develop support structures for projectification of academic work

Universities should devote resources to create effective support structures for the increasing projectification of academic work.

Increase the mobility of human capital between the university and business sectors

Governments, labour unions and private firms need to collaborate on schemes for promoting the mobility of human capital between sectors. This type of initiative would facilitate the dissemination of knowledge not only to SMEs but to all business sectors.

The following researchers have participated in the project:

- Eric Iversen,
STEP, Norway
- Pirjo Kutinlahti,
VTT, Finland
- Søren Wennerberg,
Management, Politics and
Philosophy, Copenhagen
Business School, Denmark
- Merle Jacob, (Project Leader)
Institute for the Management
of Innovation and Technology,
Chalmers University of
Technology, Sweden

Promote enterprise culture on a national level

Most countries have developed mechanisms and policies for encouraging the development of an enterprise culture among public research organizations (PROs) and universities. The need is to extend this to the society as a whole. An initial step might be the introduction of public education programmes fostering a positive image of entrepreneurship and providing information about how to start a company.

Public support to assist in the development of a competent venture capital market

All country reports show a relatively underdeveloped private venture capital market and a scarcity of investment for early stage development. Some public intervention is required to help to develop the private market.

More attention to other sources of knowledge

National and regional organizations should work with SME lobbying organizations to develop and improve other sources of knowledge utilized by SMEs. Trade fairs, small-big firm networks, trade magazines, etc., are all significant sources of knowledge to SMEs.

PROs should develop diversified knowledge delivery systems for SMEs

Social proximity is a significant factor in determining SME-PRO interaction; this suggests that knowledge transfer to SMEs should be differentiated. Extension services modelled on the agricultural university approach may be one potential solution for SMEs with no history of PRO interaction.



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Behind the music - Profiting from sound: a systems approach to the dynamics of the Nordic music industry



"Behind the Music was the first large-scale investigation into the Nordic music industry. The investigation found that music has grown into an important and dynamic industry that is now in a period of rapid change: a period in which sound policies can help develop the competitiveness of this exciting industry."

Dominic Power,

Project leader (dominic.power@kultgeog.uu.se)



Background

The music industry in the Nordic countries represents a profit sector with great potential for increased export and further growth and development. Commercial studies directed at the production of music are, nevertheless, relatively new fields in economics and the social sciences.

The music industry has undergone great structural changes during recent years. The branch has experienced, on the one hand, a sharp rise in newly created small companies which speculate in the discovery and promotion of new talents; on the other hand, there is a concentration of a few big players which, through the purchase of medium-sized companies, specialize in sales and distribution. The future success of the music industry will depend on collaboration between the different players in the value chain.

Scope, goals and participants

The scope of the project must be viewed in the light of an emerging understanding of the dynamics of the service industries and the interactions of those involved in this sector. This study seeks to expand existing knowledge of how the music industry functions in the Nordic countries, and how best to organize innovation policies for the industry.

More specifically the project aims at understanding the shape and size of the individual actors making up the music industry, their competitiveness, and how weaknesses might be addressed, opportunities identified and competitive strengths exploited. An underlying focus is on ways in which different types of companies influence processes of education, innovation and competition.

Policy implications

The Nordic music industry is in a period of restructuring

Policies for the music industry should take into account the role of related music services, and the overlap of music and other related services such as media and ICT. There are mutual benefits and new products to be gained from linking music with other industries.

Statistics and benchmarks

There is a need in the music industry for the collection of more accurate industrial statistics and benchmarks. Better figures are the key to identifying problems and benchmark developments.

Tax incentives

A supportive local market is crucial to the industry. Lowering sales taxes or value added taxes on musical products would be a considerable stimulant to

The following researchers have participated in the project:

- Daniel Hallencreutz,
Intersecta Consultancy, Sweden
- Dominic Power,
(Project Leader)
Uppsala University, Sweden
- Gylfi Dalmann Adalsteinsson,
University of Iceland, Iceland
- Hanna Virtanen,
ETLA, Finland
- Helga Bjorg Ragnarsdottir,
University of Iceland, Iceland
- Johan Hauknes,
STEP - Centre for Innovation
Research; SINTEF Industrial
Management, Norway
- Lars Frederiksen,
Copenhagen Business School,
Denmark
- Mark Lorenzen,
Copenhagen Business School,
Denmark
- Markus M. Bugge,
STEP - Centre for Innovation
Research; SINTEF Industrial
Management, Norway
- Per Lundequist,
Intersecta Consultancy, Sweden
- Rita Asplund,
ETLA, Finland

domestic demand. Sales taxes applied to both recorded and live music should be brought into line with the substantially lower rates of sales tax applied to other cultural products.

Better coordinated cultural and business policies

Public-sector cultural policies are not adequately integrated with business development policies. Cultural and business policies towards the music industry should be more coordinated.

Building on strengths in the industry

The Nordic music industry needs more opportunities to gather together at meetings or other events for networking, information exchange, exposure to best practice, cross-national marketing, etc. Joint ventures and local cluster initiatives comprising different sets of actors and competencies should also be encouraged.

Need for formalized educations and training

As the music industry becomes more professional and international, there is a need for higher education programmes focusing on the sector, and for courses and seminars dealing with export markets, industry trends, new technologies and traditional business skills such as management, marketing and administration. Mentoring programmes and informal networks would be useful in view of the increasing involvement and career development of women in the industry. At the same time, companies, organizations and educational authorities should monitor national and international best practice in music education and competence training.

National umbrella organizations

The establishment of national umbrella organizations linking the various bodies representing the music industry should be supported. There is a need for such organizations to speak for the music industry with a single voice on issues of common interest and to lobby on the industry's behalf, internationally as well as domestically.

Export support structures

Music industry firms need better access to detailed information on potential export markets: business climates, cultures, organizations, profiles, etc. Existing public sector export promotion bodies could help with this. However, the advantages of setting up specialized music export authorities and promotion offices should also be investigated (where it has not been done already). Central points or one-stop-shops for seed capital to fund promotional tours, showcases, and radio play promotion in foreign markets would be valuable.



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High-tech spin-offs in the Nordic countries



"A new method, based on register data to identify spin-off enterprises in the Nordic countries, indicates that so-called high-tech spin-offs make only a limited contribution to the restructuring of trade and industry - but the spin-off enterprises have a greater chance of survival than other types of newly established enterprises."

Svein Olav Nås,
Project leader (svein.nas@step.no)



Background

High-tech spin-offs have been the subject of great political interest in a number of countries - and in particular when it comes to newly established enterprises originating from higher educational facilities and research institutions. High-tech spin-offs are generally seen as a valuable contribution to wealth creation and innovation in the private sector, whether originating from the research establishment or from private companies.

The study of high-tech spin-offs is therefore of undeniable importance, as is the formulation of relevant government policies. Nevertheless, despite the apparent value of these companies as wealth creators, little work has been done in this field in the Nordic countries.

Scope, goals and participants

Renewal is frequently identified by policy-makers as a positive force in industry. However, a relevant question is how much renewal takes place within existing enterprises, and how important are the newborn companies to renewal in the business community. Also, most relevant, how significant is the contribution of spin-offs that can be characterized as "high-tech"? Until now such quantitative comparisons have been difficult.

This project studies the creation and performance of start-ups and new enterprises in the Nordic countries, utilizing register data compiled by the national statistical agencies. Among the many different aspects brought up during the study, a central theme is the performance of new establishments that can be identified as "high-tech spin-offs".

Policy implications

Limited impact

A first point is that high-tech spin-offs in many respects seem to be a rather marginal phenomenon. The numbers of companies involved and the numbers of employees in them are quite limited. Activity is to a large extent concentrated in particular parts of the business services industry, often involving small consultancy firms that employ few others than those involved at the time of company formation. In terms of industrial renewal, this kind of change has very limited effect in quantitative terms, and other dynamics affecting the businesses should therefore be given greater attention. The study proposes a more thorough analysis of the most influential types of renewal utilizing and building on the methodology presented in this study.

The following researchers have participated in the project:

- Svein Olav Nås,
(Project Leader)
- Tore Sandven,
STEP, Norway

- Tor Eriksson,
Aarhus Business School,
Denmark,

- Olavi Lehtoranta,
• Markku Virtaharju,
Statistics Finland, Finland

- Björn Tegsjö,
• Jan Andersson,
Statistics Sweden, Sweden

Compensation for low achievements

Even if high-tech spin-offs are not found to be of any major importance to date, that does not necessarily imply that it is – or should be – a permanent state of affairs. One can argue, on the contrary, that such limited activity accentuates the need for improvement. It could be for example that high-tech spin-offs are effective as a mechanism for bringing advanced knowledge to use in new businesses. The present work has had no means of settling such an issue.

More spin-offs in high-tech

Spin-offs seem to be more frequent in some cases than others. In particular, spin-offs are more widespread in high-tech sectors than in other sectors, and they have a higher survival rate than other new start-ups.

Experience important for survival

Higher survival rates among spin-offs suggest that the experiences the employees bring with them when “spinning out” are important, and more important in high-tech sectors than in other sectors. If the objective is to enhance the presence of high-tech sectors in the economy this is valuable information for policy design.

Success factors hard to identify

It is difficult to identify factors influencing the likelihood of success. In isolation, this is an argument against getting involved with policy measures, simply because one has insufficient knowledge as to which factors might be decisive – or even significant. The particular variables that bear directly on policy, such as location and (especially) eligibility for regional or structural support, have no impact on the likelihood of success. However, some unresolved methodological limitations could be responsible for these problems in explaining success factors.

Costs for the delivering enterprise

An aspect that is rarely brought up in discussions of (high-tech) spin-offs relates to the cost side of spin-offs for the parent establishment. Any consideration of the social return must also take these costs into account. One such case could be when researchers leave their organization to establish a new firm, thereby depriving the parent organization of their expertise. Depending on the situation, this may constitute a cost; but the experience can also yield a positive result as it can help to focus activities in the parent organization.

Costs of policymaking

When making policy, bureaucrats may have more detailed and nuanced information about some cases than others. On this basis it may be possible to identify cases where high-tech spin-offs seem to be a promising opportunity that could be brought to life with appropriate support systems. This process, via different support systems, is common to all countries. Also common to all

countries, however, is the fact that in order to design effective measures the policy-maker requires very detailed knowledge; knowledge that is difficult to access, therefore making prioritizing among candidates difficult.

There is also a more general cost consideration in policy-making, as resources always have alternative applications. Thus support for one candidate or activity is always at the expense of another. Assessing the many advantages and disadvantages is usually difficult. As regards (high-tech) spin-offs, the current study shows there are not enough margins either to recommend or advise against using policy to influence the outcome. On the other hand, the analysis has established a broad and nuanced view of high-tech spin-offs which can be useful for future policy-making. Also, the analysis can serve as a reference point for more focused analysis of the subject in future.



Notes:



Nordic SMEs and regional innovation systems

"In order for Nordic SMEs to be internationally competitive they need proactive and system-oriented innovation support structures. Regional innovation systems play a key role in this regard."

Bjørn Asheim,
Project leader (Bjorn.Asheim@keg.lu.se)



Background

Regional innovation systems involve collaborative innovation activities between companies and knowledge creating and diffusing organizations such as universities, colleges, training bodies, R&D institutes, technology transfer agencies, business associations and funding institutions. These organizations possess important competencies, train employees and provide necessary finance in support of regional innovation.

SMEs have been increasingly targeted by industrial and innovation policy-making authorities. However, designing such policies requires insight into the distinctive role and characteristics of SMEs in the wider production systems, and into the significant barriers SMEs face in enhancing their innovative potential.

Scope, goals and participants

The aim of the research project is to carry out a Nordic comparative research on SMEs, regional innovation systems and innovation policy. The full project report contains a state-of-the-art overview of regional innovation systems and related policies, comparative analyses of selected regional innovation systems (or clusters) in the Nordic countries, and a synthesis of the cases including policy implications.

The study asks whether there are similarities between clusters of SMEs in different regions and sectors, and compares the extent to which regional factors underlie the success/failure of clusters in comparison to industry/sector-specific factors. This comparative case-study approach provides the background for investigating the conditions for implementing strategies in the different Nordic countries and regions, and for presenting policy recommendations for promoting policies supporting clustering processes and the development of innovation systems at regional level.

Policy implications

Broad-based innovation as the basis for SME competitiveness

A key to the competitiveness of Nordic SMEs in a globalized economy is their ability to innovate, i.e. to implement new and better ways of organizing the production and marketing of new and better products. Given the comparatively high cost level in the Nordic countries, innovation provides a more promising strategy than competition based on cutting costs. Moreover, innovativeness is not restricted to high-tech industries such as ICT but can also be found in low-tech SMEs.

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Innovation through interaction with other firms and knowledge organizations

Due to their small size, SMEs can benefit from innovation in partnerships. This occurs most frequently through processes of learning with suppliers and customers in a cluster. But existing knowledge and competence gaps in SMEs can also be bridged, and barriers to innovation overcome, through interaction with universities and research institutions. Sometimes SMEs find it difficult to find suitable partners for innovation. Policy measures can help by bringing SMEs in contact with relevant knowledge institutions, for example through innovation support centres.

Regional and global innovation linkages

Often the regional innovation system holds the knowledge to help SMEs in solving problems associated with product development or process improvement. This is especially the case in more central regions. Yet because SMEs and knowledge organizations are not used to collaboration, such learning processes may not take place. This unfortunate situation can be avoided by policy measures that stimulate partnerships. Sometimes, the SMEs are in need of specialized support that is not present in the vicinity or region. In such cases it is crucial that SMEs manage to find such support at national or even global level.

Policy based on cluster life cycles

Successful SME innovation very often takes place in a regional cluster context. However, clusters tend to witness different stages in their life cycle, which affects the need for innovation support. While young, embryonic clusters mainly need venture capital and a pool of highly skilled labour, mature sunset clusters often need to replace outdated collaboration structures and technologies in order to be rejuvenated. Policy-makers need to recognize these differences when designing measures to support clusters.

Universities as important skilled labour providers

SMEs are highly dependant on the skill level of their workforce for their innovative capacity, especially in a collaboration context. The regional provision of a skilled labour pool is probably the most crucial innovation support that universities can provide to SMEs.

Spin-offs as knowledge-intensive, innovative SMEs

An efficient vehicle for capitalizing on knowledge available in the regional innovation system is generation of academic spin-offs, whereby knowledge-intensive, innovative SMEs are established, particularly in high-tech industries. However, researchers often lack the managerial skills needed to run a business. Therefore, financial public support structures made available through e.g. incubator centres need to be complemented by management training and support.

Social capital as a cornerstone for collaborative innovation

As mentioned, SMEs are highly dependent on learning processes within a network of firms and knowledge organizations. Underpinning such learning processes are shared norms and values as well as the presence of trust (i.e. social capital) between the actors. Such social capital proves to be essential in explaining the high innovative performance of regional clusters. Furthermore, it may explain why research collaboration between SMEs and universities yields sometimes relatively tentative results. Even though policy-makers should not expect that social capital is easily built, it may address framework conditions beneficial to its creation. Thus efforts should be made to stimulate network organizations that provide a forum for SMEs and other organizations in the regional innovation system. Within such network organizations, SMEs can forge and sustain important relationships for their innovative performance.

**Notes:**



The role of universities in regional innovation systems



"Universities and institutes of higher education, particularly those, which have a technical and natural science faculty, have a deciding influence on business development in their regions."

Jan Evert Nilsson,
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Background

The pattern of regional development changed course during the 1970s. Regions that had previously functioned as engines of economic development stagnated and fell on hard times. Circumstances previously considered important growth factors - access to a harbour, a large industrial sector and a long industrial history - now turned out to be handicaps.

New regions with new requirements - a sizeable local market, a well educated workforce, a variety of research activities - now took on the role as engines for growth. As a result of this transformation, universities and colleges became a vital resource in regional development. The higher education system was expanded in all the Nordic countries, and new colleges are still being established in anticipation of positive regional development.

Scope, goals and participants

Universities and colleges have come to play a much more important role as sources of industrial renewal. They are a significant force in the regional innovation system, which also comprises the regional business community, local and regional authorities and national and international agencies.

In reality, however, different universities and colleges are not equally successful in their role as drivers of the regional innovation system. In some cases, universities and colleges contribute to comprehensive change; in others, the regional impact is insignificant. Thus the regional impact of these colleges and universities varies. It is these variations that are the subject of this study. What makes the difference? In particular, it is the aim of the project to study what is required for a university or college to play a dynamic role in the regional innovation system?

Policy implications

Universities may be efficient engines for regional industrial development

Universities may be efficient engines for regional industrial development. If universities are to be used as a measure for stimulating industrial development in a region it is important to invest in universities with technical faculties. Such universities can play an important role in transforming the present industrial structure and enforcing regional growth.

Education is the main driving force

In terms of universities' contributions to innovation and business development, education and not research is the most important overall facilitator. The universities deliver young, ambitious and qualified people to corporations in expanding markets. In order to fulfil this task efficiently the university must

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offer qualified education in technical fields characterized by fast growth and high long-term growth potential. Thus the university's portfolio of educational programmes defines the role it can play in supporting regional development. In this regard, educational programmes in fields experiencing a fast growing demand for jobs are of particular importance.

Immature Technologies

Education in new and growing technical areas has the greatest regional impact. By fulfilling the universities' primary dynamic role, namely to seize new opportunities in immature technical growth areas, universities can play a decisive part in creating new industries. It is therefore unwise policy to design the specialization of a university purely on basis of the specialization of existing industry in the region.

Spin-offs as latent sources of growth

In regions like Silicon Valley and Boston, spin-offs from universities represent an important source of new global corporations. In the Nordic countries the numbers of spin-offs from universities are smaller, and few if any have developed into large global corporations. The institutional structure in the Nordic countries seems almost to obstruct entrepreneurial activity and so reduce the potential of universities as a source for generating new knowledge-based firms.

Cross-border institutions may play an important role.

Most universities have built science parks and incubators, and created venture capital organizations, in order to stimulate spin-offs. These facilities may be efficient tools, making it easier to fund and support start-ups. In that way these facilities increase the survival rate of the spin-offs. However, the impact depends on the amount of spin-offs. Policy-makers need to realize that support for unborn enterprises might yield better results than nursing infant – but nevertheless exiting – enterprises.

The presence of university as a business location factor

Universities exert a strong impact on regional industrial development as an attraction factor. Expanding corporations looking for new locations tend to prefer places close to universities with relevant educational programmes. The strength of the attraction factor depends both on the number of competing universities with relevant educational programmes and the number of existing large corporations in fast-growing industries.

Universities' commercial role

The universities have several different roles in society. If governments want to reorient the universities toward a more commercial role they should implement incentives in the public funding system that motivate a higher degree of university-industry interaction.

Regional innovation systems reflect ongoing social processes

Policy-making in the Nordic countries usually begins with the formulation of goals followed by the choice of measures needed to achieve the goals. Often the specification of the goals to be achieved is detailed. It is often the case that the ambition is not solely to create a regional innovation system that produces innovations, but that the innovations should contribute to certain types of other developments as well - sustainable development, for example, often involving certain population categories, e.g. women or immigrants. As a result, the programmes get too specific and inflexible. Regional innovation systems are not most effectively built in this way. A successful innovation policy must be more general, giving institutions involved reasonably generous conditions, and thereby also making room for local initiatives. Successful regional innovation systems are not normally built according to a plan, but develop as a result of initiatives taken by a multitude of public and private regional actors.





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Nordic collaboration

Nordic collaboration is any co-operative venture involving Denmark, Finland, Iceland, Norway and Sweden, together with the self-governing regions Greenland, the Faeroe Islands and Åland.

The Nordic Council

The Nordic Council was founded in 1952 to promote co-operation between the parliaments and governments of Denmark, Iceland, Norway and Sweden. Finland joined in 1955. At the sessions held by the Council, representatives from the Faroe Islands and Greenland form part of the Danish delegation, while Åland is represented by the Finnish delegation. The Council consists of 87 elected members - all of whom are members of national parliament.

The Nordic Council takes initiatives, acts in a consultative capacity and monitors co-operation measures. The Council operates via its institutions: the Plenary Assembly, the Presidium and standing committees.

The Nordic Council of Ministers

The Nordic Council of Ministers was founded in 1971. It submits proposals on co-operation between the governments of the five Nordic countries to the Nordic Council, implements the Council's recommendations and reports on results, while directing the work carried out in the targeted areas. The Prime Ministers of the five Nordic countries assume overall responsibility for the co-operation measures, which are co-ordinated by the ministers for co-operation and the Nordic Co-operation committee. The composition of the Council of Ministers varies, depending on the nature of the issue to be treated.

Nordic Industrial Fund

The Nordic Industrial Fund - Centre for innovation and commercial development is an institution under the Nordic Council of Ministers. The Fund initiates and finances cross-border research and development projects aimed at developing the Nordic innovation systems.

Such projects are expected to enhance the competitiveness of Nordic industry and reinforce Nordic business culture while encouraging sustainable development in Nordic society. The Nordic Industrial Fund works closely with the national research financing bodies. Its secretariat is located in Oslo.



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