



Innovation



Public Research Commercialisation Survey Denmark 2006



**Danish Agency for Science
Technology and Innovation**

Ministry of Science
Technology and Innovation

Public Research Commercialisation
Survey – Denmark 2006

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Public Research Commercialisation Survey – Denmark 2006

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Introduction

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The annual commercialisation survey illustrates the efforts and results of public research institutions in technology transfer. It is thus included as one initiative, among several, to strengthen the monitoring and documentation of the national effort in knowledge transfer, which The Danish Council for Technology and Innovation has launched with its action plan "Innovation Denmark 2007-2010".

The statistics for 2006 reveal that the progress made in recent years with the commercialisation of research results in Denmark, continues.

The performance of public research institutions in licensing is improving year by year, while the costs for patenting are decelerating. From 2005 to 2006, the total revenues of public research institutions from commercialisation almost doubled. Thus, for the first time, revenues from commercialisation exceeded costs.

In 2006 23 institutions had commercialisation activities of various scale. From 2007, several institutions have merged. More than 90 per cent of the activities in technology transfer will thus now be concentrated at six or seven institutions.

The commercialisation survey has been conducted jointly by The Danish Agency for Science, Technology and Innovation and The National Network for Technology Transfer according to the international standards for such surveys. Data for 2006 have been collected through a standard questionnaire to universities, government research institutes, and research hospitals active in patenting. The presented data include all public research institutions with significant commercialisation activities.

Further information on technology transfer in Denmark can be obtained from the website www.techtrans.dk

This survey on public research commercialisation is based on data from a total of 23 public research institutions. The group of institutions surveyed includes nine universities, nine government research institutes and five research hospitals (regional hospital administrations).

Inventions and patents

- In 2006, the public research institutions received a total of 368 invention disclosures – an increase of 30 per cent from 2005.
- In total, 113 new patent applications were filed in 2006.
- From 2005 to 2006, the number of patent applications increased by approximately 30 per cent. The government research institutes, in particular, filed a substantially greater number of applications.

Licensing, options and assignments

- In 2006, the public research institutions signed new agreements licensing, assigning or giving option to IP. The universities accounted for more than 8 out of 10 agreements.
- From 2005 to 2006, the number of agreements increased by approximately 40 per cent – part of which however is attributable to an adjustment in the method of calculation.
- At the end of 2006, the institutions aggregate portfolio totalled 103 active licenses – similar to a 10 per cent raise from 2005.

Spin-out companies and equity

- In 2006, 15 new enterprises were created, dependent on the licensing or assignment of IP from public research institutions. (The tables list 16 spin-out companies, as one enterprise was established with IPRs obtained from two institutions)
- During 2006, the institutions received equity in 11 enterprises, in return for licensing or assignment of IP.
- At the end of 2006, eight institutions reported an aggregate portfolio of equity in 36 enterprises.

Technology transfer staff

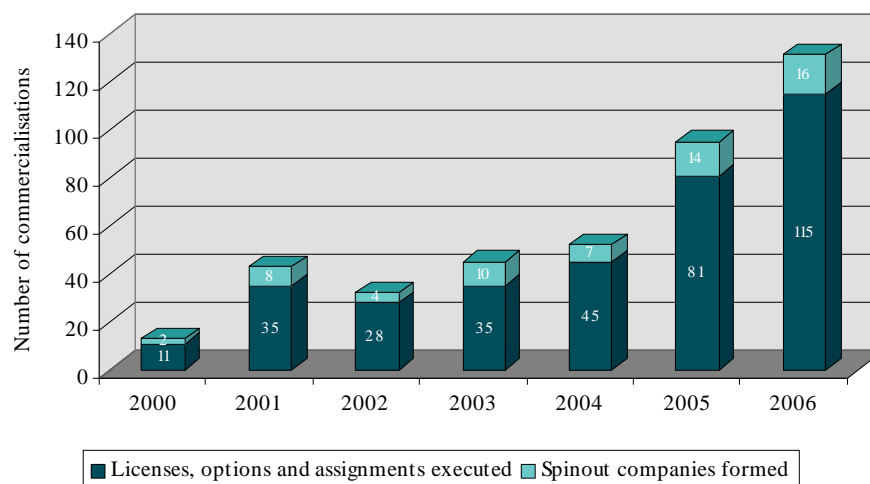
- From 2005 to 2006, the total of technology transfer staff grew by 15 per cent to the equivalent of 56 full-time positions.
- At the end of 2006, four institutions reported a staffing level of more than 5 full-time equivalents.
- From 2007, the 23 institutions in the survey have been amalgamated into 13. In this connection, a number of the technology transfer units have also been merged.

Costs and revenues

- In 2006, the public research institutions had commercialisation costs of DKK 28 million.
- The total income from licenses, assignments and cashed-in equity amounted to DKK 29 million – almost a twofold increase from 2005.
- Three institutions together accounted for almost two thirds of total revenues in 2006.

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Commercialisation performance, 2000-2006



Summary	<i>Universities</i>	<i>Government research institutes</i>	<i>Research hospitals</i>	Total 2006	Total 2005
Invention disclosures received	259	47	62	368	281
Patent applications filed	78	23	12	113	87
Patents issued	3	12	0	15	31
Licenses, options and assignments executed (incl. software)	97	11	7	115	81
Total license portfolio (excl. software)	45	43	15	103	95
Spin-out companies formed	14	0	2	16	14
Technology transfer staff (full-time equivalent)	3.2	14.7	10.3	56.2	48.8
Commercialisation costs (DKK million)	1.3	7.3	4.9	28.4	31.9
License income received (DKK million)	1.8	1.8	1.4	29.0	15.8

Inventions

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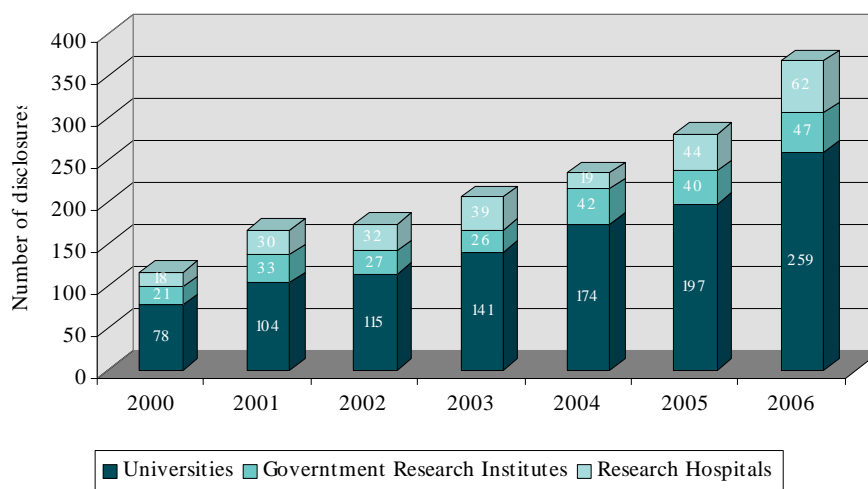
Employees in public research institutions are obliged to report to their own institutions any invention made in the course of their work.

In 2006, the institutions received a total of 368 invention disclosures. 17 of 23 institutions in the survey received such disclosures in 2006. Of these, five institutions accounted for almost two thirds.

From 2005 to 2006, the number of disclosures increased by approximately 30 per cent. Over the entire period from 2000 to 2006, the number of disclosures received annually has trebled.

It should be noted that to a certain extent, the calculation of reported inventions includes double counting of joint inventions across several institutions. In 2006, the same inventions were registered by two or more institutions in 52 instances.

Invention disclosures received, 2000-2006



Invention disclosures received	2000	2001	2002	2003	2004	2005	2006
Total	117	167	174	206	235	281	368
Universities	78	104	115	141	174	197	259
Government research institutes	21	33	27	26	42	40	47
Research hospitals	18	30	32	39	19	44	62

Patent applications

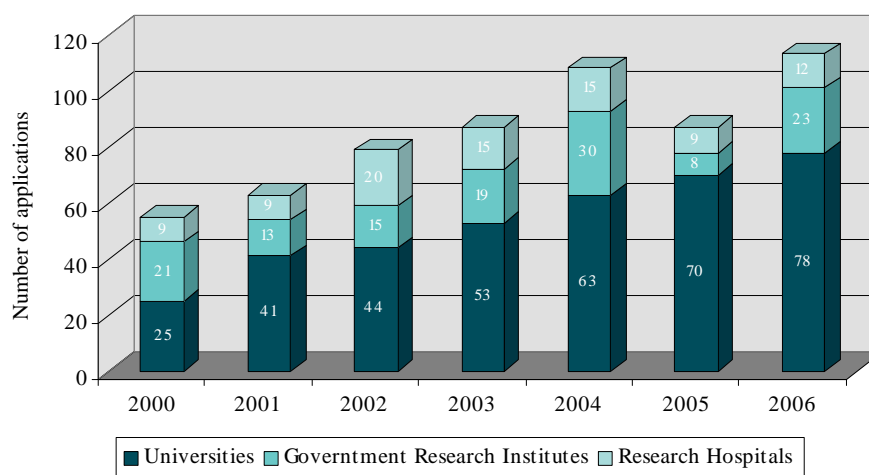
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In 2006, the public research institutions filed 113 patent applications. 14 of the 23 institutions in the survey filed patent applications in 2006. Four institutions accounted for more than half of the total number of applications.

From 2005 to 2006, the number of patent applications increased by approximately 30 per cent. In particular, the government research institutes filed more applications in 2006 after a decline in 2005.

It should be noted that the calculation of patent applications, includes a degree of double counting of cross-institutional applications filed jointly by several institutions. In 2006, the same applications were reported by two or more institutions in 12 instances.

Patent applications filed, 2000-2006



Patent applications filed	2000	2001	2002	2003	2004	2005	2006
Total	55	63	79	87	108	87	113
Universities	25	41	44	53	63	70	78
Government research institutes	21	13	15	19	30	8	23
Research hospitals	9	9	20	15	15	9	12

Patents issued

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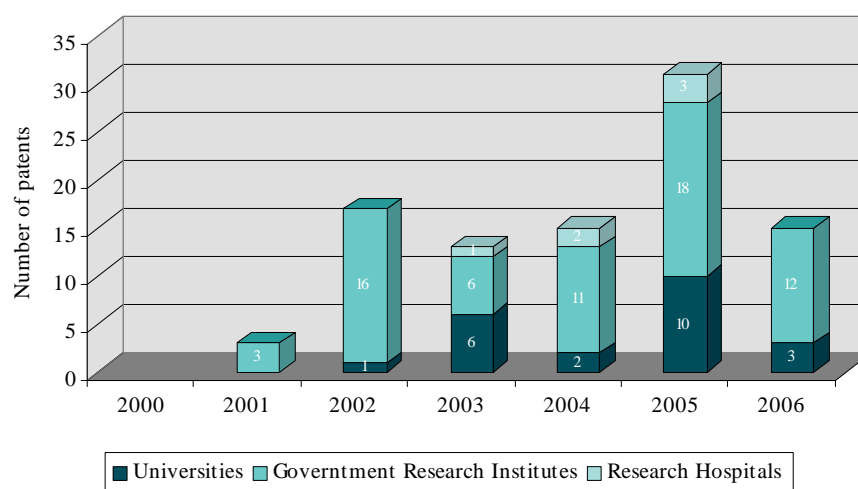
In 2006, seven institutions had 15 new patents issued. Of these, a single institution accounted for almost half.

Over the period from 2000 to 2006, 94 patents in total were issued to public research institutions. Of these, by far the majority was issued to government research institutes. From 2005 to 2006, the number of newly issued patents to the public research institutions was halved.

Taken together with the number of patent applications filed – of around 100 annually – the low number of issued patents can probably be attributed to the fact that a considerable amount of IP is sold to industry prior to the patents being issued.

Additionally, the limited share of patents issued to universities probably reflects the fact that Danish universities have only been filing patent applications since 2000 following a change in legislation on IP ownership.

Patents issued, 2006



Patents issued	2000	2001	2002	2003	2004	2005	2006
Total	0	3	17	13	15	31	15
Universities	0	0	1	6	2	10	3
Government research institutes	0	3	16	6	11	18	12
Research hospitals	0	0	0	1	2	3	0

Licenses, options and assignments

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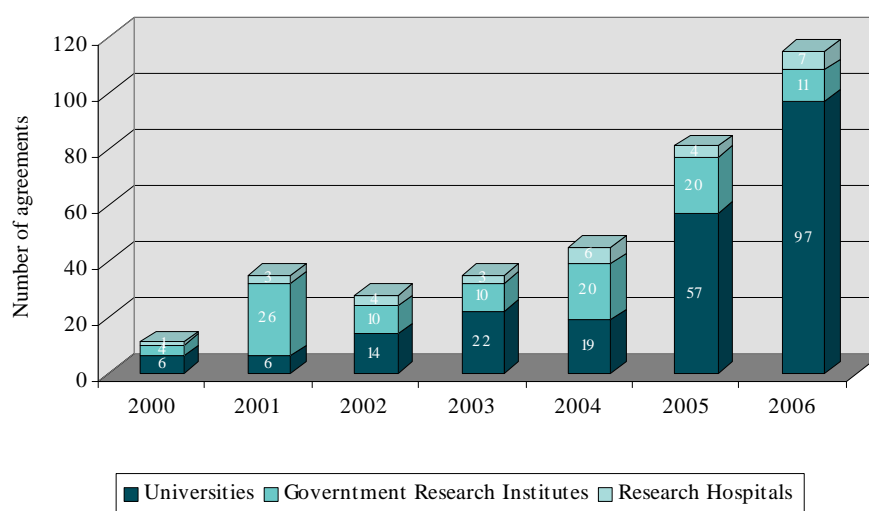
In 2006, the public research institutions signed 115 agreements licensing, assigning or giving option to IP. Universities accounted for more than eight out of ten agreements.

15 of 23 of the institutions in the survey made license deals or assigned IP in 2006. One institution alone accounted for almost one third of the agreements.

From 2005 to 2006, the number of new agreements executed rose by approximately 40 per cent. A proportion of this increase must however be attributed to an adjustment in the method of calculation. From 2006, option agreements are included in the figures. This adjustment has been made to achieve better accord with international statistics. For 2006, the institutions reported a total of 26 option agreements. Without including these agreements, the increase from 2005 to 2006 would constitute approximately 10 per cent.

Over the period from 2000 to 2006, the number of agreements executed at an annual basis has increased more than tenfold.

Licenses, options and assignments executed, 2000-2006



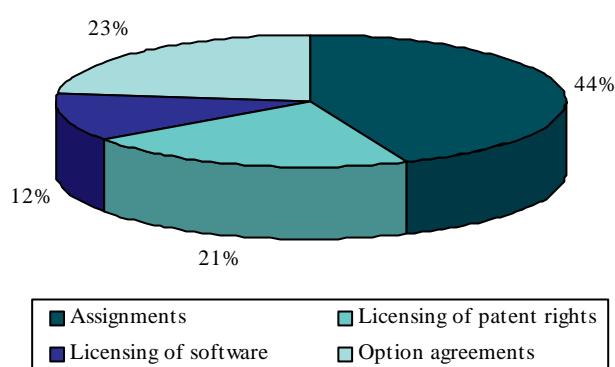
Licenses, options and assignments executed	2000	2001	2002	2003	2004	2005	2006
Total	11	35	28	35	45	81	115
Universities	6	6	14	22	19	57	97
Government research institutes	4	26	10	10	20	20	11
Hospitals	1	3	4	3	6	4	7

Software licenses accounted for 14 of the total of 115 agreements executed in 2006. Here, only license deals with a value of minimum DKK 10,000 are included. Furthermore, where the same software is given in license by a standard agreement to multiple users this is counted as one license agreement only. Two institutions were responsible for all of the software licenses in 2006.

From 2005 to 2006, the number of software licenses executed declined from 26 to 14 while the number of agreements on patentable inventions increased from 55 to 75. Of the total number of IP agreements, patentable inventions accounted for two thirds.

In regard to patentable inventions, twice as many assignments as licences were executed in 2006. Nine institutions have commercialised inventions by assignment of IP while 11 institutions have signed new license agreements.

IP agreements divided by type, 2006



It should be noted that the data on licenses and assignments executed in 2005 and 2006 also include agreements with spin-out companies. To some extent there is therefore an overlap in the results presented in the form of licenses/assignments, and those in the form of established spin-outs.

Furthermore, the statistics can, in certain cases, include single instances of double counting of agreements executed jointly by one or more institutions.

Finally, it should be noted that two institutions have stated that they have employed a contract practice where the same license agreement encompasses the sale of licenses to a number of different patented inventions. In these cases, the number of licenses sold has actually exceeded the number of license agreements executed.

License portfolios

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At the end of 2006, the public research institutions had a total portfolio of 103 license agreements (software licenses not included). Of these, approximately 40 per cent were yielding income in 2006.

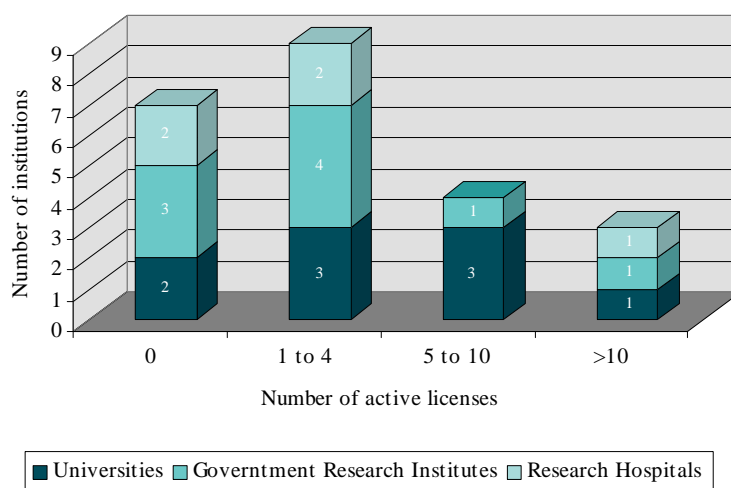
From 2005 to 2006, the combined license portfolio of the public research institutions expanded by just under 10 per cent.

16 out of the 23 institutions in the survey reported active license agreements at the end of 2006. Of these, three institutions reported a portfolio of more than 10 license agreements. At the same time, these institutions represented more than half of the total portfolio.

It should be noted that in a few cases, the figure could include double counting of joint license agreements with the participation of several institutions.

When comparing with other national statistics it should also be noted that data from the Danish research institutions include all valid license agreements, regardless of whether they were generating revenues in the year surveyed.

Institutions' license portfolios, end 2006



Aggregate license portfolios, 2006	0	1 - 4	5 - 10	>10
Number of institutions	7	9	4	3
Universities	2	3	3	1
Government research institutes	4	4	1	1
Research hospitals	2	2	0	1

Spin-out companies

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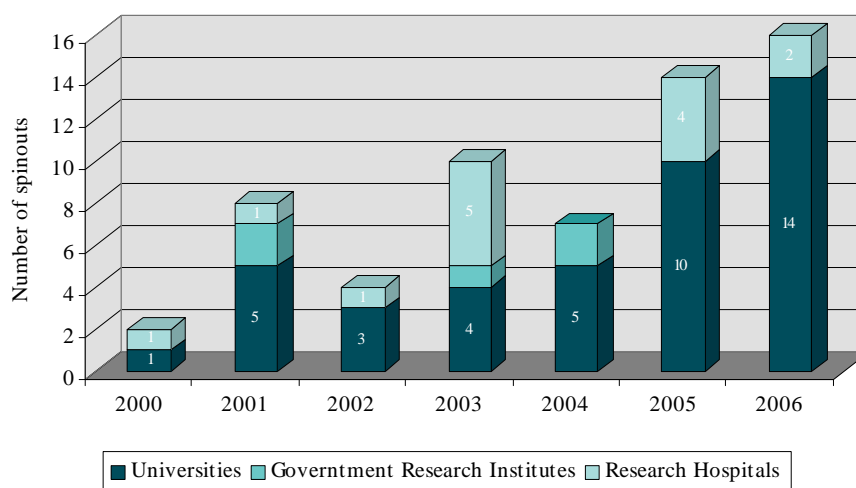
Seven research institutions reported the establishment of a total of 15 new spin-out companies in 2006. 14 of these originated in the universities. (The tables list 16 spin-outs as one enterprise was based on the purchase of rights from two institutions).

Over the period 2000 to 2006 as a whole, an increasing trend in the establishment of enterprises can be seen. However, at the same time, this pattern fluctuates significantly from year to year.

It should be noted that the data for the period 2000 to 2003 only cover spin-outs where institutions themselves entered into agreements with the enterprises. From 2004, the data cover all spin-outs based on IP agreements for technology created in the institutions. Also included, is the establishment of enterprises where the institutions have left it to the researcher concerned to exploit the IPRs to an invention commercially, in return for an agreed remuneration for the institution.

In 2006, public research institutions received equity (shares or share options) in 11 companies in return for IPR. By the end of 2006, eight institutions reported a combined portfolio of equity in 36 enterprises.

Spin-out companies formed, 2000-2006



Spin-out companies formed	2000	2001	2002	2003	2004	2005	2006
Total	2	8	4	10	7	14	16
Universities	1	5	3	4	5	10	14
Government research institutes	0	2	0	1	2	0	0
Research hospitals	1	1	1	5	0	4	2

Technology transfer staff

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From 2005 to 2006, the total of technology transfer staff at the public research institutions grew by 15 per cent to an equivalent of 56 full-time positions. Of these more than half were employed in the universities.

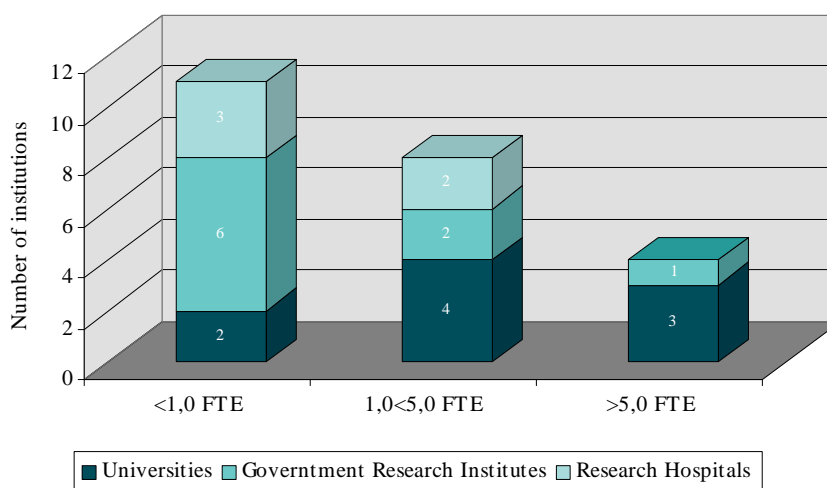
Four institutions reported a staffing level of more than five full-time equivalents at the end of 2006.

One research hospital reported that it occupied no technology transfer staff of its own but were served by the technology transfer unit of the affiliated university.

It should be noted that many of the employees working with technology transfer only use part of their time on this task. Consequently, the total number of persons engaged with technology transfer is substantially greater than the number of full-time equivalents stated in the survey.

From 2007, the 23 institutions in the survey have been amalgamated into 13. Hereby, a number of the institutions' technology transfer units have also been merged. This however, will not be reflected in the statistics until 2007.

Technology transfer staffing levels, end 2006



Number of full-time equivalents employed in technology transfer, end 2006	≤ 1	1 ≤ 5	> 5
Number of institutions	11	8	4
Universities	2	4	3
Government research institutes	6	2	1
Research hospitals	3	2	0

Commercialisation costs

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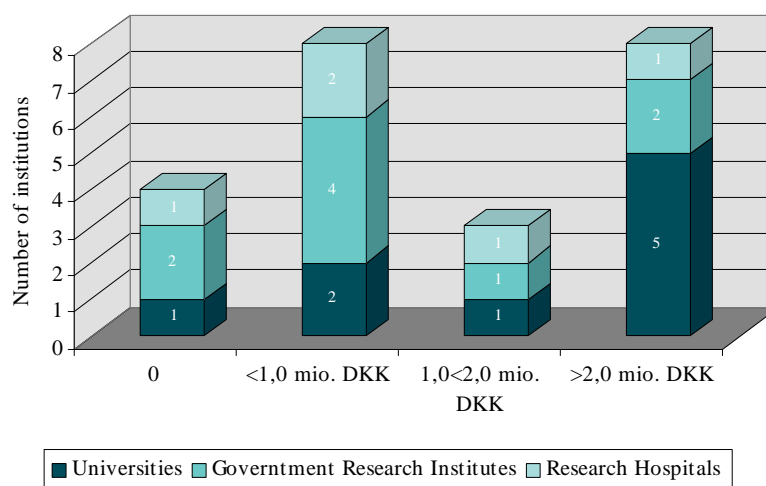
In 2006, the public research institutions defrayed commercialisation costs of DKK 28 million, in total. Included in the commercialisation costs are IP protection expenditures and the use of external consultants etc., but not internal costs for staffing and operation of technology transfer offices at the institutions.

19 out of 23 institutions had commercialisation costs in 2006. Of the total commercialisation costs, the universities accounted for approximately 60 per cent.

From 2005 to 2006, the research institutions' combined commercialisation costs were reduced by approximately 10 per cent. This reduction was primarily seen at the universities and government research institutes, while the research hospitals, as a whole, increased their commercialisation costs in 2006.

In 2006, 11 institutions reported commercialisation costs of more than DKK 1 million.

Commercialisation cost levels, DKK million, 2006



Commercialisation costs, 2006	0	≤ DKK million	1 ≤ 2 DKK million	> 2 DKK million
Number of institutions	4	8	3	8
Universities	1	2	1	5
Government research institutes	2	4	1	2
Research hospitals	1	2	1	1

License income

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In 2006, the public research institutions had revenues from licenses, assignments and cashed-in equity amounting to a total of DKK 29 million. 14 of the 23 institutions in the survey had revenues from commercialisation.

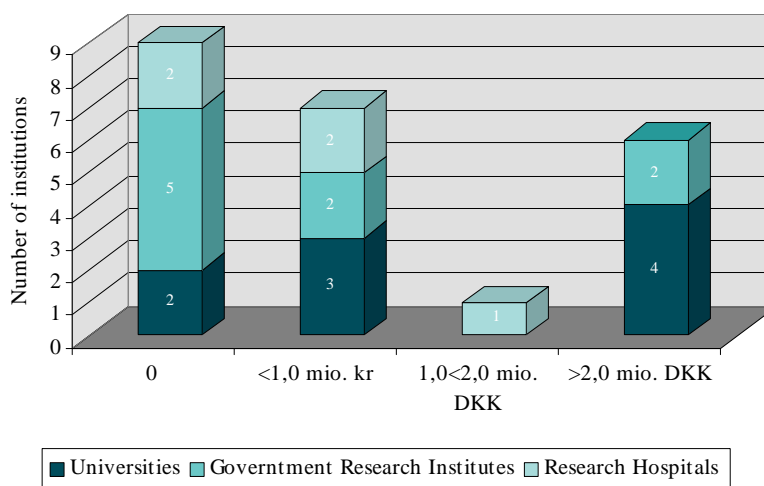
From 2005 to 2006, the research institutions' combined revenues from commercialisation almost doubled. In 2006, revenues have thus exceeded the institutions' combined commercialisation costs.

In 2006, seven institutions reported revenues from commercialisation of more than DKK 1 million – in comparison with five institutions in 2005. Three institutions alone accounted for almost two thirds of total revenues in 2006.

Only direct, booked revenues are included in the figures. Indirect revenues in the form of external research funding, sponsorships, commitments on future revenues or the value of unrealised equity are thus not included.

Several institutions report that in a number of cases, derived revenues in connection with IP agreements exceed the direct revenues from licensing. However, it lies beyond the scope of these statistics to illuminate these revenues.

License income levels, DKK million, 2006



License income received, 2006	0	≤1 m DKK	1≤2 m DKK	>2 m DKK
Number of institutions	9	7	1	6
Universities	2	3	0	4
Government research institutes	5	2	0	2
Research hospitals	2	2	1	0

Institutional data



Institutions as at 31.12.2006	Invention disclosures received	Patent applications filed	Patents issued	Licenses, options and assignments (incl. software)	Total license portfolio (excl. software)	Spin-out companies formed	Technology transfer staff (full-time equivalents)	Commercialisation costs (in DKK 1,000)	License income (in DKK 1,000)
Year 2006									
Universities (9)									
Aalborg Universitet	45	18	1	14*	6	2	6	3.326	839
Aarhus Universitet	45	14	0	8	8	1	4,0	2.400	500
Danmarks Farmaceutiske Universitet	7	1	0	2	1	0	1,5	510	50
Danmarks Tekniske Universitet	53	18	0	23	1	5	6,3	3.335	2.060
IT-Universitetet i København	0	0	1	0	0	0	0,9	78	0
Den Kgl. Veterinær- og Landbohøjskole	39	5	1	4	9	0	2,5	2.500	2.147
Københavns Universitet	25	9	0	10	19	0	6	2.950	2.080
Roskilde Universitetscenter	2	2	0	0	0	0	0	0	0
Syddansk Universitet	43	11	0	36	1	6	4	1.200	6.172
Government research institutes (9)									
Danmarks Fiskeriundersøgelser	0	0	0	0	0	0	0,01	7	0
Danmarks Fødevarerforskning	2	0	0	2	3	0	1	0	0
Danmarks JordbrugsForskning	10	14	1	1	23	0	4,8	2.030	924
Danmarks Miljøundersøgelser	4	0	0	0	0	0	0,2	100	0
Danmarks og Grønlands Geologiske Undersøgelse	0	0	1	0	4	0	0,2	10	0
Danmarks Rumcenter	0	0	0	0	0	0	0,1	25	0
Forskningscenter Risø	23	6	3	6**	4	0	5,3	3.422	5.773
Statens Byggeforskningsinstitut	0	0	0	0	1	0	0,1	0	75
Statens Serum Institut	8	3	7	2	8	0	3	1.700	7.000
Research hospitals (5) (Regional hospital administrations)									
Aalborg Sygehus	3	1	0	2	1	0	0,75	0	75
Århus Amt	17	1	0	1	0	0	0	463	0
Hovedstadens Sygehusfællesskab	18	4	0	1	13	1	4	3.137	1.128
Københavns Amt	13	6	0	3	1	1	3,5	1.088	214
Odense Universitetshospital	11	0	0	0	0	0	2	166	0
Total (23 institutions)	368	113	15	115	103	16	56,16	28.447	29.037

* Aalborg Universitet reports that the 14 agreements executed cover a total of 20 commercialised inventions, as several inventions are included in some of the agreements.

**Forskningscenter Risø reports that the six agreements executed cover a total of 10 commercialised inventions, as several inventions are included in some of the agreements.

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Data for 2006 re-calculated for new institutions as at 1.1.2007	Invention disclosures received	Patent-applications filed	Patents issued	Licenses, options and assignments (incl. software)	Total license portfolio (excl. software)	Spin-out companies formed	Technology transfer staff (full-time equivalent)	Commercialisation costs (in DKK 1,000)	License income (in DKK 1,000)
Universities (7)									
Aalborg Universitet - Aalborg Universitet - Statens Byggeforskningsinstitut	45	18	1	14**	7	2	6,1	3.326	914
Aarhus Universitet - Aarhus Universitet - Danmarks JordbrugsForskning, nu Det Jordbrugsvidenskabelige Fakultet - Danmarks Miljøundersøgelser - Handelshøjskolen i Århus	59	28	1	9	31	1	9	4.530	1.424
Danmarks Tekniske Universitet - Danmarks Tekniske Universitet - Danmarks Fiskeundersøgelser* - Danmarks Fødevarerforsknig , nu Dianova - Danmarks Rumcenter - Danmarks Transportforskning* - Forskningscenter Risø	78	24	3	31***	8	5	12,71	6.789	7.833
IT-Universitetet i København	0	0	1	0	0	0	0,9	78	0
Københavns Universitet - Københavns Universitet - Danmarks Farmaceutiske Universitet, nu Det Farmaceutiske Fakultet - Den Kgl. Veterinær- og Landbohøjskole nu Det Biovidenskabelige Fakultet	71	15	1	16	29	0	10	5.960	4.277
Roskilde Universitetscenter	2	2	0	0	0	0	0	0	0
Syddansk Universitet - Syddansk Universitet - Statens Institut for Folkesundhed*	43	11	0	36	1	6	4	1.200	6.172
Government research institutes (2)									
GEUS	0	0	1	0	4	0	0,2	10	0
Statens Serum Institut	8	3	7	2	8	0	3	1.700	7.000
Research hospitals (4) (Regional hospital administrations)									
Region Hovedstaden - Fredriksborg Amt* - Hovedstadens Sygehusfællesskab - Københavns Amt - Bornholms Regionskommune*	31	10	0	4	14	2	7,5	4.225	1.342
Region Midtjylland - Aarhus Amt - Viborg Amt* - Ringkøbing Amt* - Vejle Amt* (partly)	17	1	0	1	0	0	0	463	0
Region Nordjylland - Nordjyllands Amt (+ parts of Aarhus Amt)	3	1	0	2	1	0	0,75	0	75
Region Syddanmark - Fyns Amt - Ringkøbing Amt* - Sønderjyllands Amt* - Vejle Amt* (partly)	11	0	0	0	0	0	2	166	0
Total (13 institutions)	368	113	15	115	103	16	56,16	28.447	29.037

* Institutions not included in commercialisation statistics for 2006 by own data.

** Aalborg Universitet reports that the 14 agreements cover a total of 20 commercialised inventions as some agreements cover more than one invention.

*** Forskningscenter Risø is responsible for six of the 31 agreements. Risø reports that these six agreements cover a total of 10 commercialised inventions as some of the agreements cover more than one invention.

Terms and definitions

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The National Network for Technology Transfer	An association for professionals working with technology transfer at public research institutions in Denmark. Operator of website www.techtrans.dk
Assignment agreement	Agreement on the transfer of ownership of intellectual property – e.g. proprietary rights to a patent.
Commercialisation costs	Includes cost incurred for legal fees, patent costs, external consultants and specialist IP advice – but does not include internal costs for staffing and operation of technology transfer offices.
Equity	Ownership interest in a company – e.g. shares or stock options.
Intellectual Property (IP)	The ownership of intangible assets of human knowledge that that can be legally protected and commercially exploited – e.g. in the form of patents or copyrights (intellectual property rights IPR's).
Invention disclosure	A document from an employee, which informs the institution of an invention done in the line of work – providing basis for further evaluation of the commercial perspectives.
License agreement	An agreement where the licensor (e.g. a PRO) retains ownership of IP but grants rights to the licensee (e.g. a private enterprise) in the form of a contract that permits the licensee to exploit IP according to the contractual terms and conditions.
License income	Includes income generated by licensing as well as assignment of IP and cashed-in equity. Includes even remuneration from researchers retaining right to IP of inventions upon commercial exploitation of this IP. Does not include indirect income such as external research funding, sponsorships, commitments on future revenues, or the value of non-realised equity.
Option agreement	Provisional agreement where the institution grants the potential licensee or assignee a period during which it may evaluate the technology and negotiate the terms of a license agreement or assignment.
Patent application filed	The first submission of a patent application, irrespective of the patent authority to which it has been submitted.
Public research institutions	Universities, government research institutions, and research hospitals (regional hospital administrations).
Spin-out company	New enterprise that was dependent on licensing or assignment of the institutions technology for initiation. Also encompasses initiation of enterprises where the institutions have left it to the researcher concerned to exploit the IPRs to an invention commercially in return for an agreed remuneration for the institution.
Technology transfer	Includes those activities associated with the identification, documentation, evaluation, protection, marketing and licensing of technology and IP management, in general. It encompasses all other activities also associated with the day-to-day operations of a commercialisation office, including assisting with the negotiation of research agreements etc.

Appendix 1 – Questionnaire to institutions

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Inventions and IPR		
1		<p>Total number of invention disclosures received from the institution's researchers in 2006</p> <p><i>[Guidance: Question refers to the number of written reports which the institution has received pursuant to Section 10 of the Act on inventions at public research institutions (individual and joint.).]</i></p>
	1A	<p>How many of the reported inventions are joint inventions where the same invention has also been reported to one or more other institutions subject to the Act on inventions at public research institutions?</p> <p><i>[Guidance: Question refers to where the same invention has been simultaneously reported to several institutions. In your response, how much of a joint invention your institution owns should not be considered.]</i></p>
2		<p>How many inventions has the institution acquired the IP in 2006?</p> <p><i>[Guidance: Question refers to the number of inventions where the institution has acquired the IP from the relevant employee pursuant to Section 8 of the Act on inventions at public research institutions.]</i></p>
3		<p>For how many inventions has the institution filed patent applications in 2006?</p> <p><i>[Guidance: Only the first patent application filed should be counted. Where a provisional application is followed by an improved PCT application, the application may only be counted once and is included in the year in which the provisional application is filed. Only patent applications where the institution itself is applicant/co-applicant may be counted.]</i></p> <p><i>Where the same invention results in different patent applications, each application is counted.</i></p> <p><i>Applications regarding the institutions' inventions filed by other institutions or enterprises are not to be counted. That is to say applications where another party appears as applicant should not be counted, regardless of whether one or more of the institution's researchers are listed as inventors in the patent application]</i></p>
	3A	<p>How many of these patent applications have been filed jointly with another institution subject to the Act on inventions at public research institutions?</p> <p><i>[Guidance: Question refers to the situation where several institutions have jointly submitted a patent application for a joint invention. That is to say applications where several institutions appear as applicants. Conversely, applications filed by another institution where one or more researchers from your own institution appear only as inventor, should not be counted.]</i></p>
4		<p>How many patents have been issued to the institution in total in 2006?</p> <p><i>[Guidance: Only the first patent issued counts – regardless if the same patent is subsequently issued in other countries. Accordingly, patents issued in 2006, which have previously been issued in another country, are not to be counted.]</i></p>
5		<p>Number of software rights which the institution has obtained in 2006 in accordance with Section 59 of the Copyright Act</p>
	5A	<p>Number of utility model IPRs obtained in 2006</p>

Organisation, economy and staff		
6		<p>Number of full-time equivalent employees in technology transfer at the end of 2006</p> <p><i>[Guidance: Technology transfer includes those activities associated with the of identification, documentation, evaluation, marketing and licensing of technology and IP management in general. It encompasses all other activities also associated with the day-to-day operation of a technology transfer unit, including assistance with negotiation of research contracts etc.</i></p> <p><i>Technology transfer staff will typically include administrative staff but not technical and scientific personnel. Only personnel employed within the institution itself is to be counted, including individuals who undertake technology transfer tasks for other institutions, for example university personnel who provide technology transfer services for a university hospital.</i></p> <p><i>Unit of measurement is full-time equivalent. Where an employee works part-time or works only part-time on technology transfer activities, only this share is included.</i></p> <p><i>Personnel for technology transfer do not include:</i></p> <ul style="list-style-type: none"> - <i>Technical and scientific personnel</i> - <i>Staff who work on project management, fund raising, research networking, enterprise networking etc.</i> - <i>Personnel employed by another institution or external consultant who undertake technology transfer tasks for the institution.]</i>
7		<p>Which primary educational backgrounds do employees in the institution's technology transfer unit have (state in full-time equivalent)?</p>
	7A	Legal, in total
	7B	<p>Commercial, in total (business orientated approach)</p> <p><i>[Guidance: Includes individuals with a background in marketing, business, commerce and economics]</i></p>
	7C	Technical/Scientific, in total
	7D	Other, in total
8		<p>What were the institution's operating costs (excluding salaries) on technology transfer in 2006?</p> <p><i>[Guidance: This includes institution costs for evaluation of inventions, IP protection, commercialisation, and use of consultants in connection with technology transfer. Technology transfer costs do not include:</i></p> <ul style="list-style-type: none"> - <i>Institution's internal costs for the operation of technology transfer units such as wages, other staff costs, office expenses, and general travel costs (overhead)</i> - <i>Payments for the use of personnel employed by other institutions subject to the Act on inventions at public research institutions – for example, if a hospital obtains services from personnel at a university technology transfer unit</i> - <i>Institution payments of fees to inventors, pursuant to Section 12(1) of the Act on inventions at public research institutions]</i>

Commercial results		
9		<p>Number of license agreements executed in 2006</p> <p><i>[Guidance: By license agreement is meant an agreement on the transfer of the right of exploitation (but not proprietary rights) of IP. License agreements with spin-outs are also included, even if the establishment of such enterprises is also counted under question 14. License agreements do not include:</i></p> <ul style="list-style-type: none"> - <i>Assignment of IP</i> - <i>Research contracts where the institution grants an external party option for signing a license agreement later</i> - <i>Agreements where the institution commissions the inventions to an external agent with a view to commercialisation</i> - <i>Institution agreements with its own employees on their right to issue sub-licenses to third parties</i> - <i>Agreements on waiver of rights to the relevant inventor in return for payments to the institution in accordance with Section 12(2) of the Act on inventions at public research institutions]</i>
	9A	<p>Patents</p> <p><i>[Guidance: How many new license agreements have been signed on the basis of the institution's patent rights (patents/patent applications)? There may well be several license agreements with various licensees based on the same invention. In the response, the total number of license agreements entered into in 2006 should be stated, regardless of whether several agreements relate to the same invention.]</i></p>
	9B	<p>Software</p> <p><i>[Guidance: How many new license agreements have been signed on the basis of the institution's software rights? Only license agreements with an individual value of DKK 10,000 should be counted. Where the same software is given in license by a standard agreement to several licensees', this should be counted as one license agreement.]</i></p>
	9C	<p>Utility models (including license agreements)</p> <p><i>[Guidance: How many new license agreements have been signed on the basis of the institution's utility model rights?]</i></p>
		Number of license agreements, in total (11A-11C)
	9D	<p>How many licenses to patented inventions have been sold in 2006?</p> <p><i>[Guidance: State the number of licenses covered by questions 9A-9C. For example, it might be the case that a license agreement signed in 2006 includes licenses to several patented inventions. In this case, the total number of licenses covered by the agreement should be counted. Another example could be where an invention is licensed in relation to license agreements signed prior to 2006. In this case, the number of new licenses which have been sold in 2006 and which relate to the earlier license agreement should be counted.]</i></p>

10		<p>Total number of assignments executed in 2006</p> <p><i>[Guidance: By assignments is meant the number of sales agreements signed where proprietary rights to a patent or a patent application are transferred in return for payment. Also assignment of IP to spin-outs are included. Assignments do not include:</i></p> <ul style="list-style-type: none"> - License agreements - Research contracts where the institution grants an external party option to sign an assignment agreement later - Agreements where the institution commissions the inventions to an external agent with a view to commercialisation - Institution agreements with its own employees on their right to issue sub-licenses to third parties - Agreements on waiver of rights to the relevant inventor in consideration for payments to the institution in accordance with Section 12(2) the Act on inventions at public research institutions
11		<p>Number of option agreements executed in 2006</p> <p><i>[Guidance: By option agreements is meant a provisional license or assignment agreement where the institution grants a potential licensee or assignee a specified time period during which it may evaluate an invention and negotiate the conditions for a license or assignment agreement with the institution.</i></p> <p><i>An option agreement is not constituted by a clause in a research contract where a research partner is given option to future inventions, which may result from a collaborative or commissioned research project (agreements i.a.w. Section 9 of the Act on inventions at public research institutions.)</i></p>
12		<p>Number of spin-out companies formed in 2006</p> <p><i>[Guidance: By spin-outs is meant enterprises established in 2006 that was dependent on the licensing or assignment of the institutions' technology and IP for initiation – including also spin-outs established on the basis of agreements with the relevant inventor that he/she may personally exploit the IP from his/her invention in return for a payment to the institution]</i></p>
	12A	<p>How many enterprises have been established in 2006 on the basis of agreements with the institution pursuant to Section 14(1) of the Act on inventions at public research institutions, i.e. where the institution has entered into an agreement with a third party on the transfer of IPR in relation to the establishment of an enterprise?</p>
	12B	<p>How many enterprises have been established in 2006 on the basis of the institution's agreements with the relevant inventor that he/she may exploit the rights to his/her own invention in consideration for a payment to the institution – that is to say, agreements i.a.w. Section 12(2) of the Act on inventions at public research institutions?</p>
		<p>Number of spin-outs in total (14A-14B)</p>
	12C	<p>Name and CVR (Central Company Registration) of spin-out companies formed in 2006</p>
13		<p>In how many cases, in 2006, has the institution acquired equity in return for IPR?</p> <p><i>[Guidance: This refers to where the institution has entered into an agreement pursuant to, Section 16(2) of the Act on inventions at public research institutions, on receiving payment or remuneration in the form of shares and/or share options in existing or newly started enterprises.]</i></p>

14		<p>Institutions' gross revenues in 2006 from commercialisation</p> <p><i>[Guidance: This includes the commercial revenues directly related to the transfer of IPR and which form the basis for calculating the institutions remuneration for inventors in accordance with Section 12(1) of the Act on inventions at public research institutions. Only revenues recorded in the institutions accounts for 2006 are to be included. Revenues are calculated before deductions for inventor fees.</i></p> <p><i>Revenues from commercialisation do not include:</i></p> <ul style="list-style-type: none"> - <i>Commitments on future revenues</i> - <i>Indirect revenues in the form of external research funding, including sponsorships etc.</i> - <i>Value of not cashed-in equity.]</i>
	14A	From license agreements (patents)
	14B	From license agreements (software)
	14C	From license agreements (utility models)
	14D	From assignment of patents
	14E	From assignment of software
	14F	From assignment of utility models
	14G	<p>From inventor payments i.a.w. Section 12(2) of the Act on inventions at public research institutions</p> <p><i>[Guidance: This would be agreement to leave commercialisation to the inventor concerned in return for payments to the institution.]</i></p>
	14H	Realised from cashed-in equity
	14I	Dividends from equity interests
	14J	<p>Reimbursement of IP protection costs</p> <p><i>[Guidance: This refers to the situation where the institution initially has covered the IP protection cost, but where these costs have subsequently been fully or partly refunded by an external party.]</i></p>
		Revenues from commercialisation, in total (16A-16J)
Status of commercial portfolios		
15		<p>Aggregate patent portfolio</p> <p><i>[Guidance: Number of patents issued with the institution as owner/co-owner, at the end of 2006 (total current portfolio). Any given patent may only be included once – regardless of whether the same patent is subsequently issued in several countries.]</i></p>
16		Aggregate valid license agreements on patents/patent applications at the end of 2006 (total current license portfolio)
	16A	Of these, license agreements which have yielded income for the institution in 2006
17		Aggregate number of enterprises where the institution at the end of 2006 had equity or share options in accordance with Section 12(2) of the Act on inventions at public research institutions (total current portfolio).

Appendix 2 – Institution responses

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Institutions as at 31.12.2006	1. Total number of invention disclosures received from the institutions' researchers in 2006	1 A. How many of the reported inventions are joint inventions?	2. For how many inventions has the institution acquired the IP in 2006?	3. For how many inventions has the institution filed patent applications in 2006?	3 A. How many of these applications have been filed jointly with another institution?	4. How many patents have been issued in total to the institution in 2006?	5. Number of software IPRs obtained in 2006 i.a.w. Section 59 of the Copyright Act	5 A. Number of utility model IPRs obtained in 2006
Universities (9)								
Aalborg Universitet	45	1	31	18	0	1	0	0
Aarhus Universitet	45	16	19	14	6	0	0	0
Danmarks Farmaceutiske Universitet	7	0	5	1	0	0	0	0
Danmarks Tekniske Universitet	53	0	29	18	0	0	0	0
IT-Universitetet i København	0	0	0	0	0	1	0	0
Den Kgl. Veterinær- og Landbohøjskole	39	9	15	5	2	1	0	5
Københavns Universitet	25	4	14	9	0	0	0	0
Roskilde Universitetscenter	2	0	0	2	0	0	0	0
Syddansk Universitet	43	2	30	11	0	0	0	0
Government research institutes (9)								
Danmarks Fiskeriundersøgelser	0	0	0	0	0	0	0	0
Danmarks Fødevarerforskning	2	0	0	0	0	0	0	0
Danmarks JordbrugsForskning	10	1	6	14	3	1	0	0
Danmarks Miljøundersøgelser	4	1	1	0	0	0	0	0
Danmarks og Grønlands Geologiske Undersøgelse	0	0	0	0	0	1	0	0
Danmarks Rumcenter	0	0	0	0	0	0	0	0
Forskningscenter Risø	23	0	22	6	0	3	0	0
Statens Byggeforskningsinstitut	0	0	0	0	0	0	0	0
Statens Serum Institut	8	1	8	3	0	7	0	0
Research hospitals (5)								
Aalborg Sygehus	3	1	2	1	0	0	0	0
Århus Amt	17	7	8	1	1	0	0	0
Hovedstadens Sygehusfællesskab	18	7	11	4	0	0	0	0
Københavns Amt	13	0	8	6	0	0	0	0
Odense Universitetshospital	11	2	5	0	0	0	0	0
Total (23 institutions)	368	52	214	113	12	15	0	5

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Institutions as at 31.12.2006 Year 2006	6. Number of full-time equivalent employees in technology transfer at end of 2006	7. What is the primary educational background of staff in the institution's technology transfer unit (state as full-time equivalents)?				8. What were the institution's costs for technology transfer in 2006 (excl. salaries)?
		7 A. Legal, in total	7 B. Commercial, in total	7 C. Technical/Scientific, in total	7 D. Other, in total	
Universities (9)						
Aalborg Universitet	6	3.5	1	1	1.5	3,326,000
Aarhus Universitet	4.0	1.5	1	0	1.5	2,400,000
Danmarks Farmaceutiske Universitet	1.5	1.5	0	0	0	510,000
Danmarks Tekniske Universitet	6.3	4	1	1	0.3	3,335,000
IT-Universitetet i København	0.9	0.9	0	0	0	77,600
Den Kgl. Veterinær- og Landbohøjskole	2.5	1	0	0	1.5	2,500,000
Københavns Universitet	6	1.1	2	1.9	1	2,950,000
Roskilde Universitetscenter	0	0	0	0	0	0
Syddansk Universitet	4	2	0	1	1	1,200,000
Government research institutes (9)						
Danmarks Fiskeriundersøgelser	0.01	0	0.01	0	0	7,000
Danmarks Fødevareforskning	1	0	0	1	0	0
Danmarks JordbrugsForskning	4.8	3.6	0	0.5	0.7	2,029,867
Danmarks Miljøundersøgelser	0.2	0.1	0	0.05	0.05	100,000
Danmarks og Grønlands Geologiske						
Undersøgelse	0.2	0.2	0	0	0	10,000
Danmarks Rumcenter	0.1	0	0	0.1	0	25,000
Forskningscenter Risø	5.3	1	0	3.3	1	3,422,098
Statens Byggeforskningsinstitut	0.1	0.1	0	0	0	0
Statens Serum Institut	3	1	1	1	0	1,700,000
Research hospitals (5)						
Aalborg Sygehus	0.75	0	0.75	0	0	0
Århus Amt	0	0	0	0	0	463,000
Hovedstadens Sygehusfællesskab	4	3.5	0	0	0.5	3,137,000
Københavns Amt	3.5	2	1.5	0	0	1,088,000
Odense Universitetshospital	2	1	1	0	0	166,000
Total (23 institutions)	59.66	28.0	9.26	10.85	9.05	28,446,565

Institutions as at 31.12.2006	9. Number of license agreements executed in 2006					10. Total number of assignments executed in 2006	11. Number of option agreements executed in 2006
	9 A. Patents	9 B. Software	9 C. Utility models	Number of license agreements executed in total (9A.-9C.)	9 D. How many licenses to patented inventions have been sold in 2006?		
Year 2006							
Universities (9)							
Aalborg Universitet	2	0	0	2	8	10	2
Aarhus Universitet	1	0	0	1	1	7	0
Danmarks Farmaceutiske Universitet	1	0	0	1	1	1	0
Danmarks Tekniske Universitet	0	9	0	9	0	10	4
IT-Universitetet i København	0	0	0	0	0	0	0
Den Kgl. Veterinær- og Landbohøjskole	3	0	0	3	0	0	1
Københavns Universitet	8	0	0	8	8	0	2
Roskilde Universitetscenter	0	0	0	0	0	0	0
Syddansk Universitet	3	0	0	3	3	18	15
Government research institutes (9)							
Danmarks Fiskeriundersøgelser	0	0	0	0	0	0	0
Danmarks Fødevarerforskning	0	0	0	0	0	2	0
Danmarks JordbrugsForskning	1	0	0	1	1	0	0
Danmarks Miljøundersøgelser	0	0	0	0	0	0	0
Danmarks og Grønlands Geologiske Undersøgelse	0	0	0	0	0	0	0
Danmarks Rumcenter	0	0	0	0	0	0	0
Forskningscenter Risø	1	5	0	6	10	0	0
Statens Byggeforskningsinstitut	0	0	0	0	0	0	0
Statens Serum Institut	2	0	0	2	0	0	0
Research hospitals (5)							
Aalborg Sygehus	1	0	0	1	1	1	0
Århus Amt	0	0	0	0	0	1	0
Hovedstadens Sygehusfællesskab	1	0	0	1	0	0	0
Københavns Amt	0	0	0	0	0	1	2
Odense Universitetshospital	0	0	0	0	0	0	0
Total (23 institutions)	24	14	0	38	33	51	26

Institutions as at 31.12.2006 Year 2006	12. Total number of spin-outs companies formed in 2006			13. In how many instances has the institution acquired equity in return for IPRs?				
	12 A. How many enterprises have been established in 2006 on the basis of agreements pursuant to the Section 14(1) of the Act on inventions at public research institutions?	12 B. How many enterprises have been established in 2006 on the basis of agreements pursuant to the Section 12(2) of the Act on inventions at public research institutions?	Number of spin-outs in total (12 A - 12 B)					
Universities (9)								
Aalborg Universitet	2	0	2	3				
Aarhus Universitet	1	0	1	1				
Danmarks Farmaceutiske Universitet	0	0	0	0				
Danmarks Tekniske Universitet	5	0	5	4				
IT-Universitetet i København	0	0	0	0				
Den Kgl. Veterinær- og Landbohøjskole	0	0	0	0				
Københavns Universitet	0	0	0	1				
Roskilde Universitetscenter	0	0	0	0				
Syddansk Universitet	3	3	6	0				
Government research institutes (9)								
Danmarks Fiskeriundersøgelser	0	0	0	0				
Danmarks Fødevarerforskning	0	0	0	0				
Danmarks JordbrugsForskning	0	0	0	0				
Danmarks Miljøundersøgelser	0	0	0	0				
Danmarks og Grønlands Geologiske Undersøgelse	0	0	0	0				
Danmarks Rumcenter	0	0	0	0				
Forskningscenter Risø	0	0	0	0				
Statens Byggeforskningsinstitut	0	0	0	0				
Statens Serum Institut	0	0	0	0				
Research hospitals (5)								
Aalborg Sygehus	0	0	0	0				
Århus Amt	0	0	0	0				
Hovedstadens Sygehusfællesskab	1	0	1	1				
Københavns Amt	1	0	1	1				
Odense Universitetshospital	0	0	0	0				
Total (23 institutions)	13	3	16	11				

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Institutions as at 31.12.2006	14. Institution's gross revenues in 2006 from commercialisation										Revenues from commercialisation in total (14A-14J)
	14 A. From license agreements (patents)	14 B. From license agreements (software)	14 C. From license agreements (utility models)	14 D. From assignment of patents	14 E. From assignment of software	14 F. From assignment of utility models	14 G. Inventor payments i.a.w. Section 12(2) of the Act on inventions at public research institutions	14 H. Cashed-in equity	14 I. Dividends from equity interests	14 J. Reimbursement of IP protection costs	
Year 2006											
Universities (9)											
Aalborg Universitet	60,000	0	0	439,000	0	0	0	0	0	340,000	839,000
Aarhus Universitet	0	0	0	500,000	0	0	0	0	0	0	500,000
Danmarks Farmaceutiske Universitet	50,000	0	0	0	0	0	0	0	0	0	50,000
Danmarks Tekniske Universitet	150,000	0	0	545,000	0	0	0	0	1,000,000	365,000	2,060,000
IT-Universitetet i København	0	0	0	0	0	0	0	0	0	0	0
Den Kgl. Veterinær- og Landbohøjskole	2,147,000	0	0	0	0	0	0	0	0	0	2,147,000
Københavns Universitet	1,220,000	0	0	0	0	0	0	0	0	860,000	2,080,000
Roskilde Universitetscenter	0	0	0	0	0	0	0	0	0	0	0
Syddansk Universitet	50,000	0	0	5,162,000	0	0	0	960,000	0	0	6,172,000
Government research institutes (9)											
Danmarks Fiskeriundersøgelser	0	0	0	0	0	0	0	0	0	0	0
Danmarks Fødevarerforsknig	0	0	0	0	0	0	0	0	0	0	0
Danmarks JordbrugsForskning	923,520	0	0	0	0	0	0	0	0	0	923,520
Danmarks Miljøundersøgelser	0	0	0	0	0	0	0	0	0	0	0
Danmarks og Grønlands Geologiske Undersøgelse	0	0	0	0	0	0	0	0	0	0	0
Danmarks Rumcenter	0	0	0	0	0	0	0	0	0	0	0
Forskningscenter Risø	1,146,000	4,601,000	0	0	0	0	0	0	0	26,000	5,773,000
Statens Byggeforskningsinstitut	0	75,000	0	0	0	0	0	0	0	0	75,000
Statens Serum Institut	7,000,000	0	0	0	0	0	0	0	0	0	7,000,000
Research hospitals (5)											
Aalborg Sygehus	75,000	0	0	0	0	0	0	0	0	0	75,000
Århus Amt	0	0	0	0	0	0	0	0	0	0	0
Hovedstadens Sygehusfællesskab	589,000	0	0	0	0	0	0	0	0	539,000	1,128,000
Københavns Amt	214,000	0	0	0	0	0	0	0	0	0	214,000
Odense Universitetshospital	0	0	0	0	0	0	0	0	0	0	0
Total (23 institutions)	13,624,520	4,676,000	0	6,646,000	0	0	0	960,000	1,000,000	2,130,000	29,036,520

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Institutions as at 31.12.2006	15. Total patent portfolio at end of 2006	16. Total license portfolio at end of 2006		17. Total number of enterprises where the institution at the end of 2006 had equity or share option i.a.w. Section 12(2) of the Act on inventions at public research institutions
		Total	16 A. Number of license agreements yielding income in 2006	
Year 2006				
Universities (9)				
Aalborg Universitet	2	6	2	6
Aarhus Universitet	5	8	0	1
Danmarks Farmaceutiske Universitet	0	1	1	0
Danmarks Tekniske Universitet	6	1	1	11
IT-Universitetet i København	1	0	0	0
Den Kgl. Veterinær- og Landbohøjskole	2	9	6	1
Københavns Universitet	3	19	9	1
Roskilde Universitetscenter	0	0	0	0
Syddansk Universitet	0	1	1	7
Government research institutes (9)				
Danmarks Fiskeriundersøgelser	1	0	0	0
Danmarks Fødevareforskning	0	3	1	0
Danmarks JordbrugsForskning	3	23	7	0
Danmarks Miljøundersøgelser	2	0	0	0
Danmarks og Grønlands Geologiske Undersøgelse	5	4	0	0
Danmarks Rumcenter	0	0	0	0
Forskningscenter Risø	18	4	2	0
Statens Byggeforskningsinstitut	0	1	1	0
Statens Serum Institut	17	8	8	0
Research hospitals (5)				
Aalborg Sygehus	1	1	0	0
Århus Amt	0	0	0	0
Hovedstadens Sygehusfællesskab	3	13	3	8
Københavns Amt	0	1	1	1
Odense Universitetshospital	1	0	0	0
Total (23 institutions)	70	103	43	36



Public Research Commercialisation Survey Denmark 2006

The annual commercialisation survey illustrates the efforts and results of public research institutions in technology transfer. It is thus included as one initiative, among several, to strengthen the monitoring and documentation of the national effort in knowledge transfer, which The Danish Council for Technology and Innovation has launched with its action plan Innovation Denmark 2007-2010.

The statistics for 2006 reveal that the progress made in recent years with the commercialisation of research results in Denmark, continues.

The performance of public research institutions in licensing is improving year by year, while the costs for patenting are decelerating. From 2005 to 2006, the total revenues of public research institutions from commercialisation almost doubled. Thus, for the first time, revenues from commercialisation exceeded costs.

In 2006 23 institutions had commercialisation activities of various scale. From 2007, several institutions have merged. More than 90 per cent of the activities in technology transfer will thus now be concentrated at six or seven institutions.

