Nordic Collaboration Scrutinized

A long history and the tradition of closely-knit cultural, political and economic interaction between the five Nordic countries has led to an extensive network of more or less institutionalized cooperation arrangements within the cultural, educational and scientific sectors. They exist between all Nordic universities, between national research councils and between a large number of private associations and companies. Industry also collaborates at the R&D level so the result is scientific and industrial cooperation in numerous areas, forms and institutional settings ranging from bilateral arrangements to Nordic programmes and institutions. The Directors of three Nordic institutions concerned with different aspects of research describe how cooperation works and the repercussions adhesion to the European Union by some of the countries is having on collaboration.

THEORETICAL PHYSICS

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The beginning of the year brought important changes to the political affiliations of some of the Nordic countries because Finland and Sweden joined Denmark in the European Union (EU). The Norwegians, on the other hand, opted in their referendum last autumn to remain outside the EU, together with the Icelanders. The new configuration is having some repercussions on the close collaboration built up between the Nordic countries since World War II. The outcome will interest physicists since there is extensive Nordic collaboration in physics, which is nurtured in particular by Nordita, the Nordic Institute for Theoretical Physics based in Copenhagen.

An Established Infrastructure

There exists a well-developed institutional framework for Nordic collaboration. The Nordic Council, which held its first session in 1952, is a parliamentary body with 87 voting members. Delegates are appointed by the national parliaments of the five member states (Denmark, Finland, Iceland, Norway, and Sweden) and by the local parliaments of the three autonomous regions (the Faroe and Åland islands, and Greenland). It runs several permanent institutes for research and a number of more or less permanent programmes, institutions, etc. related to cultural, educational, scientific and economic activities. The Nordic Council of Ministers Nordita, Stockholm.
The main Nordita building is on the left.
The private business sector is the main performer of research and development in the Nordic countries (51 000 MSKR in 1991, where 1 SKR = 1 Swedish kroner = 0.10 ECU). Only Iceland stands out with less than 50% of total R&D spent in the private sector. In terms of R&D manpower, the percentage of total full-time equivalents (FTEs) spent in industry was about 57 percent in 1991, with above average amounts (about 60 percent) in Denmark and Sweden. Denmark, Finland and Iceland have seen a constant increase in their R&D FTEs as compared with Norway and Sweden, where they have decreased since 1987. The importance to each of the five countries of selected knowledge-based industries is clearly seen in the figure above. All devote the largest amounts of R&D resources to industries related to microelectronics. But for other fields, the distribution differs greatly between the five countries, depending on the emphasis placed on their basic industry.

Nordic R&D collaboration of industrial relevance is mainly organized at the institutional level through support of industrial R&D by the Nordic Industrial Fund (NIF). Founded in 1973 by the governments of the five Nordic countries, it reports to the Nordic Council of Ministers. The NIF’s main objective is to strengthen the position and competitiveness of Nordic industry by stimulating technological and industrial development. The Fund does this by:
- identifying and encouraging Nordic R&D programmes and projects;
- funding Nordic R&D projects;
- stimulating the growth of technological and industrial networks.

The Fund’s total grant budget amounted to 73.7 MNKR (1 NKR = 1 Norwegian kroner = 0.12 ECU) in 1994. All organizations and enterprises in the Nordic region can apply for financial support for R&D projects of industrial relevance. Applications must contain a clear statement of an enterprise’s intention to collaborate with companies in at least two Nordic countries.

The NIF’s executive body is a Steering Committee which is assisted by an Executive Director and a secretariat comprising about 15 professionals in technology and business. Like any other organization, the NIF has had its ups and downs. During the last decade, relatively large capital transfers to the Fund from the Nordic Council of Ministers have been necessary to meet increasing R&D and investment costs. One successful result has been the Nordic Biotechnology R&D Programme which ended in 1994 at the same time as two other R&D programmes (Industrial Environment; Materials Technology). The biotechnology programme involved around 300 scientists — full or part time — in industry and research institutions and resulted in the formation of three new biotechnology companies, some 20 patents, 30 Ph.D.s theses, and 700 scientific articles.

Focus on Basic Industry

In 1992, the Nordic Council of Ministers decided that the NIF would focus activities in 1993-96 on:
- new technologies in the food industry;
- new technologies in the wood and paper industries;
- lightweight structures.

Accordingly, the Fund granted 73.7 MNKR in 1994 (85.2 MNKR in 1993) to 125 technological and industrial collaboration projects in these areas through four industrial R&D programmes (NordFood, NordList, Nordic Wood, NordPulp) which are essentially co-financed by industry on a 50/50 basis. More than 1200 companies and R&D centres are participating, and each project involves an average of 3-4 Nordic countries. The projects in which the NIF participates had a total budget of 260 MNKR in 1994 (323 MNKR in 1993). Its support amounted to an average of 28%, with industry covering 49% and national R&D bodies the remainder. Research institutes and universities received the largest share of NIF’s funds (70% in 1994). Some 16% of the NIF’s total grant budget was allocated in 1994 to so-called independent projects unrelated to the priority areas. This is to ensure the Fund’s ability to support industrial or institutional R&D efforts that are of significance for industry but lie outside the NIF programme framework.

Nordfood, the Nordic R&D programme for the food industry, was initiated in December 1993 “to contribute to the continued competitiveness of the food industry in a changing market by ensuring that a ‘critical mass’ is attained in selected research areas” Of the programme’s total budget of approximately 250 MNKR, NIF financed 30% and national R&D bodies 20% (industry provided the re-