

# ServINNo

Service Innovation  
in the Nordic Countries  
Key Factors for Policy Design

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**PROBLEM DESCRIPTION**

There has been a growing recognition in recent years of the importance of growth and productivity increases in service sectors and that service firms are innovative. Despite this acknowledgement, our understanding of innovation and, importantly, the design of innovation policy measures, are still primarily based on the analysis of manufacturing firms. There is thus a need for more knowledge about the particularity of innovation activities in services, and on the implications of increasingly blurred boundaries between manufacturing and services.

Services are highly diverse, making it very difficult to make broad generalizations on the entire sector. To make sense of this diversity, earlier studies have classified firms into a small number of groups, identifying general innovation characteristics for each group (Soete and Miozzo 1989, Evangelista 2000, Hollenstein 2003, Howells and Tether 2004, de Jong et al. 2003, ECON Analyse 2005, van Ark et al. 2003). These studies offer many insights, however, they are insufficient for use in detailed policy analysis. This requires an analysis and methodology that can be applied to individual sectors and one that can capture the diversity within sectors. Without such a detailed empirical understanding of services, the appropriate design of policies to address services will be lacking (OECD, 2001; Rooney et al. 2003).

Studies of policies for service innovation (e.g. Green et al. 2001 and Pilat 2001) emphasize the need for reducing policy biases towards manufacturing and cite a wide range of areas where policy can be better oriented towards services. Among these areas are: regulations, trade barriers, direct innovation support measures, education and training, greater awareness, IPR's and cooperation. However, in order to put these policies into practice, there is a need for detailed analysis of current policy measures and to identify the most effective (having the right policies) and efficient (doing things right) policies connected to the different service types. This includes both national and

international (e.g. EU) policies and, importantly, also the coordination of national policies between countries (e.g. Nordic, EU).

This project will explore innovation processes in Nordic service firms and their policy implications, with the aim of increasing understanding of service innovation and identifying relevant policy measures to public authorities and service firms. To capture both the diversity of service activities and innovation in each sector and the inner workings of service firms the project will utilize both survey data (CIS4 data for all five Nordic countries, data from the Danish PUS survey of service innovation, and the Danish DISKO survey covering innovation and organizational practices) and existing and ongoing Nordic case studies.

In order to study the general patterns of innovation in each service sector, the main drivers of innovation, and the diversity within each sector, the project will develop and apply a typology of service activities and innovation. The two main dimensions of this typology are types of service products or activities (e.g. degree of standardization, client integration) and types of innovative firms (e.g. adopters of new technology, creators of new technologies and new service products, and various intermediate types). Types of innovation drivers can be for instance product centered innovation (research based knowledge and technology), user centered innovation (customer knowledge and user requirements) and collaboration centered innovation (concept building and absorptive capacity).

This analysis and typology will then be used as policy tools to evaluate current policy measures and policy frameworks in Nordic countries (as described in e.g. EU Trend Chart Reports, the GoodNIP report and government white papers), with the aim of identifying strengths and weaknesses and making concrete policy recommendations.

## **PROJECT'S RELATION TO OTHER PROJECTS AT THE NORDIC INNOVATION CENTRE**

This project is related to a number of other NICE projects. PLIP examines innovation and innovation policies in periphery regions. This project is thus complementary with PLIP, in that they both examine two different areas of innovation and innovation policy. "Nordiske servicevirksomheders brug af patenter, varemærke- og designbeskyttelse" examines Nordic service firms' use of protection methods and thus provides valuable input to this project's analysis of service innovation policy within intellectual property rights. The project is also complementary with DOMUS, and international service firms is one of the focus areas for this project.

For completed NICE projects, this project will make use of work in the GoodNIP project, as it contains a comprehensive list and discussion of Nordic innovation policy measures. Other projects that are related to a somewhat lesser degree, are "Innovation systems and the Periphery", "Nordic SMEs and regional innovations systems" both of which are related to regional innovation systems.

In addition, there are other NICE project proposals for this call (under the first theme), for which eventual cooperation would be of great benefit, among these, NIND, Innocate and IGNORed.

An additional project of relevance for this project is PILOT (Policy and Innovation in Low-Tech).

Finally, this project will draw on a large number of cases within service innovation.

Among those conducted by project participants are:

- KISA in the Finnish Forest and Related Engineering and Electronics Industries Cluster
- OECD Innovation and Knowledge-Intensive Service Activities (synthesis report)
- Insights into Services and Innovation in the Knowledge Intensive Economy (Tekes Technology Review 2003)
- Norwegian case studies within services (Det Norske Veritas, Nemko, Aker Yards, Opera Software, Hvitesider.no, Marintek, GjensidigeNor)
- Swedish case studies (ITT-Flygt, AGA, "Aerospace Inc. et al")
- Icelandic case studies within the NICE DOMUS project.

## **RELEVANCE FOR NORDIC BUSINESS**

Results from the analysis and the detailed service innovation typology developed in this project will be useful for Nordic business. This project's contributions in relation to Nordic businesses are numerous:

The identification and comparison of innovation modes in service and manufacturing industries will contribute to improved business practices. By examining within-industry variation in innovation activities, the project will reveal important information about the interplay between technological conditions determining firms' innovation behavior, on the one hand, and the role of firm strategy in organizing and investing in innovation activities, on the other hand. The cross-country comparison indicates the extent to which firm behavior is country-specific, including possibilities for learning about best practices across national borders.

The qualitative and differentiating descriptions of service innovation will assist business management, business confederations, and ministries in responding to innovation challenges more accurately and in achieving large efficiency gains.

The findings will first and foremost be important to service firms, but also relevant for the growing number of manufacturing firms that develop and provide services.

Manufacturing firms will increasingly look to service development when planning growth strategies. This project will contribute to increased understanding of these innovation processes and how policy can best promote them.

Due to globalization the future economic growth in Nordic countries will largely be based on the export of intangibles – hence in-depth understanding of service innovation and related policies is increasingly important.

An important contribution to Nordic businesses is through policy analysis and recommendations, eg. identifying policies that best promote service growth and policy gaps where new service specific policy measures are needed, and measures to make existing policies more service friendly.

## **RELEVANCE FOR NORDIC SOCIETY**

The central goal of innovation policy for services is to promote innovation, competitiveness and growth in service industries and in manufacturing firms that

provide services. This project aims to contribute to this through increasing understanding of service innovation processes, developing a detailed framework for service innovation analysis and through policy analysis.

The project also aims to contribute to the impact of public policies on service growth by identifying the most effective and efficient policies connected to the different service types.

Continuous development and adjustment of innovation policies are necessary and services represent a challenging direction with significant potential. The analysis and typology can contribute by offering tools for analyzing how policy should be adjusted to meet these changing needs.

There is a lack of awareness of innovation in services and its potential as a contributor to productivity and employment. This project will contribute by drawing attention to this area, helping to place services innovation higher on the political agenda.

An additional, societal benefit of service innovation is knowledge creation and transfer. The contribution of this project aims to identifying ways in which policy can promote interaction and knowledge flows between service firms and public research organizations.

## **OBJECTIVES**

The overall aim of this project is to analyze innovation survey data and case studies in order to develop a detailed typology of how service firms innovate and to develop policies for promoting service innovation.

The project will conduct a comparative analysis of service innovation in the Nordic countries, with focus on the following areas:

- Examine how innovation processes vary across service sectors in Nordic countries and also within sectors. To better analyze different types of innovators within each sector, the project will use firm level data to create composite indicators (indicators calculated using a number of firm innovation characteristics).
- Compare service innovation performance across Nordic countries, to identify strengths and weaknesses in each country.
- Analyse how innovation differs in international service firms compared to domestic firms.
- Explore how the boundaries between manufacturing and services are becoming increasingly blurred.
- Analyse patterns and determinants of public-private partnerships and other types of innovation cooperation.
- Examine the importance of organisational practices and human resource management for innovation in service firms.

The project will develop a policy-oriented typology that characterizes how different types of service firms innovate, best practices, how knowledge is transferred, and main

preconditions for service innovation. This typology will be applied to individual service sectors and other groupings of relevance for policy.

The project will evaluate actual policy measures and policy frameworks in Nordic countries, using the analysis and typology developed here. The project will examine issues such as: What policies have been effective and in what areas are they lacking? Which policy areas should be prioritized and how can policy be designed to target individual sectors? Do policies differ greatly across countries, and does this have a negative impact on service innovation and performance?

## **PROJECT AMBITIONS IN A EUROPEAN/INTERNATIONAL CONTEXT**

Our European/international ambitions for the project fall into four areas. Firstly, we hope to contribute to policy discussion outside of the Nordic countries, particularly in the EU, the OECD and individual non-Nordic EU countries. Our ambition is that the project work (in particular the methods used for data analysis, development of a services typology, and use of these in policy evaluation) will be useful inputs to service innovation analysis and the formation of policy recommendations. Towards achieving this, we will aim to disseminate work to relevant researchers and policy analysts in other EU countries, the EU and the OECD.

Furthermore, dissemination of results is planned through a number of channels internationally. This includes 'press releases' and short newsletters to the relevant researchers and policy analysts mentioned above, in addition to the project's own website. In addition, project participants will present the results at relevant international workshops and conferences. Project participants will also seek to publish project results in international journals and other publications.

Project participants will seek to establish new contacts both in order to discuss project results and to create opportunities for follow-up studies. An overall goal will be to have at least one international follow-up study related to services and policy formulation.

Finally, the results of this project may have important insights for innovation measurement. These will be presented at working group meetings on innovation measurement at the OECD and Eurostat (CIS).

## **MAIN TARGET GROUPS FOR PROJECT RESULTS**

The project will be oriented towards organizations that are involved in innovation policymaking and policy discussions in the Nordic countries, including:

- Ministries and other government organizations involved in innovation policymaking.
- National and Nordic innovation agencies, such as the Nordic Council of Ministers, NICE, Tekes, Vinnova, the national research councils.
- Relevant industry organizations, trade unions, and special interest groups.
- Other relevant policymaking bodies, such as councils, task forces or committees, which may consist of members of the government, business and academics.

The project is intended to be useful for these groups on a number of levels: to increase understanding, to keep abreast of service innovation in their own and other Nordic countries, as an analysis tool, and as inputs to policy discussions. The results will be disseminated through the project website (see below for greater detail on dissemination methods). Finally, in order to reach a greater number of policymakers, a shorter non-technical version of the final report will be published in addition to the full report.

It is anticipated that the project results will also be useful for other groups, including:

- International organizations, such as the OECD and EU, national (non-Nordic) policy institutions and relevant working groups within them.
- Researchers and academic institutions (both Nordic and non-Nordic)
- Businesses
- Public and private venture capital funds and other financing institutions

For researchers and analysts in academic and international institutions, the results will be of use for their related work and policy discussions. The results will also be of use for teaching and for student research projects. The results can provide business leaders and financing institutions with a greater understanding of service innovation activities and policies in the Nordic countries.

## **SUCCESS CRITERIA**

The project will measure its success in terms of 4 criteria: quality, practical relevance, dissemination, and networking.

The project reports will obtain high quality standards both academically and regarding practical relevance. This will be assured by testing the findings with academic peers and discussing draft reports with business representatives from case studies.

Relevance is measured in terms of the degree of usefulness for target organizations. Our primary focus is on policy, and how the results of our research will influence and provide an input to policy discussions.

It is important for the project's impact to disseminate the results as widely as possible. Thus, success will be measured in terms of how many the results are distributed to, the number of different channels used, project visibility, and publication in journals.

Networking is both important for disseminating the results and for creating the best possible conditions for future work in this area.

## **PROJECT ORGANISATION**

The project consists of three stages: comparative analysis of Nordic service firms using innovation survey data, development and application of a typology for services innovation, and policy analysis. The stages are sequential, where each will be based on work in the preceding one(s) (though work in each stage will be partially overlapping).

CFA will be the main coordinator for the project. In addition, there is a lead member for each of the three stages of the project: Carter Bloch (CFA) for the comparative analysis; Ragnhild Kvalshaugen (BI) for the typology; and Jari Kuusisto (SC Research) for the policy analysis. An attached file contains an organisational chart for the project, showing main and subproject work, all participating members and an estimated distribution of work hours at the subproject level.

The comparative analysis will conduct detailed statistical analysis of innovation in services using the CIS4 data for all five Nordic countries. This includes the calculation of a wide range of indicators for various groups (e.g. by sector, size, market orientation, and others) for comparison. It also includes the use of firm level data to create composite innovation indicators. The analysis of organisational aspects of service innovation will mainly use data from the Danish DISKO survey. The examination of blurred boundaries between services and manufacturing will utilize both CIS4 data and data from the Danish PUS survey of service innovation.

The typology will consist of 2 subprojects: the development of a detailed typology of services and the application of the typology to characterize innovation activities in specific service sectors.

The policy part is broken down into 3 subprojects: a review and evaluation of existing Nordic policies relevant for service innovation; a Nordic comparative analysis that identifies best practices and important policy gaps; and concrete recommendations for how innovation policy can be improved for services.

## **DELIVERABLES**

The project is expected to run over 21 months, from 01.09.06 to 31.05.08, where 4 meetings will be held. Deliverables include two reports, a non-technical summary and 8 thematic papers. The first report covers the results of the analysis of innovation in services, while the second report is the final full report containing the results of the entire project. The thematic papers cover specific themes and provide material for the reports.

Below is a more detailed description of time plan and deliverables:

- Meeting 1, Sept 2006: This initial meeting will be used to plan project structure, to organize work, and to discuss other details (such as plans for dissemination)
- Meeting 2, Feb 2007: Discuss the results of the comparative analysis and the report, and discuss ongoing work on the typology.
- Meeting 3, May 2007: Discuss the thematic papers on the service typology and its application, and also discuss ongoing work on policy analysis.
- Meeting 4, Oct 2007: Discuss the final full report (and its launching) and a separate paper covering policy recommendations.

Deliverables:

Deliverable 1 (D1):

Thematic paper: Comparative analysis of service innovation in the Nordic countries



Deliverable 2 (D2):

Thematic paper: Blurred boundaries between manufacturing and services

Deliverable 3 (D3)

Thematic paper: Organisational practices and innovation in service firms

Deliverable 4 (D4)

Report on the analysis of service innovation in the Nordic countries

Deliverable 5 (D5)

Thematic paper: A review of typologies of service activities and innovations

Deliverable 6 (D6)

Thematic paper: Developing a typology for service innovation in the Nordic countries

Deliverable 7 (D7)

Thematic paper: Analysing Nordic service sectors using a detailed typology

Deliverable 8 (D8)

Thematic paper: Review and evaluation of service innovation policies

Deliverable 9 (D9)

Thematic paper: A Nordic comparative analysis of service innovation policies: best practices and policy gaps

Deliverable 10 (D10)

Thematic paper: Policy recommendations to promote service innovation

## **COMMUNICATION PLAN**

The objectives of the communication activities are to create awareness of the project work and results on a broad basis and to maximize impact of the project in terms of discussion and use of results by target groups. A primary target group for the communication of results is policymakers and other stakeholders involved in policy discussions.

Communication activities will be conducted through a number of channels:

- Dissemination of written work

A website will be created for the project, which will allow us to promote and inform on the project's work. We will use the links/contacts from participating institutions to inform about the project, its goals, results and publications as they become available. The project will also establish its own email list to send out notifications, 'press releases' on new publications and electronic newsletters (3-5).

The project will utilize two types of publications, thematic papers and reports. Thematic papers provide background material for the main reports. They also allow us to present individual results or draw attention to specific issues. The larger number of publications also increases exposure for the project.

Project participants will also actively seek opportunities to present project results at workshops and conferences both in Nordic and non-Nordic countries.

- Direct contact with policymakers

Participants will also seek to establish informal contacts with relevant 'policymakers' (i.e. members of industry organizations, government policy analysts, business leaders). The project will also establish a reference group, with representatives from ministries and other policymaking organisations, such as Tekes and equivalent institutions. (not included in budget).

- Networking

Networking is important for dissemination and to create opportunities for follow-up studies. The project will establish contacts with a number of active (or potential) NICE projects (see above), and with other researchers in the field.

### **Target groups for the communication activities**

NICE projects

Ministries and other government organizations involved in innovation policymaking.

National and Nordic innovation agencies, such as the Nordic Council of Ministers,

NICE, Tekes, Vinnova, the national research councils.

Relevant industry organizations, trade unions, and special interest groups.

Other relevant policymaking bodies, such as councils, task forces or committees, which may consist of members of the government, business and academics.

International organizations, such as the OECD and EU, national (non-Nordic) policy institutions and relevant working groups within them.

Researchers and academic institutions (both Nordic and non-Nordic)

Businesses

Public and private venture capital funds and other financing institutions

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