OECD/IMHE project

Supporting the Contribution of Higher Education Institutions to Regional Development

Subreport:

Aalborg University

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1. INTRODUCTION

This survey constitutes Aalborg University's contribution to the Jutland-Funen OECD survey of higher educational institutions' influence on regional development and interaction with regional stakeholders. The purpose of the survey is to map and evaluate activities, relations and mechanisms of importance to Aalborg University's significance to and cooperations in a regional context.

The survey of higher educational institutions' regional role takes its starting point in a mapping and evaluation of the following institutions' regional significance and cooperation: Aarhus University, the University of Southern Denmark, the Aarhus School of Business and the Danish Institute of Agricultural Sciences. These evaluations have the following functions:

1. A development tool for the individual institution and its regional stakeholders to develop the region in relation to the challenges that they meet in connection with the continuously growing development of globalisation, technology and knowledge, culture and basic values.
2. A development tool for the total western Danish university system and its stakeholders to develop the western Danish region in relation to the challenges that they meet in connection with the continuously growing development of globalisation, technology and knowledge, culture and basic values.

The evaluation is based on a design developed by OECD as a result of a comprehensive work with analysing and evaluating universities' roles and functions in a regional context. This design attaches great importance to the following survey themes in a regional context:

1. How does the university's research contribute to development and innovation?
2. How does the university's educational programmes and learning circuits contribute to the labour market and qualifications?
3. How does the university contribute to cultural, social and environmental development?
4. How is a capacity for development established?

The evaluation is based on a qualitative investigative technique, primarily based on interviews with important internal actors at the university as well as external actors. When selecting both the internal and external actors, the goal has been to attain a representation of a diversity of activities, relations and interests and thus create new knowledge of and insight in the universities' regional importance and interaction with stakeholders in the region.

Internally, focus has thus been both to bring about knowledge and experiences from a number of strategic initiatives and activities as well as to characterise the university's many network activities through interviews with important actors in administrative and managerial positions at different organisation levels. This knowledge is complemented by knowledge and experiences from activities, relations and mechanisms as they are utilized in practice in connection with the daily research, study, education and communication environments.

Externally, focus has been to bring about knowledge and experiences from a number of important actors in private and public organisations, the system of knowledge, technology and competence development, as well as important actors from the trade and labour market. With regard to the cooperation with companies, experiences have been gathered from different types of companies in order to obtain an impression of the diversity of cooperations and interaction.

2. INTRODUCTION TO THE UNIVERSITY IN A REGIONAL CONTEXT

2.1 The regional context

The composition of industries, company sizes and capacity for innovation lies in the neighbourhood of the country average, excluding Copenhagen and Aarhus from consideration.

- The number of innovative companies is lower than the country average
- The number of innovations is decreasing
- The majority of companies and employed people deals with price sensitive areas within traditional trades
- Some high-technology companies are located close to the university
- High-technology environments can be found within the university: information and communication technology, electronics, health science technology, biotechnology, nanotechnology and materials technology

The educational qualifications can be characterised as follows:

- The educational level is below the country average, although an increase has occurred, primarily in relation to the long-cycle educational programmes
- The share of long-cycle educational programmes is lower than the country average and the regions exhibit substantial variations

The regional vision is:

- To make the yearly income growth match the country average
- To make the dynamics of the region's development match the other regions
- To strengthen the conditions for growth and development in the whole region
- To maintain and develop the existing industry specific potentials
- To investigate and develop new potentials in the interface between businesses, research, educational programmes and culture
- To make investors see the region as an attractive region

2.2 University - from Regional University to Network University

Aalborg University was established in 1974 as the fifth Danish university after many years of popular and local political activities in relation to establishing a university in northern Jutland. This was a support that formed the basis for a close dialogue with the surrounding society relying on the development of contact and cooperation committees with the business sector, trade unions and cultural life.

The local anchorage of the university found expression in e.g. the university's integration of a number of institutions with medium-length educational programmes such as engineering educational programmes, librarian educational programmes and social worker educational programmes which occurred simultaneously with the decision of basing the university's research and educational activities on inter-disciplinary integration, problem orientation and group work. This was a combination that had the effect that Aalborg University in the early years independently had to document that it could produce qualified scientific research and qualified graduates at the highest level for the business sector, educational sector and public administration.

At the same time the region was faced with major challenges as the business sector and labour market were under great pressure arising from comprehensive structural changes within the region's dominant sectors, especially the primary sector. This structural change has had an influence on the region ever since and today it can be characterised as the change from the economics of manufacturing to the economics of knowledge. The changes have among other things meant that a wide-ranging shipyard industry in northern Jutland, especially in the main city of Aalborg, had to close.

Thus there was a recognition of the university's vital importance to regional readjustment and renewal from the very beginning as well as a mutual recognition of the region and the university having a common interest in development and renewal concurrently with both institutions having a need for pursuing their own interests and in this way legitimising their societal justification for existing; *"The university repaid the wide popular support by engaging itself in full cooperations in relation to regional activities"*.

The development of the cooperation has thus been driven by a mutual commitment and full cooperations in large number of areas as well as mutual respect and trust which is also recognised in interviews with external stakeholders; *"the university has a popular support which is anchored deeply and broadly in all groups in the region"* and *"a support that also stems from groups that have not traditionally connections to the university"*.

The wide popular support has been an important catalyst for the cooperation and been a principal factor in giving the cooperation a scope and kind of dynamics that have had a major role in the industrial development. A support which, however, also invites reflection and level-headedness as there is a tendency to attach importance to the university and its functions that reaches far beyond its possibilities; "*occasionally there is a belief that the university can save the region… a confidence in the importance and possibilities of the university that reaches far beyond what the university has an influence on and possibility of achieving"*.

This confidence in the importance and possibilities of the university can also be seen as a consequence of the positive effects of the interaction between the university and the region in connection with developing an industrial cluster within mobile communication where the university in cooperation with local manufacturers took part in creating the basis for an industrial concentration of mobile communication of national and international importance.

3. RESEARCH AND INNOVATION

3.1. The regional framework conditions

Despite the fact that the capacity for research and innovation in the northern Jutland region has followed an upward trend the past 20-30 years, the share is still below the country average. Particularly, regional research and innovation within the private sector are falling behind while a significant growth in the extent of research within the public sector has taken place, which can be attributed to the university and its ability to attract external research funds. The fact that research within the private sector falls behind the country average is chiefly connected to industrial and business structural conditions.

The industrial structure is dominated by industrial production within the resource areas of food products, iron and metals, machines and production industry while a growth is recognised within more knowledge based industries, especially the IT area which has grown into becoming the third largest industrial concentration in Denmark. The development in the service sector is below the country average.

The industrial structure is dominated by small businesses as well as businesses that are part of national and international businesses. Additionally, the share of entrepreneurs with a further educational background is equal to less than half the share in the Copenhagen area.

The future regional challenges are these:
1. Renewing and readjusting the dominant industries in order that they to a lesser extent compete on price and to a higher extent on differentiation
2. Developing a knowledge based industry
3. Developing a cooperation between businesses and the pubic sector within research and innovation.

The cooperation between the public sector, businesses and universities is known to be more extensive than in the rest of the country due to the region's above mentioned challenges.

3.2 The university's research strategy

The university's research strategy focuses on contributing to developing the societal needs through the development of new knowledge and acknowledgement, an activity that is global by nature.

3.3 The regional dimensions in the research

The research strategy has a focus on developing the international cutting-edge competence within areas where AAU has particularly good prerequisites to become the international leader in the field and at the same time maintaining research within the university's other areas. Prioritising the cutting-edge competence plays a significant role in the university's contribution to regional development as well as the role that the university plays in relation to renewal and readjustment in the region.

3.3.1 Developing new competence clusters within knowledge based industries

Since the beginning of the university, research and development have played a pivotal role in the interaction between the region and the university as technology research has been perceived as an important driving force in the renewal of the industrial and business structure.

The development of an international and highly competitive competence cluster within mobile communication, which created workplaces and new businesses during the eighties and nineties, plays in this context a pivotal role for the importance that regional stakeholders themselves, including the universities, ascribe to research and cooperation as the driving force for the development in the region.

The positive results with the build-up of a competence cluster within wireless communication has to the extent possible been transferred to other knowledge-intensive areas where regional stakeholders and the university have joined forces in developing and transforming a cutting-edge competence to a new growth cluster. The work with the innovation political agenda has been delegated to an Innovation Political Forum consisting of representatives from the university and innovation political actors from the region: a forum that has become a model for new growth fora in the region.[1]

Within this framework, it was decided that with the university as a significant driving force, focus should be on developing the following areas:

- IT and communication
- Biomedico/health
- Nanotechnology

3.3.1.1 The IT and communication area

The IT and communication area in the Aalborg region has within the last 10 years developed into a regional growth generator having created an employment growth of 60% in the Aalborg region and 50% in northern Jutland as a whole. The industries in the Aalborg region related to IT and communication technology have over the last 20 years grown from a few isolated businesses to clusters of businesses that combined constitute the third largest concentration of industries related to IT and communication technology. This has thus become a geographical specialization and concentration, which is even more profound within the sub industry constituted by wireless communication. This cluster has earned a commanding position in Denmark and is attractive to international businesses due to its research and innovation competence.

3.3.1.2 Wireless communication

The build-up of competence clusters within wireless communication was built on the development of an international cutting-edge competence within the research environment of the Institute of Electronic Systems in cooperation with local businesses. This was a cooperation that made it possible for local businesses and the university to develop into central players within wireless communication while at the same time maintaining this position in a period of comprehensive technological developmental leaps. The cluster's leadership position was established in connection with the development of the new Nordic mobile system in the 1980s. It was possible to maintain this position in connection with the transition to digital technology and the new European standards (GSM) due to research cooperation between the university and dominant actors in the local cluster of business.

The cluster's future position depends on its ability to develop new products and services within the next generation of technologies. The university has through its establishment of the "Center for TeleInFrastruktur" (hereinafter referred to as CTIF) set up a research-related framework in order that the region can still play a pivotal role in the development of wireless communication. CTIF is centrally located as a coordinator for various strategic projects under the EU's 6th framework programme and participates in several research projects together with leading international businesses. Further, it should be noted that CTIF in cooperation with Danish Technological Institute has become the coordinator of the national programme Mobile Systems which primary function is to develop the national competence within wireless communication.

The university's central location in international and national innovation networks gives it a unique opportunity to maintain the international cutting-edge competence within wireless communication. The university is working on new strategic initiatives that can transform the research based knowledge into the

[1] See section six on building up capacities

development of innovation and industries in the region by offering local and international partnerships dealing with utilizing the achieved knowledge and patents.

Center for TeleInFrastruktur (CTIF)
CTIF is a research center with more than 130 employees within 10 different research groups which carry out research with the aim of promoting technological research within modern telecommunication technologies and tele infrastructures. The purpose of the center is to promote technological development in northern Jutland, but also nationally and internationally as well as to teach the subject. CTIF has strong relations to industries and authorities at different levels and was brought about thanks to EU, State and university finances.

3.3.1.3 The IT and communications area

Research and innovation at the Department of Computer Science plays an important role in the growth of the IT industry in the region. In the year 2000 the department initiated moves to strengthen the interaction with the knowledge center "Nouhauz". The major purpose of Nouhauz was to strengthen the northern Danish IT industry's ability to compete through innovation and development as well as to contribute to a development of the industry through forming new businesses. Finally, it was their aim to improve the possibilities of developing a synergy between research and business practise and increase the local demand for graduates.

Nouhauz:
A forum for discussion, cooperation and contact between IT researchers, IT students and IT employees in northern Jutland. The objective is that the industry becomes able to supply research with impulses, and research and cooperation with the students can supply businesses with important impulses. The forum provides a setting for already existing and tested activities in relation to research projects, student projects, educational opportunities for the business sector, purpose-directed courses, Nouhauz researchers and network.

Application of embedded software takes up a greater part of those processes and products that are of a decisive importance to the competitiveness in small and large businesses. Thus there is a significant need for faster transfer of knowledge from research to industry as well as to ensure the availability of the newest knowledge if Danish companies are to maintain and develop their competitiveness within existing and new areas. As a consequence, the Center for Embedded Software Systems (also known as CISS, the Danish abbreviation) has been established with the aim of encouraging a closer cooperation between research and businesses and is now one of four IT competence centres in the Jutland-Funen region.

CISS' competence is based on research environments at the Department of Computer Science and the Institute of Electronic Systems that give it a unique inter-disciplinary competence not to be found anywhere else and is thus attractive to businesses. CISS has during a short period of time been able to establish many collaborative projects with the business sector and cooperates with many kinds of businesses that need embedded software. The rapid perforating effect in relation to the business sector can, apart from the unique competence, be ascribed to the fact that the county and municipality of Aalborg took part in kick starting the center one year before it became an official IT competence center. The county and municipality of Aalborg also have a role in the center's financing, supplementing the Ministry of Science Technology and Innovation and Aalborg University.

Center for Embedded Software Systems, CISS
Center for Embedded Software Systems, CISS, is one of four IT competence centres in the Jutland-Funen region's IT venture. CISS is established at Aalborg University. At CISS the focus is on getting the electronics and software to play optimally together. The purpose of the center is to initiate as many collaborative projects as possible between research and private businesses, partly with the objective of being able to communicate research results faster and converting new knowledge into new products effectively and partly with the objective of having the research environment behind CISS face new challenges that take the actual problem areas that businesses are facing as their starting point. It was revealed in connection with a recently completed evaluation that approximately 90% of the businesses expect that cooperation will strengthen their competitiveness – and one out of three businesses expect an increase in employment as a consequence of the projects they have participated in.

3.3.1.4 Health science technology

University and regional stakeholders have transferred the concept of a research based competence cluster to other areas in which the public research has a notable potential of developing competence clusters.

Health science technology is a growth market developing rapidly while at the same time the region has some powerful research and development competence skills allocated at the university and the public hospital system. The status of Aalborg's hospital as a university hospital under Aarhus University has prompted totally new potentials for development that to the extent possible have been exploited in a close cooperation with Aalborg University. The private sector's competence is limited by the fact that there only is a small number of businesses in the region and that these for the main part are quite small. Several of them, however, are small innovative businesses with serious potentials that have been generated as spin offs from the university.

The Department of Health Science and Technology
The Department of Health Science and Technology was established with the objective of developing competence at the highest scientific level within the area of health science through interaction between engineering science and medical disciplines. Within several research areas, e.g. pain research and sensory-motor interaction, the department has developed unique international research results that also have been commercialised. As an example, a group of students and their counsellors have signed one of the biggest contracts with GE Healthcare in the history of Denmark, where GE Healthcare, the world market's leader within EKG management, has been handed the license to use ALQTECC in their MUSE system.

The university's research competence has been developed at the Department of Health Science and Technology where "*development within the health science area has nearly developed explosively during the past 10 years and thus it has developed a competence by today which is unique worldwide within the health science area.*"

During the autumn of 2005 the university obtained approval for accepting students by September 1 2006 for a whole new educational programme focused on employment within the pharmaceutical industry. The educational programme takes five years and the graduates will get the title MSc in medicine with an industrial specialization. The specialization is a natural extension of the competence that the university already holds from the cooperation with the industry.

The university cooperates with regional stakeholders to develop a new competence cluster within health science technology in a cooperation called "BioMedCom", which has conducted a comprehensive mapping of the cluster's competence skills and resources which have been used in the marketing of regional initiatives. In addition, BioMedCom has established a knowledge society for businesses in the region meant to support their network.

Most recently, ”Forskningens Hus” (The House of Research) has been established in connection with the hospital of the county of northern Jutland and is charged with breaking down a number of barriers that have an inhibitory effect on the development of new products and processes across organisations, professional groups, etc.

3.3.1.5 Nanotechnology

Nanotechnology is an example of an area in which the university focuses on building up a cutting-edge competence as its previous competence and facilities have been limited. The area is regarded as an area of strategic importance within both university research and industrial development.

As a consequence the university has engaged in a cooperation with the private company NanoNord, which takes part in ensuring the establishment of the largest laboratory facilities in northern Europe. Through this strategic cooperation the university gets access to facilities that it does not have the funds to finance itself simultaneously with the company taking part in ensuring the operational conditions in relation to building up the facilities. The university is by virtue of the partnership able to focus on building up research competence skills within nanotechnology based on the professional environments including physics, material technology, biotechnology and health science technology.

The dedicated effort on nanotechnology is a long-term dedicated effort where the first step consists in building up a cutting-edge competence which in combination with an industrial development is expected to be of business strategic importance.

3.3.1.6 Summary

As is apparent from the above-mentioned, Aalborg University plays an important role in the region’s dedicated effort on the development of growth areas within the knowledge based industries. This is a kind of dedicated effort that takes its starting point in the university’s present and future cutting-edge competence, primarily within technical and scientific research. It is a long-term dedicated effort on future possibilities. In this way it took 20 years to develop a competence cluster within wireless communication and as a response to the continuous technological leaps large investments are still called for in order to maintain the leading position. The time perspectives in relation to health science technology and nanotechnology are different as they are at different stages in a cluster’s life cycle.

The competence skills of the health science technology cluster are relatively well developed due to public research, and a breakthrough seems to depend on the possibility of attracting businesses and projects within the region. It is a difficult process but interviews indicate that positive behavioural changes in businesses have taken place.

Nanotechnology is at the initial stage of an actual cluster formation where the very fundamental competence skills and resources are being built up for which reason a competence cluster is a long-term perspective.

3.3.2 Developing existing industries

The existing industries employ approximately 80% of the total labour force in the private sector, and thus they are of significant importance to the regional development. These industries compete mainly on their cost base for which reason they are very vulnerable in the global competition, where a still larger part of the production is outsourced from Denmark. Continuing development of the industries in the region will consequently depend on the continuing innovation and technology development.

Innovation and development of existing industries has thus become a large and important priority area in the regional strategy, which has been further strengthened by the establishment of a growth forum. Aalborg

University has a number of international and national cutting-edge competence skills within the area which can contribute to a strengthened development of existing businesses' competitiveness.

3.3.2.1 Development and design of business systems

Developing industrial systems constitutes one of the university's cutting-edge competence skills. In 1999 these activities were further strengthened through the establishment of the Center for Industrial Production (hereinafter referred to as CIP). The purpose of CIP is to develop future oriented, innovative and continuous solutions for the benefit of Danish industries. The systems are able to increase productivity and customer value by making the flow of knowledge, materials and other resources in the businesses more effective.

CIP primarily cooperates with development-oriented businesses, regardless of size, line of business and geographical location. There is a large share of western Danish businesses in the cooperation portfolio while the share of businesses from the northern part of Jutland is smaller. Through the cooperation with development-oriented businesses knowledge is created and this can be passed on to smaller development-oriented businesses.

In this manner CIP has built up a number of competence skills and research projects that contribute to developing existing industries and it plans to develop a center that will focus on systems that will improve the competitiveness within "traditional" industries. Effort is also being put to develop the cooperation with secondary technical schools and centres offering labour market training courses (so-called AMU centers) in relation to development activities targeted at smaller businesses, where the secondary technical schools and AMU centers are in charge of the primary contact with the businesses.

Center for Industrial Production
The Center for Industrial Production (CIP) was established in 1999 as a Danish National Competence Center with the purpose of supporting research in industrial production. Its mission is to create and disseminate competence with respect to the development of innovative, holistic solutions to meet future industrial needs. The main focus of CIP is on linking theory to method, with a special interest in the interplay between product development, manufacturing and distribution networks in a global context.

The Center's ambition is to achieve international recognition as a world class research institution. Additionally, CIP aims to strengthen Danish engineering degree programmes, and to provide management educational programmes within its area of activity.

3.3.2.2 Innovation and development

Innovation research at the Department of Business Studies is an international cutting-edge competence built on a research-oriented interaction with the national and regional system of promotion of trade.

The research-related framework is constituted by the research group IKE but also includes other employees from the Department of Business Studies. The IKE Group has since the late 1970s been engaged in research on innovation and renewal in northern Jutland and has contributed to the development and implementation of concrete development initiatives as well the development of a foundation for concepts, framework programmes and institutions through numerous analyses, evaluations and dialogues in relation to business development and innovation.

The interaction between researchers and regional actors has been an active part in the creation of a mutual frame of understanding in relation to innovations' influence on businesses' and the regions' competitiveness and possibilities of promoting innovation and renewal. This is recognised in activities that are reflected in e.g. the development of the regional innovation system and the establishment of new institutions such as the

Innovation Forum of northern Jutland (in Danish known as NOVI, the abbreviation for "Nordjysk Innovations Forum") as well as the development and formulation of development programmes and initiatives.

The new programmes related to the development of existing industries are based on concepts developed during the Disko project under the IKE Group. These are concepts that include the businesses' ability to innovate and renew on the basis of their organisational and management skills.

The IKE Group
The IKE Group is a research group at the Department of Business Studies at Aalborg University and is a central part of the Danish Research Unit for Industrial Dynamics (DRUID) founded in 1995 by the IKE Group and scholars from the Department of Industrial Economics and Strategy at Copenhagen Business School. More recently, the IKE Group has been the main architect behind GLOBELICS - a network of scholars who apply the concept 'systems of innovation and competence building' as their analytical framework. The group is also among the central members in the DIME Network of Excellence funded by the European Commission. The IKE Group does research on economic, technical and institutional change. The main research themes include economic evolutionary modelling, theory of the firm, national systems of innovation, international trade and competitiveness and the interplay between economic and ecological issues.

3.3.2.3 Summary

The university's research within innovation has played a pivotal role in the development of the fundamental concepts and there has been a dialogue between actors related to business policy and researchers from the business economists' environment on both overall concepts and concrete projects. This was a dialogue promoted by the fact that researchers from the business economists' environment participate in background groups/expert groups related to business policy at many levels and that researchers from the business economists' environment for periods have been employed at the regional department of the business and labour market.

In relation to innovation projects in businesses, the university's researchers have been involved to a smaller extent which is connected to the fact that research at CIP, the Center for Industrial Production, has been insufficiently visible to actors in the existing industries and the system of promotion of trade. There is an understanding that the center's and university's research within this area is oriented towards more development-oriented (i.e. advanced) businesses and thus cannot be directly transferred to or is interesting for the dominant type of businesses in the region.

3.3.3 The event industry

Culture and events are of growing importance to the regional development in the knowledge economy. The tourist industry constitutes by far the largest industry within the area of culture and events in the region and is of central importance to the regional development, not the least in the outlying area freely. The geographical location of northern Jutland as well as the region's amenities (by being surrounded by the ocean and the best beaches in the country) has had the natural consequence that tourism was the regional focus. In addition, culture and the event economy are in rapid growth and thus are regarded as central for the development of new business areas and businesses in northern Jutland.

The university has been an active participant in developing potentials within culture and the event economy and has contributed to a number of activities. In the summer of 2005, the university initiated moves to develop a joint platform for research and educational programmes within culture and the event economy in a center across the three faculties: ExCITe, Center for Experience and Economy, Creative Industries and Technologies.

ExCITe
ExCITe is a research center at Aalborg university that gathers employees across faculties, departments and subjects. The center was established in June 2002. The center now includes 12 research groups/departments and nearly 130 scientific employees. ExCITe exists through interacting with numerous partners outside the university where cultural institutions and creative environments go hand in hand with knowledge and entrepreneurship. The starting point for ExCITe is that there is a need for:

- More knowledge on perspectives and barriers in relation to the event economy and in relation to design processes and construction of event products
- Comprehensive research as the basis for stronger educational programmes
- Communication with and contact to the business community and the society

The center's activities are supported by the new business strategy from the growth forum, as culture and the event economy are recognised as a growth potential for the regional business community.

3.4 Mechanisms to promote research and innovation

The interaction between research and innovation in the region has been a prioritised area throughout the years where the university has developed a number of mechanisms and institutions at a centralised and decentralised level that are able to support and provide services to the interaction between researchers and regional stakeholders.

3.4.1 Central institutions to promote the interaction between research and innovation

The broad popular support in relation to the university contributed to the fact that there from the university's very beginning was a full cooperation with the regional stakeholders. Several years before the new University Act (Act no. 403 from 28 May 2003) Aalborg University had already been engaged in communicating research, and the university is probably the university in Denmark that spends most funds on communication activities. This is a practice that entails that the university at the strategic level prioritises and supports communication activities by developing and improving the organisational framework for these activities.

The new University Act's demands on the universities societal role did therefore not necessitate any big changes in the existing practice and can more likely be perceived as a legitimisation of the past practice.

The university has especially since the beginning of the 1990s worked on developing an internal administrative infrastructure that can support communication and commercialisation of research where the establishment of the Network Center in 1996 plays a pivotal role in the development of communication activities. Later in 1999 the Patent- and Contract Unit was established as a consequence of the new law on inventions. Still later, the Fundraising and Project Office was established. All were located at the central administration.

These three units have got a united organisational structure by 1 September 2005. The purpose of this consolidation was to obtain an increased synergy by gathering competence skills in relation to network cooperation between institutions, commercialisation, patenting and IRP, contract negotiations, entrepreneurships, student related projects, fundraising and project management, regional, national and international institutional cooperations.

3.4.2 AAU innovation and the Knowledge Exchange Office

The establishment of the Knowledge Exchange Office in 1996 entailed a radical organizational renewal of the university's world; communication activities were gathered in one center in order to better support the work with the development and operations of a network that communicates the newest research at Aalborg University to businesses and institutions. The communication concept is built on a network and cooperation generating development.

The network model

Networks fulfil the functions of fora of communication and exchange of knowledge within specific research areas. Networks constitute a framework within which researchers and people from the business community and institutions meet and organise activities such as network meetings, after-work meetings, feature days and professional events in relation to the newest research, etc. The network model has proven itself useful in relation to generating interaction between researchers and people from the business community and institutions and thus today there are 24 networks within the Knowledge Exchange Office with a total of approximately 2.800 members. Most networks are long-term and have been able to develop and build up knowledge and relations that are of increasing value to the involved partners.

In relation to activities the Knowledge Exchange Office presents a variety of offers and to the extent possible a decentralised ownership of the various activities is preferred.

A change in the Knowledge Exchange Office's task has taken place; from having been primarily in charge of administrative and coordinating tasks in connection with networks, the Knowledge Exchange Office is on a larger scale in charge of tasks in relation to a number of new institutions that are important to the region's development. This broad focus is reflected in the Knowledge Exchange Office's new reformulated mission from 2004:

The Knowledge Exchange Office's mission:

"The Knowledge Exchange Office manages and enhances Aalborg university's communication of research and cooperation with businesses and educational institutions regionally, nationally and internationally with the aim of promoting growth and welfare."

The Network Center is a central player in the regional business and innovation development, not the least in relation to the university's key areas within IT, biomedico and entrepreneurship.

The Knowledge Exchange Office supports the development by establishing knowledge and experience exchange networks with a basis in the research-related cutting-edge competence skills within the above-mentioned areas. Furthermore, the center launches innovative kick-starts that support innovation and the set-up of businesses in the region by promoting the students' and graduates' capabilities for developing products and businesses.

3.4.2.1 IT and communication technology

Within the IT and communication technology the Knowledge Exchange Office is in contact with the most significant initiatives in the area and the aim is to get as big an overview as possible as well as carry out secretariat functions for a number of networks and regional cooperations, including Nouhauz and the IT and communication technology Forum (known as the IKT Forum in Danish):

Within this area, the Knowledge Exchange Office carries out secretariat functions for the following networks:
IT and electronics, 3D Geoinformation, Acoustics, Acoutel, Interaction design and applicability test, Lonely Wolf, Galileo, Nouhauz, IKT Forum, Mobile Systems besides staying updated in a number of decentralised initiatives.

Within the last two years there have been two new initiatives of importance to these activities:

The establishment of IKT Forum is an umbrella organisation to the whole industry of IT and communication technology in northern Jutland and is a significant development in the dedicated effort directed at the IT and communications area. This is a kind of dedicated effort that is charged with making the area's potentials for regional development more visible besides contributing to a larger industrial diversity within the IT and communication technology area in the region.

The IKT Forum is not looped up on a specific research-related area at the university; it is rather the case that all relevant research areas are involved in the IKT Forum. The reason for the location of the secretariat at the university is related to the recognition that the university has as a regional actor, where the university often is seen as an independent and objective organisation that does not pursue self-interests.

IKT Forum
IKT Forum is a joint platform for the IT and communications technology industry, educational institutions and the public sector, with its starting point in northern Denmark. IKT Forum strengthens the cooperation between IT and communications technology actors in northern Denmark and makes competence skills, products and services visible that combined constitute the regional center of excellence for IT and communication technology.

The establishment of "Mobile Systems" under the national programme for high-technology networks is another notable kind of dedicated effort on upgrading and developing the commercial potentials of the mobile cluster. Again it is the Knowledge Exchange Office that is responsible for the secretariat function in order to ensure complementarity and synergy with other regional IT and communication technology activities.

Mobile Systems
Mobile Systems offers a platform for cooperation between private companies, universities and other knowledge institutions working with mobile technology. Through a wealth of activities Mobile Systems will develop strong ties and synergies between research and business and keep track of new trends and explore new application areas.

Mobile Systems possesses expertise within all areas of mobile systems – from the physical communication structures and hardware to the logical services that are realized. Across the focus areas a set of technological and commercial challenges are discussed. All interested companies can join Mobile Systems.

3.4.2.2 Health science technology

The Knowledge Exchange Office is involved with running networks that have their basis in the research competence of health science technology: "MedicoTeknik" (medical technology), "HandiaTek" (handicap technology), "AkuNet" (an acoustics network) and "Sundhedsnet" (a health network). On to that must be added participation in wide-ranging activities such as BioMed Community and "Forskningens Hus" (house of research, located at Aalborg Hospital).

BioMedCom is a cooperation between important actors in northern Jutland that has the objective to develop and promote a competence cluster within biomedico and health science technology; here, the mappings of the cluster's competence skills and competitiveness have constituted important activities.

BioMedCom
BioMedCom is a cooperation that has the objective to develop and promote northern Denmark's cluster within life sciences. The project-partners represent the most important players in northern Denmark within Biotechnology, Medico-technology and Health Science & Technology. The competence group, which encompasses Aalborg University, Aalborg Hospital, Bio- & Medical companies, the county of northern Denmark, Aalborg Commercial Council, the Region Aalborg Cooperation and NOVI Science Park, contributes with resources and facilities.

Within BioMed there is a number of innovative activities that the Knowledge Exchange Office has been involved in; e.g. the creation of a business association, arranging project competitions due to a creation of a database that can handle the many actor relations, competence skills, etc.
The role of the Knowledge Exchange Office has been to ensure coordination and development of tasks in relation to the new initiatives.

3.4.2.3 Entrepreneurship

Entrepreneurship is an important element in the activities that are part of the Knowledge Exchange Office's contribution to regional development. A number of the activities are related to development activities within IT and health science technology as these areas are central to the development of new projects and businesses. In general the main effort of the Knowledge Exchange Office is related to making project development and setting up businesses visible opportunities to students, researchers and other people within the knowledge based industries. Also, a number of services to these target groups are offered through courses, conferences, events and the like under the Kick-start project as well as coordination of entrepreneurship activities in relation to regional and national programmes and initiatives.

3.4.3 Research centers between research and innovation

The interaction between research and innovation plays a pivotal role in the university's organisation of research. On one hand the challenge is to maintain the research anchorage in the internationally oriented research environments, and on the other hand, the challenge is to develop research based innovations through interacting with the societal needs - in other words a kind of interaction that is created through the establishment of centres based on societal needs for innovations such as: CTIF, CISS, CIP, etc.

The interaction between research and innovation is, to the extent possible, maintained by having researchers and research activities have their basis in research environments which are defined in view of long-term research-related priorities in relation to international research environments. These priorities result in long-term research grants. At the same time a number of research centres are established and have their basis in application-oriented problem areas that can be seen in a shorter time perspective. These problem areas are defined in cooperation with external stakeholders, and the research environments will often consist of researchers from various subject-related environments, including university external environments. The centre's financing is often a combination of internal and external grants.

Establishing centres like CTIF, CISS, ExCITe and CIP can be regarded as examples of the development of centres with basis in socially defined needs for innovation and development that integrates various subject-related fields and groups of stakeholders.

The innovative effect lies in the fact that research effort and projects are selected on the basis of the centres' application-oriented objectives as well as a more flexible organisational and managerial structure in which external cooperating partners often serve on the board/steering committees for the center in question. Furthermore, through their visibility and organisational structure, the centres are better at entering a dialogue with external stakeholders.

3.4.4 Research priorities

The main part of the university's research takes place in research groups within the various departments for which reason their framework conditions determine to which extent problem areas of regional importance are treated.

The three faculties prioritise the social importance of research and emphasize that the research and the researchers' activities are evaluated on the basis of a wide range of activities in which also the external roles in the research are included. Furthermore, the university's research environments are characterized by being "research cultures" that are based on inter-disciplinarity, openness and full cooperations as the research is very open towards the outside world and regional needs for development.

The Faculty of Technical Science has worked with developing strategies that stimulate the cooperation with external stakeholders by making it easier to attain resources for the following activities:

- Financing of PhDs
- Laboratories
- Business PhDs

3.4.5 Researchers as a scarce resource

One of the main barriers in relation to the interaction between the university and business is a scarce resource that only has limited capacity to research-related cooperations. *"A researcher is a scarce resource that at most can cooperate with 5-10 businesses. The researcher as a resource has been reduced in recent years."*

It also means that the researcher as a resource in a business cooperation is being over-valued in the outside world of the university as it is expected that researchers are fully available to businesses and organisations when these turn to the university.

The researchers' opportunity to enter into an interaction is also dependent on the departmental framework in which aspects such as culture and educational structure have a quite significant role. The general belief is that *"the research-related and educational culture is very open towards researchers engaging themselves in cooperation with regional businesses" which makes it possible for the individual researcher to engage him- or herself in regional projects.*

Still it can prove difficult to the individual researcher to form a synthesis from the educational obligations and the everyday life; *"I would like to enter into cooperation with businesses but it is difficult to make the everyday life hang together when nobody is there to substitute in relation to one's obligations within teaching and administration."*

In order to promote the interaction between researchers, businesses and other actors the various faculties have tried to develop a number of different mechanisms that take the different conditions into consideration.

The Faculty of Technical Science has developed a strategy that makes it easier for researchers and businesses to get financed research through PhD projects, the development of shared research facilities, etc. The Faculty of Social Sciences has developed a policy in which cooperation with external actors is stimulated and has commenced a number of initiatives. The Faculty of Social Sciences has developed a policy that stimulates researchers to external commitments by making it part of their curriculum.

The new management team at the university has likewise introduced a number of incentives that will promote cooperation with external actors.

3.4.6 Project work

Project work as a working method constitutes approximately 50% of the total time of study and is by means of its special characteristics a large and only partly exploited potential for innovation. The scope of project work can be illustrated through the following statement: *"The University has 13,000 students and there are constantly 2-3,000 ongoing projects that primarily deal with external problem areas"*.

Especially in the last year of studying does project work have a big potential for innovation which in many ways can be compared to the universities' and large businesses' preferred cooperative way of working. It is stressed that *"2 exam projects have just as much research content as a PhD course of 3 years."*

Further, it must be added that exam projects and project work at a later study stage have a number of characteristics that make them suitable for cooperation with businesses and other external actors.

Project work and innovation

- Exam projects have a short time horizon – typically six months, which make them suitable in relation to the short time horizon that businesses often set.
- Exam projects typically take place in project groups for which reason there might be a relatively big man-hour input within a short time horizon, which PhD projects and/or researcher contacts cannot match.
- Exam projects are often more flexible than researchers that are tied up with long-term projects for which reason they can better take account of specific problem areas and requests from businesses.
- Exam projects are more suited to smoothen the dividing line between research and development, as the scientific commitments are more flexible.
- Despite the students' academic level, project work is more flexible because it is not tied up with the same narrow academic merit standards as a PhD and a researcher would be tied up with. Still the students will have to take an examination on the basis of the project work which means that they will have to comply with the specifications of the individual study programmes.

3.4.7 Business contact

The university has through the years developed a diversified net of activities and proposals to businesses and private persons who wish to enter into a dialogue with the university. Consequently a number of communication channels have been set up with the purpose of promoting the contact to smaller businesses and organisations that only have a narrow reason to initiate contact.

As a result, the university cooperates with the county's regional secretariat of promotion of trade, ECNord, that daily has contact to a number of smaller businesses with the aim of letting them use ECNord's competence that will help them to establish contact to researchers and students. Specifically that means that ECNord has posted two employees at AAU one morning weekly.

In addition the university is working on a new programme, "The Road to Knowledge", that is meant to educate people with close relations to small businesses into "ambassadors" that can help businesses use the university's competence skills.

The Road to Knowledge
The purpose of this programme is to have some more easily available entrances to Aalborg University's knowledge and educational programmes. This takes place through three channels:

1) A number of contact centres are being set up locally at central actors within the promotion of trade or the like. These actors are offered an educational programme at AAU, which makes them "certified" AAU Ambassadors that will gain knowledge about the university, and are given the use of a number of easy tools that they will be able to use in the bridge building between particularly small and medium-sized businesses.

2) AAU Contacts will be appointed within each department and will be given the task of receiving and answering external inquiries, directing these inquiries to relevant cooperating partners and following through on the inquiries.

3) If the small business does not know an AAU Ambassador or an internal AAU Contact, the small business is always welcome to call a central telephone number at AAU Innovation.

3.5 Commercialisation of research, incubators and research parks

Increasing the number of research based entrepreneurs is a vital and integral part of the promotion of welfare and growth in the strategy of northern Jutland.

Developing new businesses has since the mid-1980s been a central part of the university's contribution to regional development. The research park NOVI was established in 1989 in view of the fact that the region one year earlier had lost three large businesses with more then 2,000 employees. In view of this NOVI was brought into being as a spearhead in the northern business development and as a linking element between research and production.

In later years focus has been on how the university can increase its number of patents and licenses and having the commercialisation process rendered more efficient by developing patents, licenses, contracts and IPR. This means that greater focus is being applied to commercialisation's business-related aspects in the various stages of the commercialisation.

3.5.1 The commercialisation process

Universities and research institutions have set up activities with the aim of promoting efficiency and quality in the various stages of the commercialisation process in order that the number of project contracts, patents and licenses will be increased in future years. This is a development that is promoted by the new law on transfer of technology, which gives universities and researchers financial incentives to develop research projects that have a potential to be commercialised.

The Technology Transfer Office at Aalborg University functions as the first stage in the commercialisation process by counselling and offering guidance to researchers in relation to the possible means of using the commercial possibilities in cooperation contracts, licenses and patents. The aim is to improve the efficiency of the commercialisation process in order that a larger share of the examined projects is converted to patents and licenses as well as to increase the individual researchers' interest in patenting his or her research.

The Technology Transfer Office
Aalborg University has a Technology Transfer Office to handle tasks in connection with the evaluation of license transfer, the patenting process and commercialisation. The Technology Transfer Office receives reports on innovations from researchers, functions as secretary for the Technology Transfer Committee, manages the daily contact to external partners, consultants, etc. They also protect and look after Aalborg University's patent portfolio and offers support to researchers' innovations in cases where the rights are not transferred to the university. The Technology Transfer Office handles the second highest number of cooperation contracts within a Danish university (approximately 500 per year).

To strengthen the setting for developing business-related ideas research parks and innovation environments have been established in Denmark, including northern Jutland. Initially focus was on the physical and organisational framing for the development of innovation and entrepreneurship by locating research next to business. Subsequently focus has turned to business barriers in the commercialisation process and innovation corporations have been established in relation to the research parks as they have the capacity to inject risk-bearing capital and business-related knowledge to the most promising projects.

A third stage in the commercialisation process is the establishment of development corporations that together with the regional authorities can contribute to strengthen the commercialisation of research results as well as the development and growth of small businesses by means of seed and venture capital. Aalborg University is presently looking into the opportunities of setting up such a corporation.

3.5.2 Research parks and incubators

The university regards the set-ups of spin off businesses as a significant contribution to regional development and has as a consequence in cooperation with regional stakeholders established NOVI, which is directly attached to the university, and which gives the opportunity of an active interaction between research and business environments.

The NOVI concept was from the beginning different from traditional research parks as this park on the strength of its share capital was able to finance parts of the projects in the early start-up stage. This meant that NOVI from the beginning was breaking new ground in relation to having a financially supported physical and organisational framing which is one of the main barriers in the commercialisation process. In 1998 NOVI Innovation was operating independently and recognised as a developmental environment.

Research park with business-oriented perspectives

In 1988 three large businesses in northern Jutland closed and 2,000 workplaces were lost in a region that already was characterised by unemployment. In view of this NOVI was brought into being as a spearhead in the northern business development and as a linking element between research and production. NOVI was projected and established within the county's "Nord-Tek" framework and 100 shareholders subscribed to shares worth of DKK 35.5 million while also EU regional funds and the Ministry of Education were supporting the project. NOVI was different from other institutions from the first day. Especially the fact that NOVI supplied money from its share capital in the early start-up stage (max. DKK 2.5 million from the share capital or loan capital per project) was ground-breaking.

In 1998 NOVI Innovation Ltd. became an independent part of NOVI (with NOVI Ltd. as the operator) and was recognised as a developmental environment for new knowledge based ideas. During its first four years, NOVI Innovation has evaluated more than 500 project ideas, carried out 230 preliminary studies and in view of these initiated an active portfolio containing 55 businesses, which now are on their way to sustainable independence.

Having the university environment close at hand has been an important base of NOVI's development. The role as a generator in the process between research and the business community is a business opportunity that is beneficial for the whole innovative environment.
In recent years NOVI has expanded by building new sections. Today the research park constitutes 44,000 square metres and approximately 40 businesses with around 800 employees.

The university has actively been supporting research park activities by placing several of its technological scientific activities at NOVI, an active cooperation related to development and commercialisation activities in relation to cutting-edge competence environments as well as contacts at the management level.

NOVI is focused on development of high-technology, knowledge based projects and setting up businesses and they enter into cooperations with centres such as CTIF in relation to the development and commercialisation of research.

3.5.2.1 Development of differentiated incubators

The increased effort at Aalborg University in relation to the commercialisation of research has lead to an increased number of potential projects and actors as well as an expansion of those branches of knowledge that to the extent possible are commercialised. This is a development that has formed the basis for the development of specialised incubators that are meant to attract and generate entrepreneurs and projects within the specialised competence cluster initiatives.

The university's commitment in the establishment of competence clusters has been largely focused on entrepreneurship as a natural consequence of the fact that few and small businesses constituted one of the biggest barriers to future development of competence clusters. For this reason there have been many network events within IT and biomedico with the purpose of promoting development of new business ideas and businesses.

As a consequence the university has participated actively in the development of incubator environments in northern Jutland in relation to the various clusters and networks.

- "Forskningens Hus" (The House of Research) has its particular focus on health-related issues
- "Dreamhouse" is a hothouse for culture and event economics
- "Gamehouse" will be a hothouse for the "adventure & game" industry

Hothouses have also been set up in a number of larger towns in northern Jutland; at present there are about 40 and the university's effort in relation to entrepreneurship is an active factor in the development of these hothouses. The university is also a partner in the regional entrepreneurship network in northern Jutland.

Most recently the university has taken the initiative to develop a new kind of incubators that will help students and recent graduates with potential commercialisation possibilities in relation to their project work. The initiative is thus linked to the earlier stages in the commercialisation process in which there are well-considered and professionally reasoned ideas. The purpose of the project is primarily to support new students', recent graduates' and researchers' possibilities for transforming ideas from their very early stages into commercialised activities and develop the competence skills needed for the set-up of their own businesses.

One of the main barriers in relation to this type of potential entrepreneur is missing access to professional knowledge and laboratory equipment, which can be complied with by placing potential entrepreneurs in relevant and existing research environments. In addition, in order to obtain the necessary competence skills, they will here be given an external mentor/coach who has a business-related insight.

By setting up incubators in professional environments it becomes possible to make research based knowledge and laboratory equipment available which can assess the potential in ideas by testing and probing these, aided by professional and business-related guidance, inter-disciplinary sparring and competence development. In this way the entrepreneur will be able to have a clear business concept, contact to potential partners and a plan for further development at the end of the course.
Three embedded incubators have been set up at the Department of Computer Science, the Department of Health Science and Technology and in the inter-disciplinary research environment related to digital media. Besides, a commencement of 5-7 incubators in other professional environments at the university is planned.

It is the aim that the embedded incubators will increase the number of student projects that will be commercialised and that the number of students that choose to become entrepreneurs will increase as well.

3.5.2.2 Summary

It is recognised that the universities actively develop initiatives with the aim of promoting the concept of commercialisation by setting up internal offices for patents and contracts in which they set out to increase the number of patents, licenses and cooperation agreements with external stakeholders. The development of research parks and research environments has been an important tool in the attempt to create growth in regions where the university in question has been an imperative actor. The cooperation between research parks/innovation corporations and the university is close and has a positive effect on the development of new innovations and set-ups of businesses. Thus there has been a significant growth in the number of businesses that stem from research parks/universities. At the same time there is a tendency that new types of areas are subjected to business development in order that focus is not alone on high-technology knowledge.

Interviews point at the university's intensified involvement with developing patents and licenses that contribute to the creation of a more complex pattern of cooperation and competition between the university and the research park which play a role in how the potentials can be better utilized.

3.6 A SWOT analysis of the university and the region in relation to research and innovation

Strengths	**Opportunities**
▪ Internationally recognised research areas at AAU (e.g. IT and communications technology, health science technology and innovation). ▪ Access to advanced laboratory equipment. ▪ Access to international research environment. ▪ An "open" university. ▪ Good framework conditions for entrepreneurship (business service and risk capital). ▪ The businesses' innovation effort is "reasonable". ▪ Relatively many innovative businesses. ▪ International acquisitions of the most high-technology businesses. ▪ Strong support and interest from regional partners (Triple Helix). ▪ Ability and willingness to respond quickly. ▪ Quick, easy and cheap to set up a business[2]. ▪ Well-developed infrastructure.	▪ Motivation of the entrepreneurial culture. ▪ Strengthen the interaction between the university and the region's vocational schools. ▪ Continued development of research competence skills. ▪ Development of inter-disciplinary research and business cooperations. ▪ Development of industries on the basis of research competence skills. ▪ Attraction of development departments from international businesses. ▪ Attraction of businesses. ▪ Setting up a high-technology/knowledge-intensive entrepreneurial environment. ▪ Cooperation with mid Jutland/Aarhus.
Weaknesses	**Threats**
▪ Relatively little interaction between the business community and the university/other educational institutions. ▪ Only few (large) high-technology businesses – there is an overweight of the primary industries. ▪ Inadequate visibility in relation to competence skills within the IT and communication technology and health science technology. ▪ Inadequate visibility of the region, also in an international context. ▪ Too few "traditional" businesses use Aalborg University.	▪ National inattentiveness to research competence skills from northern Jutland and thus little access to national funds. ▪ Inadequate investment in basic research. ▪ Difficult to attract the management part in international businesses because of the size of the region. ▪ The internationally acquired businesses close and the competence moves to the mother company abroad. ▪ Insufficient "receiver" in businesses in relation to university cooperations.

[2] Based on an IBM Benchmark tool

4. EDUCATION, LEARNING, QUALIFICATIONS, AND THE LABOUR MARKET

4.1 The regional frames

The educational qualifications in the region are, as mentioned in section 2.0, characterised by the following:

- The educational level is lower than the country average, although an increase has occurred, primarily in relation to the long-cycle educational programmes
- The share of long-cycle educational programmes is lower than the country average and the regions exhibit substantial variations

The labour market in northern Jutland is characterised by the following:

- The labour market for long-cycle educational programmes is reduced, not the least regarding those within the humanities and social sciences
- The labour market for specialised and advanced labour force is reduced and primarily revolves around a small number of knowledge institutions and high-technology businesses
- The share of businesses and organisations that have employees with long-cycle educational programmes is lower than the country average
- There is a regional overproduction of working power with long-cycle educational programmes, primarily within the humanities and social sciences

The regional action areas in future are:

- Efforts are under way to develop the market for long-cycle educational programmes as these are regarded as growth generators in relation to maintaining and attracting qualified labour but also as the driving force for socio-economic development
- Efforts are under way to develop options within continuing education and further education in order that the labour force's competence skills become enhanced
- Efforts are under way to strengthen businesses and the labour market through entrepreneurial initiatives
- The cooperation between the university, county/municipalities and businesses has been extended

From interviews it is evident that *"one of the biggest challenges for the northern Jutland region has been to reduce the unemployment rate in the region and even if they have succeeded in reducing extra unemployment their unemployment rate is still higher than the country average. One of the main driving forces in creating regional growth and development is education and competence development as there in future will be made demands on businesses and the labour force's competence skills which will make educational level a central competition parameter."*

4.2. The universities' strategic frames

As is apparent from the university's strategy, the university will offer and develop a wide range of educational programmes adjusted to societal needs and educate students to reach the highest competence level.

Extracts from Aalborg University's strategy

- "To offer a wide range of both academic and business-oriented educational programmes characterised by demands from the students and relevance and applicability in relation to societal needs
- To supplement with continuing education and further education in cases of sustainable needs
- To educate graduates with the highest professional and social competence skills
- To integrate the entrepreneurial culture into the educational programmes and stimulate graduates to test ideas"

Great importance is thus attached to the significance that the societal needs present in relation to the development of new and existing educational programmes, which has been a central point in the university's educational strategy throughout the years. The university's development of new educational programmes is characterised by the fact that a proactive and dynamic development of new educational programmes take place, in order to comply with the changes in societal needs. The university's openness and full cooperation with external stakeholders as well as its fundamental educational concept, which rests on inter-disciplinarity and problem orientation, are important to creativity and inventive thinking within the educational area.

The university's educational and learning concept has, as mentioned in section 3.4.5, since the beginning been built on the problem-oriented project work where the students work with problem areas in groups. This is a way of studying that enables the students to acquire qualifications that very much correspond to those requested by the labour market. In this manner the students acquire skills throughout their education that will enable them to be incorporated as competent employees in businesses after having finished their educational programmes, without any subsequent induction training.

The university is also very aware of challenges that globalisation, innovation and development prompt in relation to the supply of educational programmes and the contents of these. These challenges entail that the university will have to offer educational programmes that contribute to the region's and general society's competitiveness in relation to creativity and innovation which impose very high demands on the quality and contents of the educational programmes. For this reason the educational programmes must continuously be adjusted and developed to match the changed conditions in order that unique educational programmes can be developed and contribute to making a difference in the global competition.

4.3 The regional dimension in educational programmes

The university's educational concept, which is based on inter-disciplinary project work in groups, is central in the understanding of the regional dimensions of the educational portfolio and the way in which the contents of the educational programmes integrate regional dimensions; *"The Aalborg Model's project-oriented way of studying was developed in the 1970s and is characterised by the fact that up to 50% of the study work is problem-oriented project work. Here the students work in teams and have their starting point in externally defined problem areas which most frequently have been developed in a regional context and dialogues with actors from the outside world."*

The importance of this working method is recognised in the fact that *"the university has 13,000 students and there are constantly 2-3,000 ongoing projects that primarily deal with external problem areas"*.
The method involved with project work is thus important to the development and communication of knowledge between the university and regional actors as well as an important learning process for both students and regional stakeholders.

4.3.1 The regional dimension in the educational portfolio

The combination of national and regional societal needs constitute an important factor in the development of the university's educational programmes as the university continuously develops its educational programmes in relation to changes in societal needs.

It has from the very first day been important to the university as well as the regional leaders of the initiative to ensure the development of a university with a wide-ranging educational portfolio that would cover all main areas.

First of all this was meant to give youngsters in the region the options of further and higher education, and in this way contribute to the enhancement of the educational level but also to maintain youngsters in the region.

In addition, complying with regional needs for academic labour force in the region was important as it was hard to attract such from the two larger university towns.

Second, this was meant to fulfil societal needs for development and renewal of the region by means of developing qualifications and competence skills. In other words, it was a kind of development that was justified by the need for readjustment and renewal in northern Jutland and/or a similar need in western Denmark.

The university's establishment of engineering educational programmes at master's level reflected the fact that the university wanted to contribute to a west Danish need for graduated engineers. The reason for a west Danish engineering educational programme is recognised in the fact that the main part of the industrial production from the mid 1960s was localised in western Denmark and that it increasingly became difficult to attract engineers from the metropolitan region.

The university has thus since its opening in 1974 actively been a part of establishing educational programmes that comply with local needs for specialised competence skills and qualifications within both existing industries and new growth industries. This is a development that has taken place in close interaction with regional trade and labour market organisations and regional initiatives in relation to the promotion of trade and it shows a number of those limitations that can be associated with developing research based educational programmes for specific regional needs.

The university is characterised by exhibiting a very proactive behaviour in relation to developing new educational programmes that can contribute to the fulfilment of new and existing societal needs. This proactive behaviour is based on the problem based learning model which again is based on inter-disciplinary, problem-oriented project studies combined with professional courses. The university has thus been able to differentiate its supply of educational programmes in relation to the existing supply of educational programmes. This differentiation has made it possible to develop educational programmes adjusted to the new societal needs as well as to offer educational programmes within fields that traditionally have difficulties obtaining a ministerial approval of new regional offers.

Thus, within the area of social sciences several new educational programmes at master's level have been developed, especially two of them need mentioning: innovation and entrepreneurship.

Within the area of technical science a number of educational programmes have been developed, e.g. global business development which is on the borderline of engineering and management, and engineering psychology, which builds a bridge between engineering and the humanities. Architecture & Design educational programmes constitute other significant innovative features that bring the region new kinds of competence skills and qualifications that are important to both business and urban development. These are educational programmes that integrate engineering with the more soft fields related to design and architecture.

Within the humanities educational programmes aimed at businesses and organisations have been established; they combine traditional humanistic qualifications with e.g. IT and communication. In this way the humanities' educational profile is characterised by the fact that 75% of the students study educational programmes directed at work functions outside the educational sector.

But the danger in establishing educational programmes in a regional – and more short-sighted – need is that even if the educational programme is established quickly the demand and need might have disappeared by the time the educational programme has been initiated. Below are given two examples of this.

The fishery engineering educational programme
Within the existing industries the establishment of a fishery engineering educational programme was regarded as a mean to promote readjustment and renewal within a dominant competence cluster. It was a cluster of great importance to the regional development by having a large number of businesses and workplaces. It was in view of this that the university developed a special educational programme that would cover the regional needs and stakeholder interests. The basis for the initiative was that the fishing industry constituted a regional competence cluster in northern Jutland which was squeezed by international competition and regulations for which reason a special educational programme was needed: an educational programme that would improve the possibilities for renewal and adjustment of the many businesses and sub-industries within the fishing industry.

The establishment of the educational programme took place simultaneously with the university's involvement in the establishment of a research and development department related to the North Sea Center in Hirtshals ("Nordsoecenteret"). Despite the fact that trade organisation and actors within promotion of trade had taken the initiative to the educational programme and given assurances that the need existed it turned out that there was no need for such an educational programme for which reason it was not initiated.

Engineering specialisation in wireless communication
Another area in which the regional (and national) actors wanted to promote the industry by developing specific competence skills and qualifications was within wireless communication, as there here seemed to be big and unexploited growth potentials. In this view Aalborg University established an advanced and specialised master's programme that matched these needs but due to changing business conditions the priorities of the businesses changed as well and the foundation for initiating the educational programme became non-existent.

These two cases show that the university is open towards cooperating on developing educational programmes that are directed at specific regional needs but these needs may prove to be either too insignificant or too momentary in relation to the industries in question. Long-standing experiences in establishing regional specialisations have, however, not intimidated the university from entering into a dialogue with regional stakeholders on developing new educational programmes directed at special, regional needs.

In recent years the university has developed proposals for two new educational programmes that have specific needs from northern Jutland as their starting point.

Educational programme within industry specialised medicine
The first educational programme is a new medicine programme with industry specialisation which is developed in view of a national need expressed by the industry. This need could be combined with the university's wish to develop competence skills within the field of medicine and in this way strengthen educational programmes and research within the entire field of health science technology. The educational programme was approved in the autumn of 2005.

Educational programme within tourism
The other educational programme is within tourism and is developed to comply with a need for giving industry and the region a labour force with higher qualifications. These qualifications are regarded as being important in the promotion of the industry's ability to develop products and concepts in relation to the continuous need for events and creativity.

The university is thus actively involved in developing new educational programmes directed at specific regional needs, but such a development is restricted by a number of factors:

- the regional labour markets are small and thus vulnerable to changes in the economic situation
- the regional needs may be in contrast to institutional interests belonging to institutions that already offer the kind of educational programme in question

In relation to developing specialised and advanced educational programmes, the regional conditions may seem inhibitive as these needs only to a very limited degree are present in the region. Thus there may be a regional limited interest and competence in relation to supporting such initiatives which may have an inhibitory effect on the development of advanced and future-oriented educational programmes. Examples of this kind of inhibitory effect:

MIKE
There is a weak demand from local students for the new master's programmes in innovation and entrepreneurship. The initiation of the educational programme has primarily been due to the fact that it has been possible to attract foreign students as a consequence of the international cutting-edge competence research that is attributed to the educational environment.

Architecture & Design
The educational programmes within Architecture & Design that are directed at creative lines of business have massive student interest, also locally. Here lies the regional limitation in the lack of dynamic businesses in the region that can interact with the educational and research environments and establish some dynamic study and learning environments. The students are consequently forced to looking outside the region in their project work and subsequent employment.

4.3.2 Project work and the regional dimension

The project-oriented working method gives the educational programmes a totally unique regional dimension as the project work means that the students, up to half of their study time, work with problem areas that have external/regional dimensions.

The regional importance of this work may not be overrated as projects constitute the source of development of competence skills and qualifications in the region among students, businesses and other stakeholders that are an active and/or passive part of the corporation.

The fact that the projects contain a substantial potential resource for the development of the region and its actors is recognised through the large amount of projects that operate with regional problem areas.

The student projects at the Faculty of Social Sciences are directed at market, authorities and civil society. Within each of these areas there have been made hundreds of projects that shed light on problem areas that are important to the development of regional competence skills and qualifications.

In relation to this, one of the interviewees state that at *"the Faculty of Social Sciences there are several hundreds of analyses of businesses' market potentials"* and that there *"parallel to this are several analyses of the development within the field of social and health care."*

Within the field of business economics it has been the case for many years that there is a special semester during which the students work with problem areas in selected businesses in the region. *"20-25 businesses participate each semester"* and *"the evaluations show that it gives the students a professional benefit and the participating businesses a positive input."*

Within the areas of technical science, a wide range of projects in relation to the different educational programmes' specialisations are being worked on. Several projects within businesses and organisations are part of the engineering educational programmes and contribute to shedding light on concrete problem areas. The *"primary effect of the many projects is recognised in the students' ability to investigate and identify*

factors and circumstances that form the basis for the chosen problem areas and to a minor extent their specific suggested solutions.

Within the humanities there are many projects that provide one with knowledge on businesses and organisations' communication and international relations.

The quality of the student projects increases during the educational programme but experience shows that student projects contribute to external stakeholders' learning processes already after a couple of years of studying. Since students have to pass their exam in the accomplished projects, project contents have to be able to live up to the standards within the study programme in question. This also implies that businesses cannot choose freely the problem area but this must be worked out in close cooperation between students, counsellor and the operating business. Thus this should not be regarded as ordinary consultancy work.

4.4 Mechanisms to promote the regional dimensions in the educational programmes

The regional dialogue on educational programmes and their contents is communicated through strategic and operational networks.[3]

At the strategic level the need is communicated through various contact committees and institutional corporations between AAU and regional/societal stakeholders. The development of new educational programmes within fishery, wireless communication and medicine are examples of this.

At the operational level new ideas for new educational programmes are developed, e.g. Architecture & Design, MIKE, global business development and communication, aided by the existing network in the various research and educational environments.

In its effort to improve its educational programmes' quality, the university increasingly makes use of external user panels that are given the task of giving advice and counsel in relation to present as well as future needs. These user panels are very widespread within the humanities where they contribute to a continuous development of the educational programmes.

The Knowledge Exchange Office has a pivotal role in administering and organising networks within the educational arena which are intended to bring together researchers and teachers from the university with teachers from the upper secondary school as well as other shorter, medium-length and further educational programmes. Through these networks teachers from the university, upper secondary schools, commercial schools, technical schools, adult education centres and higher preparatory courses are able to meet.

Educational networks
The networks constitute the frame for a wide variety of activities, from general network meetings, feature days, exchange of experiences in relation to educational methods, professional discussions, visits at individual institutions, the possibility of participating in educational programmes, setting up trainee programmes for students, distribution of information through newsletters to general dialogues across educational institutions.

Educational networks can be found within the following areas: mathematics, IT, electronics, Danish, chemistry and biology. In addition, a more transverse network is established on the basis of the Department of Education and Learning which focuses on learning and didactics. Especially the network related to mathematics is student-oriented in relation to the relevant educational institutions where the university among other things defines annual assignments and makes data material available to the students.

[3] See sections on regional cooperations, contact committees, etc.

4.4.1 Project cooperation with external stakeholders

In order to promote the cooperation with regional stakeholders and give them a better opportunity of entering into a dialogue with the students, various essential initiatives in relation to student offers have been established. These offers are primarily of use within educational programmes where the direct contact to external stakeholders is limited. Within engineering and business educational programmes, several networks have been established which make project work in external businesses a norm rather than an exception. Within the fields of the humanities and the social sciences, the tendency to use the afore-mentioned offers to get in contact with external partners is increasing.

Examples of essential initiatives are found below:

The Science Shop establishes relationships to external stakeholders, including private businesses that request project cooperation. The science shop has a large number of concrete project proposals of possible cooperation partners. In addition, a **Business Forum** has been established; it provides contact information to businesses and students. The Science Shop, the Business Forum and the **Career Counselling Center** have been involved in a national project related to establishing better contact between small and medium-sized businesses through the **Project Gateway**. The Business Forum is also in charge of the cooperation with ECNord which is designed to promote the cooperation between students and small and medium-sized businesses. In that connection ECNord is able to draw on its extensive network of small and medium-sized businesses in connection with their activities within technology and promotion of trade. ECNord has people located at the university for half a day per month. As students and teachers do not show up by themselves ECNord must be proactive in relation to the educational environments. **Topjob** is another kind of contact as this is related to placement and career services: businesses are here aided in finding the right employee and students are aided in finding the right student job. In addition there is an initiative meant to find more internships.

4.5 Student recruitment

The regional importance of the university is recognised in the significant increase in the number of youngsters within the region that choose to initiate a long-cycle education. The proximity of the university reduces the barriers for choosing a long-cycle education – not the least in relation to groups that do not have the tradition of a long-cycle education.

This is a development that has been further strengthened by the active cooperation that since the university's opening has been between the university and regional stakeholders that have had a mutual interest in exploiting the possibilities that the university's educational programmes offered the youngsters.

The cooperation has found expression in the establishment of educational networks and partnerships, campaigns, initiatives and bridge building. The amount of resources used on recruiting youngsters for the educational programmes is on the increase.

For several years the university has undertaken bridge building activities in which more than 750 students from about 50 upper secondary schools in the counties of northern Jutland, Viborg and Ringkoebing that result in visits to nearly 30 different educational programmes at the university in the weeks 43 and 44. The students are given the opportunity of becoming acquainted with the university, experiencing the environment and education within a field of study that was chosen beforehand.

Additionally, various open house events are arranged and as something new the students took over the teaching of one subject at the upper secondary school of Nykoebing Mors when the teachers left for further education. Beyond that the university organises "Universitarium" each summer; the aim here is to communicate knowledge about the technical and scientific educational programmes in a popular manner, primarily in relation to elementary schools.

4.6 Graduates and labour market

Graduates' qualifications and job opportunities have been an important aspect in the university's strategic planning. The background for this is partly due to the university's location in an area with relatively little demand for labour with a long-cycle education, and partly due to the specific education concept.

It has thus been of interest to investigate the quality of the educational programmes in relation to the development of the labour market. A comprehensive survey was conducted in 2002; it looked into how the quality of the educational programmes was perceived, both by graduates and the labour market. The survey provided documentation that the graduates through their study programme had obtained professional and personal qualifications that put them in great demand by the labour market. In this way the university and the outside world received confirmation that the Aalborg Model was able to produce graduates that had the qualifications that a modern society requests. In other words, these were qualifications that the traditional educational programmes were not able to provide to the same extent.

The comprehensive data was subsequently used to develop and adjust the study programmes. The expertise of the Vocational Counselling Office is now used on a continuous basis to conduct surveys within the various educational programmes in order to obtain new knowledge on employment and job opportunities, qualifications and need for competence skills, etc. This is a service that also is sold in the outside world in connection with national and western Danish evaluations of master's programmes belonging to the various educational institutions.

Graduates' Service is an offer free of charge for former students to receive newsletters from the university which contain information about further education and events.
The basis for this service was constituted by the fact that the university regards it as being important to support former students' needs for lifelong learning. Furthermore, the university considers its 50,000 former students as ambassadors for the university and thus they are important in relation to the interaction between the university and outside world.

A career fair is organised each year where more than 1,400 participating students are given the opportunity of obtaining knowledge on future job opportunities.

4.6.1 Project work and graduates

In the survey of graduates it was confirmed that the students through project work obtain a combination of professional, social and personal qualifications that make the graduates very well-suited for the demands that a modern business community put on employees' ability to work with problem areas in teams consisting of people with various professional backgrounds and also for a great flexibility in relation to work assignments and subject areas.

Apart from the project works' great importance in relation to competence skills and qualifications, project works are also of great importance to the development of the labour market:

1. The development of the labour market for further education.
   The effect of there constantly being 2000 ongoing projects each semester, primarily working with problem areas of the outside world, "*cannot be overrated. New business opportunities are created, new knowledge on how graduates can find use and thus new job opportunities.*"
   The many project cooperations give the businesses knowledge of the potentials in using students/graduates. This is particularly important to the great segment of small private and public businesses that do not traditionally employ academics. Project work thus contributes to breaking down a number of the barriers related to employing academics.

2. Retaining graduates in the region.
Project work means that the students attain knowledge on how their qualifications can find use as well a better insight into the various areas where they can employ their qualifications. This means that *"in terms of the students, they get knowledge on new opportunities within areas that might otherwise not have been obvious"* and thus they more easily can be retained in the region which only has limited job opportunities within the traditional academic areas.

4.7 Retaining graduates

The limited business and employment possibilities hold a central position in many of the university's initiatives within both research and education. Thus the university sees this as an important element in its societal commitment to contribute to the development of the business and employment possibilities for the highly educated in the region.

This commitment finds expression in the establishments of the many networks and centers that aim to promote regional development by attracting and retaining businesses and the highly educated as well as creating new workplaces by setting up new businesses.

The university has initiated a large number of initiatives within the area of entrepreneurship with the aim of promoting the graduates' interests and abilities to start up their own businesses. In recent years, these initiatives have been intensified through cooperation with the regional system of promotion of trade in relation to a wide variety of initiatives aimed at promoting entrepreneurship, including establishment of incubators directed at various kinds of businesses and educational programmes.

The following gives examples of establishments of new incubators which support entrepreneurship within the areas event economy and health:

As described earlier a new concept for embedded incubators has been developed; its purpose is to help students/recent graduates initiate projects that will form the basis for business development and thus create a real alternative to a job as an employee, which also might extract them from the region.

4.8 Further and continuing educational programmes

Further and continuing educational programmes constitute a significant element in the regional development plan. The university is appointed particular focus in connection with the developing and upgrading the competence skills of businesses and the labour force. Intensified global competition increases the need for enhancing the qualifications of that part of the population with short-cycle and medium-length education as well as maintaining and updating qualifications for those with a long-cycle education.

Further and continuing educational programmes at the university constitute a central part of the university's educational development. The university focuses on being able to offer a wide variety of master's programmes and continuing educational programmes to comply with the changes in the societal needs. In coming years, there will thus be offered at least three new master's programmes and initiated new kinds of continuing educational programmes, which are in accordance with the development contract.

4.8.1 Master's programmes

Master's programmes are primarily organised as part time studies and distance learning which makes it possible to follow the educational programme while also having a job and living in other parts of the country. A master's programme takes two years but the student effort corresponds to a one-year full time study, and for the most part the study activities are based on distance learning.

Master's programmes are to a larger extent than the traditional educational programmes able to recruit students from all parts of the country. Master's programmes also reach wider in the Jutland-Funen region which is of particular importance to the outlying areas. The result of distance learning is that the educational programmes have been able to attract students from the Oresund region in relation to areas in which Aalborg University has developed special competence skills and study programmes as within health science technology, medialogy, education and learning.

4.8.2 Short-cycle continuing educational programmes

Short-cycle continuing educational programmes play a pivotal role in relation to developing and upgrading qualifications and competence skills in private businesses. The primary purpose of the courses is to upgrade people's competence skills within specific areas in relation to specific businesses and job opportunities. This implies a varied supply of courses from standardised courses to tailor-made courses for individual use.

Within these course segments Aalborg University has developed a special competence advantage that has its basis in the user's concrete situation. *"Within the area of further education AAU can be characterised as a front-runner and thus it is no coincidence that IDA has chosen to cooperate with AAU in relation to the Lonely Wolf project."* This advantage is based on the university's fundamental education concept: The Aalborg Model, which within the area of continuing educational programmes has developed into a concept for "Facilitated Workbased Learning".

The programme ELITE that was initiated in 2001 and has been responsible for organising continuing educational programmes within IT and electronics has played a pivotal role in the development of these new concepts and has also been a driving force in the development of a model to identify the competence needs in businesses. Experience shows that many businesses have difficulties identifying their need for qualifications. Since 2004 ELITE has been in charge of organising and coordinating short-cycle continuing educational programmes within the entire area of technical science and by the end of 2005 it was decided that ELITE should cover the entire university.

ELITE
ELITE was established in 2001 in relation to continuing educational programmes within IT and electronics on the basis of a national initiative to promote these activities. The ELITE programme aimed primarily at developing master's programmes, but AAU had experienced that there was greater need for courses of short duration and was granted the right to develop these.
Thus, from the beginning there has been a focus on developing educational programmes adjusted to businesses. ELITE has great expertise within the area and is focused on a situation-specific concept for the courses based on "facilitated workbased learning". The concept has been developed through involvement with several EU projects under the Leonardo programme.

Lonely Wolf is an example of developing courses for minor businesses in the outlying areas. Lonely Wolf has been developed in cooperation with the Danish association of engineers and the Danish organisation of promotion of trade.

Lonely Wolf
The target group of this course is minor businesses with only one engineer. Such businesses need creativity and ability to renew themselves; it is decisive for the development of the business at the same time as production optimization is decisive for the development of the business. The decisive parameter for these businesses is time, and for that reason a concept has been developed which enables competence development in the daily work life together with the building up of networks to support the individual engineer.

As part of the educational programme, a tailor-made competence programme is developed for the individual engineer, and a regional network of colleagues is established which can be used as professional sparring partners for the exchange of experience.

4.9. A SWOT analysis of the university and the region in relation to education, learning, the labour market and competence

Strengths	**Opportunities**
▪ Seen from a business perspective, northern Jutland has a relatively well-functioning education sector. ▪ There are a fair number of training places. ▪ There is access to highly qualified university graduates/labour. ▪ There is access to an inter-disciplinary educational environment ▪ Both Aalborg University and the vocational schools in northern Jutland have high competence skills.	▪ Better exploitation of the interaction between business employees and knowledge environments. ▪ The new industry-oriented educational programme within medicine creates a spin off in the industry. ▪ Retention of graduates. ▪ Broader exploitation of ELITE's competence skills and possible cooperations with vocational schools, etc. ▪ Increased focus on coordination and educational programmes adjusted to industry needs. ▪ Increased application of establishing networks in order to increase the competence level.
Weaknesses	**Threats**
▪ Many have a short-cycle educational level. ▪ There is a geographically skewed educational level. ▪ Limited geographical mobility. ▪ Youngsters' educational level increases less in northern Jutland than Denmark in general. ▪ Poor competence match – bottlenecks and unemployed can be found within the same industry. ▪ Poor framework conditions in relation to attraction and availability on the labour market. ▪ Relatively weak interaction between the business community and the university/other educational institutions.	▪ Inability to maintain labour force "Brain drain", for example within the academic area. Graduates move away from the area. ▪ Problems with recruiting sufficiently many future students in relation to the technical scientific area. ▪ The success of new initiatives depends on the financial trading environment. ▪ The financial situation entails that many vocational schools have continuing difficulties in satisfying business needs. ▪ Lacking competence level development will inhibit growth.

5. THE UNIVERSITY'S CONTRIBUTION TO THE SOCIAL, CULTURAL, AND ENVIRONMENTAL DEVELOPMENT

5.1 The regional frames

The skewed socio-economic development reflected in the formulations about a distorted Denmark is an essential reason for the Jutland-Funen industrial cooperation. The phrase, distorted Denmark, means that there is a geographically uneven development in the economy, occupation, and living conditions. It seems to be harder to break this "geographical inheritance" if it is not possible to break the decisive patterns behind this development.

Culture, social conditions, and environment play an ever increasing role in this development as they constitute essential prerequisites for the Jutland-Funen area to maintain and attract creative persons who have the necessary potential to break the development through cultural and social innovations and renewal.

The universities play a central role as distributors of knowledge and competence in a knowledge society, and in cooperation with regional stakeholders, they can create better prerequisites for creative development and dynamism. And at the same time they can contribute to northern Jutland's vision of culture as a dynamic variable in social developments that by means of artistic quality creates renewal, growth and a new cooperation partners. The vision consists of the following features:

- The region must consequently be a leader in relation to cooperations between culture, nature, business and education
- The region will obtain a more impressive and creative image
- Creating an educational lead within the cultural area, a common northern Jutland identity and a common set of values that are compatible with the knowledge and growth society of the future

5.2 The university's frames

The university act sets the stage for a broad interpretation of the universities that also involves the role as cultural distributors as well as a visual profiling of the public utility. The role as cultural distributor is only to a small extent reflected in the existing development contract. The university's role as a cultural distributor is further limited by the fact that no direct funds are granted for this purpose. Despite the financial pressure, Aalborg University plans to locate the creative educational programmes in the forthcoming "Musikkens Hus" (House of Music) and thereby contribute to developing a creative environment.

Musikkens Hus
The whole idea of a beautiful and spectacular block of buildings bearing the name "Musikkens Hus" (House of Music) by Aalborg's water front is a unique idea on bringing educational and research institutions (the Academy of Music, Aalborg, "Aalborg Symfoniorkester" – Aalborg Symphony Orchestra, and Aalborg University with their educational programmes within music, music therapy and Architecture & Design) together with other cultural institutions within the music area. The house will consist of two building units that will enter into a dynamic cooperation in order that the whole house will be able to swing and buzz with activity both day and night. Musikkens Hus will be located by the quay in Aalborg. The house will be facing both the water and the city, and a promenade along the water front will be made which will also provide room for events that do not have their basis in the music universe but that in a broad sense can contribute to developing the cultural life. The driving force behind Musikkens Hus is Aalborg University's former Rector.

The intensity in the university's role as a cultural distributor lies in its ability to attract and maintain creative people as well as in its ability to create environments that stimulate development and creativity. These environments are characterised by variety, diversity and challenges.

5.3 Socio-economic development

The university's contribution to the social development is made directly because the university is a big workplace and educational center and indirectly through its impact upon development of companies and occupations.

The direct impact of the university is significant as it as a workplace employs many highly educated employees and attracts many students. This implies that the university contributes to changing the socio-economic development by attracting many highly educated people who are attractive for several reasons.

First, the highly educated are attractive because their average income is higher than the average which contributes to an increase in the local income and tax base.

AAU has with a budget of approximately DKK 1,426,000 and 2,090 employees a significant impact on the regional socio-economics which further is affected by 13,000 students that are attracted to and maintained in the area. The many employees imply that the number of highly educated people and high incomes is increased particularly in the Aalborg area. And this means an increase in the average income and general basis of taxation.

The indirect effect that stems from the growth in the knowledge intensive business clusters is even bigger, and the development, if the IT cluster serves as good proof of this.

The IT industries in Aalborg and northern Jutland have through the 1990s grown to become the third largest IT area in Denmark, only surpassed by the metropolitan area and the Aarhus area. The IT industries operate as a growth generator for the socio-economic development having resulted in an employment growth of 50% in the northern Jutland region and 60% in the Aalborg area over the last 10 years. This growth is further boosted socio-economically by the fact that the income is 25% above average. This has for the municipality of Aalborg meant an overall increased income despite increased unemployment: *"The university has had a positive effect on the economic development in Aalborg through its promotion of high-technology industries that have a higher income than traditional industries."*

Secondly, the highly educated act as "cultural distributors" that represent another kind of lifestyle with focus on developing the civil society and its cultural activities. This is a kind of lifestyle that contributes to creating social and cultural frames that are attractive to other groups of highly educated. There is thus a tendency that these groups focus more on the possibilities for cultural and social events in city spaces.

5.4 City development

In recent years, the city of Aalborg has experienced a revitalisation which makes it more attractive to the creative growth layer in knowledge economics. This is a process where the university plays an active role through the way it affects the city and its space.

First, the university acts as a magnet for highly educated people as it offers a number of industrial and cultural events that contribute to lifelong learning which increasingly is regarded as necessary for personal development and one's career track.

Secondly, the university contributes to the development of the city's physical and social space. Here the establishment of Architecture & Design plays a central role.

- The university contributes to the development of cultural environments associated with "Musikkens Hus" (House of Music) by locating the creative educational programmes in Musikkens Hus and in

this way contribute to the creation of a creative centre of excellence in the city, including the rental income from the building

- Architecture & Design contributes by establishing a Joern Utzon Center in respect of the world famous Danish architect which will take part in profiling Aalborg in relation to the creative industries.

- The students and teachers are involved with the development and planning of the city environment through projects, conferences and seminars that contribute to the debate on Aalborg's future identity.

Thirdly, the university contributes to the development of the city's diversity as the attraction of researchers and students from foreign cultures contributes to an enrichment of the city life. The attraction of international researchers and students may consequently be able to generate an effect on the development, as they constitute a factor in the variation and diversity that other areas cannot offer. This might also have had an influence on the city of Aalborg's new brand.

It is important that the city and the university maintain and develop a separate identity based on fundamental values in order that the city does not strive to become a mini metropolis. Also here the university has something to offer through its distinct identity as an inter-disciplinary, open and cooperating university that attracts researchers who focus on the possibility for openness and network.

5.5 Cultural development

The universities are distributors of cultural development both through research and education and through attraction and retention of youngsters and employees interested in arts, culture and events.

Attraction of students and employees interested in culture and event activities is an essential motivating power for the development of a rich and varied cultural life. Thus, there is a tendency that students and to some extent also employees constitute a cultural growth layer for cultural entrepreneurship in a broad sense. In addition, the students and employees are heavy users of culture and event products which contribute to creating a large and varied market.

In relation to the wide variety of cultural events, it is emphasized in the Regional Cultural Agreement:

- that "Studenterhuset" (the student house), "Spillestedet Skraaen" (the music venue called "Skraaen"), etc. are active players in relation to the development of the music environment and the youth environment in Aalborg
- that many youngsters constitute an important growth layer in relation to displaying the many different kinds of cultural activities in Aalborg
- that the university is very active in the development of the cultural frames in Aalborg and thus participates actively in developing and designing the Regional Cultural Agreement. It is emphasized that the university is more actively involved in developing cultural activities than otherwise known from other parts of Denmark
- that the university contributes actively to the development of a creative environment around Musikkens Hus by placing its creative educational programmes in the house
- that the university's employees participate actively in organising cultural organisations and activities through directorships, memberships, etc.

The Regional Cultural Agreement 2005-2008
The Regional Cultural Agreement for Northern Jutland, "Kulturaftale Nordjylland", is a development agreement that will contribute to increasing the quality and visibility of the entire cultural area in the region. This applies to development in relation to art, theatre, music, museums and sports.

The cultural agreement focuses on making culture a lever to obtain renewal, growth and new partnerships in northern Jutland. The goal is that culture will contribute to the promotion of a coherent development within culture, education and business in northern Jutland.

The cultural agreement thus contains five themes that can be converted into specific projects within and across: Children and culture, youngsters and culture, talent management and growth layers, culture and business and finally culture and the event economy.

The Ministry of Culture entered into the agreement which includes all 27 municipalities in northern Jutland, and the Ministry of Culture also participated in the underlying process. Overall it is expected that there will be around DKK 5 million per year to realise the goals. The money partly comes from the municipalities and the county as each contributes with DKK 2.50 per inhabitant per year, and partly from lottery grants and other state funds where it is possible to apply for financial support.

5.5.1 Culture as a regional development generator
The Regional Cultural Agreement also focuses on the cultural role in the development of industries where the university cooperates with the municipality of Aalborg, Aalborg's trade council, the county of northern Jutland and the stakeholders in the cultural agreement. This cooperation contributed to further strengthen the regional interests within the event economy and has lead to the fact that the region, as the first one, has been able to coordinate activities to become a row of coherent development initiatives:

- Development of a regional development strategy within the event economy
- Development of a center for the event economy at the university (ExCITe)
- Development of a regional competence plan that ensures coherent educational programmes within the value chain of the event economy
- Establishment of a hothouse for entrepreneurs within the culture and event area

Networks and partnership relations have been established through these activities, and they have made it possible to develop united initiatives for northern Jutland. Aalborg's trade council, ExCITe and the Regional Cultural Agreement have recently been granted DKK 7.5 million for projects within the event economy in northern Jutland.

5.6 Environmental development.
The university is leading the field within a number of areas related to environmental planning and development and energy activities. The university's role in relation to developing environmental and sustainable initiatives in the region is primarily communicated through a number of cooperation and survey projects as well as through the production of graduates who possess the competence and the involvement in the environmental area. This means that the region has been able to build up competence skills and networks that carry the knowledge and ability to promote a sustainable development. Throughout the years there have been a number of initiatives related to environmental and energy planning and development in both the public and the private sector that are responsible for the regional environmental performance.

Center for Intelligent Transport Systems (hereinafter referred to as CITS) also plays an active role in the development of planning infrastructure and transport and is singled out as one of the competence centres with a central role in the regional development strategy.

The tourist industry is one of the great regional industries where on compound concept and marketing of green tourism has been developed.

The university as a business does not work as a "front runner" within environmental areas. The primary effect on the environment is constituted by the effect of research and educational activities of national stature. In cooperation with local authorities and businesses, this has, among other things, contributed to attracting public funds for energy, environment and natural activities.

Another effect of the educational environment is the strengthening of the civil society's environmental competence as the environmental awareness has been increased and regional environmental initiatives have been promoted.

5.7 A SWOT analysis of the university and the region within the social, cultural and environmental development

Strengths	**Opportunities**
▪ Northern Jutland has a number of cultural environments if national interest. ▪ From here follows a local identity associated with the valuable environments. ▪ Northern Jutland is surrounded by the ocean on three sides – this is Denmark's most beautiful stretch of coast. ▪ There are isolated examples of public/private partnerships within the environmental area. ▪ Varied experience products.	▪ More widespread public/private partnerships (today examples can be found within the environmental area). ▪ Use the university as frontline figure in the application of a sustainable, environmental development. ▪ Germinating attention to "real life test beds" within the environmental and energy area. ▪ More extensive employment of IT and communication technology.
Weaknesses	**Threats**
▪ Lacking awareness of and missing information on the cultural-historical sights.	▪ Prejudices like "what does culture have to do with business development?" ▪ Musikkens Hus is an example as it has been confronted with objections from "the man in the street" ▪ The competition between the main city (Aalborg) and the region. ▪ A regional distortion.

6. BUILDING UP REGIONAL CAPACITIES

6.1 The regional framework conditions

The northern Jutland region is characterised by a significant focus on building up regional capacities. This involves a cooperation with trade and labour market organisations, public institutions and authorities as well as private and civil organisations.

The whole region was very active in the process of getting a university in the region as regional stakeholders saw the university as one of the means to carry out a necessary readjustment and renewal of the region. This was a transformation that could bring the region into line with the eastern parts of Denmark.

The university has thus from the beginning been regarded as an important partner in building up regional capacities at both strategic and operational levels. The university participates in competence development through a number of strategic fora in which it contributes with competence skills and knowledge.

Throughout the years the university has hence contributed with persons and competence skills for a number of different development programmes apart from numerous contributions and cooperations at more informal levels.

6.2 The university's frames

The new University Act demands that the university sets up goals and makes its public utility more visible, but it does not support these activities through special grants. The universities regard their primary social function as being a producer of new knowledge and graduates at an internationally professional level for which reason they see networks and cooperations as means to promote this development. In relation to the universities, this means that networking is not a question of geographical distances but rather a question of access to knowledge and important information from the various research and educational activities. It is also a question of mechanisms to communicate and share knowledge with external stakeholders.

This means that the university perceives itself as a "Network University" that ties resources, persons and activities together, regardless of the geographical dimensions, because the university's linkage between the global and the regional dimension is very important:

- The global dimension is necessary for the university to produce knowledge and competence skills that in the long run will maintain the university's role as an interesting cooperation partner
- The local dimension is necessary because it is a prerequisite for the university to maintain and develop competence skills that makes it possible to be attractive in the global knowledge process

The university has from the beginning wanted to repay the regional support and confidence by engaging itself in activities that are important for building up the regional competence and by establishing a number of formal cooperation relations to the regional stakeholders by way of various contact committees.

Over time, these liaison bodies have been given a more informative role as the university and the regional stakeholders gradually have been building up new networks and institutions to promote regional development.

Simultaneously with these more formalised activities a complex pattern of relations and activities has been developed; this pattern is based on research and student activities in the various environments and contributes to building up regional capacities.

6.3 Building up capacities

In recent years the interaction between the university and regional stakeholders has undergone a strong development from being more general and formal relations to being strategic and operational networks of great importance to the universities and the regional stakeholders' possibilities of reacting to challenges that regions and universities face in light of the constantly increasing development within globalisation, technology and innovation.

6.3.1 Northern Jutland's Innovation Forum – delegation of the county's business and innovation policy

Northern Jutland's Innovation Forum (hereinafter referred to as NIF) was established in 2002 as a forum for developing innovation in northern Jutland. Moves to its establishment were initiated by the county of northern Jutland, the municipality of Aalborg, NOVI and the university. The basis for its establishment was a need for a forum in which the central innovation political actors could develop a strategic discussion on northern Jutland's future strategy. The purpose was to create a space for dialogue and knowledge sharing and thus an opportunity for developing a mutual language and frameworks that make it possible to overcome the institutional barriers.

The result of this experiment was very positive as NIF succeeded in putting forward visions and goals for the future of northern Jutland. Based on the university's cutting-edge competence, the goals encompassed new growth areas that played a central role in combination with an initiative to develop existing industries. The reason that it was possible to delegate the county's industrial policy was the very positive experiences from developing the competence cluster within wireless communication, as well as from the cooperation with the university and actors in the innovation network on industrial policy strategies and initiatives.

The concept from NIP has formed the basis for the new structural reform's Growth Fora which were established as institutions that draw out industrial and competence strategies in the new regions.

6.3.2 Networks within industrial areas

Through development, exchange and sharing of knowledge between businesses, institutions and authorities, networks within a number of industrial areas to promote the competitiveness of industrial areas have been developed. These kinds of networks are now spreading out and various professional and strategic networks apart from those that the university initiated can be found in the region.

6.3.2.1 IT and communication technology forum

The IT and communication technology sector is a significant growth driver that creates many new businesses and workplaces in Aalborg. Employment within this sector has grown by 60% within the last 10 years and there still seems to be substantial growth potentials for the area.
In order to exploit these potentials, central actors like businesses and the university have joined forces to establish an IT and communication technology forum which is a joint platform for businesses and institutions in the area to exploit possibilities for synergy through a broad network cooperation. The network does not regard itself as a competitor to the existing cooperation within wireless communication but more as a complementary network intended to support a broader scope of the IT and communication technology area and make the areas potentials more visible as well as creating a more comprehensive cooperation between the public and private part of the IT and communication technology area.

6.3.2.2 Health science technology

Within the area of health science technology research, competence skills have primarily been distributed across hospitals, the university and a small number of businesses. This provides the basis for developing new

cooperations between the county and the university as the county is in charge of operating the hospitals while the university is in charge of research and development.

A cooperation between a county and a university traditionally has its focus on health and welfare services, but in the northern Jutland cooperation, the primary focus has been on establishing a competence cluster. The cooperation is organised by a network located in the county's business department and participants constitute central actors within systems of knowledge, promotion of trade and enterprise systems.

6.3.3 Research centres functioning as generators for cooperation between the university and industry

Research centres hold a pivotal role in the interaction between universities and the outside world as the centres are located in the interface between research and innovation interests.
On one hand, they have through researchers and research contacts obtained relations to research environments' long-term development of new knowledge, and on the other hand, they are tied up on shorter-term and application-specific objectives by means of goals and grants.

Exceptional success has been achieved with CISS that has its starting point in international cutting-edge competence skills within the Department of Computer Science and the Institute of Electronic Systems as well as the purpose of spreading knowledge to businesses in all of western Denmark.

An evaluation of the centres' effort shows that it has been possible within a short period of time to establish cooperation with businesses that overcome a number of traditional barriers for knowledge exchange and knowledge sharing. Thus it has been possible to successfully establish a cooperation in which

- the businesses regard cooperation as something positive for the development of their competitiveness
- more than half of the participating businesses are located outside the university cities
- nearly half of the participating businesses are small businesses with less than 50 employees

This is rather unusual for cooperations between universities and businesses seen in an international perspective. The interaction has been supported by a number of institutional factors. Thus it was required that the centres' projects had a duration of no longer than 18 months which is typical for innovation projects in small and medium-sized businesses while research based projects have time horizons of 5-10 years.

6.3.4 Network

The communication concept is built on network and cooperation, as a generator for development. Networks act as fora for communication and exchange of knowledge within specific research areas. Networks constitute a framework in which researchers and people from the business community and institutions can meet and organise activities such as network meetings, after-work meetings, feature days and professional events in relation to the newest research, etc.

The network model has proven itself useful in relation to generating interaction between researchers and people from the business community and institutions, and thus today, there are 24 networks within the Network Center with a total of approximately 2,800 members. Most networks are long-term and have been able to develop and build up knowledge and relations that are of increasing value to the involved partners.

The majority of the mentioned networks are directed at industrial businesses, but there are also networks directed at the educational sector, the administrative sector and employees at the university.

6.3.5 Greater interface with small and medium-sized businesses

Small and medium-sized businesses constitute at least 97% of the business community in northern Jutland and they also account for the majority of industries (with the exception of high-technology and knowledge-

intensive businesses) that still represent an unexploited target group for the university. The problem here is to reach the target group.

This is the basis of the initiation of the programme "The Road to Knowledge" in which a number of regional AAU contact centres have been set up in order that businesses can contact them easily or employees from the contact centres (in most cases probably commercial directors or similar persons) through their contacts with businesses can act as bridge builders to the university.

Even if the small and medium-sized business does not directly appear to be an attractive target group for the university (seen from a high-technology and resource based perspective) there are still many perspectives in this cooperation, not at least from businesses' point of view. They get access to a substantial pool of knowledge, a number of laboratories and not at least students.

6.3.6 Building up capacities in the educational system

An extension of the capacity within the educational field is presently taking place through a cooperation between the universities and the education system for further short-term education which contributes to the system's ability to promote development. Aalborg University has a large number of cooperation agreements with this kind of educational institution in Denmark. The development, however, is directed at more formal cooperations, and as can be seen now, among other things, a number of mergers in the national educational world have been planned.

First, cooperation entails an improvement of the educational system as it gets access to research based knowledge and dialogues with the universities within both the professional and the educational area.

Secondly, cooperation entails an improvement of the educational institutions' ability to support and provide service for small and medium-sized businesses.

Thirdly, cooperation entails that users of educational systems get better opportunities for combining different elements in educational systems and study across the existing institutional divisions.

Further, a number of specific networks within selected subjects at upper secondary schools have been developed; these organise common events in order to promote a professional and educational dialogue.

6.3.7 Cooperations between research institutions

6.3.7.1 Research

Research cooperations between research institutions enhance the university's ability to work with inter-disciplinary and cross-functional problem areas that contribute to the improvement of knowledge development and knowledge transfer. Participation in comprehensive programmes often takes place through cooperation across universities. In this way the programme Mobile Systems is a programme with several universities participating. The cooperation usually takes place at the international level.

6.3.7.2 Education

IT West is an example of how universities join forces in relation to developing a number of inter-disciplinary and cross-functional IT educational programmes for the business community. One of the intriguing initiatives within the educational programmes is that cooperation enables IT West to combine different educational programmes and benefit from the research environments in which the various universities have the cutting-edge competence to put together a course programme that the individual institution does not have the possibility to do.

Educational cooperation might also take place at the international level – for example, Aalborg University is involved with the development of Joint Master's Programmes through the European Consortium of Innovative Universities, referred to as ECIU. Thus, a joint master's programme within material research was initiated in 2005.

6.3.8 Cooperation between businesses and students

A number of initiatives to strengthen the cooperation between students and businesses have been developed. Especially small businesses get the opportunity of attaining competent labour (student jobs) and/or competent project benefits but also the students obtain a better understanding of theory versus practice in businesses.

In relation to Aalborg the turning point in this cooperation is the Aalborg Model with its inter-disciplinary problem-oriented project work that makes it attractive to work with problem areas obtained from a real business and solved in cooperation with external actors.

6.4 A SWOT analysis of the university and the region in relation regional capacities

Strengths	**Opportunities**
▪ Aalborg University = the Network University. ▪ Establishments of strategic contact fora between the university and the region. ▪ Efficient Triple Helix cooperations. ▪ Establishments of professional networks. ▪ Establishments of fora for clusters (IT and communication technology, BioMedCom). ▪ Establishments of more "business-oriented" research centres at AAU, e.g. CISS.	▪ Connecting regionalisation and globalisation. ▪ Make the new programme "The Road to Knowledge" more visible and ensure its use. ▪ Ensure better cooperation between regional educational institutions and the university.
Weaknesses	**Threats**
▪ Declining focus on remaining industries. ▪ Up to now incentives for researchers to cooperate have been missing.	▪ Missing visual profiling and recognition of network as a form of cooperation. ▪ Retention including financing of the new business-oriented research centres. ▪ Continued lack of national funds for cooperation activities with the university (especially informal cooperations).

APPENDICES

Appendix 1: Facts and Figures about Aalborg University

Appendix 2: Collaboration Agreements and Patent Application 2005

Appendix 3:

Appendix 4: Statutes of Aalborg University

Appendix 1: Facts and Figures about Aalborg University

Table A: Aalborg University through 30 years

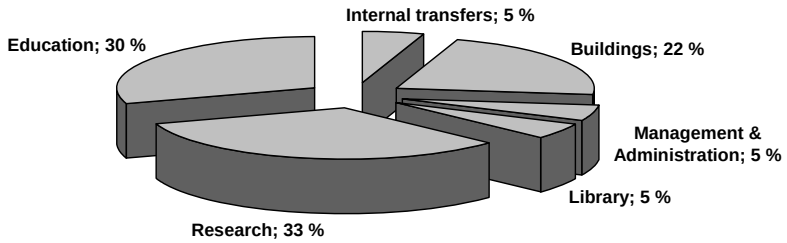
	*1974**	*1984*	*1994*	*2004*
Intake full-time students	911	1,500	1,480	3,035
Number of students	1.975	4,477	8,495	13,324
Full-time employees	471	593	1,113	2,090
- including scientific staff	250	383	679	1,269
Budget	70.3	230.8	499.4	1,372.7

*Figures for AUC and integrated institutions

Table B: Balance in millions

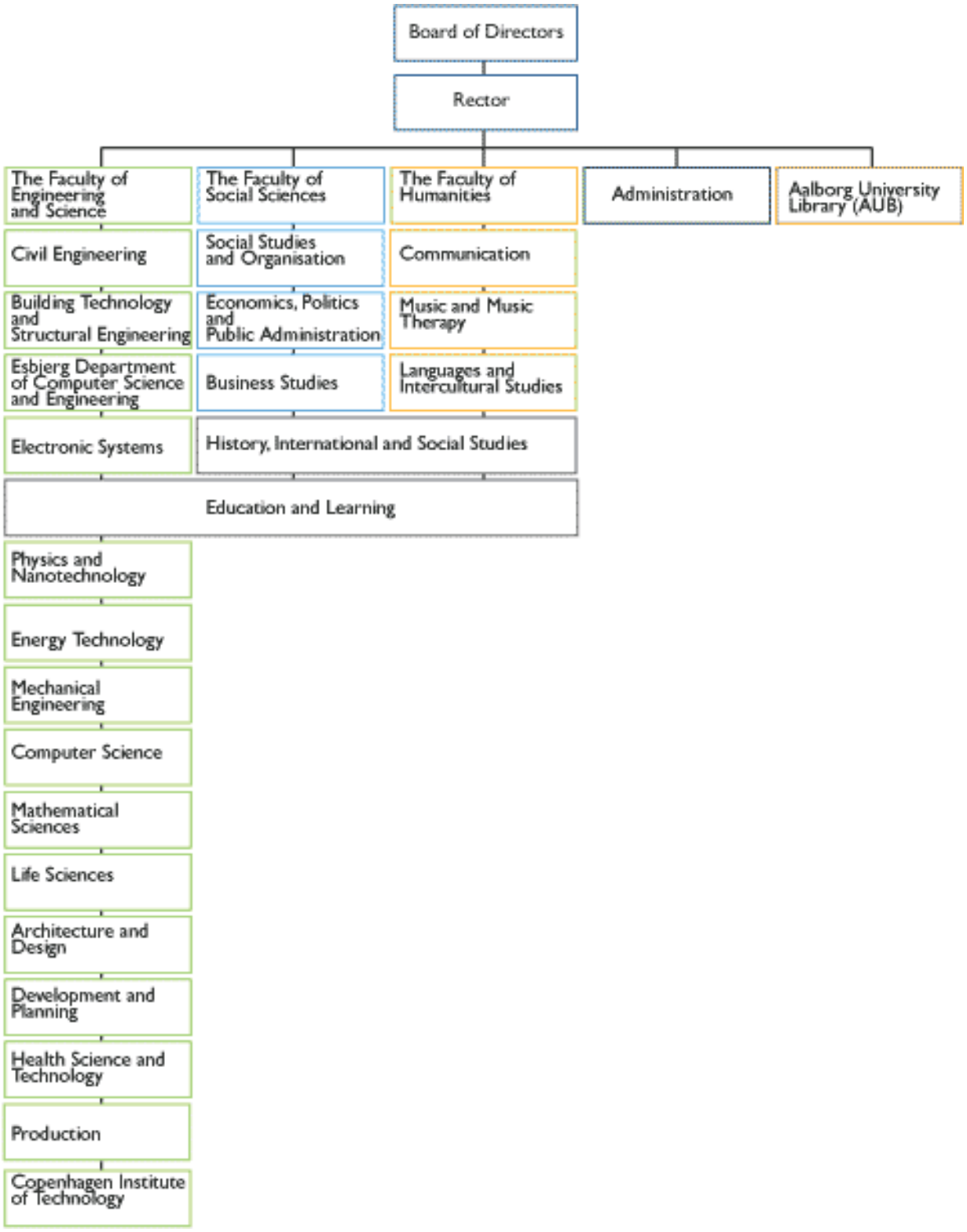
	DKK	**EUR**
Net State Funding	1,012.1	135.6
Operating Income	427.2	57.2
Total Income	**1,439.3**	**193.0**
	828.3	111.1
Payroll Expenses		
Other Expenses	597.7	80.1
Total Expenses	**1,426.0**	**191.2**
Balance	**13.3**	**1.8**
Income		
Direct Appropriation	1,194.7	160.2
External Funding	244.6	32.8
Total Income	**1,439.3**	**193.0**

Expenses divided into activities



All figures are from 2004

Figure 1: Organisational Chart



Appendix 2: Collaboration Agreements and Patent Application 2005

Number of Reports from Researchers – 1/1-2005-30/11-2005

Departments	Reports	Patent Applications
Department 7	1	0
Department 8	39	15
Department 9	2	0
Department 13	4	1
Department 14	9	0
Department 16	1	0
Department 18	1	0
Department 21	3	0
Total	**60**	**16**

Number of Collaboration Agreements – 2005

FIK- Agreements	280
IV Agreements	50
EU projects	20
Licence Agreement	1
Grants	180
Total	531

Appendix 3: AAU 2010 – Strategy of Aalborg University

AAU 2010 - Strategy of Aalborg University

Strategic basis for management decision-making

Introduction

With the University Act of June 2003, the overall mission of the Danish universities was given a new wording while at the same time there were changes in the formal framework for the universities' governance and management, programmes, and form of ownership. In addition to research, education, and communication, the University Act now includes exchange of knowledge and internationalization in the universities' mission statements. The lawmakers intended the new legal status of the universities to be accompanied by new and wider degrees of freedom. The Board of Aalborg University expects that the degrees of freedom will be increased as a management organization and strategy are put into place within the new legal framework.

The University Board has noted the Government's statement that Danish society needs universities that belong to the international élite in terms of the highest quality within research, education, and innovation. The Board considers it to be its main task to ensure a prominent position for Aalborg University as a research and educational institution, both nationally and internationally. It is the expectation of the Board that the strategic basis of management decision-making contained in this document will provide the framework for the efforts to be made by all stakeholders of Aalborg University in order to ensure that the university is capable of strengthening its position among relatively young innovative universities. The road ahead is through ambitious strategic commitments and targeted prioritizations.

The mission part of the strategic basis of management decision-making describes the raison d'être of Aalborg University, whereas the vision part tries to encapsulate the kind of university we wish to create. Next, we state the distinctive values of Aalborg University and the value foundation on which the university builds its everyday life. Finally, the strategy sets out the strategic objectives and the strategic basis providing the framework for the strategic plan of action which aims to fulfil the objectives.

The strategic basis for management decision-making will be followed up by a four-year performance contract between Aalborg University and the Ministry of Science, Technology and Innovation, a strategic plan of action subject to revision in line with changes in the preconditions for attaining the strategic goals, as well as annual budgets, reports, and accounts.

The strategy thus charts the common course for management, staff, and students alike in the continuous development of the university.

Mission

It is characteristic of universities that they create new knowledge and critically investigate and communicate the existing knowledge to the next generation and society in general. When

researchers teach, the latest knowledge is disseminated fast and effectively in society through new graduates who are aware of the methods and limitations of research.
On this basis Aalborg University intends to contribute to the knowledge of global society as well as the prosperity, welfare, and cultural development of Danish society. This will be achieved through research, research-based education, and exchange of knowledge with society in general, and always to the highest international level.
Within this framework Aalborg University sees itself as an internationally-oriented network-university with a special mission within:

- **Problem-based learning.** In this field the university will ensure close interaction between theory and practice in order to bridge the gap between the university and the rest of society by relying on and developing the problem-based project-work model.
- **Interdisciplinarity.** In this field the university will achieve new knowledge and cognition through interaction across disciplinary areas and scientific paradigms as well as across basic research and applied research.
- **Innovation.** In this field the university will function as a knowledge-producing institution of cultural significance by contributing to technological, economic, social, and cultural innovation in society through entrepreneurship as well as transfer, communication, and exchange of knowledge.

Vision

It is the vision that Aalborg University should be an open and attractive research and learning institution with an international orientation. This implies an environment where research and teaching are given equal weight and where students and researchers alike are able to satisfy their scientific curiosity and development as far as their will and talent will take them in close interaction with one another and the rest of society.
This process should unfold in a reassuring atmosphere characterized by amicable competition and collegiate cooperation focusing on the academic and social growth of students, and always with the purpose of bringing out the best potential in students and staff.
In addition, it is the vision that

- Aalborg University should be among the leading innovative universities internationally
- Aalborg University should be internationally recognised as a leading university within advanced teaching with a special emphasis on problem-based project work in groups
- Aalborg University should be internationally recognised as having world-class interdisciplinary research environments.

Distinguishing values

There is a set of values that distinguishes Aalborg University from other universities and which has helped foster the particular organizational culture of the university. Having crystallized over the years, the values focus on:

- **Creativity.** Aalborg University sees it as a fundamental value to break new ground within research, education, administration, and the exchange of knowledge with our environment. The university is constantly striving for novel and creative solutions within research by

challenging traditional scientific paradigms through interdisciplinary cooperation and fruitful interaction between basic research and applied research. The study programmes are continuously developing in a creative interplay among the university, the students, and the market for graduates.

• **Openness.** The university considers openness to be a prerequisite for the continued realization of the university's creative and innovative potential. By implication this means receptiveness to dialogue and new ideas as well as to constructive criticism and alternative conceptions. Internally, openness also manifests itself through the insistence on the open dialogue across research paradigms and groupings and through the relations among staff, students, and management.

• **Cooperation.** The multiform types of cooperation involving the university unfold in an open atmosphere characterized by confidence and respect while at the same time transcending existing frontiers and manifesting itself in the continuous search for new forms, fields, and partners. Internally, this applies to all types of workplace relations, whether among researchers, students, or technical and administrative staff. Externally, it applies to cooperation with business, local and regional authorities, ministries, and organizations as well as other research and educational institutions. In this context Aalborg University sees itself as a network university that is always prepared to consider a binding form of cooperation whenever it is in the interest of both parties or a higher cause.

Underlying values

In addition to the values that are particular to Aalborg University and thus contribute to the special profile of the university, there are several other issues that have a bearing on the university's underlying values. Among these are the values shared with other universities and the values which in general help underpin the vision of Aalborg University. A comprehensive description of the underlying values of Aalborg University includes the following:

- Respect for the fundamental academic values – freedom of research, independence of sectional interests, scientific integrity, and the search for academic excellence.
- Contributing to the consolidation and development of democratic society.
- Interaction among disciplines, basic research, and applied research.
- Focused dedication to a few select fields of research.
- Support for budding research talents.
- Broad commitment to research-based education.
- Special challenges for elite students.
- Internationalization of the university's research, programmes, and administration.
- Learning through problem-based project work in groups.
- Lifelong learning in cooperation with society in general.
- Binding cooperation with relevant institutions.
- Exchange of knowledge and cooperation with the rest of society.
- Innovative, entrepreneurial, and creative approaches.
- Students' and staff's joint responsibility for and influence on learning and management decision-making.
- An open organizational culture with dialogue as a key management tool.

Strategic goals

In order to measure the fulfilment of its mission and vision, Aalborg University has set itself a number of ambitious strategic goals.

- Aalborg University will be among the best 5% of universities globally.
- Aalborg University will have a number of research areas in which the university belongs to the world league.
- Aalborg University will draw on its unique combination of academically and vocationally oriented disciplines in order to ensure strong international research areas intersecting traditional disciplines as well as basic and application-oriented research.
- Aalborg University will have a research production which, in terms of volume and scientific recognition, is among the best.
- Aalborg University will offer particularly good working conditions for especially active researchers and research groups.
- Aalborg University will ensure strong research environments at an international level within all programmes.
- Aalborg University's programmes must be comparable with the best in terms of quality.
- Aalborg University will strive to be the Danish university with the highest share of students completing their studies within the official duration of study programmes.
- Aalborg University will strive to be in the international lead in terms of reliance on problem-based, project-organized teaching.
- Aalborg University will ensure especially challenging project work for elite students.
- Aalborg University will be in the lead in Denmark in terms of international mobility of students, researchers, and administrative staff and will offer most of its graduate programmes internationally.
- Aalborg University will cooperate actively with at least 500 universities around the world.
- Aalborg University will ensure that its staff has freedom of expression in Danish and English as equal working languages.
- Aalborg University will provide an attractive environment for studies and work for its staff and students by engaging in active human-resource and working-environment policies and by ensuring good conditions for students' studies and work.
- Aalborg University will strive to achieve a more even gender balance among its staff.
- Aalborg University will develop an effective incentive structure underpinning the prioritizations of the university in terms of resources.
- Aalborg University will ensure professional development for staff members who do not fulfil this requirement through research.
- Aalborg University will be among the leading universities in Europe within innovation and academic entrepreneurship.
- Aalborg University will be among the best universities in Europe in terms of sharing knowledge and cooperation with society in general. Aalborg University will make an active effort to promote local and regional development in the light of the challenges of global competition.
- Aalborg University will actively cooperate with a multitude of companies and institutions.
- Aalborg University will offer further and continuing education where there is a financially sustainable demand.
- Aalborg University will participate in strategic cooperation with other universities, research institutions, and educational institutions in order to achieve maximum synergy in terms of related objectives within research, education, and knowledge sharing.

• Aalborg University will continue to expand as a network university based in Aalborg and thus strengthen the development of its campuses in Aalborg, Esbjerg, and Copenhagen.

Strategic foundation

Research
Through its research, Aalborg University wishes to promote knowledge as well as utility value by improving the scientific basis for the understanding of humankind, society, nature, and culture and by providing the basis of utilization of this knowledge. This will be achieved through a special commitment to those excellent research groups which have proved to be in the world league, combined with a broader commitment to solid national and international research groups across the entire range of disciplines of the university. In this way, Aalborg University will help ensure a high level of quality in all programmes and that the brightest students and most promising research talents are encouraged in their endeavours as far as their commitment and talents will take them, irrespective of their disciplinary backgrounds.
Aalborg University will ensure a permanent capacity for re-adjustment, thus enabling new promising academic areas to be engaged with and at the same time strengthening existing academic areas with growth potential.
Aalborg University will draw on the special opportunities for new knowledge provided by the problem-oriented approach with its combination of academic disciplines as well as basic research and applied research. The university will safeguard freedom of research and the critical role of research. The university will increase its participation in the competition for external research funds whenever this may help strengthen the university's research areas. The university will prioritize quality assurance of research.
Aalborg University will increase the number of PhD students, strengthen the university's graduate schools, and strengthen cooperation among these and similar schools in Denmark and abroad.

Education
Through problem-oriented and project-organized education with students working in groups, Aalborg University will ensure close interaction between theory and practice in its programmes. The university's research-based programmes must help students obtain a competence profile providing them with a good basis for a career in Denmark or abroad.
Within all main areas, i.e. faculties, Aalborg University will offer a wide range of both academic and vocational programmes characterized by student demand as well as relevance and applicability in terms of society's need for highly educated labour. This will be supplemented with continuing education and in-service training in areas with a sustainable demand. The university will strive to allow open admission to anyone fulfilling the prerequisites, whenever this is practicable without distorting the labour market.
Aalborg University intends to be recognised for high-quality teaching and for educating graduates with the highest professional and social competencies. The university will strive to achieve high completion rates within the official duration of study programmes. The university will utilize its educational platform and will continuously develop the problem-based and project-organized educational model in the light of current demands and expectations.
Aalborg University will integrate an entrepreneurial culture in its programmes and encourage its graduates and researchers to try out ideas and inventions with a commercial perspective through new or existing enterprises.

Innovation, communication, and entrepreneurship

By making its research results available to society in general, Aalborg University will contribute to the development of the technological, cultural, institutional, and economic foundation for the growth, welfare, and cultural development of society. The university will be among the best universities in Europe in terms of sharing knowledge and cooperating with society in general. The university will contribute to improving companies' opportunities on the global market for advanced high-technological and knowledge-intensive products. Through cooperation and exchange of knowledge with society in general, the university will function as a knowledge-producing institution of cultural significance, and it will contribute to technological, economic, social, and cultural innovation.

This will be achieved through the education of graduates who are well-prepared for a professional career, through research collaboration with trade and industry, and through the provision of ideas and inventions developed by the university's researchers as part of their research as well as communication and continuation of cultural traditions.

Aalborg University feels a special responsibility for the regions in which the university is located and moreover accepts a commitment to the development in Denmark as a whole, in which context, too, it is open to cooperation with other national and international institutions of tertiary education, including universities in the third world.

As an appreciation of the freedom of research enjoyed by the universities, Aalborg University feels a special obligation to communicate the knowledge and results we obtain and to participate actively in public debate.

Aalborg University will strive to promote knowledge-intensive entrepreneurship and innovation. The university will cooperate with local and regional companies and business development agencies as well as science parks, businesses, and universities nationally and internationally to promote knowledge-based companies.

Internationalization

Aalborg University will further develop its international profile and position within research and education. The university's researchers cooperate across national frontiers, and graduates will be working in a globalized world once they leave the university. As a consequence, Aalborg University will foster an international culture and atmosphere. The university will provide students with the possibility of an international perspective in their programmes, and students from abroad will be given good opportunities to study at the university. The university will encourage the further development of international research collaboration as well as exchanges of research results, researchers, and other relevant staff. Internationalization builds on three separate, but partly interlocking objectives:

An academic objective stressing that Aalborg University's research and education must have a high international standard and must be relevant in an international context. We will ensure that the university's graduates, teachers, and researchers have the international competencies that are necessary in order to be able to function professionally, linguistically, and socially in an international and multi-cultural environment.

An objective of global competitiveness whereby Aalborg University will participate actively on the global market for research and education with the special disciplinary and educational competencies that the university possesses. In this connection the university will enter into binding agreements with other recognised universities around the world whenever there is a potential for synergy, for instance in connection with joint and double degrees.

An objective of international solidarity whereby Aalborg University will contribute to capacity building within further education in other countries in the light of the university's special

competencies. Moreover, the university will contribute to the improvement of intercultural understanding locally.

Management and human resources

Aalborg University will seek to achieve that the new management structure is clear and transparent. The university will strive for the different academic environments to be characterized by equality, openness, and acceptance of diversity. Likewise, the university will promote the further development of the straightforward and appreciative social relations among management, staff, and students. Continuous updating of the qualifications of the university's staff is seen as an important part of human resource management.

Aalborg University aims to be an open and flexible workplace based on a high degree of dialogue among management, staff, and students in which staff and student co-determination is ensured as far as possible.

Aalborg University aims to be an attractive and professionally stimulating workplace for its staff and students. The study format means that the university is able to provide an environment in which students are in close contact with their supervisors and fellow students. The university will strengthen the open-door policy which allows students to have their questions answered in a physical environment where students' group rooms are mixed with staff offices. The university will strive to ensure optimum conditions for staff and students to thrive professionally as well as socially.

Aalborg University will work with public authorities and trade and industry to help make the local community an attractive place to live and work for staff and students, with a varied range of cultural and sports activities as well as educational opportunities for them and their families.

Administration and infrastructure

The administration and infrastructure of Aalborg University will support and assist the research and educational activities at the university as well as the university's interaction with society in general. The administration of Aalborg University must help ensure that the university remains an extrovert and modern university. The administrative functions must be characterized by service, flexibility, and efficiency and must be placed at the most suitable levels of the organization in light of the functions they are intended to support. The administrative solutions must continuously be adapted to changing user needs and technological possibilities while taking into account the demand for transparency in procedures as well as continuity and legality.

Aalborg University attaches great importance to having a good physical framework for the various functions, both at the different campuses in Aalborg and at the campuses in Esbjerg and Copenhagen. Modern teaching and research facilities must be available, including well-functioning workplaces and laboratories. The university's reliance on project work in groups means that there is a special need for group rooms for students. The physical framework must support the vision of this strategic plan.

Aalborg University Library will strengthen research, teaching, and learning through relevant and competent library services and must be characterized by fast and efficient service in relation to the university's research and education.

Aalborg University will strive to apply the most advanced information and communication technology to support and strengthen the university's programmes, research, and services, on campus as well as in its interaction with society in general. The university's internal knowledge sharing and administration must be strengthened through the use of information and communication technology.

Communication and marketing activities must help maintain and preferably increase Aalborg

University’s share of Danish and foreign university students. Special efforts should be directed at young Danes who have finished secondary education and selected international market segments. Aalborg University will maintain a set of key statistical figures to help management monitor quality, efficiency, and productivity within the university’s programmes, research, communication, and administration. They must support management so that it is able to assess the fulfilment of the strategic objectives, to benchmark the university with other universities, and to provide cumentation in connection with the performance contract.
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Appendix 4: Statutes of Aalborg University

Statutes of Aalborg University

Aalborg University is a self-governing institution within public administration under the supervision of the Ministry of Science, Technology and Innovation.

Part 1. Mission

Clause 1. Aalborg University shall conduct research and provide research-based higher education to the highest international level. Aalborg University offers undergraduate, graduate, and PhD programmes as well as part-time Master's degree programmes, diploma programmes, continuing education, and in-service training.
(2) Aalborg University shall cooperate nationally as well as internationally and shall, through its educational programmes and research, provide and disseminate new knowledge and create results that are conducive to the growth, welfare, and development of society as a whole. As a central knowledge-providing institution of cultural significance, the university shall exchange knowledge with society and contribute to the development of competencies as well as the strengthening of open and unbiased debate.
(3) Aalborg University shall safeguard freedom of research and ensure high standards of scientific ethics and shall furthermore disseminate knowledge of scientific methodology and results and shall encourage its employees to participate in public debate.

Part 2. Registered Address

Clause 2. Aalborg University has its registered address and venue in the municipality of Aalborg.

Part 3. Management

The University Board

Clause 3. The University Board is the highest authority of Aalborg University. The Board is responsible for the university's interests as an institution of education and research and as such lays down the directions for its organization, long-term activities, and development.
(2) The Board must, on the recommendation of the Rector, approve the budget of the university, including the allocation of all resources as well as the principles for the use of the resources, and must sign the accounts.
(3) The Board must, upon consulting the university, prepare the Statutes of Aalborg University and subsequent amendments to them. The Statutes and subsequent amendments are subject to the approval of the Minister.
(4) The Chairman of the Board, acting together with another member of the Board, is authorised to sign for the university in cases of acquisition, sale, and mortgaging of real property. The Board shall subsequently approve any acts of acquisition, sale, and mortgaging of real property.
(5) The Board is responsible to the Minister for the activities of the university, including the management of all the resources of the university.
(6) The Board must conclude a performance contract with the Minister.

(7) The Board must prepare detailed directions for documentation systems for evaluations and follow-up on evaluations.
(8) The Board may comment on all matters of major importance to the organization and activities of the university.

Clause 4. The Board may establish an Assembly of Representatives to be in charge of contacts with society in general. The Assembly of Representatives is responsible for exchanging information and viewpoints as well as advising the university.

Clause 5. The Board appoints and dismisses the Rector.
(2) The Rector is appointed following public announcement of the position and for a fixed-duration period to be decided by the Board and subject to renewal.
(3) The Board must set up an appointments committee with representatives of the scientific staff, the technical and administrative staff, and the students. The appointments committee must make an overall assessment of the qualifications of the applicants and conduct interviews with selected applicants. The appointments committee may recommend a maximum of three qualified candidates for the position. The decision on whom to appoint is the prerogative of the Board. The Chairman of the Board or the Deputy Chairman of the Board chairs the appointments committee.
(4) The Board may terminate the Rector's employment subject to the rules agreed and stipulated by the Ministry of Finance.

Clause 6. The Board must, upon the recommendation of the Rector, appoint one or more vice-rector(s). The Vice-rector must be a recognized researcher. The Vice-rector is the Rector's deputy. If more than one Vice-rectors are appointed, the Rector must appoint one of them as the deputy.
(2) The Rector must set up an appointments committee with representatives of the scientific staff, the technical and administrative staff, and the students. The appointments committee must make an overall assessment of the qualifications of the applicants and conduct interviews with selected applicants. The Rector recommends one qualified applicant for the position to the Board. The Rector chairs the appointments committee.
(3) The Board may terminate the employment on the recommendation of the Rector and subject to the rules agreed and stipulated by the Ministry of Finance.

Clause 7. The Board must, upon the recommendation of the Rector, appoint a university director. The position must be announced publicly, and the applicants are subject to assessment by an appointments committee set up by the Rector and with representation of the executive management and groups of employees of the university administration, a dean, and a university director from another university. The Rector chairs the appointments committee.
(2) The Board may terminate the University Director's employment on the recommendation of the Rector and subject to the rules agreed and stipulated by the Ministry of Finance.

Clause 8. The Board decides the framework for the interaction between the Board and the Rector. The Rector makes administrative assistance available to the Board.

Clause 9. Meetings of the Board are public. Matters may, however, be dealt with in closed meetings if this is deemed to be necessary in view of their nature or other circumstances. All matters involving persons or contract negotiations with private entities or similar negotiations with public business partners must be dealt with in closed meetings. Similarly, all matters subject to the secrecy provisions of the Public Administration Act must be dealt with in closed meetings.

(2) The Board must adopt a set of rules of procedure. In the rules of procedure, the Board may decide on a procedure for the organization of Board meetings.
(3) The Board's meeting documents, including agendas and minutes, must be made public. However, any documents or information subject to the secrecy provisions of the Public Administration Act may not be made public. Similarly, any matter dealt with in closed meetings, cf. (1) above, may be exempted from publicity if this is deemed to be necessary in view of the nature of the matter or other circumstances.

Clause 10. The Board consists of 11 members, 6 of whom must be external members. Two members must represent the scientific staff, including PhD students. The scientific members must represent different faculties. One member represents the technical and administrative staff, and two members represent the students.
(2) The term of office of the Board is four years. However, the student members are elected for one-year periods. External members may be re-appointed once. The replacement sequence must be arranged to ensure continuity in the Board's work. If an internal member resigns during the term of office, a new member must be elected for the remainder of the term in accordance with the provisions in sub-clause (3) or (4). If an external member of the Board resigns, a new member is appointed for 4 years.
(3) The Board appoints the external members. The Chairman of the Board and two other members of the Board, at least one of whom must be an external member, shall submit proposals for new members for the approval of the Board.
(4) The other members are elected by and among the scientific staff, the technical and administrative staff, and the students, respectively, by direct elections in accordance with the provisions in these Statutes as well as the rules for the individual elections decided by the Board on the recommendation of the Rector.

Clause 11. The external members taken together must have insight into matters relating to research, education, knowledge dissemination and knowledge exchange as well as experience in management, organization, and finance, including evaluation of budgets and accounts and must furthermore comply with the requirements of the University Act clause 12, sub-clause 2. The members must constitute a reasonable reflection of the overall disciplinary profile of Aalborg University, and they must come from different sectors. The representation must be balanced in terms of regional and national activities. There must be a balanced representation of men and women. The members of the Board may not represent special-interest organizations, but must work to promote the interests of Aalborg University. Members of the Board may not be appointed or re-appointed after having reached the age of 70 years.

Rector

Clause 12. The Rector must be a recognized researcher within one of the disciplinary fields of the university and must have insight into the university sector. The Rector must, inter alia, have capability of and experience in management as well as the organization of educational and research environments, have teaching experience, have insight into national and international university matters as well as the activities of a university and its interaction with the rest of society. See also the qualifications requirements in the University Act.
(2) When assessing whether an applicant complies with the University Act requirements of recognized researchers, the assessment is based on the requirement that the applicant

- must have conducted research at a scientific level for a number of years, and

- must have been found to be qualified by a peer assessment committee in connection with an application for a position as associate professor at a university, a position as senior research associate at a Government research institution or a position at a similar level at a research institution in another country.

If a potential candidate does not have such a peer assessment, the Board must appoint a committee to assess whether the scientific activities and production of the applicant are such as to qualify the applicant as a recognized researcher. The committee must be set up in the same way as a peer assessment committee. However, if the Board itself possesses the same competence as that required of a peer assessment committee, the Board is entitled to make the assessment itself.

Clause 13. The Rector must undertake the day-to-day management of the university. The Rector is authorised to sign for the university with the exception of transactions involving real property, cf. clause 3, sub-clause 4, and decides all matters except those in which the responsibility has been assigned to others by law.
(2) The Rector must appoint a dean for each faculty. The Dean is appointed following public announcement of the position and for a fixed-duration term decided by the Rector and subject to renewal. The Rector must set up an appointments committee with representation of the scientific staff, the technical and administrative staff, and the students. The Rector chairs the appointments committee. The appointments committee must make an overall assessment of the qualifications of the applicants and conduct interviews with selected applicants. The Rector appoints one of those found to be qualified by the committee. The Rector may terminate the Dean's employment subject to the provisions agreed and stipulated by the Ministry of Finance.
(3) The Rector must appoint a library director as manager of the university library following public announcement of the position. To assess the applicants, the Rector must set up an appointments committee with representation of the management and employee groups of the library, the faculties, and with the participation of external expertise within librarianship. The Rector chairs the appointments committee. The Rector may terminate the Library Director's employment subject to the provisions agreed and stipulated by the Ministry of Finance.
(4) The Rector must lay down directions for the day-to-day management of the university and must specify management competences in delegation statements.
(5) The Rector must provide the Board with draft guidelines for the organization, long-term activities, and development of the university.
(6) The Rector must recommend the university's budget to the Board for its approval.
(7) The Rector must set up an Academic Council for each faculty.
(8) The Rector must establish a set of rules on disciplinary measures against students.
(9) The Rector must approve all types of external cooperation which bind the university.
(10) The Rector must sign the accounts of the university.

Dean

Clause 14. The Dean must be a recognized researcher, cf. clause 12, sub-clause 2, within the disciplinary field of the faculty and must have experience in and insight into education and management. In addition, the Dean must have management capabilities and teaching experience.

Clause 15. The Dean is responsible for the management of the faculty, ensures coherence between research and study programmes as well as the quality of study programmes and teaching. In addition, the Dean is responsible for the overall quality development of the study programmes and

research within the main area of the faculty. The Dean must provide the framework for the strategic development of the individual programmes and the development across disciplines.
(2) The Dean must appoint a head of department for each of the faculty's departments. The Head of Department is appointed following public announcement of the position and for a fixed-duration period decided by the Dean, subject to renewal. The Dean must set up an appointments committee with representation of the scientific staff, the technical and administrative staff, and the students. The Dean chairs the appointments committee. The appointments committee must make an overall assessment of the qualifications of the applicants and conduct interviews with selected candidates. The Dean appoints one of the applicants found to be qualified by the committee. In the event that an external applicant is appointed to the position, a job-return position may be established at the university for the applicant, provided that the applicant meets the requirements for such a position.
(3) The Dean establishes and abolishes study boards covering one or more study programmes or elements of programmes and approves a chairman and a deputy chairman of each study board.
(4) The Dean appoints and dismisses programme directors on the recommendation of the study boards involved. The Dean may consult the departments which provide teaching resources to the study boards involved in connection with the appointment of programme directors. The Dean must make certain that the recommended candidate has the necessary qualifications to perform the duties of a programme director.
(5) The Dean approves study regulations on the recommendation of the study boards.

Head of Department

Clause 16. The Head of Department must be a recognized researcher, cf. clause 12, sub-clause 2, with insight into the disciplinary field of the department, must have management skills and teaching experience.

Clause 17. The Head of Department is responsible for the day-to-day management and administration of the department, including planning and distribution of work while observing rules of proper governance.
(2) The Head of Department may direct staff to perform specific tasks. During the time when members of the scientific staff are not required to perform such tasks, they may undertake independent research within the research-strategic framework of the university.
(3) The Head of Department must ensure quality and coherence in the research and teaching activities of the department and ensure that the department is capable of providing research-based teaching to the relevant study programmes.
(4) The Head of Department must, together with relevant programme directors and study boards, follow up on evaluations of study programmes and teaching within the areas in which the department provides teaching resources.

Programme Director

Clause 18. The Programme Director must be a recognized researcher, cf. clause 12, sub-clause 2, with insight into the disciplinary field of the study board. In addition, the Programme Director must have management skills and teaching experience.
(2) The Programme Director is, in cooperation with the study board, responsible for the planning and practical organization of teaching activities, examinations, and other types of assessment included in the exams.
(3) The Programme Director must, together with the relevant Head(s) of Department and study

board(s), follow up on evaluations of teaching activities and study programmes.

Part 4. Organization

Clause 19. Research, teaching and programmes at Aalborg University are organized in faculties, departments, and study boards.
(2) The University Board may decide to establish and abolish faculties and departments.

Clause 20. The Rector may, within the framework of the University Act, establish centres to be in charge of temporary responsibilities cutting across the existing organization. The Rector must inform the Board hereof.

Clause 21. To support the Rector, the university has an administration managed by a University Director.
(2) The library and documentation services of the university are the responsibility of a university library managed by a Library Director.

Clause 22. The Rector, Vice-Rector(s), University Director, Deans, and Library Director together make up the Executive Management of the university in which the Rector manages and delegates work assignments and responsibilities to the members of the Executive Management.

Academic Council

Clause 23. The Rector may establish and abolish Academic Councils. Each Council consists of 15 members. The Dean is an ex-officio member and Chairman of the Council. In addition, the Council consists of 10 representatives of the scientific staff, including PhD students employed by Aalborg University, and 4 representatives of the students. The Academic Council summons two or more representatives of the technical and administrative staff to participate as observers in meetings when the Council discusses the budget and strategic plans of the faculty. The representatives of the scientific staff are elected for four-year terms whereas the representatives of the students are elected for one-year terms.

Clause 24. The Academic Council is responsible for

- commenting to the Rector on the internal distribution of funds
- commenting to the Rector on central strategic fields of research and education and plans for knowledge exchange
- making recommendations to the Rector on the composition of peer assessment committees to assess applicants for academic positions
- awarding PhD and higher doctoral degrees

(2) The Academic Council may comment on all academic matters of significant importance to the activities of the faculty and has a duty to discuss academic matters laid before it by the Rector and the Dean.
(3) The Academic Council decides its own rules of procedure within the framework of the standard rules of procedure laid down by the Rector.

Departmental Committee

Clause 25. The Head of Department must establish an advisory Departmental Committee with representatives of the scientific staff, the technical and administrative staff, and the students in the ratio of 2:1:1. The Head of Department is chairman of the committee. The other members are elected by direct election by and among the scientific staff, the technical and administrative staff, and the students, respectively.

Clause 26. The Dean must stipulate detailed guidelines for the advisory function of the Departmental Committee and its interaction with the Head of Department within the framework laid down by the Rector.

Study Boards

Clause 27. The study board consists of equal numbers of representatives of the scientific staff and the students. However, the maximum number of members is 10. The representatives are elected by and among the scientific staff and the students, respectively. The representatives of the scientific staff are elected for four-year terms, and the representatives of the students are elected for one-year terms.

Clause 28. The study board elects by a simple majority a Chairman from among the scientific members and a Deputy Chairman from among the student members. The Chairman chairs the meetings of the study board.
(2) The study board decides its own rules of procedure within the framework of the standard rules of procedure laid down by the Rector.

Clause 29. The study board recommends a programme director to the Dean. The Programme Director may be in charge of more than one study board.
(2) If the Programme Director is not a member of the study board, the Programme Director participates in its meetings as an observer.

Clause 30. The study board must ensure the development of the study programme(s).
(2) The study board must plan and organize the study programme(s) and ensure that the teaching activities are carried out.
(3) The study board is responsible for the quality of study programmes and teaching and must ensure that evaluation of and complaints about teaching are followed up on in cooperation with the Programme Director and the Head of Department. The responsibilities of the study board thus include:
- development of the quality of programmes and teaching
- preparation of proposals for study regulations and changes therein
- approval of plans for the organization of teaching and examinations, including the requisition from relevant departments of teaching resources within the field of the study board
- deciding applications for credit transfers and exemptions
- commenting on all matters within its field of importance to study programmes and teaching as well as discussing matters involving study programmes and teaching laid before it by the Rector or the Dean.

Part 5. Information and Consultation Committee

Clause 31. An Information and Consultation Committee must be established at any management level in accordance with the current rules.

Part 6. Elections

Clause 32. The Rector must set up an Election Board to be in charge of the internal elections for the Board as well as the elections for academic councils and study boards.

Clause 33. Ordinary elections of internal members of the Board, elections for the academic councils, and elections for the study board must be called by 1 October and must be held in early December.
(2) The persons elected take up their mandates on 1 February.
(3) Re-election may take place.
(4) Elections of the scientific members of the Board are held as majority elections, whereas other elections are held as proportional elections. The right to vote is held by employees and students who, on 1 October of the election year and at the time of the election, belong to one of the following election classes:

1. Full-time as well as at least half-time employed scientific staff, including PhD students employed by Aalborg University, have the right to vote and are eligible.
2. Full-time as well as at least half-time employed technical and administrative staff have the right to vote and are eligible.
3. Students enrolled at the university with a view to a full study programme have the right to vote and are eligible.

(5) The right to vote may be exercised within one election class only.

Part 7. Accounts and Auditing

Clause 34. The financial year of the university is the fiscal year. At the end of the financial year, the annual accounts shall be prepared, including the income statement, the balance sheet, and a list of all fixed assets. The accounts shall be signed by the Board and the Rector.

Clause 35. The accounts shall be audited by the Auditor General pursuant to the applicable law. The Auditor General may agree with the Minister to have auditing tasks pursuant to the university Act section 28, sub-section 4, performed in cooperation between the Auditor General and an institutional auditing, the details of which cooperation are subject to detailed specification. The institutional auditing must be performed by a state-authorized public accountant or by a registered public accountant.

Part 8. Commencement

Clause 36. These Statutes shall commence upon the approval by the Minister.

Adopted by the Board of Aalborg University on the 9th day of November, 2004.

Sven Caspersen
Chairman of the Board of Aalborg University

Approved by the Minister of Science, Technology and Innovation on the (date).

Helge Sander
Minister of Science, Technology and Innovation