

Knowledge in Time : Strategic Perspective for Danish University Libraries

The Library Committee of the Danish Rectors' Conference

by THE DANISH RECTORS' CONFERENCE

INTRODUCTION

In a letter dated 7 December 2001, the Danish Rectors' Conference asked its Library Committee to describe the prospects and problems of university libraries seen from a visionary, strategic perspective.

Subsequently the Committee decided to make a survey of how the more important university libraries viewed their future. Wilbert van der Meer of the Danish Rectors' Conference Secretariat carried out this survey, and it was integrated into a vision paper, which the Committee discussed at number of meetings.

Following this phase, the Library Committee of the Danish Rectors' Conference prepared the present report "Knowledge in Time" / "Timely Knowledge" on the strategic perspective for Danish university libraries. The Paper was not conceived as a Master Plan for the future library development of Danish universities, but as an outline of the most important developmental perspectives discernible today.

At a time in which events develop with unparalleled turbulence, it is important for university libraries to ensure that their knowledge development is not determined by plan-thinking, which is not tantamount to saying that it should not be based on functional planning, and that important elements in their strategic competence – in addition to a clear-cut perspective – are the ability to improvise together with healthy self-assurance. Only if they possess these qualities will they be able to aim for a strategic horizon which is itself constantly moving.

BASIC CONDITIONS & OBJECTIVES

Fundamentally, the issue at stake is not books and library institutions, but universities, their knowledge supply and knowledge sharing – knowledge in the broad sense of the word, which has now become accepted in university policy.

Universities are part of a global knowledge system in which knowledge is produced through research and development and is shared by means of research co-operation as well as through a scientific and scholarly dissemination system. So far, the traditional dissemination system has taken the form of an information value chain stretching from the researcher/author to the user through a set of dissemination organisations, for instance, scientific and scholarly societies, conferences, informal networks, publishing houses, and libraries. Each link in the chain served to enrich the knowledge product with their specific contributions. This information value chain is in the process of being replaced by an *information value network* in which the parties are in direct and interactive contact with each other, and in which the traditional actors form new role systems through downstream and upstream integration of the traditional information chain.

The shift from information value chain to information value network will mean that some links in the previous chain are becoming superfluous and will be bypassed as a link of dissemination (disintermediation). Traditional actors can only remain in the system provided they give the end user a relevant service – at reasonable prices. When actors such as, for instance, large publishing houses – with the universities as unconscious collaborators – are gaining a monopoly, the price policy pursued cause serious difficulties in the knowledge provision to the universities.

The prime mover in the development of the global knowledge system is the information and communication technology potentially making knowledge omnipresent as it needs to be stored only in one location, but will, nevertheless, be available everywhere and at all times.

At the same time, this development fundamentally changes conditions under which universities carry out research and teaching activities. For one thing, it enables new structures to be created through international and national strategic alliances, mergers, and joint ventures, and for another, it radically changes the forms of scientific and scholarly communication. Finally, it allows for a new spectrum of teaching methods (e-learning) to be integrated with the traditional forms.

As information and communication technology (ICT) means that geographical location is becoming a less important market parameter for the universities, it will become necessary for them increasingly to market themselves through individual scientific and

scholarly profiles and through quality. These elements will not, exclusively, pertain to research and teaching, but also to the entire service apparatus and the infrastructure which very much contributes to the development of a university's image and which contributes to attracting and keeping excellent researchers and students.

University libraries constitute an important component in the infrastructure of knowledge in university research and teaching. Previously, their fundamental duties were to administer and making available a local collection of books and periodicals, but today the character of these duties has changed.

- The fundamental objective for modern university libraries is to create interfaces with the global knowledge system, tailor-made to the individual profile and needs of each university, department, researcher, and student.
- University libraries are to be in charge of the importation of knowledge into the universities in the form of printed and electronic information resources that, as an on-going activity, will be made available to the users, and they are to provide individual services to procure information in accordance with immediate needs.
- University libraries are to support the exportation of knowledge produced by the universities to the surrounding world through registration and making such knowledge available on the conditions and to the extent desired by each university.

In this connection it is not of decisive importance whether the university library will continue in its traditional institutional form. On the contrary, new forms might very well turn out to be more appropriate depending on the way in which individual universities wish to organise their academic service apparatus.

Among the important strategic action areas in the realisation of the overall objectives for a modern university library we find:

- the electronic library
- individualised service for researchers and students
- e-learning
- knowledge sharing
- networks and alliances

THE ELECTRONIC LIBRARY

Here the electronic library means the total supply of electronic publications and computer-based services as well as the use of ICT in knowledge-sharing processes.

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Increasingly, *electronically based publications* will enter universities. Whereas previously libraries chose a strategy of duplication so that they would hold the same publication both in hard and soft copy, a strategic change is underway; libraries no longer duplicate hard copy publications by electronic editions, but substitute hardcopy for softcopy versions whenever possible.

In the future, libraries will prioritise electronic periodicals, reference material, working papers, textbook material and the like. As far as electronic books are concerned, things are not expected to move rapidly forward until a number of technical and structural problems have been resolved. However, we do see signs that this development is going to accelerate, and it is likely that the traditional academic monograph and the accompanying book production will change its character under the influence of ICT.

The electronic knowledge resource that, today, libraries purchase or subscribe to in one form or the other will in future consume financial resources to at least the same degree as hardcopy versions used to do. In addition to the knowledge resources for which payment must be made, the library function will make electronic resources available free of charge through registration in library catalogues or web-based information passages – with a link to the full-text version. The situation today seems to indicate that the most important academic information resources, for instance, the price formation of scientific and scholarly journals, continue to be subject to market conditions, and any ICT dividend does not accrue to the universities and their libraries but to be garnered by the publishing houses.

The development of *electronic services* includes a series of electronic standard library services: electronic catalogue apparatus, electronic alert services (“new literature”), electronic access to the borrowers own borrowing data in the lending module, renewals, news bulletins, etc. To this must be added special interactive services such as electronic reference activities and user training. It should be emphasised that, in principle, the electronic service function is independent of time and place and thus the user can be served anywhere and any time.

During the present years, a significant shift in the attitude of users to electronic resources and services is taking place. Today the young generations of researchers and students arrive at the universities and the university libraries expecting fundamental services and resources to be electronically based, and they are well prepared to take advantage of them. By contrast, the older cohorts of researchers will have to acquire “special” skills to be able to use electronic services. For this reason the information barriers are changing their orientation during these years: whereas formerly users preferred making a start with the hardcopy information systems and only went on to the electronic systems when this became necessary, the order has now been reversed: users start by looking into the electronic systems and only turn to hardcopy if this proves necessary. This development

is also making itself felt in Denmark, although the situation differs between geographical locations and scientific or scholarly fields.

In addition to the directly electronically based products and services, the electronic library also entails a massive transition and *IT-basing of the overall processes of the library*.

INDIVIDUALISED SERVICE PROVISION FOR RESEARCHERS AND STUDENTS

Whereas previously the services offered by the library was general in nature and oriented towards wide user groups, typically researchers, students, and external users, the period to come will increasingly permit greater attention being paid to the individual user. In general, ICT permits personalisation of services of any kind (“my library”, etc.), and this trend must be expected to impact on the service provision of university libraries.

A primary tool for this purpose may be a proper personalisation of access interfaces organising an individual access interface for the individual researcher based on his or her research and teaching profile. The same applies to students who will need various types of services and a changing thematic focus over the course of their studies.

To a wide extent, the personalisation of university library services will be based on electronic tools for editing individual access interfaces, on the one hand, to the resources offered by the university and, on the other, to the additional resources and communication tools which the individual researcher or student wishes to have access to.

The strategic challenge facing university libraries is to become active players in the development in the university knowledge field, something that presupposes that the libraries will accept that, in principle, they only constitute one element in the personal information system of individual users, and organise their access interfaces accordingly.

In addition to the electronically based individual types of services there is a strategically unoccupied field in connection with *assistance to researchers*. It is becoming increasingly common for researchers to have research assistants. Today, university libraries have observed that this assistance is very often used for information service tasks that the researchers themselves do not wish to undertake. Thus, the research assistant becomes an intermediary link between the researcher and the library. It would be an obvious option for action for university libraries to offer this service to researchers and to enrich it with information assistance to a spectrum of activities taking place in the departments, for instance, a wide gamut of websites. If the university library sector is to make itself a relevant partner for departments and researchers in this connection, it

would require the presence of staff who, as a matter of course, would be active in university departments as well as university libraries.

E-LEARNING

Since the mid-90s e-learning has become a regular feature in university teaching environments. Initially this was a form of teaching in which tuition was supported by IT through multimedia tools or – increasingly – disseminated over the Internet. The crucial point was an attempt to make tuition more efficient. E-learning was perceived as distinguishing itself from traditional classroom teaching by being a more flexible way of acquiring knowledge because students were independent of time and place.

However, experience gained during the first phase of e-learning shows that techniques or technology are not in themselves sufficient for ensuring that e-learning will improve the quality and potential of the learning processes. The challenge for the next few years will, therefore, be to understand the learning processes themselves, and against this background, to develop the pedagogical method and didactics so that learning processes ensure proper knowledge creation.

The research library area has a natural task in this connection, as it is capable of making considerable learning resources available by way of scientific and scholarly information, pedagogically oriented teaching materials, etc. Increasingly this task is effected electronically - full-text e-journals, textbooks, bibliographical reference bases and factual data sheets.

Thus, developments are making it possible for the libraries to work closely together with teaching environments with a view to producing targeted teaching materials and “personalised” information rooms for classes, groups, and individual students. For example, with the assistance of the library, a teacher can compose and make available to students his own course-work library, his own notes and those of his colleagues as well as texts to be used in classes. For the individual student accessing e-learning systems and student portals can provide her or him with access to targeted electronic information resources.

As a supplement to this development, libraries may develop electronically base modules for guiding and teaching students in the field of information retrieval. These modules can also be integrated into more subject-specific e-learning activities.

Finally, in recent years several libraries have been working to develop Learning Resource Centre concepts, in which special physical study facilities in close proximity to

the library have been made available to students. Here, from the “integrated desktop”, students may search for information, analyse and work with data in preparation and use it for their reports or multimedia projects, irrespective of whether this is done for the purpose of traditional teaching or in an e-learning context.

KNOWLEDGE DEVELOPMENT

In the most recent parliamentary compromise on the universities concluded between the political parties in Denmark, knowledge development is pointed to as one of the principal duties of the universities. Among other things universities are to exchange knowledge and competence with a multitude of actors, organisations, and authorities as well as public and private organisations in communities surrounding them. This should be done actively and on the basis of reciprocity.

For the university libraries this means, that the universities should factor into their thinking the library function in knowledge development, including ways in which the library function can contribute to knowledge dissemination and exchange through education and training. For the university libraries this signal should be seen as an obvious opportunity for developing as an active partner in knowledge exchanges effected by the universities.

So far, the libraries have chiefly carried out importation of knowledge to the universities and only to a limited extent carried out exportation of knowledge production from the universities to the surrounding world. There are, however, examples of a university library playing a distinctive role, for instance, by handling the job of being the university’s publishing house.

We must expect that researchers will wish to maintain the control over and the initiative for publication of their work. For this reason, the factoring in of the university libraries into the knowledge exchange activities of universities must perceive this a fact of life.

Three fields can be pointed to in which the library function would be capable of acting as an interesting partner in the field of university exchange of knowledge: electronic publishing, knowledge portals, and research registration.

Electronic publishing: To counteract the formation of commercial monopolies and costly access for the universities to knowledge, which they convey to commercial publishing houses for little or no money, we can observe a trend towards universities taking over and becoming active in publishing their own knowledge production. In this connection several problems have to be solved before the development can really get underway: the

new publication systems must entail peer reviews and must be capable of bestowing academic merit and prestige. Universities that enjoy high academic prestige may lead the way by setting up their own systems, while other universities will probably choose to position themselves in the slipstream of significant trail-blazing initiatives.

In any case, because of their experience with the scientific and scholarly publishing process and with handling electronic information resources, universities are well suited to embark upon the new electronic forms of publishing, which they themselves wish to develop, either on their own or in a thematic or regional co-operation with other universities. Some noteworthy examples of this are SPARC, Open Archives Initiative, and Budapest Open Access Initiative. Instances of new university-based electronic forms of publishing are the Dspace of MIT and the electronic periodical Organic Letters launched by universities to rival the Tetrahedron Letters published by a commercial publishing house.

Knowledge Portals: It would seem to be a natural task for universities to develop knowledge portals designed to register and giving accesses to those parts of the university's scientific and scholarly production that are not published by commercial publishers. For instance, knowledge portals may give access to:

- research and working papers of the university,
- post-print collections of articles already published in commercial periodicals,
- expert databases providing the public and the media with access,
- reviews of new books and periodicals by the university's researchers edited in a form to make them accessible to a broader audience,
- summaries of conference and seminar proceedings held at the university.

Knowledge portals should be designed so that academic colleagues as well as the interested public may gain easy access to the university's knowledge production.

Research registration: In the context of providing the university's knowledge production with a higher degree of visibility, the university library can act as co-ordinator for the registration of all the university's publication activities: either by way of exercising control and by making the university's research publications available in hard- and softcopy. This implicitly entails the possibility of providing researchers with a dynamic online bibliography.

In connection with the registration of activities, the university library can create an opportunity for collecting and retrieving statistical data on specific research activities.

NETWORKS & ALLIANCES

As a result of the impact of the integrative nature of ICT, we are seeing university library activities bursting out of the classical framework within which these activities have taken place so far. University libraries will become part of a dual network of knowledge that, on the one hand, includes the university and, on the other, the global knowledge exchange system. The university library will no longer remain a separate unit in the university organisation.

In relation to universities an initial result of this thawing of the organisational structure of the university library sector is integration (“convergence”) between the universities’ IT-departments and their libraries, respectively. This phenomenon can be observed at many universities in the English-speaking world and also at few Danish ones. In practice, the experience gained has been extremely disparate in terms of synergies between a library and an IT-service function. In general, the trend can probably be interpreted as a move in the universities towards the creation of a broader academic service sector in addition to the academic and administrative fields. Synergies are more likely to be discernible in connection with those of the universities’ strategic action areas in which the university libraries can contribute a specific competence. A number of such areas have been indicated above, for example, research assistance, which will move the boundaries between libraries and departments, exchange of knowledge through knowledge portals, and the administration of various types of knowledge bases that can soften the demarcation lines between the library sector and the faculties, and which require close co-ordination between the library function and the general communication function of the university.

As regards the global information system, developments are expected to be characterized by horizontal integration between university library sectors by way of co-operation between trans-university scholarly and scientific information systems. To this will be added joint operation and development or actual outsourcing of parallel processes, such as back-office functions like purchasing and cataloguing. This development may take the form of specific co-operation projects between the libraries of Danish universities, but international co-operation between like-minded universities in different countries might also be relevant. Furthermore, vertical integration may take place vis-à-vis supplier organisations, for instance by developing close relationships with the suppliers of knowledge products (books, periodicals).

More specifically, the operation of the Danish Electronic Research Library (DEF) has been made permanent through the transfer of financial resources from the research libraries under the Ministries for Science and Culture to the Secretariat of the Danish National Library Authority. It is of strategic importance to universities that the future organisation and contents of the project be developed in an appropriate manner. DEF

THE DANISH RECTORS' CONFERENCE

will continue to be a useful framework for co-operation projects between research libraries to develop electronic resources and services provided the focal points are concrete and prioritised projects with those university libraries who wish to take part – including in the financing arrangements. It is necessary that the individual university is at liberty to decide whether it wishes to co-finance future specific sub-projects, and that the DEF does not develop into a national library organisation, which could weaken the adhesion between the universities and their libraries.

The specific forms of networks and alliances will develop dynamically in the years to come, and consequently it will be difficult to predict the structural development of the university library sector over even as short a period as the next decade. However, it can be predicted with a certain amount of reliability that the existing type of university library structure with its quasi-independent organisation focussing on process functions in relation to a physical collection will be replaced by a more open type of organisation with structural links across the university and, beyond this, to relevant partners in the global information system.

The university library function should continue to develop as an integral part of the individual university and as a flexible tool for the university's exchange of knowledge with the world around it.

WEB SITES REFERRED TO IN THE TEXT

Budapest Open Access Initiative. <http://www.soros.org/openaccess/>

The Danish Electronic Research Library (DEF). <http://www.deflink.dk/eng/default.asp>

The Danish National Library Authority. <http://www.bs.dk/english.ihtml>

The Danish Rectors' Conference. <http://www.rektorkollegiet.dk/>

Dspace of MIT. <http://www.dspace.org/>

Open Archives Initiative. <http://www.openarchives.org/>

Organic Letters. <http://www.pubs.acs.org/journals/orlef7/index.html>

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Tetrahedron Letters. <http://www.elsevier.com/locate/issn/00404039>