FLAGSHIP

European Flagship Universities: balancing academic excellence and socio-economic relevance

UNIVERSITY OF COPENHAGEN

Institutional report by Evanthia Kalpazidou Schmidt, eks@cfa.au.dk

The Danish Centre for Studies in Research and Research Policy

Aarhus University

Table of Contents

1. Introduction

The report is a case study of the University of Copenhagen and a contribution to the Flagship project, which in a comparative perspective analyses the way in which European flagship universities are adapting to a common European governance and policy framework and their specific national contexts. The Flagship project examines how European flagship universities have in recent years adapted to extensive changes in their socio-economic and political environment, and draws attention to the degree to which these adaptations are initiated and implemented by the institutions themselves or as a consequence of external drivers. The concept "flagship university" refers to a comprehensive, research intensive university, located in one of its country's urban areas. A flagship university is among the oldest and largest higher education institutions of its country. In this perspective, the University of Copenhagen is an evident case for study.

The universities in Denmark have been subject to far-reaching reforms, where demands on closer interplay with the private sector and dissemination of knowledge to society at large have been central. Universities are therefore expected to find the right balance between academic excellence and socio-economic relevance while having to find their "room to manoeuvre", managing internal and external conditions in a new national and global framework.

The aim of this report is to address the following questions:

(i) What are the organisational settings and institutional characteristics at the University of Copenhagen that encourage academic excellence and address its socio-economic responsibilities

(ii) What are the main factors which over the recent years have affected the organisational settings and institutional characteristics at the University of Copenhagen

The report consists of four sections. Section two, following this introduction, comprises of a presentation of the national context and the manifold higher education reforms implemented in Denmark during the last 10 years. Section three discusses the case of the University of Copenhagen, addressing the above mentioned questions. Finally, section four summarizes and concludes the findings.

2. The National Context

Recent years Denmark has seen multiple reforms - and at an unprecedented pace - in the higher education sector. The main aim with the reforms was to create enabling conditions for the sector to improve quality, develop strategic education, establish research priorities, and improve the relationships between universities and the entrepreneurial sector. The debate on how to reorganize and reposition the universities within the knowledge-based society has been intensive. The most important changes comprise the governance and management of universities, the landscape of higher education institutions, the institutional funding structures for research, the criteria for resource distribution, the linkages between science and society, and the scale and orientation of science dissemination (mainly to industry). The overall reform objectives can hence be summed up in three themes: (i) quality, (ii) mergers and concentration, and (iii) interaction and synergy (Kalpazidou Schmidt 2012).

The first reform, the implementation of a new **University Act** in 2003[1], focused on university autonomy and the establishment of self-governing institutions, while ensuring accountability and transparency. The Act introduced major changes to the university governance structure, abolishing collegial, representative councils and replacing them with appointed leaders at all levels (rectors, deans, and heads of department). The Act furthermore introduced boards with majority of external members and a chairman appointed by the Minister of Science. The reform aimed at strengthening university management, smoothening the decision making process and implementation of strategic targets and advancing interfaces with society. In addition, the 2003 University Act explicitly states that the universities are obliged to communicate and exchange knowledge with the broader society. As a consequence the universities expanded and professionalized their science dissemination activities.

This reform was followed by the 2007/8 **mergers process**[2], which resulted in fewer universities (8 instead of 12) and a concentration of publicly funded research (absorption or integration of 10 ministerial research agencies) in the university sector. The merger process between universities and governmental research institutes aimed at reinforcing institutional infrastructure, sharpening the profile of universities in an international perspective, improving quality in terms of output and impact and increasing the ability to attract international research funding. The concentration of research and higher education efforts on fewer institutions followed the concentration of research activities within particular thematic areas. The Strategic Research Council (established in 2003) and

[1] Ministry of Science, Technology and Innovation 2003

[2] Ministry of Science, Technology and Innovation 2006

the Danish National Advanced Technology Foundation (established in 2005) have promoted the establishment of centers of excellence, aimed at focusing on strategic areas, in which Denmark has particular scientific competences and competitive advantages.

Mergers also aimed at increasing the professional synergy between closely related subjects. This was for example the idea behind the merger of Life Sciences at the University of Copenhagen and the Royal Veterinary and Agricultural University. Another argument in the merger debate, seen from the perspective of the institutions, was that an increased size gives the university management more room for manoeuvre. By significantly increasing university budgets, the possibilities of prioritising the funding and the usage of resources for strategic purposes increase as well - purposes that would perhaps lie outside the possibilities of a smaller university**.** At the same time the economic base for the universities has not only increased with the mergers, but has also become more diversified. Universities are no longer exclusively financed by the Ministry of Science, but also by other ministries. These renders make universities less dependent of the Ministry of Science as regards research budgets.

Since the beginning of the millennium policies driven by the government and supported by a vast parliamentary majority have aimed at intensifying **university-industry interactions**, technology transfer and innovation, supplying knowledge to the surrounding society. Innovation has thus been a priority in the enlarged Ministry for Science, Technology and Innovation. Universities have been tuned in on the interaction with other sectors in society and the commercialization agenda through management and funding reforms. Punch lines such as “from research to invoice” have been used in policy making, raising an intensive debate among the university staff. It has hence been emphasized that the university not only has to communicate but also to transfer knowledge.

Another reform process related to **funding of universities** has involved the development of new performance-based criteria for distributing basic research funding. Funding of teaching and research are detached in Denmark. Accordingly, higher education institutions receive separated resources for teaching and research. The most important source of funding for the institutions is the subsidies provided by the state in the annual appropriation acts and the additional appropriation acts provided at the end of each year. Universities receive grants as a lump sum. The universities decide the distribution of the funds internally – both for academic purposes and all other types of expenditure. The greatest proportion of the universities’ grants come from the state. Less than 10% comes from private or foreign sources, and most of the latter come from the EU. The proportion of private funds has increased in recent years. Research grants are allocated based on historical reasons. As regards education, universities are funded through the “taximeter” system, which links funding directly to the

number of students that complete their studies. The teaching component is based on a unit-cost principle, where an amount of money is provided to the university for each student who passes an exam. In order to achieve the highest grants, universities need motivated and qualified students that complete their education in the period of time prescribed for their studies. The latest reforms mean that the institutions receive additional rewards in cases where students complete degrees within a fixed time.

In 2009 it was decided that university basic funding should be distributed according to number of students (45 percent weight), bibliometric measures of research output (25 percent weight), external grants (20 percent weight) and number of PhD awards (10 percent weight). The reform aimed at creating transparency about public spending and output orientation at universities. Even though only additional funding (which is just a small amount compared to the overall basic funding of the universities) is distributed based on the model, it appears to have significant impact on the behavior of staff and leadership at Danish universities in terms of generating outcome awareness.

Most of the above mentioned reforms were based on the so called **globalization strategy**[3] i.e. a national level strategy to address challenges of the global economy. In 2005, a Globalization Council was established, chaired by the prime minister and with the participation of five ministries and representatives from a broad spectrum of the Danish society. The most important university-oriented policy goals introduced in the framework of the strategy (which was launched in 2006) were created to: (i) link the basic public funding of universities more directly to the quality of activities and performance, (ii) increase participation rates from 45 to 50 percent and stimulate a rapid throughput of students, (iii) double the number of PhD students and stimulate internationalisation, and (iv) introduce a system of accreditation for all education programmes. The globalization strategy involved a substantial financial pool for investments in education and research in Denmark and has undoubtedly contributed to achieving the Barcelona objective of spending 3% of public funds on R&D.

Development contracts[4] between universities and the Ministry of Science were already introduced in 1999. University development contracts were letters of intent, stating strategic areas on which the university intended to focus and instruments the universities intended to use in order to reach their targets. The purpose of the contracts was to improve the quality of education and research, and stimulate the innovation potential of universities. Hence, there existed no straightforward link between the funding system, the institutional strategies and implementations. Accordingly, a university development contract differed from a classic contract in the sense that there was no

[3] Danish Prime Minister's Office 2006
[4] Ministry of Science, Technology and Innovation 2000

automatic relationship between reaching the set targets and the grants awarded (Kalpazidou Schmidt & *al*. 2007).

The first-generation university development contracts (2000–2004) focused on education and research, quality assurance, internationalization, IT-based learning and innovation. The second-generation focused on reinforcing links with society, national and international cooperation (also with the business sector), quality assurance, research and benchmarking with foreign universities. Like the first generation, the second-generation contracts were not legally binding, but were supposed to serve as a tool to monitor overall qualitative targets and simple quantitative targets. In 2007 the third-generation development contracts (2008-2010) were introduced. For the first time attempts were made to establish a link between stated objectives and university outcome and funding. Universities were required to use indicators when setting targets and formulating strategies for future activities in the contracts. Thus, development contracts became genuine steering instruments for the government. With the shifting of the character of development contracts, the behaviour of the institutions changed simultaneously, as the new contracts required adjustment of activities in order to address concrete requirements. These tendencies will probably become even more pronounced in the future, as a key objective of the contracts is to encourage universities to act more strategically with regard to education and research. While the university managements are encouraged by this development, academic staff tend to perceive it as threatening their professional autonomy (Benneworth & al. 2011).

An international panel, set up in 2009 in connection with the evaluation[5] of the 2003 University Act, concluded on development contracts that: "The development contracts could be used as individual, helpful tools for the universities' strategic development and profiling, as well as for realising important targets, such as speeding up graduation and specific enrolment targets… The development contracts have become too detailed and process-oriented. In practice they consist of a list of indicators, on which universities provide data. For an overview of the university sector, the Parliament, as well as the Ministry, obviously needs comprehensive information and statistics on the universities' performance. This information is necessary and can be developed in dialogue with the universities, but it does not necessarily belong in a development contract."

[5] Ministry of Science, Technology and Innovation 2009

2.1. The quality debate and accreditation

Quality has always been central to higher education debate in Denmark but intensified the last years, in particular the quality assurance issue has been central in the debate. But the reorganisation and restructuring of quality assurance that was carried out during the last years was barely based on evidence about quality scarcity. Subsequent evaluations since the 1990s revealed the high quality of Danish higher education. In addition, very high citation and impact levels have traditionally characterised Danish research. Concerns about quality, expressed recent years, relied rather on arguments about the need to document accountability and put emphasis on strategic priorities, both in education and research activities, rather than lack of quality (Kalpazidou Schmidt 2012).

The Danish quality assurance system is exercised through: (i) accreditation of study programmes (a precondition for attaining public funding), (ii) internal quality assurance procedures (set up by the universities) and (iii) use of external examiners (established 150 years ago).

Internal quality assurance is a legal requirement, which obliges higher education institutions to evaluate their own performance and to publish the results on their websites. The University Act specifies the role of deans, heads of department and study boards, respectively, in assuring and developing the quality of education and teaching. Self-evaluation, in which students as a rule participate, is an integral mandatory part of any university assessment.

External quality assurance is exercised through an Accreditation Council and two agencies, ACE Denmark and the Danish Evaluation Institute (EVA), which carry out external quality assurance functions. Danish higher education programmes have been subjected to external quality assurance since the establishment of the Evaluation Centre in 1992. In 2000, the Evaluation Centre was replaced by EVA. In 2003, EVA developed a concept for university audit and initiated audits of four Danish universities, which agreed to participate in the audits voluntarily.

In 2007, with the implementation of a new Accreditation Act, accreditation became the key mechanism for external quality assurance. The Accreditation Institution was thus established as an independent institution comprising the Accreditation Council as the decision-making authority and ACE Denmark as the accreditation operator. The Council makes decisions on the accreditation of all higher education study programmes in Denmark, based on the European Standards and Guidelines for Quality Assurance and on recommendations from the two accreditation operators, ACE Denmark and EVA. ACE Denmark is the accreditation operator for bachelor, master's and professional master's programmes while EVA is the accreditation operator of professional bachelor, academy profession

and diploma programmes as well as specialisation courses within adult education and continuing training.

The accreditation process involves a direct assessment of whether a study programme or an institution meets a number of predefined quality criteria. The procedure results in an authoritative approval/non-approval of the study programme or the institution. A positive accreditation implies that study programmes live up to a set of minimum standards for quality and relevance. The system, which assures only basic quality, is established as a supplement to the internal quality assurance at the universities. The quality and relevance of a study programme are assessed on the basis of five criteria:

- Demand for the study programme in the labour market (relevance)
- Whether the study programme is based on research and connected with an active research environment of high quality
- Academic profile of the study programme and learning outcome targets
- Structure and organisation of the study programme
- Continuous internal quality assurance of the study programme.

The Minister of Science lays down criteria for quality and relevance as well as detailed rules on accreditation and approval procedures. The universities are obliged to submit the information required for the preparation of the accreditation plan and to follow the approved plan. Danish accreditation involves both existing and new study programmes. All new study programmes must be accredited before they may be established. Institutions and study programmes may comment accreditation reports. All programmes offered under the University Act are accredited by the Accreditation Council after assessments conducted by ACE Denmark. Evaluations are performed by expert panels, appointed and organised by ACE Denmark.

The aim of Danish policies during the last decade has been to enhance quality, promote relevance and ensure accountability. However, with the emergence of accreditation in 2007, attention shifted more towards accountability than quality improvement. Seen from an institutional perspective, this development might force institutions to emphasise on ensuring accreditation of programmes, rather than enhancing quality, as the consequences of non accreditation for the institutions are severe. A growing systematization and professionalization of quality assurance at institutional level has undoubtedly been taking place (cf. Stensaker 2008).

Against this background, all Danish universities have recently formulated strategies to cope with external quality assurance requirements. Institutions have become « strategic actors », as regards quality assurance and reporting requirements by external bodies. Universities strive to differentiate themselves from other institutions by identifying specific areas of strength and further building up their profiles (*cf*. Kalpazidou Schmidt & *al* 2007, Strehl & *al*. 2007).

Quality assurance has been formalized with the establishment of special units at institutional level to handle the process. Quality assurance was traditionally based on individual and/or group research initiatives. Nowadays, the responsibility for quality assurance is gradually becoming centralized. One example of increased centralization and responsibility shift in the Danish context can be seen at University of Copenhagen where a newly established body, the University Education Strategic Council, serves as advisory body for university managers, provides consulting assistance to faculty in their work with quality assurance and coordinates quality assurance work in relation to ACE Denmark.

The sole authority of ACE Denmark to approve new degree programmes can limit universities' autonomy and ability to innovate. At the same time universities are worried about the labour intensive character and the strong relevance element in connection with accreditation of existing and new programmes as well as the bureaucracy such a system implies. Nevertheless, the Ministry is considering a new accreditation strategy that implies accreditation of institutions instead of individual programmes.

2.2. Inter-, multi and transdisciplinarity

Danish universities (with the exception of possibly Aalborg University, which is organized differently) only fully acknowledged that research is no longer an isolated mono-disciplinary activity in recent years and that a number of scientific problems go beyond the boundaries of traditional disciplines and sectors and that cutting-edge research is increasingly being conducted in the interface between disciplines or in multidisciplinary settings.

There has thus been an apparent asymmetry between addressing contemporary scientific and societal problems and the disciplinary structure upon which most universities are based. These challenges to universities have led to organizational restructuring and mergers of institutions, departments and faculties. Universities have thus been aware of the fact that knowledge production processes have impact on institutional structures and vice versa. There are hence institutional signs of inter-, multi-, and transdisciplinary research activity such as the changing emphasis on this type of research in policies and organizational settings, that is, the mergers of departments (and the

organization of inter-, multi-, and transdisciplinary university departments, centers, and programmes) or the non-discipline-based organization of the Danish research councils. Increasing inter-, multi-, and transdisciplinarity have had far-reaching institutional and organizational consequences, as seen at the University of Copenhagen and Aarhus University but also in thematically organized research centers.

2.3. Institutional autonomy and academic freedom

In the Danish context, the issue of individual academic autonomy and freedom in teaching and research has been neglected, while focus has been on institutional autonomy. In addition, whenever autonomy was discussed, the concepts autonomy of institutions, autonomy of research teams, and individual academic freedom had been mixed up. Academic freedom and individual autonomy has long been the cornerstone of Danish universities. Senior faculty used to play an important role in decision making. With the implementation of the University Act of 2003, a new distribution of power and responsibility has been established that shifted formal control from academic staff to appointed leaders and external interests. A “top down” management model replaced the “bottom up” model. The university boards, established since the implementation of the University Act of 2003, serve as representatives not only of the university, but also of the general public and the industrial sector, and have important governance and management functions in setting strategic targets for universities. The University Act provides thus university boards, rectors, and deans with the authority and instruments to make strategic decisions by concentrating all power at the top.

The replacement of the collegial model with professional managers has an important impact on institutions and their staff. As the number of fulltime administrators is increasing, academia is being decentralized in terms of influence. The new model of governance and management based on the activities of a growing full-time body of professional managers is characterized by a move away from the significance of staff and students in the decision making process.

As to the employment of academic staff at the universities, this is the responsibility of the rector, who can delegate this function to the dean who can then delegate this to the manager of the faculty and the head of department. The Ministry of Science is not involved in any academic appointment but has established an overall framework for the appointment process. Decisions about salary are in principle delegated to the university, but within frameworks that are established in a general agreement for academics employed by the state. The general agreement is negotiated between the state and professional unions.

While institutions have gained autonomy, the autonomy of professors has been restricted with the introduction of boards, the abolition of collegial bodies, and the appointment of rectors, deans, and department leaders (although leaders have to be acknowledged researchers). In an international environment with increasing competition among institutions of higher education, among others, for recruitment of the best academic staff, Danish universities may face difficulties recruiting staff in a setting where power has been moved from professors. Temporary contracts for researchers at all levels have become more common. Before the beginning of the new century, all younger researchers (research assistants, post docs, and assistant professors) signed temporary contracts, but very few associate and full professors did. Since then, temporary contracts have been widely introduced at all levels, and a lot of them are directly connected to specific research projects that often are financed by external resources, meaning some researchers are dependent on external funds in order to continue their careers. This makes recruitment of researchers even more difficult because of the decreased attractiveness of the academic career.

The balance between the needs of the academia and the goals and strategic agenda of the appointed leadership is an issue at Danish universities. The question is whether the involvement of academic staff in managerial positions will continue and how the new leadership, which has concentrated power in their hands, is going to use this extended power potential. But the main question in Danish higher education is whether current reforms have established the right balance among professional academic freedom, institutional autonomy, and accountability to society, the state and other stakeholders. The debate concerning the rights, opportunities and obligations of staff continues while the universities try to address the issue (although perceptions of degree of staff influence and instrumentation differ) within the framework of the University Act.

3. University of Copenhagen

3.1. History and organisation

The University of Copenhagen (UC), inaugurated in 1479, is one of the oldest universities in Northern Europe. As was the case with all medieval universities, the University of Copenhagen was part of the universal Roman Catholic Church. Based on a German model, the university consisted of four faculties: Theology, Law, Medicine and Philosophy.

The university has gone through numerous changes. It started as an academic republic with its own laws, courts and prison systems. The advent of the reformation in 1536 meant a radical change in the position and role of the university in the Danish society. Though, from an organisational point of view, the university remained an academic republic along the lines of the medieval model until 1771 when it lost its own jurisdiction. Only in the second half of the 20th century (1960s) there was an abolishment of the last traces of what was called the "professorial rule". From the inauguration in 1479 until 2004, the university was led by a Rector and a Consistory. Governance has changed over time due to the introduction of new laws. The most radical change was that of 2004/2005, where the Consistory was replaced by a Board of Governors with a majority external to the university members.

In 1788 the university had a teaching staff of 20 teachers and 1000 students. By 1900, the numbers had grown to 60 and roughly 4000, respectively. Today UC has 37000 students and more than 7000 scientific, technical and administrative staff, and more than 100 educational programmes, making it Denmark's largest educational institution. In 1997 the university linked up with the other institutions of higher education in the metropolitan area and in Scania, Sweden, to form the University of Oresund with the aim to provide a framework for increasingly integrated collaboration on research and education.

3.2. Management

The University of Copenhagen is a self-governing unit under the state and the Ministry of Science. The board of the university is the highest authority at the university. The board has the task of ensuring the interests of the university and determines, among other, the guidelines for university organization, long term activities and development. The board is composed of six external members and five internal members. Membership of the board is limited to eight years from the date of accession. Membership for student representatives, who are elected every two years, is limited to four years. Board meetings are held about 8 times a year, where also the university's senior management participates. The meetings are open to the public.

The Rector and Pro-rector are appointed by the board to head the university management. The Deans are nominated by the Rector and appointed by the board to head the faculties. The deans appoint the head of departments. The Rector appoints the academic councils, one in every faculty, after recommendation from the deans. The academic council has the dean as chairman and comprises additionally at least 6 representatives elected by the students and the academic staff, including PhD students. Technical and administrative staff have two or more representatives who

attend the meetings as observers. The academic council advises the dean on the internal distribution of funds, research, education and knowledge exchange, assessment committees' composition, and in connection with award of doctoral degrees.

A university director is appointed by the board after recommendation from the Rector. The director is the head of the central administration. The central administration conducts the day-to-day administration and special initiatives. Faculties and departments have their own individual administrations, although the general economy is overseen by the central administration.

The management at UC is responsible for establishing guidelines and procedures to ensure that due financial consideration is exercised in the administration of the institution, and that the information contained in the Financial Statements and Management's Reviews on targets and performance is documented and adequate for the activities of the university. The UC reports to the Ministry of Science with which the board of the university has entered into a Development Contract. This contract formulates the university's objectives and intended progress for a fixed period of time.

3.3. Development contracts

The development contract covers the objectives of the UC which are research, education and dissemination of knowledge to society at large. Within this frame the development contract lists a number of intended results. These do however not reflect the overall profile of the university but set out development trends within the university core areas, as mentioned above. An outline of the requirements of the Ministry of Science as regards the development contracts is presented below.

Outline of the requirements of the Ministry of Science for the development contract

Main objective	Required results
Research	Production of research Internationalisation of research Attract external, non-governmental funds Research PhD activity
Education	Intake Dropout rate Study completion time

	Educations adapted to the needs of society Entrepreneurship Internationalisation of educations Education Teaching of high quality
Dissemination of knowledge	Cooperation with the vocational schools Continuing and further education Participation in the public debate Dissemination of knowledge Cooperation with the business community
Research-based servicing of authorities	Research-based servicing of authorities

An example as regards setting a target as to one indicator i.e. production of research, might be to maintain the high position that UC researchers have on the publications list in terms of publishing in the top national and international peer-reviewed journals. In 2009, 28% of the UCs research articles were published on BFI level 2 (top 20% of world production), which was the highest figure for any Danish university. The target in the current development contract is to maintain the 2009 level and improve upon it, if possible.

Another example is the setting of targets for closer cooperation with business and industry, as measured by the number of cooperation agreements, the number of licenses sold and the revenues generated. The target for 2008-2010 was to increase these activities by 10% over the contract period. Overall, during this contract period an increase in the number of cooperation agreements was recorded. In 2010, 609 such agreements were finalised, exceeding the contract target of 453 agreements and at the same time UC entered into 12 licensing agreements.

3.4. Reorganisation and mergers

In 2007, UC merged with the Royal Veterinary and Agricultural University and the Danish University of Pharmaceutical Sciences, as part of the merger reform initiated by the Ministry of Science. Through this merging, the UC contains one of the largest Health and Life Science Centres in Northern Europe. In 2012 further mergers were initiated by the Rector and the board. The Faculty of Life Sciences (LIFE) and the Faculty of Science merged into a new Faculty of Science. Similarly, the Faculty of Pharmaceutical Sciences, the Faculty of Health Sciences and the veterinary field at the Faculty of

Life Sciences are merged into the new Faculty of Health and Medical Sciences. The university comprises thus six faculties:

- *Faculty of Health and Medical Sciences*
- *Faculty of Humanities*
- *Faculty of Law*
- *Faculty of Sciences*
- *Faculty of Social Sciences*
- *Faculty of Theology*

Facts and Figures

Founded	1479
Students	38,000
Employees	8,100
Revenue	7 mia DKK (app. 1 billion Euro)
Organisation	6 faculties, more than 100 departments and research centres
Total area of premises	929, 689 m2
Number of externally funded research projects	4,600
Nobel Prize Laureates	8

The University of Copenhagen was the best ranked university among the Nordic countries (2011) with a 52nd position on the worldwide ranking by QS World University Rankings, respectively 43rd by the Academic Ranking of World Universities and 46th by the Leiden Ranking, as illustrated below. As

stated in the UC strategy “Destination 2012”, the university operates according to international benchmarks.

UC placement on rankings

University of Copenhagen's placement on rankings	**World**	**Europe**
QS World University Rankings (2011)	52	13
THE World University Rankings (2011)	135	52
Academic Ranking of World Universities - Shanghai (2011)	43	9
Leiden Ranking* (2011)	46	7
Leiden Ranking** (2011)	129	46

** Based on total number of publications*

*** Based on "Mean Normalized Citation Score"*

Students

Total number of enrolled students	36, 891
Undergraduate students	21,489
Graduate	16,521
International students (exchange, guest and full-degree)	5,484

Staff

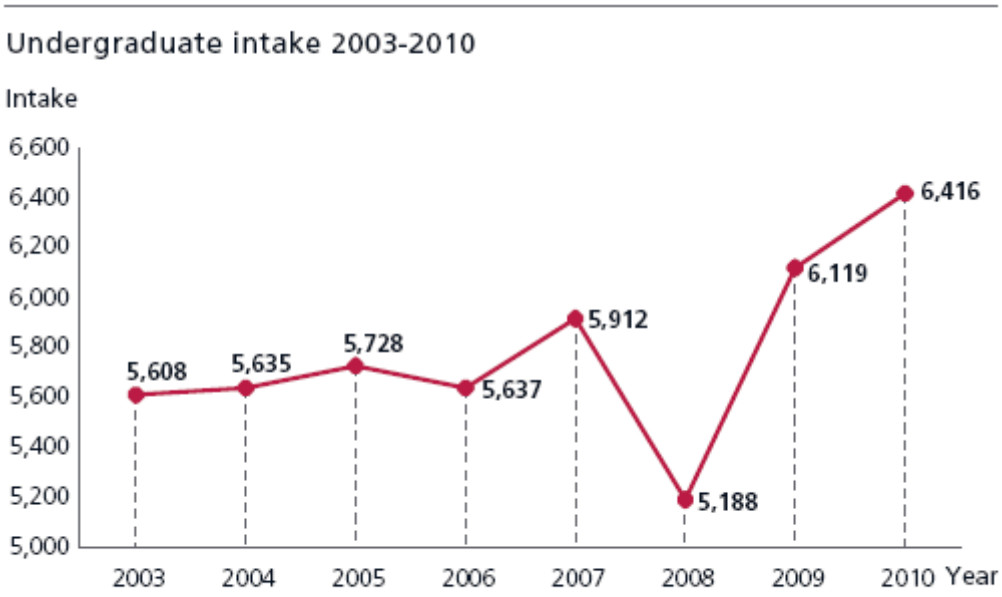
Total full time equivalents (Full Time Equivalence- FTE)	9,087
Academic staff (FTE)	4,406
Technical and administrative staff (FTE)	4,194
Number of PhD students	2,476
Number of subsidy financed research projects ????	4,602

Research

Number of PhD students	2,476
Number of externally financed research projects	4,602

In 2010, the university received a total of 6,416 new undergraduates, continuing the upward trend registered in 2009. The figure is up by almost 5% on last year, exceeding the target figure of 6,300 students stipulated in the development contract. The intake trend for 2003–2010 is shown in Figure 1 overleaf and is the largest in the university's history.

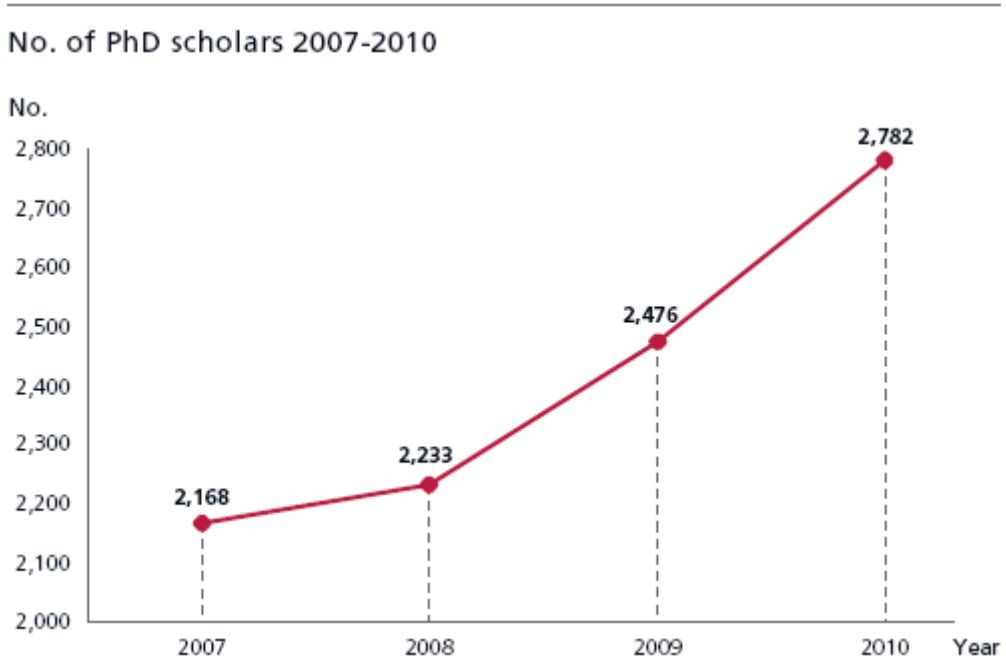
Figure 1



The undergraduate intake graph is based on reports to the Ministry of Science, Technology and Innovation (VTU), which uses different definitions of period and population from the statistics issued by Danish Universities (DKUNI).

The strong focus on the PhD programmes in the Danish policy of the recent years is reflected both in the number of PhD scholars and the number of newly registered PhD scholars at UC. Figure 2 below shows the number of PhD scholars at the University per academic year. In 2008, the curve breaks steeply upwards. This positive trend corresponds to the contract drawn up between the university and the Ministry of Science. A continuation of the present level would however require current funding levels to be maintained.

Figure 2



3.5. Funding

The university's total revenues in 2010 were DKK 7,468.8 million, an increase of 435.1 million, or 6.2% at current prices, compared to 2009. The bulk of the university's revenues (67.5%) stems from government subsidies, comprising an 8.7% grant towards current expenses, a 34.1% research grant and a 24.7% education grant.

Government funding increased by DKK 163.9 million in relation to 2009 because of the higher level of activity in research and programmes. External grants in particular grew, representing an increase of 15.1% compared to 2009. At the same time building-related revenues were reduced by DKK 79.4 million compared to 2009.

Staff expenses amounted to DKK 4,237.1 million in 2010, corresponding to 57.9% of the university's total operating expenses, an increase by app. 11% compared to 2009. Staff expenses increased primarily because of higher externally oriented activity, which triggered the recruitment of academic and technical personnel to support research, and due to the rise in the number of PhD students. Overall, there has been an increase of 315 academic staff full-time equivalents (FTEs), representing a growth of app. 8%, and 173 technical/administrative staff FTEs, representing a growth of 4%.

The financial conditions faced by the university have in general been changing in recent years, due to the continuing trend towards earmarking funds in the national budget and subjecting them to competition. After the Globalisation Settlement was reached in November 2009, DKK 881 million was up for negotiation, of which only DKK 205 million made its way to the universities in the form of funding for free basic research. Within the new performance model, a further DKK 100 million were earmarked for research funding. The UC received app. DKK 90 million, in addition to which the low taximeter level (TAKST1) was increased by DKK 4,180 to DKK 5,000 per FTE, to be fully phased in by 2012. The increase will mainly benefit the humanities and social sciences, which receive TAKST1. Finally, the Globalisation Settlement earmarked DKK 1 billion in 2010, as well as a similar amount in 2011 and again in 2012, to provide a technological improvement of the universities' laboratories. The UC's programme income and the production of student FTEs increased in 2010, representing a growth of 7.4% and 4.7%, respectively.

In 2010, external funding amounted to DKK 1,762 million, an increase of DKK 267 million compared to 2009, corresponding to a growth of 18%. The growth is mainly due to private Danish sources and EU funding. The largest private research donation in Danish history, DKK 885 million from the Novo Nordisk Foundation, allowed the UC to begin setting up a new international Metabolism Centre in 2010. The university also received a grant of DKK 415 million for the Danish Stem Cell Centre (DanStem). The centre is being established at the UC in collaboration with the University Hospital and a number of international universities and private companies.

Over the next few years, the need will remain for the UC to keep a tight rein on its finances while research funding and student intake will have to be increased during a period of economic slowdown. UC is undergoing physical, structural and administrative changes in order to adapt to new conditions, but the financial position in 2012, 2013 and 2014 is uncertain. At the same time there is a clear trend towards exposing funding more and more to competition and earmarking. The current globalisation agreement is also set to expire in 2012. At this moment in time, there is considerable uncertainty about whether the next national budget will include a continuation of the globalisation agreement and it is unclear whether these resources will be available for the university.

3.6. Internationalisation and regional cooperation

Further internationalisation is one of the main priorities of the UC as expressed in its strategy. The university aims to recruiting the best of the future generation of Danish and international research talent. A Human Resources department has the last years been established with a first priority to set

up interdisciplinary talent programmes for all groups of staff and ensure staffs inter-cultural competencies to meet globalization demands.

The UC is a member of the International Alliance of Research Universities (IARU). The alliance consists of ten universities worldwide: Australian National University, ETH Zürich, National University of Singapore, Peking University, University of California, Berkeley, University of Cambridge, University of Copenhagen, University of Oxford, The University of Tokyo, and Yale University.

The University of Copenhagen has developed a range of courses and full degrees (at master and PhD level) taught in English. Some programmes are developed and taught by the UC alone while others are offered in cooperation with other universities in Europe. In close collaboration with leading universities abroad, the UC is developing a Master of Excellence degree in English (Copenhagen Master of Excellence – COME).

The university has a longstanding educational and research collaboration with other universities in the Øresund Region. The Øresund university network involves 14 universities in eastern Denmark and southern Sweden and provides researchers and students with improved access to expertise on both sides of the Sound. The Øresund Science Region forms an umbrella for research co-operation and operates through six research and innovation platforms integrating universities, industries and the public sector.

An EU Office has been set up to support the researchers on attracting funding from the EU's Framework Programmes. The EU Office supports all phases in a project lifecycle. Major projects that retrieve a single authorization from the European Commission to the university of more than 150,000 Euro are awarded a bonus as a recognition. This has been instrumental in maintaining high participation rates.

3.7. Interdisciplinary research, Centres of Excellence and the Programme of Excellence

The mergers between the University of Copenhagen, the Royal Veterinary and Agricultural University, and the Danish University of Pharmaceutical Sciences have increased the scope for multidisciplinary research considerably. The University's strategy document "Destination 2012" states that the university has significant scientific diversity within education and research – a capacity that has been further strengthened by the mergers. During 2007, 700 researchers presented suggestions on how

the university might take advantage of its scientific diversity. This exercise resulted in the definition of the following 12 interdisciplinary research platforms.

- Living Conditions, Environment and Health in Developing Countries
- eResearch
- Natural Resources and the Environment
- Science, Ethics and Communication
- The Universe of the Cell
- Identities
- Food, Fitness and Pharma for Health and Disease
- Migration – Movement of People and the Development of Societies
- Future Technologies for Life
- Global Challenges: Spaces, Powers and Cultures
- Welfare and Democracy
- Brain, Mind and Medicines

The UC is hosting and participating in a number of Centres of Excellence financed by the Danish National Research Foundation (DNRF) within all faculties (18 in the Faculty of Science).

Furthermore, in 2007 the Rector of the UC in order to advance basic research set up a Programme of Excellence through which researchers have been able to apply for up to DK five million annually for up to five years for research projects in existing or new scientific areas. The applications were to be directed at one of the university's eight faculties.

In 2010, two special projects, Next Generation and CIEL (Copenhagen Innovation and Entrepreneurship Lab), were initiated. Next Generation is a collaboration between the UC, the Technical University of Denmark (DTU), Copenhagen Business School (CBS), Young Enterprise Denmark, Symbion Management, the Copenhagen Business Centre and Venture Cup. The project offers students advice and practical assistance in all phases of the innovation chain. CIEL was jointly designed by the UC, DTU and CBS. The partnership aims to expose all students to entrepreneurship as part of their induction programme, triple the number of students taking entrepreneurship courses as part of their studies, develop entrepreneurial programmes of excellence and further integrate entrepreneurship as part of Learning and Teaching in Higher Education (the LTHE programme). The cooperation between the UC, DTU and CBS as well as establishing partnerships with the private sector is one of the priorities of the university.

3.8. Knowledge dissemination, innovation and partnerships

In spring 2010, the university's task force for collaboration with business and industry presented a catalogue of ideas for new business activities at the university. This work has been continued by the university's Research and Innovation Council (KUFIR), established by the pro-rector in September 2010. Based on the recommendations of the task force, KUFIR presented an action plan in 2011 for the university's partnerships with business and industry, and with society as a whole. At the same time UC strives to support student interaction with business and industry (organizing, among others, mentoring programmes), as well as their involvement in entrepreneurship and innovation.

Danish universities have the right to IP produced by its employees. At the University of Copenhagen there is a Tech Transfer Unit in the Research & Innovation division (which provides support and service to the researchers in attracting external funding) responsible for the activities regarding commercialising research. The unit acts as a bridge between research and business by identifying projects with commercial potential, providing companies with information on the UC business opportunities and negotiating terms and conditions with companies on behalf of the university.

In 2010, two special projects Next Generation and CIEL (Copenhagen Innovation and Entrepreneurship Lab) were initiated. Next Generation is a collaboration between the UC, the Technical University of Denmark (DTU), Copenhagen Business School (CBS), Young Enterprise Denmark, Symbion Management, the Copenhagen Business Centre and Venture Cup. The project offers students advice and practical assistance in all phases of the innovation chain. CIEL was jointly designed by the UC, DTU and CBS. The partnership aims to expose all students to entrepreneurship as part of their induction programme, triple the number of students taking entrepreneurship courses as part of their studies, develop entrepreneurial programmes of excellence and further integrate entrepreneurship as part of Learning and Teaching in Higher Education (the LTHE programme). The cooperation between the UC, DTU and CBS as well as establishing partnerships with the private sector is one of the priorities of the university.

A strategy for collaboration with private enterprise for 2012-2016 has been presented. The strategy focuses on four areas: (i) matchmaking, (ii) increasing focus on innovation and entrepreneurship in education, (iii) seamless commercialisation and technology transfer processes, and (iv) enhancing strategic dialogue with private enterprise.

3.9. Personnel policies

Personnel policies in Denmark are in many ways regulated by the state. Institutions employ their academic staff under the same structure, in which documentable academic qualifications (degrees, publications, patents, etc.) play an important role. Also PhD students are employed. This employment system differs from the tenure system known mainly from the US. In principal, all younger researchers (such as assistant professors and post doc researchers) in Denmark are employed under temporary contracts, and none are entitled to tenure assessment.

The UC management plans to introduce a tenure-track system similar to the American model. The system will give young researchers, such as assistant professors, a clear career path. This comes as a response to a consultant's report, which criticized the former Danish university managements for failing to create real career positions such as assistant professors, and instead focused on fixed-term employees as postdocs.

In Denmark salary bands for senior academic staff are negotiated with other parties, and wage differences for similar job categories are therefore unusual. Although more autonomy as regards personnel policies and wages has been transferred from the state to the universities (within an overall limit for all staff salaries), the possibilities have not been fully exploited by the universities with very few exceptions of high profiled professors.

The UC has since 2008 formulated a strategy in order to increase the number of female professors. The strategy comprises financial incitements to faculties and departments (addressing appointment of professors), internationalisation stipends (addressed to younger researchers) and talent and leadership development (addressing all positions).

3.10. Staff and student involvement and participation

In 2010, addressing the issue of lack of staff and student involvement and participation, highlighted in the evaluation of the University Act and the International Panel's report in 2009, the Rector carried out and completed the "Temperature 2010" project on employee/student involvement and participation at the UC. The findings of "Temperature 2010" indicate that, across the university a system of advisory forums has been set up with the involvement of academic staff, technical and administrative personnel and students. However, the outcome also reveals that there is still a general need for much clearer frameworks for information and convening meetings to ensuring clarity, transparency and an adequate flow of information, as well as providing opportunities for

participants to get involved in different processes on time. Moreover, the project shows that there is a need for transparency with regards to how people in standing and ad hoc committees, departmental forums, etc. are appointed. The university runs a management development programme, which covers managers on all levels, focusing on communication and participation. It is expected that the management programme will help improve the involvement of staff and students, as there is a widespread perception among staff that responsiveness, inclusion and participation are not part of the current system to an adequate degree.

Based on a revision of the University Act in 2011 as regards staff and students participation and involvement in important decisions, the University board decided in January 2012 to establish a department council at all departments. The council is chaired by the head of the department and involves at least 10 other members who make decisions about, among others, budget, strategy and educational issues. However, staff and students, even though they welcome the establishment of department councils, point out that the definition of the concept of participation and involvement is very weak, resulting in a council that is only a hearing and information body with no real power. Decision-making lies in the hands of the head of department, according to staff.

4. Concluding Remarks

Recent years Denmark has seen multiple higher education reforms - and at an unprecedented pace compared to other European countries. The Danish university sector has occupied a central position when it comes to several political agendas regarding globalization. The most important changes aimed to improved quality, mergers and concentration of the higher education system, and interaction and synergy between different sectors in society.

The merger process between universities and governmental research institutes aimed at reinforcing institutional infrastructure, sharpening the profile of universities in an international perspective, improving quality in terms of output and impact and ability to attract international research funding. Mergers also aimed at strengthening interdisciplinarity and transdisciplinarity as well as professional synergy between closely related subjects such as in the case of mergers of Life Sciences at the University of Copenhagen and the Royal Veterinary and Agricultural University.

Another argument in the merger debate was that an increased size provides the university management more “room to manoeuvre”. The mergers gathered most of the public research in the universities and provided the university boards and managers with larger funds. This in combination with the Globalisation funds ensured the universities increased research resources and thus better

possibilities to make strategic, long-term decisions. Priorities such as academic excellence and high quality research through internationalisation and interdisciplinarity have been central to the strategy of the University of Copenhagen. Simultaneously the university has been more and more tuned in on the interaction with other sectors in society and the commercialization agenda through partnerships with the private sector.

With the introduction of the 2003 University Act, universities gained increased autonomy, which they administered very differently. The University of Copenhagen started a reorganisation process the last five years although implementation has a slower pace compared to the other large university in Denmark, Aarhus University. Nevertheless, the University of Copenhagen is undergoing physical, structural and administrative changes, which are created both due to external and internal drivers. Changes are initiated and implemented both by the university leadership and as a consequence of transformations in the higher education framework and external pressures from society at large. The university leadership has exploited the possibilities that the University Act of 2003 and the mergers provided, concentrating power at the top and making the university a more centralized institution.

The management form of the university is thus still a key point in the debate. Appointed boards and rectors with a majority of external members and a strengthening of the management are welcomed by some stakeholders while academic staff express concern over the lack of participation and involvement in the decision making process and the limitations of academic freedom. At the same time, as the "room to manoeuvre" and make strategic decisions for the boards and management of the university has undoubtedly become larger and been used (not least during the mergers of institutions, faculties and scientific areas), the "room to manoeuvre" for the academic community has become much smaller.

The balance between effectively handling "strategic adaptations" to external expectations and pressures on socio-economic relevance and academic excellence in a global competitive environment, taking into consideration in the practice of power all the actors, has been a difficult art to exercise. The long-term effects of the changes are too early to anticipate and adaptations along the way may be necessary in a dynamic and fast changing framework.

References

- ACE Denmark http://acedenmark.eu/, last accessed May 15, 2012.
- Annual Report 2011, University of Copenhagen.
- Benneworth, P.; de Boer, H.; Cremonini L.; Jongbloed, B.; Leisyte, L.; Vossensteyn, H. & de

Weert, E. 2011. Quality-related funding, performance agreements and profiling in higher education. An international comparative study. Final Report, February 2011

- Danish Prime Minister's Office [Statsministeriet]. 2006. *Progress, innovation and cohesion strategy for Denmark in the global economy—Summary*. Copenhagen.
- Destination 2012, Strategy for the University of Copenhagen http://www.e-pages.dk/ku/236/
- Frølich, N.; Kalpazidou Schmidt, E. & Rosa, M. J., (2010): Funding systems for Higher Education and their impacts on institutional strategies and academia: a comparative study between Denmark, Norway and Portugal. *International Journal of Educational Management, vol. 24, nr 1.*
- Kalpazidou Schmidt, E. (in press). Perspectives on Quality Assurance in National and Institutional Contexts. In *Contrôler la Qualité dans L'Enseignement Supérieur.* Book chapter, Université Catholique de Louvain, 2012.
- Kalpazidou Schmidt, E.; Langberg, K., & Aagaard, K. 2007. Funding systems and their effects on higher education systems. Country study Denmark. In *Funding systems and their effects on higher education systems.* International Report, OECD-IMHE Study.
- Ministry of Science, Technology and Innovation 2009. *The University Evaluation 2009, Evaluation Report.*
- Ministry of Science, Technology and Innovation, Denmark. *Research to be Strengthened with Fewer Danish Universities*. Press release, 4 October 2006.
- Ministry of Science, Technology and Innovation, Denmark 2003. Act on Universities of May 28, 2003 (Translation) Explanatory notes. Copenhagen.
- Ministry of Science, Technology and Innovation, Denmark (2000). *University Performance Contracts – The Danish Model*.
- Slottved E. & Tam, D. 2009. *The University of Copenhagen. A Danish centre of learning since 1479.* The University of Copenhagen.
- Stensaker, B. 2008. Outcomes of Quality Assurance: A Discussion of Knowledge, Methodology and Validity. *Quality in Higher Education,* 14(1), pp. 3-13.
- Strehl, F.; Reisinger, S. & Kalatschan, M., 2007. *Funding Systems and their Effects on Higher Education Systems.* International Report, OECD-IMHE, 2007.

WEBSITES

- http://introduction.ku.dk/presentation/
- http://publikationer.ku.dk/aarlige_udgivelser/aarsrapport/download_arkiv/Engelsk_aarsrapport_2010_endelig.pdf/

- http://dkuni.dk/~/media/Files/Publikationer/Tal%20om%20de%20danske%20universiteter%202011.ashx
- http://dkuni.dk/Statistik/Universiteternes-statistiske-beredskab
- http://fivu.dk/publikationer/2010/filer-2010/universitetsevalueringen-2009.pdf