Regional cooperation in postsecondary education in Europe — the case of Nordic Countries

Seppo Hölttä

Abstract

This paper examines the higher education systems in the Nordic countries, providing a history, context and description on the university and college sectors in regional areas. It also examines many aspects of co-operation between institutions and their regional communities. Case study institutions have been identified, to exemplify many of the co-operative ventures between universities, the community and other stakeholders.

The Nordic systems of higher education

The Universities of Uppsala, Sweden, and Copenhagen, Denmark, were the first universities in the Nordic countries — they were founded in 1477 and 1479 respectively. Sweden and Denmark dominated the whole Nordic area at that time. At the time the first university in Finland (the Academy of Turku) was founded in 1640, Finland was a part of Sweden. In 1828 the university was moved to Helsinki renamed as the Imperial Alexander University, later the University of Helsinki. The University of Lund was established in 1666, after southern Sweden, previously Danish territory, had come under Swedish rule. The University of Oslo, Norway, was created in 1811. (Higher Education in Nordic Countries)

For a long period of time these five universities were the only ones in the Nordic countries. It was not until the end of the 19th century that new universities were established. For example, the University of Iceland was founded in 1911. Many professional schools, however, predate the expansion of the universities. For example, the College of Fine Arts in Stockholm, Sweden, and the Royal Danish Academy of Fine Arts date from the 18th century. Many of the professional schools have now been incorporated into universities. The big institutional expansion began in the 1960s in all the Nordic countries and culminated in the 1970s, when more than 25 new universities and university colleges were founded. The number of institutions has more than doubled since 1960. (Higher Education in Nordic Countries)

The expansion of the university systems were to a large extent motivated by a desire for greater accessibility to higher education without regard to geographical or social factors. Norway, Sweden and Finland are countries in which the majority of population is concentrated to the southern parts of the countries, especially to areas around the capital cities, Oslo, Stockholm and Helsinki. The northern parts of the countries are located in the arctic area beyond the arctic circle. Also, natural resources of great economic importance are partly located in remote rural or coastal areas of the countries. Therefore, there imbalances exists between different areas. These aimed at correcting by economic and social policy, and education has been given an important role in efforts to correct economic and social imbalances. (Dahllöf 1996)

Table 1. Number of Students in Nordic Higher Education Systems in 1993/94

<table>
<thead>
<tr>
<th>Inhabitants (million)</th>
<th>Denmark</th>
<th>Finland</th>
<th>Iceland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students enrolment</td>
<td>156,000</td>
<td>148,000</td>
<td>7,500</td>
<td>173,000</td>
<td>250,000</td>
</tr>
</tbody>
</table>

Universities and other Nordic institutions of higher education are state-financed and state-regulated institutions today. The Ministries of Education have during the last few decades played a strong role in the
higher education system level governance, but today, the Nordic countries are examples of higher education systems undergoing rapid deregulation and decentralization of control.

As part of the transformation towards mass higher education system in the post war period, in particular in the 1960s, some educational institutions, such as, teacher training colleges and technical colleges have been amalgamated with each other in rural parts of the countries. The old universities acquired new and often radical competitors and a number of colleges and university colleges became independent universities. The new institutions were spread geographically and sparsely populated areas in the central and northern parts of the Nordic countries received their own universities. Thus the former concentration of centres of higher learning in the capital areas was broken. The Nordic countries are now covered by a fine-meshed network of universities and other institutions of higher education. They are, however, very different from each other as regards structure and size.

The Nordic countries define higher education in different ways. In Sweden, all post-secondary education belongs to the higher education system. The system is comprised of six full universities and 15 university colleges in different parts of the country outside the university towns. Furthermore a small number of single faculty institutions and small university colleges belong to the Swedish higher education system. Denmark has a more narrow interpretation of the concept. The Danish definition of higher education includes only those institutions which offer both teaching and research. There are 17 universities and university level institutions in the country. In addition, a substantial number of specialized institutions offer short and medium-term programs. Iceland, Norway and Finland are in between these two extremes. The higher education in Iceland is composed of the two universities and another university level institution. In Norway, the higher education system comprises of four universities, several university-level special institutions e.g in engineering, agriculture and business administration, which make up the university sector, and twenty-six state colleges making up the college sector. The structure of the Finnish higher education system is subject to ongoing change. The Finnish university system consists of 20 public universities, of which ten are multi-faculty institutions, six are special institutions like universities of technology and business administration, and four are universities of arts. A new non-university sector based of the former second level institutions is under development. The aim of establishing the AMK (ammattikorkeakoulu) sector in the 1990s has been to raise the quality of professional education and to broaden the supply of higher education. Today, there are nine permanent and 20 experimental AMK-institutions in the country. (Higher Education in Nordic Countries)

The pattern of development of the regional universities in the Nordic countries in the period from the 1950s to the 1980s was different in Finland, when compared with the pattern in Norway and Sweden. Whereas Finland had invested strongly in regional universities, Norway and Sweden placed emphasis on the non-university sector in regional higher education (Dahllöf, 1994). In Finland, universities have been given many regional ‘responsibilities’ which in Norway and Sweden have traditionally been in the hands of regional colleges or university colleges.

In all the Nordic countries it is the national parliament that establishes and, ultimately regulates the universities. Very recently in Sweden, a number of non-state universities have, however, been established by giving the old full universities foundation ownership. The university teachers and other personnel have the formal status of civil servants. The majority of university funding in all the countries comes from state grants of different types. As part of the Nordic welfare state tradition, no tuition or fees are charged at any of the Nordic universities.

All the Nordic universities are governed by acts of parliament, which state the general outlines and goals for the activities of the institutions, and by government statutes, which in some cases regulate university activities in detail. The tendency everywhere, however, is towards a higher degree of local autonomy and self-regulation

Nordic universities are normally divided into faculties, departments and service facilities such as university libraries, computer centers, the administration etc. The system of faculty and departmental classification generally corresponds to international usage. The non-university institutions usually have a less sophisticated organization.
Regional cooperation in this paper is discussed from three perspective: as cooperation between higher education institutions and cooperation between the institutions and their regional partners.

**Sweden**

Sweden has old centres of learning in the traditional prestigious universities of Uppsala and Lund. They and most other universities are located in the densely populated and highly industrialized areas in the southern parts of Sweden. The basic structures for the current Swedish higher education system were established in 1977, based on the recommendations of the U68 commission. It aimed at decentralization of the higher education system, but it also included elements of centralization of power, for example, in the control of study programs and centralized access system. Before this reform Sweden had, in addition to full universities, mostly having long historical tradition, a great number of specialized colleges that were merged into one college in each county. The colleges had no research facilities of their own, and in that respect they have been dependent upon resources and cooperation with the universities. In the recent years, the Swedish higher education system has been again subject to a number of changes. As a consequence of the 1993 Higher Education Act and some later decisions, a number of them have acquired the right to grant a higher undergraduate degree, the *magister’s* degree (corresponding to M.A.), and some of these university colleges have started some research through network arrangements with universities and regional partners. Although prohibited earlier, today, also the university colleges are free to establish positions for research purposes if they can raise funding by themselves, and if they make an agreement about course work and examination for the doctor’s degree. (Bauer 1994; Dahllöf 1996, 22; Scott 1991)

The Swedish higher education system has characteristics of a uniform and a binary system. Although the universities have been given different tasks and functions, Dahllöf (1994, 209) calls the system a ‘hidden binary’ one, since the basic rules for entry are the same to all kinds of institutions, and there is a general transferability of credits between universities and university colleges (see also Scott 1991).

Five of the six full multi-faculty universities are situated in relatively densely populated southern parts of the country, namely in Lund, Gothenburg, Lindköping, Stockholm and Uppsala. In the north, there is only one full university, the University of Umeå, but also in Luleå there is a university college with the full right to confer higher degrees in certain areas of technology and in education. University colleges with traditionally quite restricted research functions and concentration in undergraduate education only, are intended to fill the educational and research demands of the large regions between the full universities. (Wieslander and Dahllöf 1996)

An important regional function of Swedish universities is one of adult education. Sweden has a well established tradition of recurrent education in terms of part-time studies of adults in workforce either on campus or through distance-programs.

**Case 1: Mid-Sweden University College**

The Mid-Sweden University College holds a rather unique position among university colleges in Sweden. Its geographical location is special, because it is a long way to the nearest university or academic institution with permanent research resources. The institution of 12,000 students is located in one of the main industrial areas, (wood processing and heavy metal industries) in the quite sparsely populated central area of the country. Therefore, the pressure from the region to create a university is strong. The region also participates in the development of higher education through regional financial support. The University College was established in 1993 by amalgamating the University Colleges of Sundsvall, Härnösand and College of Östersund. The campuses are located in four different municipalities in two counties, which means that it receives regional funding through two different regional administrative bodies. (Nordling 1996; Rhodiner and Pettersson 1994)

Upgrading the quality of its academic activities by establishing links with traditional universities, and simultaneously, increasing cooperation with the local community, have been the main features of the development strategy of the institution. For example, the academic development of the Östersund
University College began with decentralized academic education with the Uppsala University. (Nordling 1996)

The Mid-Swedish industries expressed their need to strengthen their competitiveness in the 1980s. The development of research operations in Svedjvik and Härnösand was primarily aimed at both upgrading academic quality by recruiting faculty especially for post-graduate studies, developing the competence of the existing teachers, and developing cooperative links to the regional partners, by establishing local research groups. Emphasis in this effort was on cooperation with industry in research. Several different sources contributed to financing rapidly growing research operations at the University College. The volume of external funding has grown rapidly since the late 1980s. Regional research funds were placed at the disposal of the University College by the County authorities and the local municipalities. Some post-graduate studies were carried out in cooperation with industrial companies, and they were mostly run within a foundation with close ties with the University College. The foundation has a major role in the development of research within the technical sector in cooperation with industry. (Nordling 1996)

The amalgamation of the University Colleges was based on the Omega Project plan (Rhodiner and Pettersson 1994), and the new Mid-Sweden University College was established. The county administrations provide considerable financial support to the development of research at the University College amounting some SEK 19 million in 1995. The post-graduate students are connected to faculties, mainly at the University of Umeå, the Royal Institute of Technology in Stockholm and the Universities of Stockholm and Uppsala. At the beginning of the 1990s, long term development programs for research were adopted at the both former university colleges with the overall goal of having a fixed research organization and post-graduate studies of their own by the year 2000. (Nordling 1996)

In 1992, the University College was granted the right to award master’s (magister) degrees in Chemistry, Business administration, Systems analysis/ADP, Social work, Sociology, Psychology and Political science, which also constituted a step towards independent post-graduate work at the institution. (Nordling 1996)

**Norway**

Traditionally, there has been a very restricted set of universities and university level institutions in Norway. Following the international trend, a Norwegian response to increasing demands for study places in the 1960s was to establish universities in Tromsø and Trondheim, as well as to establish regional colleges. Before that, there had been universities in Oslo and Bergen and three special higher education institutions. The most comprehensive reorganization of the Norwegian higher education system was, however, launched in 1994. A total of 98 colleges outside the university sector were amalgamated into 26 state colleges, most of them offering a wide range of programs. These new colleges are dispersed throughout the country; in most cases, one or two in each of the 19 counties. (Kyvik 1996; Sommerseth 1994)

For the last 30 years, geography has been an important aspect of the Norwegian higher education policy. During the 1960s, the political climate changed markedly in favor of regional development, and consequently, the decentralization of higher education became an important political issue. Establishment of new higher education institutions outside the traditional university centres was regarded as an important tool, both in terms of offering educational opportunities to the citizens in the regions and creating new jobs. Also, there was a growing awareness that Norway needed new types of higher education to satisfy more effectively the needs of industry and commerce for more practical and vocational knowledge. These two trends, regional and vocational, constituted the basis for the reform in Norwegian higher education. In contrast to the original plans, the regional colleges were established without any formal ties to other colleges in the regions. However, in 1976 common steering boards were established for the regional colleges and for the colleges of teacher training, engineering and social work in each of the 17 regions. However, these boards were provided with quite limited powers. Consequently, the Norwegian higher education system, with a restricted set of universities and a number of regional colleges, remained quite fragmented. (Kyvik 1996)
A Royal Commission was established in 1987 to evaluate the goals, organization and priorities of higher education and research towards the years 2000-2010. It concluded that the number of colleges was too high, and recommended a stronger concentration within each region. This conclusion was based on three main arguments: (1) larger units would yield qualitatively greater academic institutions, (2) larger units would allow better management and use of administrative resources, and (3) larger units would improve the use of physical resources. Each of the new colleges should specialize in different areas which could be national centers and set national standards for its fields. (Kyvik 1996)

The government supported the Commission’s recommendations. The universities and university-level institutions shall be responsible for the major part of basic research as well as for graduate education and research training. The new state colleges shall be responsible for a wide variety of professionally and vocationally-oriented teaching programs, and in addition, take on some of the university programs for basic and undergraduate education. Within certain fields, where the universities do not offer similar programs, the new colleges should offer graduate education. The colleges should do R&D and other relevant activities, preferably connected to practice within specific fields. Highly competent research environment could also play a role in graduate and post-graduate education in collaboration with a university or university level college. (Kyvik 1996)

An exceptional feature in Norway compared with its Nordic neighbors is that academic staff in the college sector also have the possibility to be promoted up to full professorship, if they are found competent by national committees. This also makes staff mobility possible between the university and college sectors. (Kyvik 1996)

Case 2: Lillehammer College

Lillehammer is a town of 25000 population some 150 kilometres from Oslo in Upland County, and the Lillehammer College has 1 400 full-time students and 1 600 part-time/distance education students. It is one of the regional colleges which was not the object of the amalgamation in the reform of the non-university sector in Norway in 1994. The main features of the curriculum are the emphasis on actual problems in Norwegian society, interdisciplinary, group work and a higher than average ratio of teachers to students compared with other Norwegian colleges. (Holland 1996)

Different schools and departments at Lillehammer College have cooperative agreements with a number of national and foreign universities and colleges. The agreement with the University of Oslo is of special importance. It is aimed at to promote better combined use of the competence and resources to be found at the two institutions. It covers collaboration in research, continuing and further education, distance education, technical services, student welfare, tutoring and educational initiatives related to Oslo University’s main subject programs, recruiting to posts and research training, development of academic competence, and collaboration within the framework of Oslo University’s doctor degree program. (Haaland 1996)

Research has a remarkable role within the institutional activities at the College. As a normative starting point for the division of responsibility assigned to an academic post, 40 percent is related to teaching, 40 percent to research and 20 percent to administration. Projects funded by external sources amounted NOK 21 million in 1994. (Holland 1996)

In 1990 the College opened the Conference and Distance Education Department aiming at developing part-time and distance education programs in collaboration with the academic departments at the College, organizing conferences and developing Lillehammer College’s role in the Norwegian Distance Education Network. An important area of the recent developments has been the development and use of multimedia in education, for example, in distance education programs. Employers have the possibility of having tailored-made courses organized specifically for their employees, either in-service or at the College leaning towards a model of open learning. Another area of the Centre for Continuing Education of regional and national importance is the Tourism and Service Industries Development Centre. After the initial funding from the Local government it is supposed to be self-supporting and offer part-time and distance education in the field of travel and tourism, and provide other services to the business life. (Holland 1996)
Finland

The role of education in national development has been considered significant in Finnish society throughout the history of the nation. Public planning and development of higher education has been closely coordinated with the planning of other sectors of society. (Hölttä 1988)

The Finnish higher education system has similar roots to those of other Nordic systems. The concept of higher education in Finland is based on the German university model. In contrast with the political decisions made in other Nordic countries, all the institutions founded during the years of rapid expansion of higher education in the 1960s and 1970s are research universities with the right also to grant doctoral degrees. (Hölttä 1988)

Also in Finland, the decades of the 1960s and 1970s represented the period when the current educational and geographical structures of the university system were established. Since the late 1960s, the targets for the higher education system have been defined by Parliament in two consecutive higher education development laws, in 1967 and 1987. The main purpose of the Act for the Development of Higher Education, 1967-86 was to guarantee the growth of resources in higher education during a period of increasing social demand for higher education. The total number of students at universities grew from 23,500 in 1961, to 93,800 in 1986. (Hölttä 1988; Hölttä and Pulliainen 1994)

The governmental strategy for the implementation of the Development Act was to increase resources of higher education by regional decentralization. Traditionally, universities and university level special institutions were located in the areas of Helsinki and Turku at the southern coast of the country. In the early 1960s, only six percent of student places were to be found outside these major cities. However, after the University of Oulu was established in the north in the mid 1950s and, six new universities were established in the central and northern parts of the country since the late 1960s, the universities had wider geographical coverage than in Sweden and Norway. In fact, the Finnish higher education policy was an important and integrated part of the general national development program of the 1960s, the aims of which were the fostering of economic growth and the achievement of economic and cultural integration of the whole of the Finnish nation and territory. The new institutions were founded in the less developed and sparsely populated areas. Today about 45 percent of students are enrolled in institutions outside Helsinki and Turku. (Hölttä 1988; 1995)

By the early 1990s Finland was one of the few European countries with a uniform higher education system consisting of universities only. Today, the non-university sector comprised of the ammattikorkeakoulu (AMK) institutions, is under development. Based on legislation in 1991 aimed at developing the vocational education system, new institutions were established on, experimental basis mainly by amalgamating existing technical and business colleges and other institutions at the former secondary level. More specifically, the purpose of the reform is to raise the standards of vocational and professional education and to make the degrees internationally compatible. AMK degrees formally correspond the Bachelor’s degrees.

Again, in contrast with Norway and Sweden, the AMK institutions are teaching institutions with only very restricted tasks in applied contract research. The AMKs can engage in R&D to the extent that it serves the instruction they provide or supports working life, but academic research is restricted to the university sector. Thus far, the development of the non-university sector of higher education has remained as quite a separate process from the university sector. Cooperation and also competition with the new higher education institutions will be one of the educational challenges for the universities, too, in this decade. (Ministry of Education 1994)

Instruction is offered in AMK institutions in the fields of natural resources; technology and transport; administration and commerce; hotel, restaurant, and home and institutional economics; social services and health care; culture; and recreation and sports.
The network of AMK institutions cover the whole country. Between 1991 and 1995 there were 22 temporary AMK institutions comprising a total of 85 vocational institutions. In the beginning of the academic year 1996-1997 there were 28 AMK institutions, out of which nine permanent.

According to the current plans, the non-university sector will continue to expand up to the year 2000. An ambitious challenge of providing a study place for 60-65 per cent of age group at the tertiary level of the educational system has been adopted by government.

Tertiary level adult education is having a growing regional importance. It has been organized within the universities and AMK institutions. The universities have continuing education centers, which provide professional continuing education programs, short courses based on local needs, and as a fast growing sector, open university education. Open university education, originally in the form of non-degree studies for adult population has been organized by the universities themselves, as opposed to some other European countries, where separate open learning institutions are operating. The AMK institutions are also establishing their continuing education programs.

Inter-institutional cooperation is an essential part of the Finnish higher education policy with regional importance in the 1990s. Through the practise of contracting (Hölttä 1995) and funding the Ministry of Education is pushing universities to more active cooperation. Joint elements in study programs have been established, in particular, among universities in the same geographical area. In particular, collaboration between the universities and the AMK institutions is urgently needed in sparsely populated areas, but in most cases, it is still seeking its forms. The most important area of this cooperation is training of AMK teachers. A remarkable proportion of them do not have formal qualifications relevant to their posts in higher education, because they had been recruited to vocational institutions with qualifications appropriate to that level. The teachers have been given a five year period to attain these formal qualifications. These teacher training programs have been started, but this is an expanding area of inter-institutional cooperation between the universities and AMK institutions.

In the early 1990, Finland experienced the deepest recession of its history. Although Finland is now again among the fastest growing economies in OECD-countries, the implementation of long term recovery and structural development policy targets will require deep involvement of all branches of the public sector.

The government has launched several short term programs for improving the national economy and employment. The most central of those programs affecting universities have been the program of employing young people and the program for fostering the establishment of high-tech industrial production through research and development programs at the universities. The present cabinet chose the cutting of unemployment as its main target during the next four years, and put a special emphasis on the employment of recently graduated young people. Also, adult education at all levels of the educational system has a high priority as a means of supporting structural change of Finnish society and improving employment. A long term program reaching all levels of the education system and every branch of society is the national information society program (Hölttä and Halonen 1996a), the aim of which is to strengthen the competitive edge of the nation in information technology and its use.

Very recently, the Finnish government launched another program aiming at improving the competitiveness of Finnish economy, which is financed by the profits coming from the privatization of state owned enterprises. Out of it, FIM 1,5 billion will be allocated to research and education in universities, in particular, to the fields of Technology and Natural Sciences.

Case 3: University of Joensuu

After Northern Finland had got its own university at Oulu, the lack of higher education opportunities in the eastern part of Finland was clearly recognized in the early 1960's. The idea of the new university of Eastern Finland gained considerable political support. What was not agreed upon, was the location of the new university. Three cities and provincial centers, Kuopio, Lappeenranta and Joensuu, were all interested in getting the university. The result of the political process was that educational fields were distributed to
three different provincial centres, and three independent universities were established. Kuopio got the field of Medicine, Lappeenranta Technology and Engineering, and Joensuu got Education.

In the initial law in 1966 establishing the University of Joensuu, teacher training and teaching of the Humanities and Natural Sciences were defined as the duties of the new university. The research function was not mentioned at all in the legislation. It looked as if the University of Joensuu was about to become the first regional college without research and postgraduate training functions in Finland.

In the Act of the University of Joensuu in 1969 the main task of the University was defined as teacher education. In addition, the Karelian Research Institute was founded and explicitly defined in the Act. Following the common model of academic drift, by the mid 1980s, the institutional functions and structures had diversified and broadened. The University had grown from a regional teacher training institution to a medium sized university with five faculties: Education, the Humanities, Natural Sciences, Social Sciences, and Forestry.

As discussed, in the 1960s and early 1970s higher education was considered to be a central tool of regional policy in Finland. The first expectations in the region of North Karelia were connected with the educational function of the new University: supply of teachers and civil servants to the region. The University was explicitly considered as an institution strengthening the competitive edge of the province by accelerating the economic growth and diversifying the cultural activities of the region.

Another central regional function of the University can be found in the fact that it has offered study places for young people in North Karelia. Today, the regional emphasis can still be seen in the student body of the University. About forty percent of students are recruited from the Province of North Karelia, and some seventy per cent of students from Eastern Finland. After graduating about one third of students find their employment in the Province, and more than half in Eastern Finland.

The University has been very active in the reform of institutional management in response to decentralization and deregulation, which have been the main features of the new Finnish higher education policy based on the Act on the Development of Higher Education in 1997-1997. The University has decentralized decision making and power towards the basic units, provided the academic departments with support and incentives for more active external collaboration at regional, national and international levels.

As part of the new development strategy, the regional role of the University has been reassessed. In twenty years, an agricultural society has changed to a highly industrialized society, and Finland has adopted a major goal of becoming one of the leading information and information technology societies in the world. The regional expectations for the University are changing. In the beginning of the existence of the University expectations were concentrated in basic education and in production of highly qualified labor force to the region. Today, the University is expected to provide more and better research and development services to local industries.

Finding a new regional role has been a challenge, but providing local companies with research services has not been a simple task. The natural partners of departments of the University are big firms with their own research departments, not so much the local small and medium size firms with very practical problems and with almost no experience in research. The competitive edge in regional and national services of the University has been sought, in addition to high quality teacher education, in the fields working with research on natural resources and environment, certain sub-fields of chemistry and physics supporting high tech industries, and in the applications of information technology.

The departments have been supported by the effort of different service units and affiliated organizations of the University. Especially, in the highly regulated environment of the 1980s the private Foundation of the University of Joensuu represented a central flexibility element in collaboration with the private sector. For example, the Foundation has been a stockholder in companies working with knowledge transfer from the University to its environment, for example, in the Science Park Company and a software house designing and producing information systems to the University and most other Finnish universities. The Continuing
Education Centre of the University provides adult and further education mainly to the citizens of North Karelia in cooperation with the disciplinary departments of the University.

The Science Park was established in 1990 in cooperation with the City of Joensuu and the Association of North Karelian Municipalities. The goal of the Science Park Company, which has granted a nonprofit status, is to build a bridge between the academic community and the business world, and to work with knowledge and technology transfer. Today, the Science Park accommodates about 100 small firms.

A special regional challenge is the mobilization of the whole educational sector in North Karelia to support the regional development. The most concrete challenge is the cooperation between the University and the local AMK institution.

European Union programs have become the most important source of external funding since Finland joined the Union in 1995. The total amount of regional development projects of the University funded partly through the structural funds of EU are some FIM 70 million out of which the share of the Union is FIM 31 million. The total budget of the University in 1996 was FIM 370 million. External funding to the University has grown rapidly in the 1990s. In 1996 the University received one third of its total funding from external sources.

The new, more flexible management system and more entrepreneurial institutional culture, in addition to the organizational arrangements, are believed to encourage the departments and individual scholars to be involved in cooperation with external partners.

The regional dimension can also be seen in curriculum development. The deep recession of the early 1990s and the consequent crisis of the public sector have had significant consequences in the labor markets for university graduates, and academic unemployment exists, although it is not as severe as that of less educated people. Because of the heavy cuts in the public sector, the threshold for just-graduated youngsters to find public sector employment is very high.

The starting point in the planning of the entrepreneurial education program (see Hölttä and Pulliainen 1993) was that the present educational programs in universities have been developed to respond to the demands of the industrialized welfare state: to educate labor force to public organizations and large private companies, in which homogenous common basic skills for upper and middle management and executive jobs are demanded. Large organizations have been thought to be the driving force of the development of the whole society. Also, students have used to think that large public and private organizations offer safe career paths with gradual promotion.

The environment for future graduates will, however, become different from one for which the university education was designed. The market share of public sector and probably also that of large corporations will shrink. The needs and jobs will stay, but they will be organized differently by different organizations. There will not be standard jobs waiting for filling by standard university graduates. The jobs have to be created by the graduates themselves. The aim of the entrepreneurial education program is that each participating student will find his strengths and develops his special expertise for the increasingly competitive labor markets.

An evaluation project on the (regional) impact of the Universities of Eastern Finland is continuing. It is expected to produce empirical information on different aspects of the regional importance of the University of Joensuu as well as of the other two universities in the region (see Hölttä 1996).

**A survey on strategies and practices for regional cooperation**

Recently, a survey was made in fifteen European universities, mainly in Nordic countries, on their changing regional roles and on their cooperation with external partners and customers (Hölttä and Pulliainen 1996).

In all universities considered, some organizational changes have been made to meet the more complex challenges from the environment. Liaison persons have been appointed to lower the threshold between
the academe and the enterprises, and special units have been established to promote cooperation with external partners and for starting up business activities in almost all universities. Also organized support for making contracts with partners is provided in most universities and for starting up business activity in many universities. In contrast, most universities have no uniform practice concerning the use of university’s resources — including the working time of the university’s personnel — for external consultancy. Neither have they uniform practices concerning the sharing of economic benefits and property rights arising from research results nor concerning the sharing of the risks involved in research cooperation. Most universities evaluate the success of their research cooperation regularly.

There are different types and forms of research cooperation. Research excellence and the disciplinary basis of the university, traditions and history of university-region relations, the industrial structure and the mix of enterprises in the region, the involvement and interest and visions of individuals, all have influence on the forms and extent of collaboration. It seems anyhow, that traditional universities in highly industrialized areas emphasize their cooperation in basic research, as smaller and younger institutions typically put emphasis in applied research in industrial cooperation. The new small Finnish universities contract mainly with single enterprises, larger and older universities and also some new European ones rather make contracts in networks of several enterprises and other universities. Most often the partners are at the national level, but a few universities also mention local enterprises as their largest partners, and some universities cooperate mainly with foreign and international units.

The universities also have collaboration with industry and public administration in education. The forms and contents of adult education supplied by the universities is strongly influenced by the demand in the region. The regional needs affect also the ordinary education and teaching supply at the universities. Education in younger and smaller institutions in less industrialized areas seems to be more sensitive to environmental needs and pressures than in larger traditional universities in major national centres.

A typical target for fund raising from the region is the establishment of donated professorial posts. The mix of applied educational fields characterize the various needs and hopes the industries and local society in general have placed upon the universities.

The easiest way to increase the practical and social relevance of education would be to use representatives from the local industry and public administration as visiting lecturers and to establish contracts with industry for practical training of the students. This has been done infrequently in the case study universities.

The rectors or vice-chancellors were asked if cooperation in research and teaching with industry and public administration belongs to the basic tasks of a university. Thirteen out of fifteen answered “yes”, but five of them thought that most academic staff in their university did not share that opinion. This might indicate the existence of value conflicts within the university, where the highest management, responsible for the long term welfare of their institution, has lower resistance for changes in traditional values. Although partnerships with industry can still be perceived as a threat to some academic staff, institutional leaders typically see it as a necessity and act accordingly.

The answers given by senior management to the question of optimal mix of funding show that the share of the government should diminish and external funding should increase. The Finnish higher education system has no tuition and almost no fees for the in students. Student financing has not even been discussed, yet the rectors of all four Finnish universities in the sample suggested moderate tuition fees. The university heads from Swedish, Danish and Norwegian universities, on the contrary, regard their present funding — including no tuition fees for students — as optimal.

One form of organizational arrangement to foster university-environment social interaction is the appointment of representatives to the governing bodies of the university from outside the university. Ten out of fifteen universities have external representatives in their governing bodies. The vast majority of university heads consider that this kind of social interaction with reference groups and partners has a clear, positive impact on the development of their universities. The attitudes against including external
members on university governing bodies may indicate fears of endangering the autonomy of the university.

Most university leaders also see that cooperation with external partners has essentially improved the position of the university in competition with other universities for private funds, but also for government money and for qualified staff and students.

**Concluding comments**

Regional service functions have always been very central in the higher education policies of the Nordic Countries. Universities and regional colleges have been given important roles in these sparsely and unevenly populated countries in promoting equity and fostering economic and cultural progress. As Norway and Sweden started to implement the regionally centralized mass higher education systems since the 1960s by concentrating university level education and research to a restricted number of universities, and giving many of the regional tasks to regional colleges or university colleges, Finland established a university network covering the whole country. Finland established the non-university sector of higher education as late as in the mid 1990s.

Both institutional models have been successful, and higher education institutions have become integral parts of regional infrastructure. They offer educational services to their younger generation in the region, but to an increasing degree, they satisfy the diversified demands of the adult population and business. Research collaboration is a growing area of collaboration between higher education institutions and industries both at the regional and national level. In Finland, research is strictly concentrated within the universities, but in its neighboring countries research has been recently permitted at regional colleges and university colleges.

Based on the survey, it seems that new and small universities are more sensitive to the needs of their regional environments than the old and large traditional universities. Maybe they also have more need for the support — financial and political — of the region, maybe they are still flexible enough to utilize the opportunities provided by the demands and resources of their environments. Also, the regional service function in their missions often date back to the arguments used in their establishment. This sensitiveness can be an advantage of small and young universities in the increasing competition between institutions of higher education in the 1990s.

Flexibility in the use of resources, both monetary and human, is an institutional prerequisite for collaboration with the region. The expertise in subject matter, also concerning cooperation with industry and region at large exists within disciplinary departments. The effort of intensifying the interface and concrete interaction with the environment is typically supported by the service units either within the institutions, like liaison offices, or in their vicinity, such as science parks or technology centres. The arguments derived from theoretical research (Hölttä and Pulliainen 1996; Hölttä 1995) lead to a conclusion that the tasks have to be split between basic and supporting units. Especially in the beginning, specialized interface units are needed for establishing the contacts and starting the operations.

Typically, management information systems have been constructed for use in the regulation of internal processes in universities. As the higher education system is becoming more open, there is an urgent need to include information concerning external relations and results of external cooperation, which in this way will be brought under systematic monitoring and evaluation.

The Finnish case reveals a special problem for university-industry collaboration in a less developed region: there exists a gap between the supply and demand of expertise. The needs of small and medium sized enterprises are most effectively served by joint efforts of universities and the AMK institutions. The latter have competence in the most pressing practical problems of local firms, the former provide new methods and insight based on disciplinary knowledge.

Extension of external representation in governing bodies would be a means of developing interaction between the university and the environment. In Sweden, the external representation in the decision
making is already true. The new university legislation under preparation will provide the Finnish with all possibilities to do that.

There exists no centralized force to make university departments and academic faculty to work with regional partners. Also it is an illusion that institutions of higher education and their departments create cooperative links with industry for non-selfish reasons. Only if a department or an individual professor can gain from the cooperation, in the form of better opportunities for basic research, money or some other benefit, they will actively work in order to promote cooperation.

References


Haaland S 0 1996 *A Contribution from Lillehammer College*. In Dahllöf U and Selander S 1996.


