

Denmark's Electronic
Research Library

Annual Report 2006

DEff

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National Budget Stipulations for DEFF 2006

“Denmark’s Electronic Research Library (DEFF) is an organisational and technological partnership between research and educational libraries and is co-financed by the Ministry of Science, Technology and Innovation, the Ministry of Education and the Ministry of Culture. The objective of DEFF is to promote the development of a network of electronic libraries that make their electronic and other information resources available to users in a coherent and simple manner. DEFF provides grants for joint development projects and the development of infrastructure and administrates the joint purchase of licences. DEFF can provide grants for international activities. The Danish Library Agency manages DEFF’s secretariat.”

Preface

In many ways, the past year stood out as a year of transition for DEFF, partly due to the reorganisation of universities and local government and partly due to the reorganisation of DEFF on the expiry of the mandates of both the programme groups in September 2006 and the steering committee from 2007.

During a residential conference this spring, the steering committee discussed a new organisation. A proposal was approved just before the summer holiday and the intention was to implement this over the summer. However, the issue as to how DEFF should proceed in relation to integrated search systems altered the agenda to such an extent during the last half of the year that it was necessary to postpone DEFF's new organisation. The discussion about integrated search systems took up so much time mostly due to the fact that these systems are of great strategic significance to libraries and two fundamentally different types of systems were on the table. These were represented by the consortium linked to the Ex Libris system, Primo, and the State and University Library's system, Summa.

Thus, to a large extent, this year was characterised by the fact that the activity level of the DEFF programme groups was not as high as their activity level over the past three years. Of course, the activity level of projects and the DEFF secretariat remained constant and there have also been investments in development. However, the absence of the programme groups during the second half of 2006 emphasised their significance for the level of DEFF's activities.

At the end of 2006, the foundation was laid for DEFF's new organisation, with a new steering committee, new programme groups and a new strategy. Thus, the transition from 2006 to 2007 does not only mark the beginning of a new year; it is the start of a completely new era for DEFF. In the light of this, in addition to the status report on the work carried out in 2006, I would like include in this year's annual report a general report on DEFF's programme areas, starting in 2003, when DEFF was formed as a permanent enterprise on the basis of the results of the project period (1998-2002), and ending at the end of 2006.

Experiences from 2003 to 2006

As during the project period, the motivation behind the creation of DEFF as a permanent activity was an academic vision of a library service for students and researchers and a desire to develop libraries. In addition to this, there was increased focus on the establishment of a collaboration to optimise use of resources. Both the Ministry of Finance and the two ministerial commissioners at the time attached importance to DEFF's role in ensuring optimal use of existing resources, i.e. more value for money and the prevention of parallel development projects.

DEFF was subsequently defined as a cooperation organisation within which coordination and development are carried out jointly. The formation of the programme groups and the basic organisation of the system architecture programme contributed significantly towards ensuring the success of the organisation.

In my opinion, both initiatives have been very valuable and delivered significant results. They have also successfully formulated visions and goals for the development of the programme areas and implemented projects which contribute to the realisation of these goals. My own efforts have largely been focused on ensuring coordinated development and shared implementation but have also concentrated on encouraging increased consolidation. I note that this has succeeded in several cases and that the focus on increased consolidation is, at least, a central item on the agenda.

In an attempt to increase the coordination of the joint development, the visions have been somewhat curtailed. Nevertheless, there has been room for many new development projects, as this report shows.

New steering committee in 2007

In December 2006, DEFF's coordination committee discussed the composition of a new steering committee. I accepted the offer to continue as chairman of the steering committee with pleasure as much has been achieved in DEFF but many new and exciting tasks remain.

I look forward to being a member of the new steering committee and to working together with the other committee members to develop DEFF.

I would like to see the steering committee play a more strategic role and the programme groups become more independent. I will make it a priority to ensure that, as a result, both the steering committee and the programme groups adopt a more outgoing attitude towards their partners.



A handwritten signature in black ink, appearing to read 'Kim Østrup'.

Kim Østrup,
Chairman of DEFF's steering committee

Organisation

DEFF coordination committee

- Steen Kyed, Deputy Permanent Secretary, Ministry of Culture (chairman)
- Niels-Jørgen Nielsen, Head of Division, Ministry of Culture
- Anette Vedel Carlsen, Head of Section, Ministry of Culture
- Hans Müller Pedersen, Deputy Permanent Secretary, Danish Agency for Science, Technology and Innovation
- Thomas Alslev Christensen, Head of Division, Danish Agency for Science, Technology and Innovation
- Jan Windmüller, Head of Section, Danish Agency for Science, Technology and Innovation
- Lars Mortensen, Director General, Ministry of Education
- Ole Sommer, Head of Section, Ministry of Education

DEFF steering committee



Fra left to right:

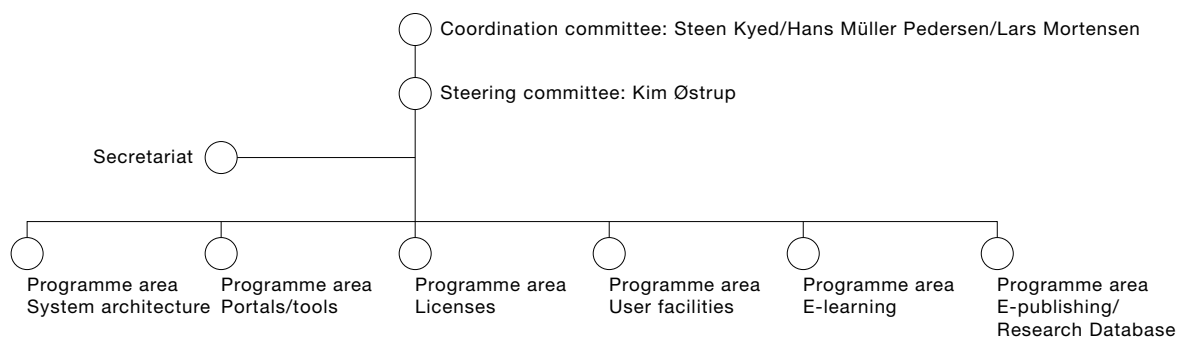
- Kim Østrup, Vice President, IBM Danmark A/S (chairman)
- Jens Thorhauge, Director General, Danish Library Agency
- Gert Bechlund, University Director, Copenhagen Business School
- Poul Bjerregaard, Director, Aarhus Business College
- Peter Rubeck, Librarian, CVU Northern Jutland
- Karen Grundvad Kvist, Library Director, The Administrative Library
- Niels-Henrik Gylstorff, Chief librarian, Aalborg University Library
- Erland Kolding Nielsen, Director General, The Royal Library

DEFF Responsible



- Bo Öhrström, Deputy Director, Danish Library Agency

The organisation of DEFF



Programme groups



User facilities

- **Chairman: Peter Søndergaard, Roskilde University Library**
- Poul Erlandsen, National Library of Education
- Ditte Jessing, Danish Veterinary and Agricultural Library
- Gert Poulsen, CBS Library
- Lilian Madsen, State and University Library
- Holger Dyrbye, University Library of Southern Denmark
- Niels Jørgen Blåbjerg, Aalborg University Library
- Niels Ole Pors, Royal School of Library and Information Science
- Jens Ingwersen, CVU Mid-West
- Morten Andersen, DEFF secretariat



E-learning

- **Chairman: Stig Broström, Technical Knowledge Center of Denmark**
- Jens Bennedsen, IT VEST
- Karen Harbo, ASB Library
- Maj Rosenstand, Aalborg University Library
- Jens Dam, University Library of Southern Denmark
- Jørgen Lerche Nielsen, Roskilde University Library
- Mai Aggerbeck, CVU Vita, Occupational Therapy and Physical Therapy School
- Julie Kihl, DEFF secretariat



Licences

- **Chairwoman: Anna Mette Morthorst, ASB Library**
- Susanne Jacobsen, National Library of Education
- Birgit Bregnebøl, CBS Library
- Janne Vendt, Technical Knowledge Center of Denmark
- Lone Ramy Katberg, Aalborg University Library
- Barbara Melchior, Copenhagen University Library
- Jette Fugl, Danish Veterinary and Agricultural Library
- Lene Stampe, Roskilde University Library
- Benedikte Kierkegaard, Gentofte Public Libraries
- Lisbeth Rasmussen, Copenhagen University, Law Library
- Ann-Merete Hjorth Jensen, BEC Business, Ballerup
- Lone Madsen, University Library of Southern Denmark
- John Andersen, State and University Library
- Bo Öhrström, DEFF secretariat
- Anette Schneider, DEFF secretariat



E-publishing

- **Chairwoman: Annette Winkel-Schwarz, Technical Knowledge Center of Denmark**
- Mogens Sandfær, Technical Knowledge Center of Denmark
- Birte Christensen-Dalsgaard, State and University Library
- Adrian Price, The Danish Veterinary and Agricultural Library
- Karen Grundvad Kvist, The Administrative Library
- Harald v. Hielmcrone, State and University Library
- Birgit Pedersen, Risø National Laboratory
- Hannah Kamstrup Wermuth, Technical Knowledge Center of Denmark
- Lars Kofod-Jensen, Frederiksberg College of Education
- Bo Öhrström, DEFF secretariat
- Hanne Marie Kværndrup, DEFF secretariat



Portals

- **Chairwoman: Birte Christensen-Dalsgaard, State and University Library**

- Birgit Henriksen, The Royal Library
- Per Steen Hansen, ASB Library
- Ingelise Stæhr, University Library of Southern Denmark
- Bente Thorup Andersen, Aalborg Commercial College
- Kasper Løvschall, Aalborg University Library
- Jakob Heide Petersen, DEFF secretariat
- Lise Mikkelsen, DEFF secretariat
- Morten Andersen, DEFF secretariat



- **System architecture**

- **Chairman: Arne Sørensen, State and University Library**

- Mogens Sandfær, Technical Knowledge Center of Denmark
- Per Steen Hansen, ASB Library
- Birte Christensen-Dalsgaard, State and University Library
- Ole Michaelsen, Technical Library of Copenhagen
- Birgit Henriksen, The Royal Library
- Kasper Løvschall, Aalborg University Library
- Bo Öhrström, DEFF secretariat
- Jakob Heide Petersen, DEFF secretariat

Activities

Even though 2006 was slightly atypical as regards activities within the programme areas, the year was marked by the continuation of a number of earlier initiatives and the implementation of new and interesting projects. The following paragraphs provide an overview of the work in the programme areas, the DEFF secretariat, Knowledge Exchange and international cooperation in 2006 as well as the objectives for 2007.

The programme areas

In the area of e-publishing, dissemination of PURE continued. It was implemented in even more universities and an increased interest in the system was shown by institutions under both the Ministry of Culture and the Ministry of Education. The Danish Research Database (DDF) underwent a consolidation process which resulted in the establishment of a cheaper and better base constructed on the basis of improved data from the universities' systems. DDF's project management also arranged for Danish research data to be exported to Google Scholar.

Information literacy was a significant action area and a number of projects dealt with various different aspects of the concept. The work involved is coordinated via the *Library as an active learning partner* project and resulted in a number of communication activities in the form of reports and a feature day in the autumn.

In addition to the more general issues related to information literacy and the library's role in the learning process, a number of projects concentrated on the practical integration of information resources into the e-learning process (DELA, Edumedia and Digitev) and provided technical support in connection with the acquisition of information literacy (the *Learning objects web and E-support tools for information literacy* projects). However, there are still a number of copyright restrictions on the full utilisation of digital information for learning purposes. The absence of a satisfactory framework agreement for the scanning of information for teaching purposes continues to present problems.

User facilities continued to work on the implementation of a digital reference service for use in some libraries in collaboration with Biblioteksvagten (the Library Assistant). There was only a limited amount of activity in the portal area. However, Juraportalen and Bizigate have collaborated on an interesting project which allows licensed information through the portals. This joint effort to make available an academic licence service for the provision of licences could prove to be an interesting supplement to traditional institution-based information dissemination.

With regard to the purchase of licences, libraries experienced record turnover again this year. Part of the explanation for this is that the licence cooperation in 2006 also included consortia for the new health regions and, thus, all hospitals and general practitioners.

During the year, work began on a new structure which, amongst other things, is intended to replace previous academic networks and ensure improved service to small institutions. This work resulted in a new structure with two independent licence groups. The conclusion of a licence contract for the "The Danish National Encyclopedia" for, e.g., upper secondary schools represents a significant step for large Danish licence agreements.

System architecture activities were, admittedly, not coordinated via the programme group all year. However, work continued on specific projects and on the implementation of a joint organisation for the management of access to further education and research (DK-AAI). The dissemination of service-oriented architecture proved to be more difficult than expected but this was included in specific projects such as Fedora.

DEFF secretariat

The secretariat's activities were also affected by the changes and reorganisation. Two of the members of staff who had previously worked primarily on portals, the web site and e-publishing began work in the licence area. At the end of the year, two new members of staff were assigned to the secretariat to

work on licences to replace two other employees who had chosen to seek new challenges elsewhere. The secretariat worked to set up an administration database for the licence area. This is intended to support the work of the secretariat and provide libraries with better service.

Turnover in the programme area for licences amounted to over DKK 100 million in 2006 and, with over 250 libraries and more than 175 products, this area represents one of the secretariat's main tasks.

The working groups in the licence area were restructured during the year to replace the academic network. Active programme groups were sorely missed in the secretariat and this made it difficult to initiate and coordinate joint activities. The secretariat worked hard during the spring to formulate a new structure and, during the second half of the year, a great deal of resources were used on discussions and creating a basis for a decision on integrated searches.

In addition, the secretariat's staff spent a good deal of effort on supporting the development of Knowledge Exchange and on establishing a new secretariat for Nordbib. They worked hard to create defined limits for DK-AAI and to secure financing for the organisation which was finalised at the end of the year.

A new model was devised for the Danish Research Database (DDF). This makes use of the new data and opportunities provided by the PURE systems and the result is a cheaper and improved base. As a result, the part of the research database that was used by institutions for reporting was abolished and, instead, the possibility of providing small institutions with alternative solutions such as Atira's PURE system and DTU's Orbit system was being considered.

The secretariat negotiated a contract on the scanning of the front pages of books for use in library catalogues and web pages. It also attempted to encourage contracts for scanning for e-learning purposes and for the digitalisation of Danish core periodicals.

Events:

- Nordic licence meeting in Kastrup
- Consortium day
- Training in DEFNet
- Standardisation courses
- Information literacy
- Feature day on research registration – Orbit and PURE
- Workshop on the knowledge production of the Danish centers for further education (CVU)
- Knowledge Exchange Decision Maker Forum
- Sustainability Workshop
- Co-organiser of the Elsevier Library Directors' Forum.

Knowledge Exchange

During its first year, Knowledge Exchange has explored and evaluated a large number of topics and activities. All of these are given high priority in the development plans of the four partner organisations and are relevant and suitable for joint development and cooperation. In addition, Knowledge Exchange has worked with facilitation models for knowledge sharing which are able to accommodate organisations that differ greatly in structure, organisation, decision-making procedures and culture. Four action areas have been selected as the first Knowledge Exchange initiatives: Digital archives, licences, sustainability and strategy.

The objective is to create added value in connection with existing activities at a national level, to build confidence, promote interaction and create joint goals and to test different models for the generation of knowledge sharing and cooperation structures. Over the past six months there has been a great deal of activity and planning to establish these initiatives and the results are described below:

Digital archives

Experts from the four countries involved in the collaboration, i.e. Denmark, Germany, Holland and the UK, ran the workshop *On Interoperability and Institutional Repositories* together with representatives from the EU project, DRIVER. The workshop was held in January 2007 at SURF in Utrecht, Holland.

Licences

All four partner organisations work at a national level to obtain digital information by means of large international licence contracts. In September, an action plan was approved which included, among other things, benchmarking of licence contracts, joint invitations to tender, a joint licence register to support future licence contracts and joint activities as well as a workshop in which all four countries will participate in February 2007.

Sustainability

By means of application procedures, funding requirements, evaluation and dissemination requirements, all four partners attempted to ensure project results which would reinforce joint development, the application of standards and a satisfactory level of competence. In addition, they attempted to ensure that products meet the requirements of the future and that solutions are reusable. A JISC/SURF workshop and a DEFF workshop were held in 2006. In January 2007, a DFG workshop was held and a joint workshop on sustainability is planned for 2007.

Strategy

Based on the vision for Knowledge Exchange's role in and influence on the development of ICT in the scientific research and education environment, the main purpose of the Knowledge Exchange initiative is to contribute to the development of joint strategies and programmes within the partner organisations. In October 2006, Knowledge Exchange held a meeting in Berlin. The meeting was called the Decision Makers' Forum. It was a round table discussion between the top management of the four partners and was based on the four new strategies. The meeting resulted in, amongst other things, a declaration of the vision for Knowledge Exchange, a roadmap for Knowledge Exchange, coordinated Knowledge Exchange briefing, inclusive engagement with the European Parliament, the European Commission, directorates, national and transnational funding organisations (such as NSF) and a plan to hold a Decision Maker's Forum again in 2007. In addition, the board of directors of Knowledge Exchange has decided to conduct a comparative strategy analysis of the four partner strategies.

New organisation

The organisational structure of Knowledge Exchange was changed in September 2006. Thus, the interests of the Knowledge Exchange initiative are served by the four partner organisations. They are responsible for its progress and the generation of new initiatives and activities together with a steering committee consisting of management representatives from the partner organisations. The task of the Knowledge Exchange office is to facilitate and support the partners. At a strategic level, a board of directors is responsible for consultancy and helps to identify correlations within strategies and development. This ensures the desired level of service in the research and education environment.

Knowledge Exchange launched a new web site in December 2006 at www.knowledge-exchange.info.

International cooperation

In 2006, DEFF participated in a number of international forums. In addition, the secretariat's licence staff was in continual contact with mainly foreign providers and vendors who usually come to Denmark for negotiation meetings. The DEFF secretariat negotiates a large number of contracts annually on the basis of a portfolio numbering over 175 contracts. In 2006, contract volume exceeded DKK 100 million.

International forums

- At an European level topics about licences are still handled by the ICOLC (International Coalition Of Library Consortia) among others. The conferences alternate every six months between Europe and North America and DEFF participated in the conference in Rome in October 2006. DEFF was a member of the organising committee for the European conference and, in 2006, contributed actively via mailing lists with opinions and information.
- In March 2006, DEFF participated in JISC's annual meeting in Birmingham. The meeting provided a unique opportunity to follow and learn from the activities of the largest and broadest programme for digital teaching and research in Europe.
- In April 2006, DEFF participated in the annual conference in UKSG (United Kingdom Serials Group) at the University of Warwick. In addition to inspiration from lectures and workshops, this provided an excellent opportunity for vendor meetings and networking.
- At a Nordic level there was continued collaboration on the purchase of electronic information; meetings were held and experiences exchanged, there was continual contact between the organisations of the individual countries and the organisations shared negotiation experiences with common vendors. A joint meeting was held in Norway and, in February 2006, a Nordic meeting was held in Copenhagen at which Emanuella Giavarra, an English expert in licences and copyrights, talked about her field. The course had almost 20 participants from licence entities in the Nordic countries.
- In June 2006, DEFF/Danish Library Agency participated in a digitalisation conference and a National Representatives Group meeting in Salzburg during the Austrian EU presidency. One of the important issues was the large i2010 programme.
- DEFF participated in the CNI/JISC conference in York in July 2006. The conference provided a number of visionary proposals for digital development in libraries, learning and digitalisation.
- DEFF was co-organiser of the Elsevier's 4th Library Directors' Forum in October 2006 in Copenhagen.
- At the end of November, DEFF participated in 'Online Information 2006' at Olympia in London. In addition to networking, the purpose of participating in this annual event was to conduct a large number of vendor meetings on pricing, contract terms and ongoing outstanding issues related to electronic resources.
- DEFF supports open access publishing via its membership of SPARC. DEFF also works for standardisation of and comparable specifications for the use of electronic resources via its membership of COUNTER. DEFF has joined the new cooperation known as Transfer. The purpose of Transfer is to work together with publishing houses and libraries to protect standards so that periodicals that change their publisher remain accessible to those who have paid for access.
- DEFF participates on the library advisory boards of certain publishers. During 2006 DEFF participated in library board meetings at Cambridge University Press, BioOne and Springer. In each case, DEFF evaluates whether it is to DEFF's and the Danish libraries' advantage to take part.

DEFF 2006

Accounts

At the end of 2005, DEFF carried forward DKK 0,24 million to 2006. In addition, DEFF received a reverse transfer totalling DKK 2,02 million in 2006 from completed projects for which expenses were lower than expected. DEFF's ordinary funding under the Finance Act amounted to DKK 17,3 million.

A total of DKK 12,7 million was spent on the six application areas. The distribution of funds between these application areas reflects the fact that, due to the reorganisation, fewer projects were initiated via the programme groups than in previous years. Expenses in the area of system architecture included two large grants for integrated search. One of the grants, amounting to DKK 1 million, was given to a collective enterprise related to joint data, and the other, amounting to DKK 1,9 million, was for the Primo consortium.

In addition to this, DKK 1,2 million was spent on operating costs and the further development of the Danish Research Database. The largest system architecture projects were related to Shibboleth and document delivery.

Financial statements 2006	DKK
Carried forward 2005	240.000
Reverse transfer 2006	2.020.000
Funding	17.300.000
Costs – action lines	
System architecture	8.366.000
Portals	1.397.000
User facilities	403.000
E-learning	357.000
E-publishing	840.000
Licences (subsidy Ministry of Education)	1.330.000
Total costs action lines	12.693.000
Library infrastructure	530.000
Knowledge Exchange	338.000
Other expenses (conferences, travel etc.)	754.000
Secretariat (incl. rent etc.)	5.200.000
Total costs	19.515.000
Carried forward 2006	45.000

Costs that were not related to the application areas primarily included an expenditure of DKK 5,2 million on the secretariat (including rent etc). Subsidies totalling DKK 0,53 million were given to library systems partnerships under the Ministry of Education. Contrary to previous years, expenses for conferences, travel etc. were kept separate from the application areas.

Total expenditure amounted to DKK 19,5 million and DEFF will carry forward DKK 0.045 million to 2007.

More detailed accounts are available on DEFF's web site (in Danish).

Objectives in 2007

Following DEFF's new organisation, new project groups will be established in 2007. The groups will be given the opportunity to continue their project work and create new action plans for a large number of tasks. Thus, there is a need to structure the work on integrated search and this includes the coordination of document delivery and shared data. There is reason to assume that digitalisation and scanning for e-learning purposes will become important new action areas. In addition, discussions about publishing policies and initiatives in the area of open access will be obvious focus areas.

An important organisational task during 2007 will be the incorporation of upper secondary schools into the DEFF cooperation.

However, the most important task will be to create a positive framework for the cooperation that will benefit the organisation of the steering committee and the work of the programme groups but also the work with international partners and the collaboration in Knowledge Exchange.

Summary

In 2003 a completely new framework was created for Denmark's Electronic Research Library (DEFF) – the former DEF - following the transition from project to operation and permanent funding under the Finance Act. DEFF was established as a permanent activity due to the fact that the project's ministerial commissioners and the Ministry of Finance were highly satisfied with the results of the project period.

The most significant event in 2004 was the Ministry of Education's decision to re-enter the partnership. Thus, DEF became DEFF. This was a gratifying decision for the many institutions and libraries linked to short-cycle and medium-cycle higher education programmes as well as their users. Of course, it was also good news for DEFF as a whole due to the obvious opportunities for continuity and coordination of services to the end user. The re-entry of the Ministry of Education also resulted in improved financial circumstances and a larger organisation.

In the spring of 2004, the DEFF steering committee prepared an overall action plan for DEFF 2004-2006 on the basis of the existing strategy. The keywords were cooperation, utilisation and communication.

In 2005, the majority of DEFF's projects were focused on the development of digital services. It is also worth mentioning another significant event of 2005, namely the formation of Knowledge Exchange which was a formalisation of the cooperation with foreign partners.

Introduction

Once the steering committee and the programme groups had been formed in 2003, a strategy, an overall action plan and action plans for the individual programme areas were prepared.

A review of the projects in the individual programme areas provides an idea of the specific results created by the programme groups. The more general objectives in DEFF's action plan of 2003 form the basis for a more peripheral review of the activities during the period. The general objectives of the action plan were:

- improved access and more comprehensive use of electronic information resources by the end user
- reinforced cooperation between the research libraries and the inclusion of new partners in the cooperation
- documented, clearly communicated and widely distributed results. Research and research results are communicated to the public.

End users

A very significant proportion of the information resources accessed by end users is licensed. As shown in figure 1 the use of licensed information resources has increased over the whole period and is the most significant information resource for research libraries.

The goal related to end users' access was largely met by developing and consolidating the licence cooperation. Efforts were made to improve administration in the secretariat and the purchase of TDNet in 2003 made it easier to administer institutions' licences. In addition, the cooperation on licences for electronic information was continually extended to include new institutions, e.g. due to the re-entry of the Ministry of Education into DEFF in 2004.

In the area of system architecture, efforts were made to improve access management which is a requirement for access to licensed information. In addition, work was carried out on projects on service-oriented architecture. These projects formed the basis for joint development of services for the individual institutions.

However, the original goal for end user access also included an ambition to improve user-friendliness and presentation. In 2004, the programme group for user facilities conducted a large usability study among libraries which indicated that the presentation of the much-used electronic information resources could be improved. The study gave rise to local initiatives with a view to improving and increasing the focus on user-friendliness. Furthermore, the study helped recognise the need for a combined integrated search of information resources across the libraries as well as an intelligent presentation of an individual user's results.

Usage - 17 large research libraries

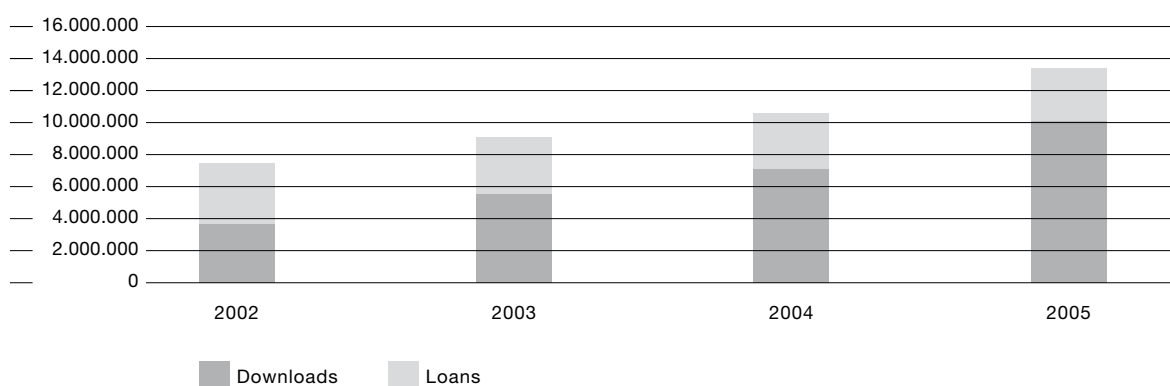


Figure 1 illustrates the increase in the use of licensed information resources at the 17 large research libraries between 2002 and 2005. The proportion of total use represented by downloads increased in relation to physical loans.

The portals group discussed the relevance of continued academic dissemination of internet resources. The existing portals were consolidated by moving them to a common software platform in a common operating environment. It gradually became obvious that the relevance of the portals was, to a large degree, dependent on the ability to offer access to digitalised items or electronic resources. Thus, the portals group's most recent project targeted the academic dissemination of licensed information via the portals.

DEFF's two new programme areas, e-publishing and e-learning, were the areas in which DEFF had the most contact with the libraries' parent institutions.

As far as e-learning was concerned, this resulted in a number of considerations about the way in which the library and its resources and competences could be integrated into the learning environment. In addition to the organisational and subject interface to the parent institution, e-learning also dealt with technical aspects. The goal to integrate library services into the virtual learning environments of the institutions resulted in practical work with web services, e.g. in the DELA project (Digital Educational Library Access). The work with web services and service-oriented architecture was of particular relevance when the libraries' data and systems were integrated into new contexts outside the library.

As far as e-publishing was concerned, a good deal of time was initially spent on system tests and standardisation of data. A number of libraries outside the programme area entered into a cooperation on development – with the support of DEFF – to create a system for the registration of research (PURE - PUblication & REsearch). Later, this spread to almost all Danish universities.

In 2006, the new standardised data format, more comprehensive registration and the improved systems formed the basis for the launch of a new version of the Danish Research Database. The work with the research database resulted in a proposal by the Technical Knowledge Center of Denmark to share the dissemination of research via a portal in cooperation with DR and other central interested parties.

Cooperation

At the end of DEFF's project period in 2002, DEFF was very much a library project. Then as now, the focus was on the role of the research library. However, after 2003 it became obvious that the individual libraries were taking on research registration and e-learning themselves and that, in several cases, the library was assuming a more central role, both on campus and in the institutions' digital environments.

The DEFF participants also experienced increased cooperation with external players. As far as system architecture was concerned, the cooperation with foreign countries, universities, the research network and, in particular, the Ministry of Science, Technology and Innovation developed significantly. 2003 saw the establishment of a three-year cooperation between the IT departments of The Royal Library, State and University Library and The Technical Knowledge Center of Denmark. The result of this cooperation was the formation of a basis organisation which provided expertise and the personal resources that became the foundation for many of the projects during that period. It proved to be difficult to ensure adequate dissemination of the system architecture activities to all libraries.

In the licence area, the number of participating institutions grew to include far more than libraries alone. The most unmistakable recognition of the expertise of the Danish research libraries and the positive cooperation within DEFF was, perhaps, the invitation to take part in Knowledge Exchange with partners from Germany, the UK and Holland.

In general, the programme groups proved to be very valuable areas for the promotion of coordination and cooperation. Of course, there were times when various different areas became politicised or when cooperation proved difficult. However, it was also possible to come to a compromise and continue cooperation in the areas in which agreement could be reached. Similarly, there were a number of lessons learned which could be put to use in the future to improve cooperation further.

Results and dissemination

As mentioned above, the results of the period between 2003 and 2006 were very satisfactory and, in a number of areas, it was proved that good results can be achieved by cooperating. Taught by the experiences gained during the project period, no special attempts were made to market either DEFF or DEFF's activities. However, it was unfortunately rather difficult to convince the relevant decision makers of the significance of academic and research libraries for education and research. The secretariat attempted to do this during its work with the Globalisation Council but without success.

On a more practical level, neither academic nor research libraries had any trouble proving their worth. Research registration and e-learning made some libraries more visible in their parent institution and the many cooperative relations with new partners in DEFF have also provided new opportunities to promote the library's services.

Most recently, a group of staff members from the education libraries prepared a report, *Knowledge in Play*, which deals with the tasks of the library in connection with the establishment of university colleges.

However, there is a need to improve action on "library advocacy"; not in order to promote institutions and funding, but in order to ensure reasonable promotion of education and research. The issues are open access, digital Danish teaching aids, research dissemination, information literacy and lifelong learning, but it is also a question of more specific activities such as integrated search, alumni services, research statistics, support of e-science and digitalisation.

DEFF Programme Areas 2003-2006

The following paragraphs provide an overall status of projects in DEFF's programme areas between 2003 and 2006 and the results. There is a short description of the objective for each programme area as well as its organisation, action areas, projects, milestones or results and perspectives for the future.

Licences

“Obligatory cooperation on the purchase of digital information is developed in collaboration with the research libraries. Cooperation on the registration of periodicals and user statistics will be established.”

Between 2003 and 2006, both the number of participating libraries and the number of licences increased. The cooperation on licences remains a very important area of collaboration. To begin with, this only comprised access to periodicals in electronic form. However, it now includes access to books, databases and reference volumes.

Organisation

The cooperation on licences for electronic information was founded by the large university libraries in 1998 and originally reported to the Conference of Directors of Danish Research Libraries (FC) which is a professional body comprising the 12 largest research libraries. At that time, the licence group consisted of representatives from these 12 libraries and, thus, was not a DEFF programme area. The next libraries to request permission to participate in the licence cooperation were the research institutions and the public administration. At this stage, the licence group was enlarged to include one representative from the smaller research libraries. In 2004, the institutions under the Ministry of Education were added to the cooperation and upper secondary schools will follow later. In 2005, FC decided to allow the group to become a DEFF programme area. The requirements of the different types of institution varied greatly and, therefore, another member was added to the licence group when the Ministry of Education re-entered. The new member was to represent these institutions. A number of academic networks were set up at the same time, the purpose of these being to ensure that all libraries, regardless of type, could have an influence on the selection of products. The aim was for the large libraries to share their experiences with the smaller libraries. This academic network was never successful and, from 2007, it will be replaced by a new structure with two licence groups.

Action areas

Over the years, the licence group has worked very hard to provide access to a critical mass of information. The following paragraphs outline the most significant points.

Pricing models

Pricing models have always been a subject of debate, not only in the licence group but also among library management. There is general agreement that pricing models based on an institution's past subscriptions are not models that should be applied in the long term. However, it proved more difficult to reach agreement on an alternative model. The bottom line, i.e. the amount owing to the publisher, is difficult to change. Before pricing models/distribution ratios can be changed, there must be agreement on the new criteria. Necessary statistics must be compiled, a relevant basis for distribution (e.g. student man-years) agreed upon and, finally, contracts must be negotiated with the publishing houses to authorise a change in the distribution models. There has also always been a desire to be able to offer a pay-per-view service, i.e. display of certain full-text articles for a fee. This service is currently only available via the publishers' own web sites and is, unfortunately, far too expensive.

Backfiles

Backfiles have become the publishers' new source of income. However, many libraries have also requested them. Backfiles with access back to volume 1 make information that is usually stored in a cellar more accessible but are also linked to savings for libraries as they do not require much shelf space and there are savings on the cost of copies. In most cases, backfiles will be a property purchase but a small annual fee may be charged for permission to have the information on the publisher's server.

DEFNet

DEFNet was established in 2004 and is a search tool for periodicals as well as an administrative tool. A number of small institutions have all access to their periodicals via DEFNet. In addition, a number of libraries have personalised their entry page so that it contains their own logo, a link to hard copies of their own periodicals and a link to their own electronic periodicals. At the end of 2006, 57 libraries had full access to DEFNet.

E-books

Over the past few years, there has been an increasing interest in contracts for e-books. The licence conditions for books are different from the conditions for periodicals, e.g. there are significant differences in the scope for printing and loans to other libraries, so-called interlibrary loans. A number of publishing houses have selected to define licences for e-books as a purchase, while others offer subscriptions and a purchase option for the books the library wishes to retain. In the future, DEFF will spend increasing time on e-books as a medium.

Statistics

Statistics are a topic of both national and international interest. The COUNTER organisation, which is responsible for a set of rules which allow the comparison of statistics from different publishers, now has rules for the enumeration of statistics for both periodicals and books. Unfortunately, although statistics are required by the libraries, not all publishers provide them. Based on the statistics, DEFF has established that the use of e-resources continues to increase. Presumably, saturation point will be reached at some stage. However, this point has not yet been reached. The increase is, of course, also linked to the increase in new participants but is also related to the fact that many backfiles have been made accessible.

Perspectives for the future

When the Ministry of Education re-entered the DEFF cooperation, institutions were offered favourable entry terms to allow them time to organise their budgets and try out various different products. These subsidies will be terminated at some point and, before this happens, it is important that the Ministry of Education libraries carry out an evaluation of their access: Do they have access to the right databases/periodicals; is there anything better; what are the statistics for use etc.?

Even if there are new pricing models the basic issues will still exist. This will stimulate the interest for alternative publishing forms and agreements for research. Therefore, DEFF considers "open access" to be an important issue. Some publishers have already included open access periodicals in their contracts. If an institution pays a subscription for a periodical, the researchers at the institution will have free access to the publication. This provides the libraries with a different challenge: Who is to pay for the publication of research – the researcher, the university or the library?

The many mergers between universities and centers for further education (CVU) will have a large impact on the licence issue. Even if there are fewer institutions, the current pricing models will be inadequate. A university college with, perhaps, 18,000 students will not be able to pay licences equivalent to the full number of students. Licences would have to be priced according to relevant users. Another challenge is the incipient problem within the licence agreements related to the definition of a "site", i.e. a geographically demarcated area. From a Danish point of view, the demarcation of a "site" ought not to be defined as a geographic area. The problem could be solved by attempting to establish national agreements for a specific academic area.

The creation of the new regions also gives rise to changes in licensing. The Danish regions have allocated a sum of money to provide the whole of the health sector – including general practitioners – with access to a basic package of information. Until now, the type of service provided to hospitals by the libraries has varied greatly across the country. A number of hospitals (the university hospitals) have been served by the universities while others have been required to purchase their own agreements. The remaining hospitals have had no access at all to electronic information. The Danish regions have now compensated for this, although there is still a great amount of work to be done to provide information to all hospital workers and to investigate the cost of the service provided to hospitals by the universities.

Periodicals which change publisher have always caused the libraries problems. This problem has not diminished in the electronic world. Therefore, DEFF has decided to follow closely the work carried out by the UKSG group, Transfer. It is the task of this group to define standards to be applied when electronic periodicals change publisher, e.g. what is required of the publisher who is selling, what is required of the publisher who is purchasing and, last but not least, how will the library's access be affected.

System architecture

“Research libraries collaborate to develop, purchase or operate IT systems which strengthen the way in which the individual research library is able to handle assignments. The systems meet joint standards, are part of the common (three-tiered) architecture and are made freely available where appropriate.”

In 2003, work in this programme area started with an initiative based on the desire to unite the few strong resources that already existed and to create an effective common infrastructure. The result was the creation of a basis project. The three largest libraries with the largest number of IT employees entered into a three-year cooperation agreement with a view to developing a common system infrastructure for all libraries. The aim was for this infrastructure to support IT-based services at the individual libraries.

The general concept for the architecture model already existed: The three-tiered model had to be put into practice. All agreed on one important principle for the cooperation and this is expressed in the following sentence:

Shared development – individual presentation

The aim of this principle was to bury the ghost of centralisation. At the same time, the experts would be able to join forces to solve technically complicated tasks related to library infrastructure and system architecture in times when IT applications in the rest of the community are undergoing intense change and professionalisation. If libraries were to keep up with developments it would be necessary to pool resources.

Architecturally, this area was divided into two. Both areas are technically challenging and, together, they form the cornerstone of modern IT architecture. One area comprised the actual implementation of the three-tiered model into the practical development of service components. These names of these components (Web services and XML, the related communication format) were combined to become XML Web services. The other area comprised user and access management. The LDAP project was successfully implemented in the preceding years (2002 and 2003) and all of the Danish research libraries were granted access to electronic periodicals, regardless of their location. This access is still used today but will not be adequate in the future.

In addition to these two large architecture and technology projects, there have been a number of communication and network activities. These included workshops and seminars related to the individual projects aimed at disseminating results and promoting involvement as well as an international conference.

Action areas

XML Web services – work sharing and specialisation

Activities have been concentrated on the development of applications for the three-tiered architecture in order to demonstrate – by power of example – that work sharing and specialisation are possible. At the beginning of the period contact was established to the Fedora project which was an initiative by Cornell University and the University of Virginia. Fedora is open source software and provides flexible tools for the management and delivery of digital content. Fedora utilises web service technology and seems to be the libraries’ answer to organisation and delivery of digital content. There are further details about Fedora at www.fedora.info. The Fedora activities accounted for almost half of the activities in this area. The main project was *Fedora as generic repository architecture*. The project ran during 2005 and 2006 and, as a result, Fedora is now used on the operating systems at both DTV and State and University Library. Furthermore, several smaller projects were implemented and resulted in the following web services: the Library Directory, Z39.50 gateway and a document delivery service.

User and access management – the road to DK-AAI

The architecture with the three A’s, Authentication (who are you?), Authorisation (what are you allowed to do?) and Accounting (what do you have to pay?) has been a well-known concept for some time. Therefore, well-known and accessible technical solutions are available. The difficulty is that the methods must be implemented simultaneously for all who participate. Implementation that only covers libraries is not acceptable, nor is implementation that only covers Denmark; we need to consider both national

and international solutions. Therefore, this type of implementation takes time and it may be necessary to consider partial solutions along the way. These two circumstances have affected the projects during the period. There is no doubt that the period's most important result was the creation of the joint Danish DK-AAI initiative in line with other similar projects in a number of other countries and under the auspices of three ministries, the universities and the libraries. There is more information about DK-AAI at www.dk-aa.dk. The activities included sample and technology projects for the individual elements of DK-AAI including work with the open source software, Shibboleth. More than half of the projects carried out during the period were aimed at long term goals. There were also other projects that were worthy of note, e.g. a statistics project for the LDAP/proxy server solution resulting from the programme group in 2002, which continues to work well, and the project on the consolidation of user databases between the Royal Library/Copenhagen University and State and University Library/Aarhus University. A pay-per-view administration project illustrated the application of this form of purchase at libraries. The result is still applied in the public library project, *Library Net Music*.

Network and dissemination activities

There were network activities with the international partners in both of the two main areas, e.g. in the form of a workshop with the Fedora group from Cornell and a workshop with the chairman of Internet2 about the Shibboleth software solution.

Participation in the above workshops as well as in specific workshops related to implemented projects contributed to the dissemination of information.

However, the dominating event of the period was the international conference, *Building the Info Grid*. There were 240 participants from 17 countries and it was a huge success. The conference was organised in accordance with system architecture's two development principles as described above and we succeeded in attracting good international experts to the conference as speakers, e.g. Peter Brantley from California Digital Library and Anurag Acharya from Google Scholar.

Perspectives for the future

DEFF's new organisation is expected to further develop the work already begun on infrastructure. However, DEFF now has the option to finance the operation of shared components. Finally, there is a great deal of pressure from central sources to consolidate and improve efficiency. The complexity of the solutions is increasing. The complexity (and the actual value) of the public IT infrastructure is increasing. International and public IT architecture are experiencing healthy development. The libraries will follow the trend, hopefully of their own free will and in cooperation with partners. However, we must be willing to cooperate and share the load more than ever before.

E-publishing

“The aim is to contribute to the creation of an organisational, financial and technological framework for internationally oriented scientific communication, the primary focus being the interests of universities and sector research institutions and not commercial publishing houses.”

E-publishing initiated studies and projects related to the scientific communication of the future as well as publishing relevant to Danish research.

The main objective was twofold:

- to contribute to providing open access to Danish research results to the greatest possible extent
- to contribute to the most effective possible exposure of Danish research, its institutions and scientists in the fields of international digital knowledge-sharing and communication

In order to meet this goal, e-publishing worked with technical and organisational solutions across the Danish universities, research institutions and research libraries and in collaboration with international initiatives. Furthermore, e-publishing models were applied in collaboration with publishers. There was also collaboration on the setting of standards and development of software. Solutions that, previously, were limited to one or only a few libraries are now available to a large number of, or all, libraries.

Action areas

Initiator of a Danish research portal – Videnskab.dk

The aim of Videnskab.dk is to present specifically Danish research results in a fun and vibrant language that appeals to young people. The portal is expected to be instrumental in bringing more and improved scientific news to the written and digital media. It is expected to increase the interest in science and contribute to a broader understanding within the community that research and development are one of the cornerstones of our scientific community. The role model for this portal is the Norwegian portal www.research.no.

Videnskab.dk is developed in collaboration with the Technical Knowledge Center of Denmark and DR and is financed by DEFF, the Danish Agency for Science, Technology and Innovation, the Research Council etc.

Research registration and publishing

Research registration and publishing was another significant area of the programme group's work. The PURE system for the dissemination of research and research publications has been implemented at seven universities. They are also working on integrating PURE into the Danish Research Database. Formats have been developed for this purpose and work procedures etc. described.

From printed to electronic periodicals – start-up support for the e-publishing of small periodicals

The work conducted on the migration of small periodicals from the printed to the electronic media has been an important action area. The target group was non-commercial periodicals published by universities, libraries or companies, or a combination of these.

Preservation and accessibility of e-published information

There is an increasing awareness of the need to preserve digital data when developing institutional repositories. The group cooperates with the English SherpaDP project, which is supported by JISC, on the joint development of a system.

Copyright issues and the development of standards

This activity area has resulted in two reports; one on copyright issues and one on standards. The main objective of the first report was to create awareness of the problems related to IPR (intellectual property rights) and scientists' need to retain the rights to their own articles and not transfer them to

commercial publishers. They should at least be given the option to make their own work accessible to their own institution's Institutional Repository.

Common software platform for research registration

In 2004, DEFF supported a development project which was initiated outside the programme area. The aim was to establish a common software platform for research registration. The initiators of the project were a number of university libraries – primarily Aalborg University Library and the library at the Aarhus Business School. Together with software developers from ATIRA A/S, they developed the software platform PURE (PUBlication & REsearch) between August 2004 and December 2005. PURE was a customised research registration system and e-archive platform for the Danish university and research environments.

Perspectives for the future

The majority of the activities described above have been implemented and continue to run locally as an integral part of the individual library's activities. Therefore, it makes good sense to terminate the e-publishing unit in its current form.

The activities that continue to run centrally are activities of national interest, e.g. Videnskab.dk which deals with popular research dissemination aimed at a geographically and academically diverse group, and the activities linked to the Danish Research Database (DDF). The aim is to make DDF attractive as a national archive for Danish research publications and to develop it to include a database which can store information about the expertise of all Danish scientists, including their CVs. Furthermore, DDF is expected to be a useful tool in the cooperation with the regional greenhouses that are an initiative by the National Agency for Enterprise and Construction and are intended to support the collaboration between entrepreneurs and university researchers.

Portals

"The purpose of the Portals programme area is to promote an improved and up-to-date method of information dissemination for users by means of a cooperation between Danish research libraries on the development of portals and portal tools."

Organisation

The work with subject portals was limited to two areas, namely the formation of an operation center with common software and an evaluation of portal development under the auspices of DEFF.

A joint operation center was set up and, to begin with, this involved the migration of all portals to a common software platform (Keystone). The evaluation of the work with portals within DEFF was an attempt to evaluate the effectiveness of the portals as a service for the user but also to discover how the work with portals was organised and prioritised in the research libraries.

The evaluation of the interface between user and library was dealt with in the project *User expectations and requirements in relation to the hybrid library*. The group investigated the way in which research libraries could most successfully meet the information needs of their core users. They did this by studying how users accessed both physical and electronic material as well as the libraries' members of staff. The assumption was that a study of the working methods of the users could provide input for new services and for the improvement of existing ones.

The results of these projects provide a basis for indicating trends which could characterise developments in this area in the years to come.

Action areas

When work began in this programme area, a need to make the operation of the subject portals more efficient had already been expressed. The solution was to move the portals to the same platform and collect the operation of the portals in one place.

This meant that all portals would have to convert data and develop new user interfaces. Several selected to add new facilities at the same time and supplement the link collections of the portals with other contents. Thus, the Virtual Music Library selected to supplement their material with source material from the Danish Music Periodical, Jazz Special and Nordic Sounds, while Bizigate and Juraportalen now also provide access to licensed resources.

The programme area has taken the initiative to establish a common operating environment and the individual portals have selected to improve contents.

Another aim when the programme area started up was to conduct a study of the portals and the portal work in research libraries.

The project was implemented in 2005 by two consultants from the Royal School of Library and Information Science. They prepared a report on the basis of a number of interviews conducted in 12 research libraries. The report summarised the libraries' opinions on the outcome of portal development and link collections and provided an insight into the way in which the field is expected to develop in the coming years.

The conclusion was that the focus on internet resources built on link collections was a thing of the past. Furthermore, in the future, information dissemination ought to attach more importance to search options across item types and a larger selection of resources.

Everyone stresses that DEFF's participation in the portal cooperation was an invaluable starting point from which to reinforce the academic network across all types of institution.

With *User expectations and requirements in relation to the hybrid library* an attempt was made to reveal users' opinions. The main method applied was a field study of the users and the way in which they used the library. The idea was that the compilation of information would provide input to the way in which the future library service should develop.

During the course of the project, various different user patterns were observed. The patterns were named worker bee, the library enthusiast and the drive-in user.

The conclusion was that libraries do not contribute to the way in which the user judges relevance or selects literature. Users often use their academic network and literature lists. They do not usually use the library services until they wish to search for a known item or subsequently reserve the item.

A further conclusion was that the presence of the libraries on the net was very important to users and that the professional profile of the library staff as well as their visibility ought to be reinforced. The study also showed that many users consider and use the library as a workplace.

Perspectives for the future

On the basis of the projects mentioned here and the results gained, the following conclusions can be made:

- that there is a wish to see more digital content and functionality in the library interfaces
- that there is a need for tools which help users to judge the relevance of items
- that the library must increase and make its services more visible to its end users

It is obvious that these conclusions can be processed in different ways. One option would be to look at some of the initiatives mentioned in Web 2.0. Social technologies involving the users can provide specific information about the library's item collection, e.g. reviews which can be of benefit to other users when they are selecting items. Software that is able to provide such a service could be a useful supplement to the library catalogue which is a useful tool during the verification phase.

Libraries will presumably also have to put in some effort to make access to relevant items more simple and coherent. One solution could be improved and simpler search services whereby the user does not only conduct the search in the library catalogue but in several databases or collections simultaneously.

E-learning

“The digital library shall be a central player in the modern world of education and information dissemination in which the quantities of non-structured information from the net exist as a growing source of knowledge. Based on this, it shall be easy for both teaching staff and students to construct meaningful and personal complexes of information which can be shared in an uncomplicated fashion and made available to others.”

The programme area was established in the summer of 2003 and set the stage for libraries, together with the learning environments, to create models for the development of e-learning. This reflected the attitude that, partly due to the development initiated and supported by DEFF, there are resources, knowledge and competences available in libraries to start up valuable cooperation projects on e-learning.

The group consisted of staff from the research libraries and a number of representatives from the universities' e-learning environments. This combination was to ensure both dialogue between the two parties, library and education, and an even weighting of views when discussing and evaluating project applications.

The e-learning programme group worked to promote interaction between the development of information technology and the development of communication technology and encouraged them to support each other in their efforts to create the best possible teaching and research environments at Danish educational establishments.

Action areas

Between 2004 and 2006, the e-learning programme group chose to work on a number of action areas which would create the framework for a variety of more specific initiatives and projects:

- Content production
- Information competence
- Copyrights
- Access – a common access key
- Personal portals
- Cross disciplinary e-learning courses.

All action areas comprise fields of development which point at access to, and management of, information in virtual learning environments. Some of the projects implemented in this programme area have focused on the way in which the libraries' electronic resources are accessed via the various universities' virtual learning platforms. Other projects have worked on digital curriculum lists published and distributed on these learning platforms and the appertaining copyright implications. “Streaming video” has been studied as a media and has been the subject of a project, as has the ability of “information competence” to manage and work with information in modern e-based learning environments in which the student, to a large extent, works independently. All projects have aimed for results which could add value to the knowledge production of the educational institutions.

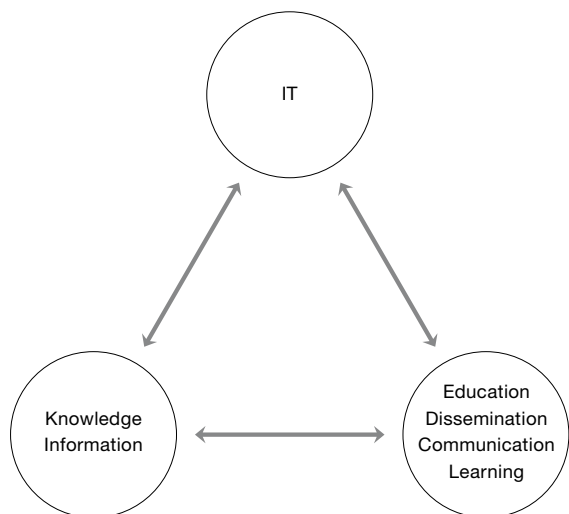
Perspectives for the future

E-learning as a concept has always been a subject of debate in the programme group. The concept contains both a technological and an educational dimension and the issue was the weighting of each dimension. Is e-learning purely technology? Or, if e-learning is to have a purpose and to create value, should it always be seen in a cultural, social and academic/educational context? There were two aspects that were of interest to the programme group:

- E-learning as a technical discipline in which search facilities and the development of technologies support the communication between, and integration of, various platforms. The focus is on the technology here and the library's role is one of system developer.

- E-learning as an educational discipline in which the development of new ways in which to assimilate information competence are seen in relation to e-learning's educational dimension. Here, the focus is on learning and the role of the library is one of knowledge provider/information coach.

In the opinion of the programme group, DEFF ought to consider both aspects of e-learning important. As illustrated in the model below, e-learning is held tautly between IT, knowledge and learning/communication.



If all the elements in the model are to be taken into account, a cross-disciplinary approach must be taken, i.e. professional knowledge of all three areas is required and this knowledge must be applied and shared.

The e-learning programme group was the subject of a review in August 2005. In line with the above, it should be noted in closing that the review emphasised a need for new digital teaching materials. It also indicated that information competence should be included as a significant focus area in a new strategy for DEFF. In addition, it was noted that the focus should be broadened in relation to traditional e-learning and that it is not sufficient for libraries simply to make material available to users; they could focus more on the way in which users work with the material at hand.

User facilities

“The objective of the user facilities programme area is to promote the end user’s access to the research libraries’ information resources and to break down any barriers which restrict this access.”

This vision is caught between the development trends, considered by the programme area to be positive for the user, and the actual status of information dissemination, which creates barriers for the same user’s access to information.

Action areas

Usability studies

Together with UNI-C, the programme area conducted a usability study of the web sites of large Danish research libraries and the development of local usability competence at the libraries involved. The purpose was to pinpoint the difficulties and barriers met by users when they attempted to gain access to information and resources at the libraries. If these barriers could be localised, an attempt could be made to remove them.

11 large Danish research libraries participated in the study and the project resulted in a report: *The user-friendly digital research library*. Shortly afterwards, the study was repeated at the ARKADE libraries.

A common trait in both usability studies was the difficulty experienced by users in making use of the libraries’ supply of electronic resources. Based on the studies, the following could be concluded:

- Research libraries are not the only sources of information
- Electronic resources are not used efficiently
- Users are not aware that their search results are not exhaustive.

During the studies, both researchers and students indicated that they use Google to find full-text articles and other academic resources. Google provides comprehensive and easy access to a wealth of information.

The studies also showed that users had great difficulty locating full-text articles via the libraries’ search facilities. Users basically expect to be able to conduct a search at article level and usually give up if they have to use the traditionally recommended search method. This requires the user to familiarise himself with, what is for some, an incalculable number of bibliographic databases with varying search interfaces.

This explains why users are increasingly avoiding the libraries’ local search facilities when they search for information. If they use the library search facilities, the results are often poorer as these facilities require insight and frequent use.

Following the two usability studies, the programme area suggested a follow-up project involving the creation of a “Knowledge Center for usability studies” which would maintain and renew experience gained as well as study technology. However, the proposal did not receive the required financial backing although the programme area is aware that follow-up tests have been conducted at a number of the previous project libraries, often in connection with a re-design of the library’s web site.

Virtual reference service

Another extensive and pivotal project area was the virtual reference service. Many members of the user facilities working group have been involved in this project for some time. The project’s issues originated from the technological potential of the electronic library and the realisation of the fact that libraries’ traditional user instructions are faltering and could fittingly be supplemented by an e-service which would assist the user regardless of physical location. A number of research libraries as well as Biblioteksvagten (“The Library Assistant”) are participating in the project which is expected to be completed in the spring of 2008.

Other initiatives

One of the other initiatives was the *Books on your doorstep* project for which a modified version of the previous DEFF catalogue was revived. This provides the dispatch services of the participating libraries with a common brand.

CVU Midwest received project backing in 2005 for *The analysis model – a web tool*. The library and teaching staff produced an IT tool for, amongst other things, information dissemination. Backing was arranged by the user facilities group.

Perspectives for the future

The various projects and their results indicated that there are some barriers between user and library and the services provided. It is the opinion of the programme area that some of the identified issues, which are described in more detail in the programme area's action plans, can continue to be included in work on further development of the electronic research library over the next years.

Improved communication, marketing of the libraries' services (including information about the extent of the electronic resources), and better and simpler interfaces and search engines are obvious action areas.

These initiatives ought to be followed up by new, multi-faceted user studies to measure usability. As mentioned above, the user facilities group has suggested the creation of a center for usability which can advise libraries in connection with future usability studies, preferably based on new methods in the field. It may be that it would be beneficial to reconsider this proposal, e.g. as new media and usage patterns gain ground and call for new knowledge about usability.

Information competence and increased user knowledge, with regard to the localisation, evaluation and application of information, are fields which the user facilities group expect to become focus areas in the years to come, perhaps in close collaboration with the teaching staff at educational institutions. One action area could be the reassessment of methods for instructing users, perhaps taking into account the fact that users are increasingly conducting their information searches outside, and independently of, the libraries. The collaboration with teaching staff should help students to understand that they must professionalise the information search process in order to be prepared for their studies.

Projects

The following provides an overview of projects that have received funding from DEFF between 2003 and 2006. Relevant key figures are quoted for the licence area.

User facilities:

- The analysis model – a web tool
- Project local, regional and national virtual reference
- Usability testing of ARKADE and development of local usability competences
- Usability tests
- Biblioteksvagten (The Library Assistant)
- Information dictionary on the Net

E-learning:

- Libraries as an active learning partner
- DELA – Digital Educational Library Access
- Digital preservation of IR
- EduMedia phase II
- E-support tool for information literacy
- The research library as a facilitator for net-based teaching
- Learning Objects Web
- Problem-based teaching of advanced information and literature search
- Streaming video service
- Are the study competences of students improved if study methods are integrated in subject teaching?
- Digitev

E-publishing:

- Electronic periodical publishing – study and pilot projects
- Scheme design for a national research portal
- International preprint search service on the DEF portal etc.
- Survey of standardisation initiatives and requirements
- Survey of state-of-the-art with regard to rights and their administration
- Pilot implementation of Institutional Repositories at Danish universities
- PURE
- Exchange format for the Danish Research Database
- Digitalisation of Danish state commission reports

Portals:

- Subject portal for history and archaeology
- Subject portal for education and psychology
- Implementation of recommendation systems
- User expectations and requirements in relation to the hybrid library
- Migration of DEF subject portals to the TKL (Keystone) program
- Portals in Danish research libraries, subject web sites and subject portals
- Internet directory

System architecture:

- Basis organisation for system architecture
- Library directory as a web service
- DEF Pilot XML Web Services based on Fedora
- E-periodicals and Shibboleth
- Fedora as generic repository architecture
- Consolidation of user databases
- Local authentication 2004
- Local authentication 2005
- Pay-Per-View administration system

- Shibboleth and Elsevier/ScienceDirect
- Preparation of user databases using Shibboleth
- Statistics module for DEF proxy servers
- Web service for digital document delivery
- XML Web services gateway for Z39.50 services
- Dissemination and use of XML Web services
- Consolidation of user databases
- DK-AAI

Licences:

More than 175 licence agreements have been entered into. These provide scientists and students with access to more than 25,000 periodicals, more than 40,000 e-books and more than 200 reference volumes.

More than 250 libraries participate in the cooperation on licences and these cover a further 200 institutions. Over 100 libraries have access to DEFNet which, in turn, provides access to more than 32,000 titles. More than 12,500 are conducted in DEFNet each month.

Development in the no. of licences and no. of participants in the cooperation on licences

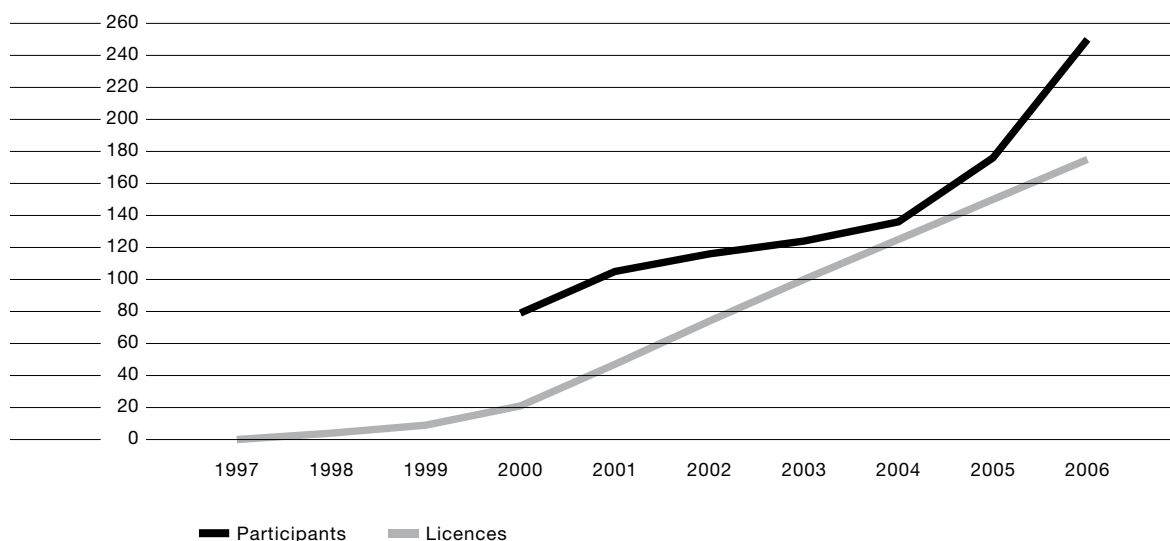


Figure 2. The number of licences has increased steadily since 2000. (Until then licences were handled by the libraries on behalf of DEFF.) During the first year under the auspices of DEFF, licences were mainly purchased for and by the universities. At the end of the nineties, research institutions began to participate. The graph also shows that the institutions under the Ministry of Education entered the cooperation in 2004 and, at the end of 2006, sixth form colleges began to register.

Summary of DEFF’s allocation of funds

DEFF’s activities were divided into six action areas between 2003 and 2006 and a breakdown of the use of resources into these areas illustrates the activities.

Figure 3 shows a summary of expenditure in the action areas over a four-year period. The figure only reflects subsidies for projects etc. within the areas.

As indicated by the figure, system architecture accounts for the majority of DEFF’s funding of projects. The two new action areas, e-learning and e-publishing, were the next two most capital-intensive areas, whereas user facilities and portals were less of a financial burden. According to the figure, the licence area also only required modest financing but this is due to the fact that the funding of licences mostly originates from the libraries’ own spending allocation.

Expenditure in the “other” category may seem large in relation to the expenditure in the action areas. However, all the expenses are linked to DEFF’s action areas and only reflect that the steering committee has chosen to enter into a contract or to purchase a service rather than create a project and subsidise it. These types of contract or service purchase are typically administered directly by the DEFF secretariat.

In an attempt to illustrate the extensive activity in the licence area, the information in figure 3 has been repeated in figure 4. However, in figure 4 the information is supplemented by the financial resources contributed by the libraries in connection with the cooperation on licences. As indicated in the figure below, the area represents a large proportion of the allocation of funds and is a task of increasing importance to the DEFF secretariat. It is also an area in which a significant number of libraries and other institutions participate.

Utilisation of DEFF’s funding, 2003-2006

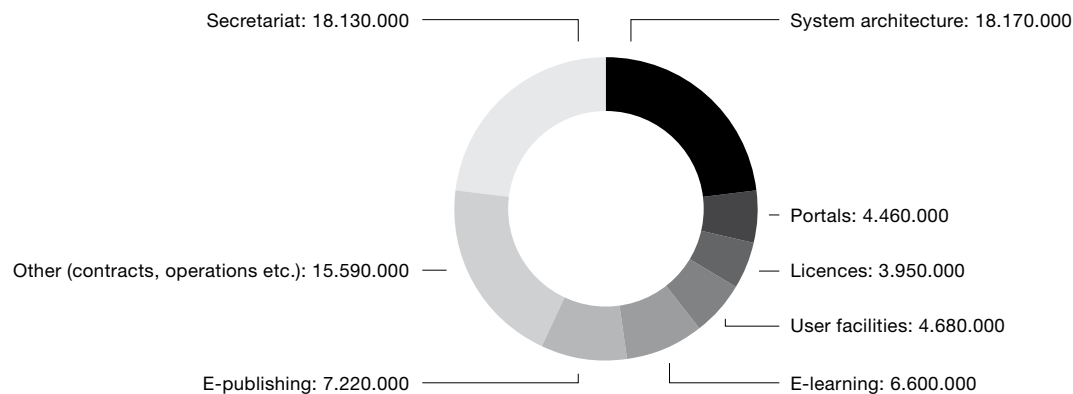


Figure 3. Total DEFF funding during a 4-year period

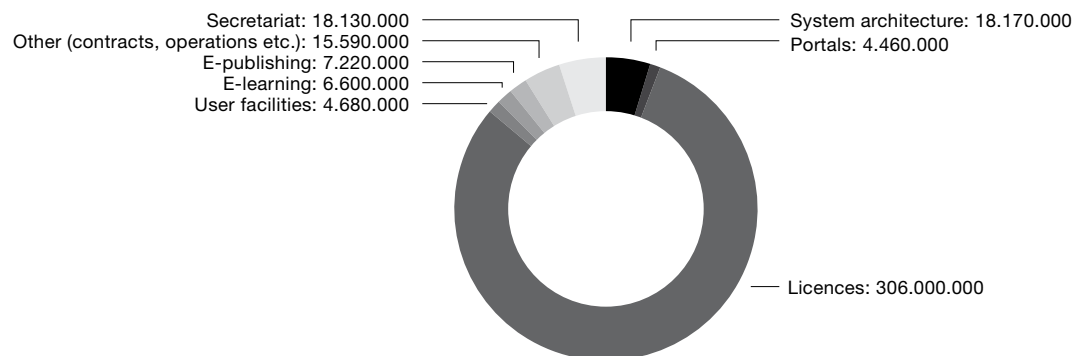


Figure 4. DEFF’s funding 2003-2006 supplemented by the libraries’ purchase of licences

DEFF secretariat

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Administration:
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Knowledge Exchange and Nordbib:
Library consultant Hanne Marie Kværndrup

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