About the digital library at University of Bergen Library

By Kari Garnes

At the University of Bergen Library (UBL) the digital library has been developed over a period of 25 years. It started slowly, but during the last decade the changes have been more and more rapid, entailing major alterations to routines and services. There has also been a revolution in the amount of available information. In the first part of this book we will explore the changes and challenges that the University of Bergen Library has been facing during the last 15 years regarding the digital library. The changes are basically of a technological nature, but they have led to major alterations to all the main library processes. Consequently the situation has changed radically compared to 25 years ago, both for the library users (academic staff, students *etc.*) and for the library staff.

Modern Technology (IT) Developing the Digital Library

The term 'digital library' is ambiguous, meaning different things to different groups.

A two-part definition (after Borgman, C. L. 2002) is useful for the Digital Library:

1. *Digital libraries are a set of electronic resources and associated technical capabilities for creating, searching, and using information. In this sense, they are an extension and enhancement of information storage and retrieval systems that manipulate digital data in any medium and exist in distributed networks.*

2. *Digital libraries are constructed/collected and organized by and for a community of users, and their functional capabilities support the informational needs and uses of the community. They are a component of communities in which individuals and groups interact with each other, using data, information, and knowledge resources and systems. In this sense they are an extension, enhancement, and integral part of informational institutions as physical places where resources are selected, collected, organized, preserved, and accessed in support of a user community.*

Implementing the digital library has entailed both technological and cultural changes. As a consequence of the 'digital revolution' the users nowadays make very different expectations and demands of the library from those they used to make. This means that the library, and consequently also the library staff, has had to change its attitude and way of thinking and working to match user demand. The librarians have to support specific activities in specific contexts, such as scholarship, classroom instruction, education in information, and competition in the context of specific uses and users.

In 1980 the board of the University of Bergen decided to join the BIBSYS library system organisation, an integrated electronic library system that has since become the common system for all Norwegian institutions of higher education. At the University of Bergen Library BIBSYS was first used for acquisition and cataloguing new materials. From 1983 all cataloguing has been done electronically using the BIBSYS system. Since then the main card catalogue has been retrospectively converted into the same online catalogue (OPAC). This has resulted in more efficient and labour-saving library processes. In subsequent years the library began to use the BIBSYS electronic periodicals module and electronic loan system. All the main library processes are currently performed in the same BIBSYS electronic library system.

The BIBSYS system is a central core of the digital library. The content of the digital library includes data, metadata that describe various aspects of data, and metadata that consist of links to or relationships with other data or metadata, whether internal or external to the digital library. Through the digital library more and more electronic resources are made available to patrons. The Internet and web technology have accelerated the development and urge for change.

The number of available resources, with widely varying prices, is constantly growing – digital journals, reference works, databases, and other electronic resources in many different forms, shapes, and formats, including both current and back issues. A new library portal was introduced at the UBL in 2005, common to all the Norwegian universities. The portal is the gateway for accessing electronic resources from the library, and therefore an increasing number of computers have been made available for this usage. Many computers are also equipped to make them suitable for students writing essays, searching the internet *etc*. Institutional repositories with open access (OA) have been developed nationally and internationally in recent years. The library has been instrumental in developing and establishing BORA (Bergen Open Research Archive), which is a digital repository of research output from institutions in the Bergen area. BORA contains full-text peer-reviewed journal reprints, theses, dissertations, and other digital research materials. The library has also started digitising its own material

(pictures and special collections of old and rare books and manuscripts).

The changes that have happened at the University of Bergen Library are explored in greater detail in the other chapters of this book.

Building for the new technology

In the chapter 'Modern technology – modern library premises', Bjørn Arvid Bagge takes us through the journey of decisions made when the University of Bergen Library building with its closed stacks was rebuilt to house the Arts and Humanities Library. This meant putting the books on open shelves, as well as accommodating modern technological resources, where patrons, especially students, could use the library as their main workplace, and where, as well using the non-electronic books and journals available, computers were available for use in browsing or searching the catalogue, searching electronic reference works, searching full-text electronic journal articles, or writing essays and assignments. The rebuilt library building also needed to contain rooms for group study or library and information literacy teaching.

The electronic catalogue

The next chapter, 'The card conversion project at the University of Bergen Library', tells the story of how the University of Bergen Library converted the card catalogue into the electronic catalogue, making it freely available on the internet for all patrons. The electronic catalogue is the pillar upon which the Digital Library is built. The conversion was a huge job, but in the opinion of the author, Anne Bjørkum Åsmul, it turned out to be well worth it in terms of subsequent labour saving. In addition to being the basis for the Digital Library, the electronic catalogue has also been a necessary tool in the efficient planning of the movement of collections between buildings, or out of the library.

The digital library applied

In the University of Bergen Library, the different faculty libraries have implemented the digital library to a different degree. In the chapter 'The Medical and Law Libraries – and the Digital Challenge, by Halvor Kongshavn and Svenn Sivertssen, we will read about these two libraries that are among the most digitised of our branches. Both libraries have put a great deal of effort into producing user-friendly web pages, and they are also allocating a lot of resources to user education and on developing close connections to the academic staff.

The digital library and the learning challenges

In the chapter 'The Learning Centre Model at the University of Bergen Library, Anne Sissel Vedvik Tonning describes the background to the projects leading up to University of Bergen's learning centre model. Included in the project were several sub-projects. One of them is further described in the following chapter, 'User Education at the Digital Library: Physical and Intellectual Access to Information through Digital Literacy' by Maria-Carme Torras and Therese Skagen. This chapter explains how, in collaboration with three other Scandinavian higher education libraries, we have developed online learning objects for the virtual classroom to help students improve their digital and information literacy. More specifically, the learning objects have been designed to help students with the information search process and their use of information sources in writing.

Why a portal?

One of the challenges for a university library is how to present the digital and electronic research resources in such a way that they are as efficient as possible for patrons. In the chapter called '*Bibliotekportalen* - the Library in Cyberspace', Pål H. Bakka gives a brief description of the challenges and solutions facing the University of Bergen Library when we were considering buying a portal, and later when we bought and implemented it. He also shows us what the Bibliotekportalen looks like to patrons, and evaluates the implementation process, with a special focus on the few things that do not yet work properly.

Institutional repositories

Another aspect of electronic research resources is the escalating price. As an answer to this problem, and the more general problem of getting research published, several university libraries have investigated the possibility of presenting research done at their own universities in institutional repositories. These may also be used for presenting and publishing exams and other student material. The chapter 'Institutional Repositories' by Richard Jones introduces us to the history and current situation concerning institutional repositories, and briefly presents Bergen's own BORA.

Digitising our own material

Especially in the Picture Collection, described in Solveig Greve's chapter, 'Digitisation as a strategy for preservation and dissemination of photographic archives', and the Special Collections as described by Rune Kyrkjebø, 'Parchment

and paper in digital University Libraries – new contexts for manuscript and archival collections', the University of Bergen Library contains material that may be digitised to give unique content to the Digital Library. In both these chapters the authors present projects currently being undertaken at the University of Bergen Library, as well as their thoughts on how and why to choose the material for digitising. They also discuss particular challenges in archival and preservation practices in respect of unique and perishable archival material.

E-books:
While electronic journals and databases have been on the market for some time, electronic books are a relatively new phenomenon. In 2003, the UBL therefore initiated a project for investigating the process of acquiring, presenting and utilizing such resources. In the chapter 'E-books and their future in academic libraries', Susanne Mikki and Elin Stangeland present the results of this project and discuss experiences from the period after the conclusion of the project. Finally, they look at developments in the e-book market and discuss how these will affect the procurement and use of of e-books at UBL in the future.

Leadership and implementing the digital library
In the chapter called 'Implementing the Digital Library – some theories and experiences on leadership of change', Ane Landøy focuses on leadership in change processes, and uses implementing the digital library as an example of a planned change process.

Strategy of the University
Major challenges in this field are: How can we ensure that our faculty scientists and students get the access they need to the world's scientific, technological, and other literature and source materials; and: How can we help them develop the skills they need to use that literature effectively?

All the digital developments mentioned here are rooted in priorities in the University of Bergen's strategic plans and research plans. In the University of Bergen Strategic Plan 2005-2010, developing an institutional repository is a priority, as is developing collections of electronic research materials, both based on our own collections and on the collection of databases, electronic journals, *etc*, that we buy and make available to our users. Electronic teaching materials and learning resource centres are also mentioned in the University's strategic plan. The University Board has decided to continue developing the digital library at the University of Bergen.

Major challenges for the library in the digital age

With the development of modern technology and today's information society, strong commercial and other interests have entered an area which used to 'belong' more or less exclusively to the libraries. The library sector is therefore faced with an unaccustomed form of competition. What is, or should be, the library's role in this situation? The Internet and web technology develop independently from the thoughts or actions of libraries and librarians. The users often start their searches from a general search engine, and not from a library portal. Contextual information is more than records and documents. Many libraries have unique and valuable collections of older materials. These special collections must be digitised to make them available to the general public. A major task for the library must be to help researchers and other user groups to get easy access to a broad range of electronic resources. It is especially important to assist the scientific community in their scholarly communication, by helping to organise effective systems for electronic research registration and publication, such as institutional repositories like BORA and other open access archives (journals *etc.*). To achieve our goals in this field the library must focus on efficiency, *e.g.* by using systematic performance measurement and developing further systems of library quality control.

A major challenge will be: How are we going to make the library staff skilled for work in the library of the digital age? The staff will have to be continually educated, to ensure that they have the skills and qualifications needed for understanding uses, users and flexibility in performing their duties. To a large degree, staff at the University of Bergen Library already possess these competences, but we still need to develop their skills. Specific skills that will need extra efforts to develop will include pedagogy, especially in teaching Information Literacy so that staff will be able to participate in implementing this in the university's taught subjects. In order to fully achieve this, staff also will need to have an academic background. We also need to make sure that computer literacy among the staff is at a sufficiently high level for them to be able to help and guide library users.

University of Bergen Library is a library with old collections. We will always have books, paper and patrons in our buildings.

Reference:

Borgman, Christine (2002) Challenges in Building Digital Libraries for the 21st Century. *Lecture Notes in Computer Science*, 2555, p 1-13.