Document delivery in Denmark – a systematic overview

Fig 1

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Abstract

Interlibrary loans, document delivery and cooperation between libraries have a long tradition in Denmark.

The purpose of the article is to give a status on the actual activities in this area in Denmark describing a short history of legislation and circumstances, which have come to an end-user facility for all citizens in Denmark – "library.dk".

Library.dk is end-user access to the Danish Union Catalogue with all holdings from all Danish libraries enabling any user to search and request all materials from almost any library in Denmark.

The Danish ILL environment has a high level of automation. The combination of standards, a general interaction between systems and dedicated functions in national system gives an effective handling of ILL and document delivery.

Supported by an effective delivery service Denmark has an efficient ILL for physical materials and are now challenged by e-resources and copyright holders on how to deal with them in the library and ILL environment.

This article gives an overview of ILL and document delivery in Denmark, technical aspects and the impact of e-resources and digitised materials on ILL and how we in Denmark are trying to attack these challenges.

1. **Introduction**

Denmark is one of the smaller countries in EU, situated north of Germany and belonging to the Nordic countries. We are by language and culture affiliated with the Nordic countries and Denmark has app 5.5 mill inhabitants.

Document delivery and sharing materials has a long tradition in Denmark. Legislators in the cultural and library arena has made significant decisions through the last century and decades to ensure that cooperation between libraries – and this means all types of libraries – are emphasized and important.

In 2001 IFLA published a major revision of the international guidelines for interlibrary loans and document delivery (International Lending and Document Delivery, 2001) and they were the background for Danish guidelines for cooperation between all types of libraries in Denmark (Hansen, 2001) as follow-up of the Danish library act of 2000.

These guidelines have been important in guiding and cooperating interlibrary loans and other fields of cooperation between all types of libraries in Denmark. The goal of interlibrary loan is to ensure the best possible access to information for all residents in Denmark; **and to give access with shortest possible delay to the broadest possible quantity of knowledge and information resources.** It was in the guidelines unspoken that ILL was seen as a supplement to loan and other services from the user's local library.

As Denmark is right now revising the guidelines it is strikingly clear how much have changed in the document delivery, ILL and library fields since 10 years.

This article gives an overview of the current status for document delivery in Denmark. Some new developments of physical ILL are mentioned and the challenges in developing general access to digital resources are described.

Goals and vision

Since 1994 Denmark has had a national union catalogue **Danbib**, which is covering both public libraries and research libraries. This common data base for all libraries has been an effective tool as basis for interlibrary loan.

A fundamental paradigm shift was opening the national union catalogue for the public by the establishment of **library.dk** (Information in English about DanBib and library.dk) in 2000. Together with library.dk was developed a data base for user requests and for library-to-library requests.
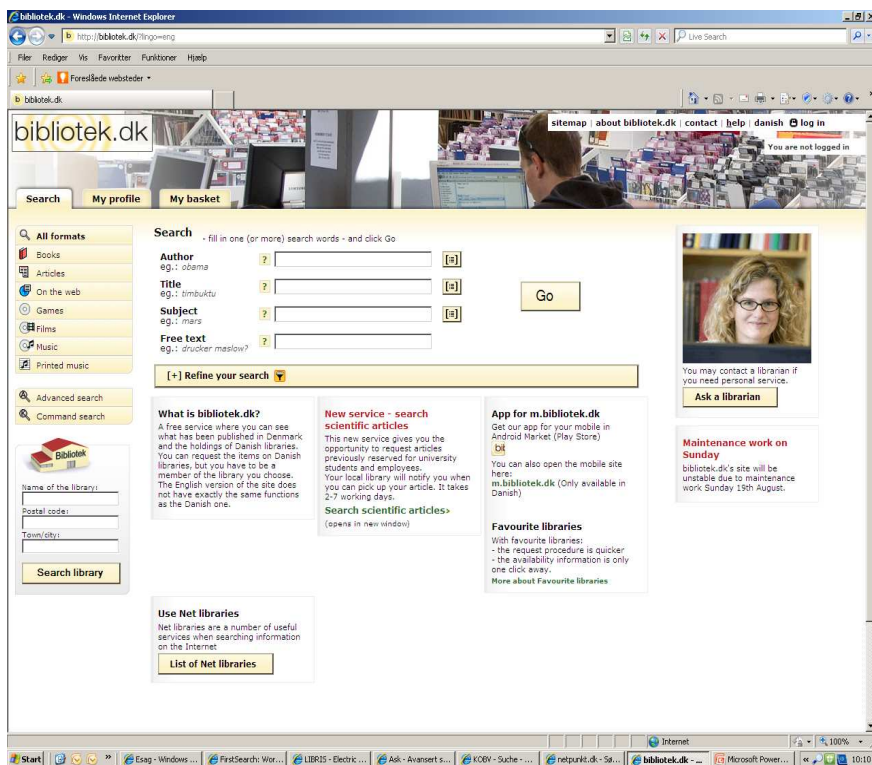

Fig 2

As **vision** for the national service library.dk was defined by the basic requirements: the user should select a material (book, article, cd etc), identify her self and point out the pick-up library.

The selection of source for the delivery was – and is – not a task for the user, but for the libraries. This works and works well for physical materials.

Paralleled it is urgent to explore access to digital resources and materials and to negotiate with publishers, license holders, copyright holders to ensure access to the digital resources as well.

The vision is still valid, but need to be extended in view of the digital (electronic) resources: the user should select a material (book, article, music etc), and identify her self. But the delivery location is not necessarily a physical place, but can be an internet address (to pick-up) or an email (to receive).

The selection of source for the delivery is not a task for the user, but for the libraries, as well as identification of the best possible delivery format is a task of the libraries.

Denmark has a very effective system for sharing physical items including a national transport service, and what we need now is effective system for sharing digital items.

Future ILL – or document delivery – is not only to establish access for direct users, but also more indirect giving access to people outside e.g. campuses – direct or via their library.

The development has started, we have learned some lessons and now – September 2012 – a serious estimate would be that Denmark within the next years will have a highly effective system for sharing resources and information with no regards to format.

Danish union catalogue as starting point for ILL

The two interfaces of the national union catalogue are the starting point for most of the ILL-requests in Denmark.

The end-user requests from library.dk ends as user initiated ILL requests after

* handling by a library employee or

* an automated process

The end users have to choose the title and the pickup library. The library employee use DanBib to send ILL requests based on e.g. librarian/borrower conversation.

This have since been technical developed over more than the last ten years with several improvements. The most important are automatic update from the national service of request into the libraries local data bases and automatic forwarding of user request to library-to-library requests based on rules defined by the individual library.

Fig. 3: Requests DanBib and library the last eight years:
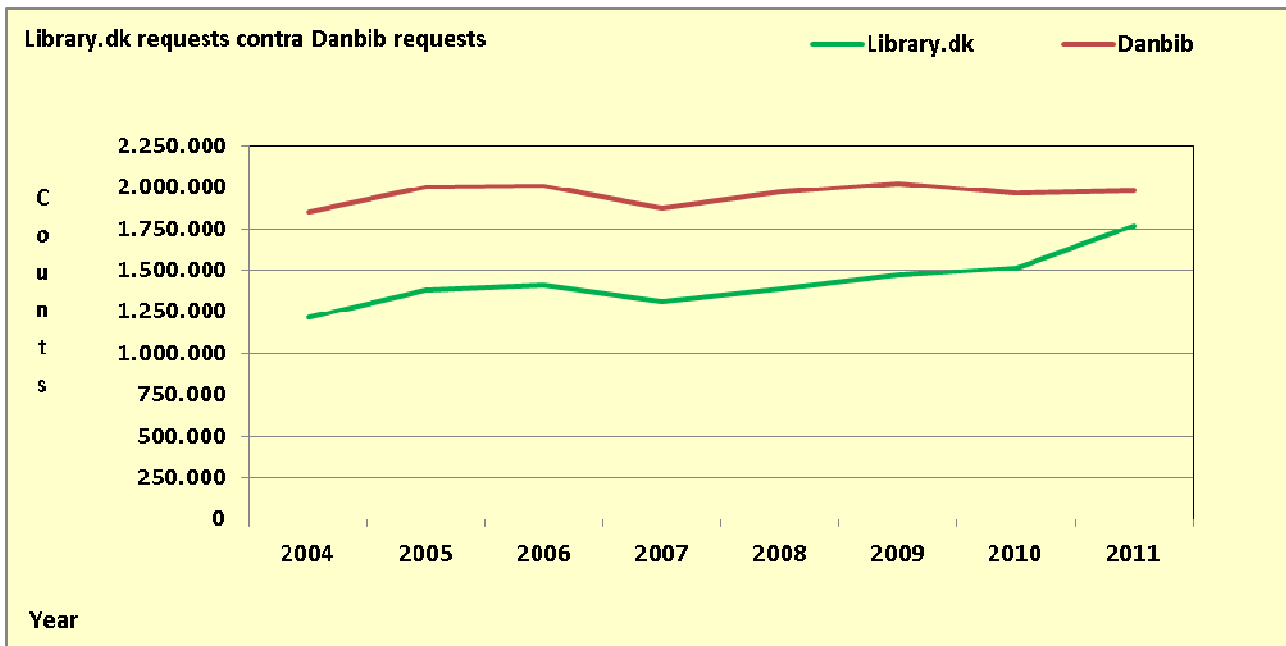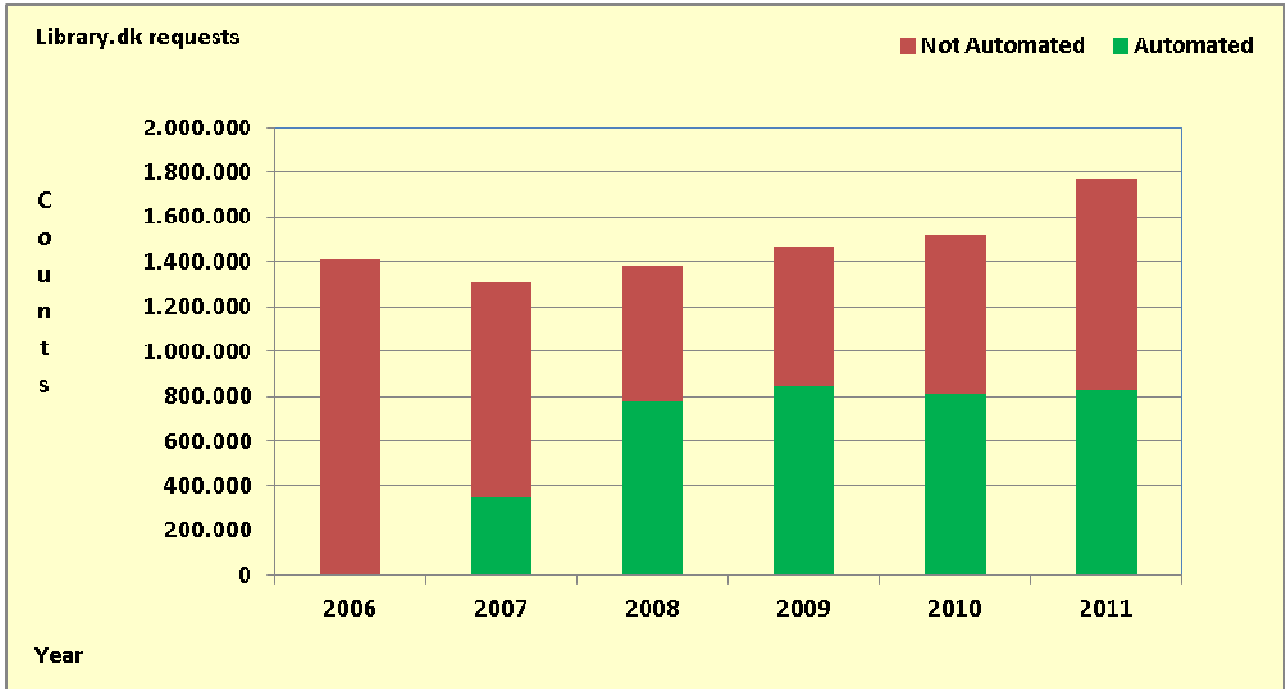

Fig 4 figures for the amount of **automated requests** in library.dk

In 2012 the next big challenge is to establish an equivalent efficient system for handling access to digital resources.

DanBib is maintained and developed by DBC – Danish Bibliographical Centre (About DBC, 2012). DBC is a public company, owned by Local Government Denmark and the Danish State. DBC's main task is to develop and maintain the bibliographic and IT infrastructure in the Danish libraries. DBC's IT development is based on open source and service oriented architecture, following general recommendations for governmental IT development.

2. Legislation

2.1 Danish Library Act

Act regarding library services was passed by the Danish parliament, in May 2000 (Act regarding library services, 2000), being the latest act in a long line of Danish public library acts since the first one appeared in 1920. The ambition of this act is to create an adequate framework for the library in the information society, that is to say the networking hybrid library. In this act it is stated, that the common goal of Danish libraries is "to encourage enlightens, education and cultural activities".

The Act made access to the internet and establishment of homepages obligatory for all public libraries. It stated that access to all published information – regardless of the medium on which it was stored - was free for any user. This led to a general building of collections of compact discs and multimedia materials in all libraries.

The act stated a number of tasks that was the responsibility of the state. A major service was public access to National Union Catalogue launched in October 2000 as 'bibliotek.dk' (English version: *library.dk*).

All public libraries have the obligation to make books and *other relevant materials* available to the public and are required to participate in the interlibrary loan process in Denmark. Also the university libraries and some other libraries have special obligations like the public libraries. These libraries are required to participate in the interlibrary loan process and shall give public access to their collections.

Users of public libraries and libraries with special obligations shall not pay for loans – and copies to replace loans. Interlibrary loans from regional libraries and libraries with special obligations to public libraries shall be free of charge. Other libraries can charge a fee. This is not normal, but some libraries have done it – for public libraries mostly in short periods.

The State and University Library of Aarhus and the library for blind people have the obligation to provide extended services to the public libraries e.g. last resort/ILL for free.

The different types of libraries have different levels of participation and this is reflected and easily identified in the Union Catalogue – DanBib.
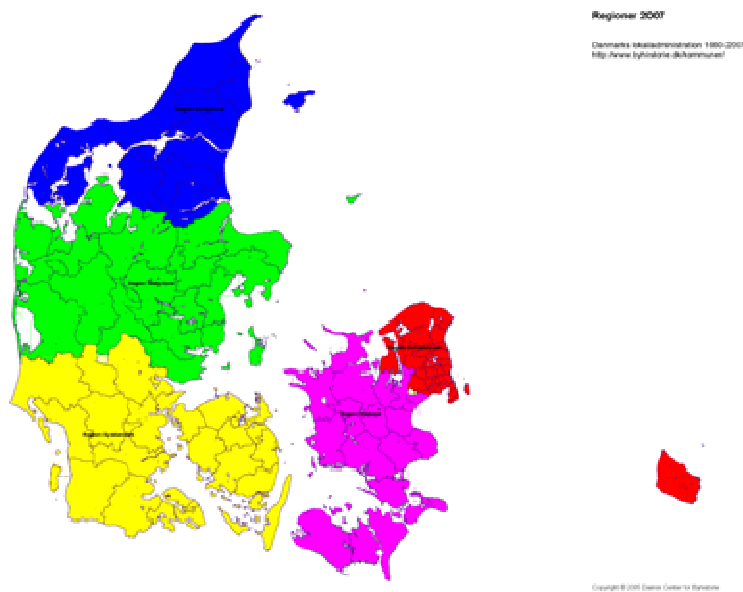
3. The library system in Denmark

3.1 Organisation

The library system in Denmark belongs mainly within 3 different Ministries – Culture, Science and Education – and the library system is administered by The Danish Agency for Culture referred below as DAC.

Danish Agency for Culture is an agency under the Ministry of Culture and the central government organ for among other things libraries. The Agency handles a number of administrative tasks in relation to the libraries, including administration of the Act regarding library services. Likewise, the Agency deals with development tasks in association with the libraries' activities and administrates a number of subsidy schemes within the library area. These responsibilities were handled by the Danish Agency for Libraries and Media until 1 January 2012, were the agency was merged with The Danish Arts Agency, and the Heritage Agency of Denmark to DAC.

Fig. 5: 5 regions and 6 library regions in Denmark – 2 in southern Denmark.

The 97 public library systems are funded partly by the municipalities. 6 of them have regional tasks covering the areas shown on the map.

Denmark has 9 big research and university libraries and DAC has by now registered more than 400 other research libraries of any type, education, science, administration etc. These libraries are funded by their respective institutions. The definition of "research library" is all libraries except public libraries and internal libraries for municipal primary and lower secondary schools.

All types of libraries in Denmark are subscribers of The Union Catalogue, called DanBib and thereby have access to search and request from each other through the professional access: Netpunkt.dk.

4. ILL and document delivery in Denmark – function and figures

The current ILL system in Denmark is based on a mixture of databases, and functions made in connection with the national union catalogue. The description of the components is not comprehensively for each component – only the ILL relevant details are mentioned.

To handle the requests from library.dk and DanBib we use two databases:

- *VIP*: Database with text and parameters defined by each library. Defines e.g. text on receipts after request in the library.dk user interface, which material categories for ILL, how to receive requests (different levels of automation), and specification for user initiated ILL e.g. period after publication etc. and a library directory. And include an order of priority of all other Danish libraries for request.

- *BOB*: Database for administration of user requests conducted in library.dk and library request conducted in DanBib.

Not all the following steps are in function for all requests. It's the local library who decides as profiled in VIP.

Before the request in library.dk is finished, a request (*Check-up user*) is sent to local library to control that the library accepts that the user give the library as pick-up library. First step after the request is a Z39.50 transported request (*Holdings Request*) based on Z39.50 Holdings Schema (Z39.50 Holdings Schema, 2002) as profiled in the danZIG-profile (danZIG Profile Specification 2007). The response gives basic information about accessibility: green/yellow/red as described above and is used to select the library to receive the request. Most of the bigger supplies of ILL use the

Automatic ILL, where requests made in library.dk by end users are transformed to ILL request from one library to another.

Fig 6: Presentation level of availability: green, yellow and red light (DanBib) based on Z39.50 Holdings Request.

The ILL request - *Automatic ILL* or not – is for most the bigger supplies of ILL send to the local library as *Automatic received Requests,* which is a Z39.50 transported ILL request in XML format as profiled in the danZIG-profile. Renews and cancellations and replies for this are also exchanged by Z39.50.

Delivery service: All Danish public libraries, the university libraries and many other research libraries are served by the Danish Delivery service (see 10.1).

In July 2011 precisely 111 libraries were both suppliers and recipients of Automatic ILL – and a few more (118) only suppliers respectively recipients. 132 libraries receive requests for automatic update in local circulations system. 210 libraries accept check of user affiliation from library.dk using NCIP.

Z39.50 transported ILL request in XML format as profiled in the danZIG-profile based on international specifications. The technical set-up is described in an article (Andresen, 2011) together with a draft proposal for a new ILL standard. Based on this and other input the ISO-committee about technical interoperability in libraries (TC46/SC4) at the meeting May 2012 ask Denmark to propose a new ILL standard in cooperation with other interested parties.

By 2012 about 67% of all end user requests in library.dk are automated (Fig 3) – which means that the requests are directed to the library, where the material is available – and thereby unmediated requests.

The automated ILL requests in Denmark are about 2/3 of the user's requests which leaves around 1/3 for mediated ILL-requests – similar to approximately 850.000 requests.

5. Further automation of ILL

In 2011 some developments is decided to improve further automation of ILL and the interaction between the national service conducted by library.dk and the local libraries.

In the national union catalogue the mark-up of accessibility for loan has been a free-text field. This has been changed to a coded field useful for automatic handling.

The subfield contains a code with these possible values:

- not for loan

- not for automatic ILL

- not for loan, but copies can be delivered

- only for ILL to libraries with supervised reading room

- only for ILL to use in the library (not necessarily supervised)

- under acquisition – not yet for ILL

- requests only for the libraries own users

All Danish libraries have assigned a code to describe the willingness to provide ILL. These codes are revised in 2010-2011 so the libraries can profile their willingness to provide ILL on a more detailed level. This gives smaller libraries a possibility to declare themselves as "third level" suppliers

This solves a problem, where several small educational libraries don't have the size or staff to handle many ILL requests, but nevertheless will deliver what they have on their shelves. This being successfully conducted requires all libraries to handle the smaller libraries as last resort.

6. What is available? -

If a direct request through library.dk to your local library for any material cannot be fulfilled it is possible for any citizen in Denmark to make a request for materials from other libraries through the local library for free.

6.1 National Union Catalogue

DanBib contains approximately 33 mill holdings - app. 24 mill records (July 2012). In addition to holdings of the Danish libraries and the national bibliography DanBib contains 2.7 mill records from the British National Bibliography (BNB) and 9.9 mill records from Library of Congress.

DanBib is available at the website netpunkt.dk, which also gives the professionals access to search some foreign databases, e.g. Libris (Swedish), BIBSYS (Norwegian), British Library, UnityUK, WorldCat and ArticleFirst. For WorldCat the Danish public libraries can send requests through The State and University library – which provides the material for free.

In this article the statistic of ILL request performed in DanBib (Fig 3) is used to illustrate the extent of ILL activities in Denmark. Some ILL requests don't result in a loan and some requests are received from other sources. For research libraries this is mostly requests from other countries.

In spite of this the sum of completed ILL loans is on the same level as DanBib-requests, according to the official statistic.

Library.dk contains holdings from Danish research and public libraries – and the national bibliography. According to ILL the content of library.dk and DanBib is the same. The differences are records for copy cataloguing and holdings from a few not public accessible special libraries.

6.2 ILL outside Denmark – Danish Loan Centre

Fig 7

ILL of printed materials is for free within the Nordic countries whereas copies are paid for, if you do not have a reciprocal agreement.

We do lend and borrow a lot of printed material from our Nordic neighbours (app 20.000 pr year) – some through DanBib and some directly via the bases of the Nordic countries.

The State and University Library conducts a specific role within the ILL-environment in Denmark, as they conduct The Danish Loan Centre for all public libraries in Denmark. Due to this assignment they handle about 90.000 ILL-requests pr year besides supplying libraries in Denmark with app 650.000 materials from own collections.

The Danish Loan Centre has close cooperation and lending/borrowing tasks with almost every national union catalogue in the world, using the databases for every Union Catalogue or cooperation databases – e.g. SUBITO.

For the last 20 years Danish libraries have been borrowers through WorldCat and since 2010 9 big research libraries from Denmark have been lenders as well. (Brink, 2011).

In 2007 Denmark initiated a project for closer cooperation with OCLC/WorldCat. In 2009 all Danish holdings was exported into WorldCat and now updated on a daily basis. We opened up for lending through WorldCat and initially 9 Danish research libraries extended their services to become lenders within the OCLC environment and members of the OCLC community. This project is described in details in "The Interlending & Document Supply" (Brink and Andresen, 2010).

Denmark is third on the list of lenders and borrowers within WorldCat in the OCLC EMEA Region – Europe, Middle East and Asia (Brink, 2011)

6.3 All materials ?

The library law in Denmark contains obligatory for most libraries to make access to information with all kinds of materials: books, e-books, journals, e-journals, printed music and recorded music, plays, videos, DVD's, films, fiction, combined materials also.

Most libraries in Denmark are obliged to participate in the Danish ILL with most of their materials.

Within the international ILL we experience that Nordic and European libraries with whom we work in the ILL environment are very cautious (reluctant) to supply other materials than printed books and articles whereas the American libraries are less cautious and willingly supply e.g. movies and printed music with parts across the Atlantic.

This traffic is easily and effectively conducted via WorldCat – practically and economically (IFM) and participating in the WorldCat environment could prove navigable for more European libraries in an effort to open up for more materials within the international ILL environment.

7. How do we make *physical* items available?

7.1 Printed resources

All Danish libraries have their own catalogue which presents all materials – printed, e-resources, films, printed and recorded music, plays and all databases to which the specific library bought/negotiated access for their users.

As mentioned above all Danish materials held in Danish libraries are visible and most of it is available through library.dk for all end-users in Denmark.

Due to the Danish Copyright Act the Danish libraries can:

- print copies from printed and e-journals and send them by post

- cannot deliver copies electronically (with exceptions, see next section)

7.2 Electronic copies from printed materials

In 2008 The State and University Library in Aarhus initiated a project, where negotiations between the body of licences-owners and the library resulted in an agreement, where the library are allowed to scan and store articles from about 35.000 scientific journals (mainly research journals) – and deliver a copy directly into end-user mail account.

If it is the first time a copy is scanned the delivery time is within 1 work day, but if it is a re-used copy from the archive, the copy will be in your mailbox within 15 minutes.

The State and University Library pays the license-holders around 1 Euro pr copy, but the service is for free for all users.

This service is available for all citizens in Denmark through library.dk and is growing fast. The re-use of printed articles is by now past 35%

By 2012 negotiations have expanded the list of journals to app 45.000.

Fig 8

8. How do we make *electronic* resources available?

8.1 Electronic access through licensing

The public libraries in Denmark have their own board of negotiators on behalf of the users of the public libraries (Licensguide.dk) and the research libraries – e.g. University libraries – have DEFF (Denmarks Electronic Research Library) to negotiate on a national level for research libraries.

There are close relationships and cooperation between the 2 bodies for negotiating licenses and access-possibilities, but there are still huge differences in needs for end-users in the public libraries and in the university libraries.

The agreements negotiated for each library or library-confederations make access for the registered users of the specific library and are not available for all end-users.

This covers all electronic materials like access to databases, access to full-text databases, access for full-text journals and any other licensed information material.

Requirements important for document supply would be permission and frames for ILL, possibilities for pay-pr-view and walk-in-use.

Different projects and strategies as "Strategy on perpetual Access and hosting of Electronic Resources" and "Knowledge Exchange about long term preservation of electronic resources" are conducted in cooperation between DEFF and Licensguide.dk.

8.2 Electronic access using library.dk

As for electronic materials DanBib contains lots of records for electronic materials – e-journals, e-books, open access-materials – for which is very different possibilities and ways of access.

Within library.dk are links to materials for which is open and free access and these "requests" does not end as or is counted as ILL or document delivery request.

The libraries report records for both physical and digital documents. Both public and search libraries have done this over the years and a lot of both free available and licensed documents are registered in library.dk – some imported from non-library sources e.g. E-brary.

If a library in the export to DanBib has included information about access to licensed resources, this information is presented for the user in the library.dk user interface.

In total more than 1.6 mill digital resources are available through library.dk.

8.3 ILL from e-resources - a self contradiction?

Through the last 5 years negotiators of electronic materials in Denmark has been more and more aware of the need for creating access to electronic materials on a partial basis (e.g. on demand or walk-in-use) or agreements for ILL-use of specific electronic materials.

There is a growing demand from ILL departments who calls for some guidelines to meet the demands for single copies from e-journals or an abstract or chapter from an e-book, which cannot be found in a printed version.

This could be accommodated either by adding rights for ILL to the existing agreements for licenses or allowing pay-per-view possibilities for e-materials.

For Danish libraries several license agreements now contains specific rights for ILL-use of the materials. Until these rights are automatically readable in connection with the records of the resources on the databases (and the possibility to handle it automatically) using this information is a very resource demanding way of obtaining access.

The ILL departments in Denmark do try to obtain a printed version via ILL if possible, but first we do offer our costumers a "legal" part of the requested material:

In the daily workflow of ILL-departments, where there are no rights spelled, a rule of thumb let us regard electronic resources as printed material, allowing us to print an abstract, print a table of contents or print a chapter from a book up to 35 pages – and send it by mail.

There are no possibilities for sending this electronically for the time being – but we are working on it.

8.4 Direct delivery of Music – Bibzoom

Fig 9

Danish public libraries offer an increasing number of digital services to their users through Bibzoom (Bibzoom.dk) - digitally supplied music, film and audio books. Bibzoom currently offers their customers free downloads of more than 10 mill music tracks from all genres together with articles, reviews, podcasts, festival guides and recommendations.

As the latest news, BibZoom creates access to a growing part of the **Danish cultural heritage** - right now old Danish commercials, historic sound recordings and dialects.

Bibzoom is based on collaboration between 4 major public library systems and The State and University Library and is based on an agreement with Basepoint Media A/S, as representative for the right holders.

By July 2012 two third of the public libraries, covering 80% of the Danish inhabitants obtain this service which is for free for the end users.

8.5 Direct delivery of e-books

I 2012 the public libraries run a project examining loans of e-books based on an agreement with some of the leading Danish publishers. It has been a great success and will be renegotiated by the end of this year with the publishers.

The amount of e-books loaned has increased from 37.461 in January 2012 to 87.972 in July 2012.

The technical model is a file to the borrower, which after 30 days is automatically deleted. The borrower can renew an e-book one time whereas libraries have different rules for how many e-books a borrower can have for loan at the same time. After termination of a loan, the borrower needs to wait 90 days before she can loan the same title again. The library pays a fee to the publisher for each loan.

This success seems to give problems and that's why several publishers have argued for restrictions because they claim that the loan options block the market for selling e-books.

The users like the options and possibilities, but time will show the future for direct delivery of e-books by the libraries.

9. For whom is it available?

The availability of physical resources (materials) is for registered users of libraries and universities/ other educational institutions. For physical material the availability is still based on registration as borrowers in the library - both for requests in library.dk and the following loan from the local library system.

For digital content the situation is different. For public libraries and some research libraries it still is the local borrower register which is used. But for the universities and some other institutions the register of students and teachers/scientist is used.

As described in section 8.2 library.dk user interface try to give the best possible access to digital content based on information from the libraries in the reported bibliographic records.

10. How do we get the materials distributed?

Fig 10

10.1 Danish delivery service – now with Sweden and Norway

The Danish delivery service was established as a nationwide transportation service in 2004 as follow-up of a rise of ILL-requests because of library.dk. The purpose of the delivery service is to support the ILL collaboration by ensuring a fast, cheep and effective service.

The regional libraries act as distribution centres. On daily basis the participating libraries are visited: bringing and delivering pick-up boxes with library materials. Trucks carry the library materials between the regional libraries, which handles the sorting.

The backbone distribution between the regional libraries and the basic distribution to public libraries is funded by DAC. The research libraries with special obligations participate based on a fee for each transported unit and with a lower limit of annual contribution. Other libraries can participate paying a fixed price based of the extents of visits.

The Danish delivery service has meant significant cost reductions for all participating libraries.

In August 2009 this service was extended with a pilot project exchanging-materials with the Swedish and the Norwegian delivery services. This corporation called the Nordic Delivery Service is now a permanent arrangement.

10.2 Digital delivery

In the ILL environment it seems a contradiction that we are allowed to take prints from all materials – printed and electronic - and send by post.

We are not allowed to send anything electronically – except from printed journals mentioned in section 7.2.

In Denmark we are not allowed to use Ariel or any other electronic mode of shipment for sending copies, whereas we may receive articles by Ariel. Knowing that Ariel is on its way out and we are exploring – amongst other modes - Article Exchange from OCLC. This module seems to work very well, but we are unfortunately not allowed to use it for delivering in Denmark – only in receiving articles from abroad.

11. Future digital delivery

Today the digital content is propagated by:

- Web site of the local library: a university library, a college library or a public library

- The common national portal: library.dk

Each library has different ways of establishing access to digital content. A main tendency for university libraries is to establish new solutions to conduct search in not only the library catalogue, but concurrently in other data bases articles etc. Some libraries have included licensed articles and some freely available resources on the Internet in their catalogue. Until now the public libraries in Denmark have just presented a list of links of resources to their users – also from a pc at home.

Actually some public libraries together with DBC are working with developing a pool of all the resources (as many as possible) the libraries give/buys access to. The research libraries have different solutions with consolidated access to what the libraries bought licenses to. Many university libraries use Primo from Ex Libris, one library have developed an article pool and some use a consolidated data base from one supplier.

But the main trend is still that a library gives access for the registered user of the library – or for some universities: for the registered students and the scientific staff of the university.

DanBib contains records as received from the libraries – and until now, this has only partly covered the digital resources which are not satisfactory!

12. Conclusion

The world and the library world has changed rapidly over the last 10 years and the tasks for the libraries have changed with more and more digital materials and open source materials available and this development will continue.

Thus often pronounced dead document delivery and ILL is growing amongst other reasons due to the fact that libraries are cut short and we need to be better and more efficient in cooperating and streamlining our purchases.

It is still very relevant to improve and streamline ILL for physical materials and although Denmark has an efficient program there is room for further improvements paralleled to explore access to digital materials. And there will still be return of investment in further efficiency improvements.

As **vision** for the national service library.dk was defined by the basic requirements: the user should select a material (book, article, cd etc), identify her self and point out the pick-up library. The selection of source for the delivery was – and is – not a task for the user, but for the libraries. This works and works well for physical materials.

This vision is still valid, but need to be extended: the user should select a material (book, article, music etc), and identify her self. But the delivery location is not necessarily a physical place, but can be an internet address (to pick-up or an email (to receive).

The selection of source for the delivery is not a task for the user, but for the libraries, as well as identification of the best possible delivery format is a task of the libraries.

Denmark has a very effective system for sharing physical items, due to DANBIB and a national delivery service, but we still need to develop our systems toward better effectiveness – AND to cover the need for new models for sharing digital items.

The development has started, we have learned some lessons and now – July 2012 – a serious estimate would be that Denmark within the next years will have a highly effective system for sharing resources and information with no regards to format.

An important challenge is the need to focus on the user as a person, who may be registered at several libraries and institutions and not only as a user of one specific library. Streamlining and effectiveness are important, but moving the focus from library to user is even more important.

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She is member of the Danish WorldCat Coordinating Committee and manages the network for Danish WorldCat libraries, which are lenders in this environment.
She has for the past 4 years been a member of national committees on ILL and delivery services in Denmark and is presently joining the user-group section of the Rethinking Resource Sharing Initiative. HB has given speeches in meetings and conferences on the ILL subjects nationally and internationally in Europe and USA.

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