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**Integrating the Digital Library
with teaching, learning and research**

University Libraries providing added value



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Integrating the Digital Library with teaching, learning and research: University Libraries providing added value

Hans Geleijnse

Director of Library and IT Services & CIO

Tilburg University,

The Netherlands

Agenda

- Some general observations
- Trends in academic libraries in Europe
- E-learning
- Open access to information: institutional repositories
- Organisational consequences
- Tilburg University: past, present and future
- Conclusions

Reflections on the original Digital Library approach

- Library in the Centre
- Still important role for the "library as a place"
- Libraries started to make "their" information available online
- Gradual move towards the virtual library
- Access to electronic information was no longer connected with THE library

Major changes in the past 10 years

- Access over the network from anywhere and at any time
- Move to virtual collections, move from ownership to access
- Direct communication between authors and readers
- Increasing power of the user

Where are we now?

- Libraries provide access to (licensed and free) electronic information
- Libraries can be used without visiting the library
- Role of the library in the institution varies
- Libraries did not (yet) become museums
- But: Can libraries satisfy the future needs of the users?
- Does the library contribute enough to the demands of the university?

User experiences

- Use of (electronic) information has increased tremendously
- Many libraries did become lively study centres
- Users want more and more: studyplaces, Internet Cafes, more online, faster network etc.

Traditional library functions in 2005

- Collection development: traditional role of the local university library is decreasing
- Information Provision: many academic libraries offer more or less the same information
- Preservation: there is no structural role for an individual university in digital preservation

Trends

- In Higher Education
- E-information
- E-Learning
- E-publishing and Institutional Repositories
- Cooperation
- Organisation

Trends in Higher Education in Europe

- General implementation of the Bologna Declaration: Bachelor/Master structure in all institutions
- The HE Sector will become more demand driven
- Increasing competition (crossing borders)
- More national and international mobility of students (master programmes)
- More international cooperation between researchers

Orientation on current and future needs of our users

- Next generation of students: self sufficient information seekers
- Library has to compete with Google, Scirus and search engines of the next generation
- Trends towards more collaborative research and collaborative learning
- Need for fast, open, mobile, secure and personalised access to information and IT tools
- Both a trend towards more cooperation (chat, groupwork etc) and towards more individualization (just for me)

Electronic Information (based on Donald King)

- 10% of universities have E-only now
- 60% are on print AND electronic
- Perpetual access is regarded as a key issue to be implied in license agreements
- Publishers are better observers of usage statistics than librarians: we should know more about it
- Cost of E-publications are below print publications; main difference in storage costs of backfiles
- E-information also beneficial for researchers: a scientist saves at least 20 hours per year

Added value

- We should make better use of expensive information that we have acquired and licensed
- Do we communicate effectively?
- What do we really know about user needs?
- What can we do better than Google Scholar?
- What is our added value?

E-Learning

- Most universities in Europe still regard face-to-face communication between students and teachers as the core. E-learning should support this
- Remote e-learning and pure digital learning is not yet very important
- Move to model of blended learning: online learning + face to face learning

Institutional motivation for E-learning

(Gartner Industry Research)

■ Enhanced customer service	88%
■ Student demand	80%
■ Pedagogical advantage	65%
■ Marketing opportunities	60%
■ Generate revenues	52%
■ Collaboration	50%
■ Construction cost savings	27%
■ Reduce staff head count	6 %

E-Learning: current situation in the Netherlands

- IT infrastructure is OK
- Widespread use of electronic learning environments
- Focus on organisation and communication: course organisation, registration, examination, monitoring
- Diversity of specific applications (content)

E-learning and Libraries

- Universities are using digital learning environments: Blackboard, WebCT, Sakai: with prominent role of IT Departments
- First phase of creation of new digital content and distance learning
- Some libraries work side by side with faculty in organisation, creation and presentation of content.
- Some libraries provide training and instruction (in cooperation with others)
- But...this new role will not be accepted so easy and, in general, librarians are not always ready for it

E-Learning: what do we want to integrate in a portal?

- Student Information System (SAP, SCT, etc)
- E-Learning System (Blackboard, Web CT, Sakai)
- Digital library
- Institutional repositories
- Office automation tools
- Mail, calendar
- Community information
- Etc.

E-learning: real integration requires solutions for many issues

- Resource management
- Content management
- Linking tools
- Agreed standards within institution
- Authentication and single sign-on
- Security and privacy problems
- Communication and cooperation tools
- Support and help desk
- Etc. etc.

E-Learning: conditions

- An educational vision of the university
- An educational vision of the departments
- Agreement on role of service departments
- Planning and budgets to realize the vision
- Cooperation between faculty, IT people, librarians, learning technology experts
- Cooperation with other institutions

E-Learning: role of the library

- Training and instruction: information literacy
- Regular user support
- Support faculty in projects and course development
- Integration of the digital library with the Digital Learning Environment
- Requires: cooperation with faculty, IT department, Learning technology centers, etc.

E-science

- Collaborative research
- Grid computing
- Sharing and using heterogeneous datasets
- Libraries are just at the beginning of identifying their role

E-Publishing and Universities as producers of information

- Digital learning material
- Theses, student papers
- Articles
- Books
- Working papers
- Conference proceedings
- All this material is increasingly available on the Web, but scattered, badly organised, not always easy accessible

Institutional Repositories (I)

- Universities and other institutions are creating electronic archives of their own output: articles, books, working papers, readers, theses, learning material
- Free and seamless accessible at least within own institution
- Use of OAi protocols and DC metadata
- Benefits: proper organisation of e-resources, easy publishing, easy access, increased visibility
- Open Source software available (eg. DSpace, ARNO)

Institutional repositories (II)

- Support is increasing - Political level in the UK, Germany, Netherlands
- Support from major research organisation, eg. Max Planck Gesellschaft, Royal Academy of Sciences in NL
- In NL all universities have already such a repository (DARE programme: <http://www.darenet.nl/en>)
- Publishers can't ignore it anymore
- IR can work with OAi, Commercial publishing, Open Access Author Pay model
- Open Access # Open Access business model

Open Access publishing model

- Dissatisfaction with the current process of scholarly and scientific publishing is becoming stronger every day
- “Open Access” movement is getting stronger
- Based on the “author payment” model
- Implies free access to research information; the creator is paying for the review and ‘formal publishing’ process
- OA is not undisputed: Is it fair? Who will be the real winner? Are we sure we have to pay less in the end?

My personal view

- The open access publishing model with “Open Access journals” can work for some disciplines
- It is unlikely that it will be THE new business model
- Institutional repositories could be an excellent basis for new business models
- Future: all basic information will be free, you will have to pay for added value (such as quality control, refereeing)

Developing an Institutional Repository: what are the difficulties?

- Labour intensive
- Difficult to maintain without sufficient staff
- Copyright problems with publishers
- Copyright problems identified by authors themselves
- Still no sufficient critical mass

Author is key

- Can institutional repositories attract the authors?
- Is the Institutional Repository the main gate for publishing or an intermediate for publishing by the established publishers?
- For many researchers: it's all about reputation
- Registration, Selection, Refereeing, Archiving remain important
- Role of publishers in the value chain might change

Prominent Science (a DARE project)

- All publications (current and previous) of Dutch top scientists on the Web
- Should be comprehensive
- Includes scanning programme of older publications
- It supports researcher in organising his own publications and makes him more visible
- The idea is: start with the top, others will follow gladly
- We need champions to take this further

Institutional Repositories: role of library

- Most universities are pleased that library is taking up a central role in this
- Creation of IR in cooperation with IT Department
- Organiser of the process
- Apply standards
- Metadata
- Contact and stimulate researchers
- Maintenance and continuity

IR: What is the added value for the author?

- Further publicising the work
- Research becomes more visible and accessible
- Simple and free access
- Back-up system for his/her publications will be created
- Saving time
- Dynamic publication list

E-learning and E-publishing

- A sustainable infrastructure for E-learning and E-publishing (repositories) is needed
- Requires an integrated policy in the institution
- Need for more cooperation within the university and between universities, nationally and internationally

Various models are possible

- A networked, modular system
- A commercial system that integrates most elements of the information chain
- Google Scholar in combination with national and institutional repositories

The networked model

- Use of components from various vendors: library automation system A, portal software B (Metalib, iPort, Metafind, Encompass etc), search engine C, repository D, Digital Learning Environment E etc.
- Focus on common standards such as OAi protocol, Open URL
- Access to information from various publishers
- Harvesting of open archives and institutional repositories
- Gradual more emphasis on harvesting of freely available information controlled by the scientific community

Commercial model that integrates it all

- Applied by Elsevier
- Provide the content (1700 journals + E-books + Digital learning material)
- Tools to access the content (Science Direct)
- Integrate searching of repositories with Elsevier publications (Scirus) with FAST search engine
- Provide local library system and portal software (Endeavour – Encompass)
- The strategy is clear, the integrated model will be developed further in the future
- Very professional approach

Google Scholar

- Based on brute computer power
- Based on and stimulating availability of free information
- Authors want to be seen through Google
- But.. Still many disadvantages (quality control, selection, de-duplication, etc)
- Liaise with this development?
- Mass digitization of traditional libraries: Harvard, Stanford, Michigan, Oxford
- This cannot be neglected

Cooperation

The problems we are dealing with are far beyond the level of a single institution.

Tendency towards stronger cooperation at the national and international level

- Standardization
- Preservation and digital archiving
- Network of repositories and independent entities for certification

Challenge for Libraries and IT Services

- To integrate IT and E-information in the daily workprocesses of researchers, teachers and students
- This implies: Integration of the digital library with the digital learning environment
- Also: Active involvement in creating and maintaining institutional repositories as a support tool for researchers (teachers and students)
- And in general: needs of primary users as the starting point (collaboration tools, personalised information, support with statistical databases, information literacy courses, etc)
- Closer connection between library and the primary process of de university: teaching, learning and research

The library can contribute and make a difference

- Very strong service orientation
- Strong focus on user needs
- Support new developments in teaching and research
- Requires a self confident library organisation
- Quality standards
- Education and training of staff
- Management with a vision that is shared by library staff, faculty and university management

Organisation

- Tendency towards more centralized facilities with decentralized services
- Close cooperation with IT services, Media Services, Learning Centers, Publishing centers
- Internal work processes of the library should be redesigned. Reduction of some traditional tasks and functions is inevitable

Questions?

New University Strategy at TU in 1985

- Stimulate Excellence in Research
- All Faculties should be one of the Top 3 of their kind nation-wide
- Create attractive learning environment
- Make better use of new Information Technologies
- Intensify internationalization

Vision document of the Library in 1989

- "Library users will no longer be library visitors"
- "Within a few years, the student population will simply expect that they can consult library material using a workstation in whatever form it may take"
- "Central element in the concept is the 'integrated desktop' to be deployed in all offices, for all staff and all students"

Innovations at Tilburg University since 1992

- All PC's acted as “integrated desktops”
- Scanning & OCR of journals
- Lendomaat: self service check-in and check-out
- First site license agreement with a publisher (1994)
- First university in Europe that could deliver e-journals on all desktops (1995)
- Simultaneous searching in heterogeneous information (1999)
- Videobanks (1999)
- Educating hundreds of librarians in Ticer summer school (1995- now)

Current situation at Tilburg University

- Excellent international reputation on teaching and research: economics in top 5 in Europe
- Strong emphasis on quality
- 11,000 students
- 4 faculties : social sciences and humanities
- IT infrastructure is excellent
- Wireless campus

Use of digital learning environment is increasing rapidly (Blackboard)

	Sept. 2003	April 2005
Active courses	650	1146
Number of teachers	581	919

Library: current status

- In library 1000 study places, 550 with PC's + wireless access points
- Library is also a Learning Centre
- Collection of 1.2 mill. print volumes including heritage collections
- Access to 8000+ E-journals
- Moving to E-only
- Institutional Repository with 4000 full-text documents

Strategy in one hand

- Since 2004 one Director for Library and IT Services
- Director is also Chief Information Officer of the university
- Strategic plan for information services and information technology approved by the University

Vision: what do want to achieve?

“ Towards a planned and personalised integration of the ICT facilities and the electronic information with **the daily work and study environment of students and staff**, in such way that our users can work more efficiently and more effectively, anytime, anywhere en anyhow, individually and in cooperation with each other.”

This means

- A change from a supply driven organisation towards a more demand oriented organisation
- The services should be aimed both at the individual student and researchers (personalisation) and on group work (collaborative learning, collaborative research)
- We will deal with all kinds of information: new publications, course planning, study progress reports, conferences, examinations, events on campus etc.
- Services will be increasingly location independent

4 Strategic Goals

1. Strengthening of the ICT infrastructure of the university: homogeneous, agreed standards, robust, professional
2. Optimization of the current facilities and services: use should be simple and user friendly
3. Reorganisation of the IT Learning facilities on campus: central facilities in the library and in public space in combination decentralised facilities; more facilities for groupwork, more emphasis on notebooks
4. Innovation aimed at the integration of the digital library with the digital learning environment, the development of the institutional repository and on personalisation

E-Learning projects

- Blackboard Building Blocks
- E-Portfolio
- Simulation and Gaming
- Streaming Video
- Competence based learning
- Collaborative learning

Current library projects

- DARE: Institutional Repositories
- Portal Development (a University project)
- Authorization and Authentication: A-Select and Shibboleth (National project)
- Personalisation (with OCLC/Pica)
- Nereus (a European project)

Nereus

- Network of prominent economics libraries in Europe
- Subject based international cooperation
- LSE, Oxford, UC London, Warwick, UC Dublin, UL de Bruxelles, Tilburg, Rotterdam, Sciences Po Paris, German Nat.Lib. for Worldeconomics Kiel
- Focus on content: working papers, repositories, added value for economists
- Cooperation and division of work

Nereus: joint work on “Economists Online”

- IR in all partner institutions
- IR requires international approach and international cooperation
- Subject based
- Nereus will be THE access point to IR information in economics

Tilburg University Library: Challenges

- Create new partnerships with departments
- Take up new roles
- Show and develop added value
- Develop new shared values with staff
- Build new organisation with IT Services in line with new goals and roles
- Restructure the library
- Review staff development plans

Conclusion: Important challenges for an academic library

- *To make better use of what we have achieved so far*
- *To learn more about real use and user behavior*
- *To take the perspective of the customers*
- *To work more efficiently and more effectively*
- *To integrate the digital library in the daily work processes of students, teachers and researchers*

Conclusion

- The key question is: Can we provide added value tomorrow and the day after tomorrow
- Rethink consequences of new tasks and new roles
- New partnerships needed
- Restructuring of organisation is inevitable