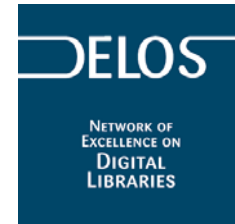


User-Centred Design of Digital Libraries

**Third International Summer School on Digital
Library Technologies (ISDL 2004)**

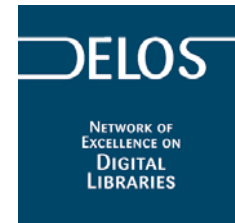
DELOS Network of Excellence

DL Definition



- Digital Library, Museum, Archive, ...
- **Why:** learning and research
- **What:** information and services
 - comprehensive
 - rich forms and kinds
 - read-and-expand-only
- **When:** value at depth of time

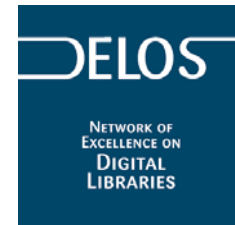
DELOS Research Agenda



- **3 brainstorming workshops**
 - San Cassiano (2001)
 - Pisa (2002)
 - Corvara (2004)
- **Produced general research agenda**
- **In collaboration with NSF (USA)**

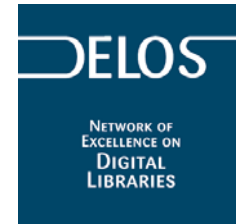
www.delos.info

Grand 10-Year Vision



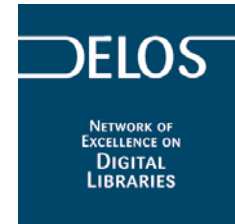
Digital libraries should enable **any citizen** to access **all** human knowledge **anytime** and **anywhere**, in a **friendly, multi-modal, efficient,** and **effective** way, by overcoming barriers of **distance, language, and culture** and by using multiple **Internet-connected devices**

Observations on Vision



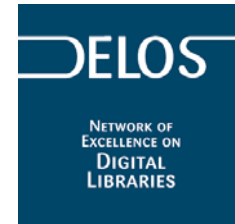
- Much **broader** perspective than normally associated with DLs
- Major focus on the **user**

DL Potential



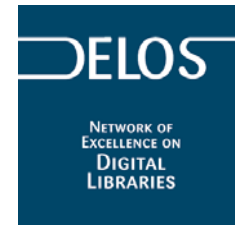
- Far beyond originally anticipated role
- Not just libraries; **archives & museums** as well
- Not just text; **multimedia** with knowledge, semantics and behavior
- Serve **specialized** needs of **diverse** applications and communities

DL Potential



- *The universal knowledge repositories and communication conduits for the future, a common vehicle by which everyone will access, discuss, evaluate, and enhance information of all forms.*
- *The strongest shield of humanity protecting its historic, cultural, and scientific artefacts from time, natural disasters, and humans.*

Potential Name Change?



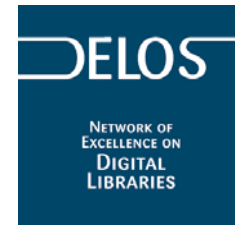
Digital Library



DUKE

(Dynamic Ubiquitous Knowledge Environment)

User-centered DL Perspective



- **How to ensure**
 - usability and accessibility of DL environment
 - by different users
 - with varying needs and capabilities
 - for both professional and recreational purposes
- **Methodologies, techniques and tools to balance technological and user-oriented requirements**

User-centred Design

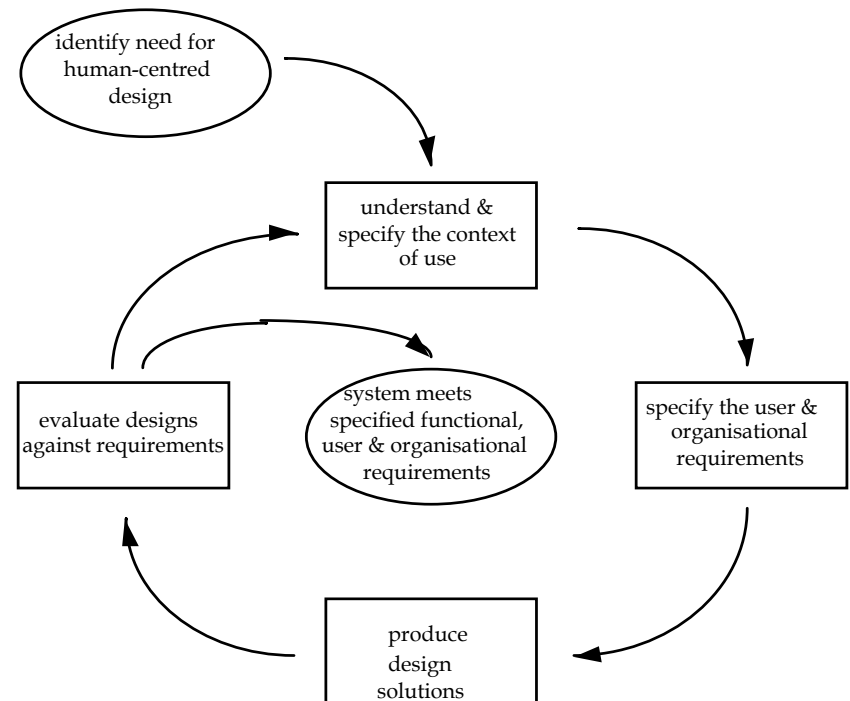
- Making systems more user-centred has substantial economic and social benefits.
- More usable systems meet user and organisational needs better and:
 - are easier to understand and use, thus reducing training and support costs;
 - reduce discomfort, stress and improve user satisfaction;
 - improve the productivity of users and the operational efficiency of organisations;
 - improve product quality, aesthetics and impact and can provide competitive advantage
- The complete benefits of user-centred design come from calculating the total life-cycle costs of the product including conception, development, implementation, support, use and maintenance.

User-centred Design (cont.)

User-centred design is characterised by:

- the active involvement of users and a clear understanding of user and task requirements
- an appropriate allocation of function between user and system
- the iteration of design solutions
- multi-disciplinary design

It is oriented towards achieving the “quality in use” for interactive computer-based systems



Cluster 4 User Questionnaire

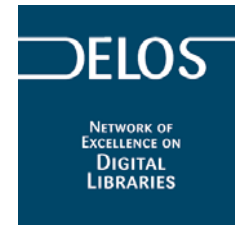


One of the main objectives of Cluster 4 is to collect and analyze user requirements in order to relate them to the different research perspectives and technical implementation options on a digital library. At this purpose, two integrated questionnaires (for end-users and stakeholders) have been set up for online collection and processing of data. The questionnaires can be found at:

<http://www.dis.uniroma1.it/~delos/questionnaires>

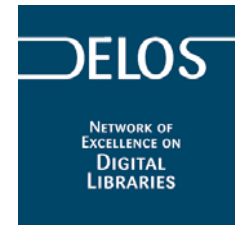
Questionnaire inputs are presently under analysis.

User Questionnaire Structure



- PART I: USER BACKGROUND & DEMOGRAPHICS.
- PART II: CURRENT EXPERIENCE. This section aimed at collecting information regarding the user's (current) experience with DLs, including purpose, frequency and patterns of use. Focus has been put on user experiences in accessing DLs through mobile technologies. User tasks and common functions provided from the DLs they have encountered are also addressed. Finally, the survey participants are asked to assess their overall experience with the DLs they have encountered.
- PART III: FUNCTIONAL REQUIREMENTS. This section allows identifying the importance to the survey participant of several common DL functions in order to allow prioritising the functional requirements.
- PART IV: NON FUNCTIONAL REQUIREMENTS. This part encourage the survey participants to state their preferences and personal interest regarding certain DL non-functional requirements.

Stakeholder Quest. Structure

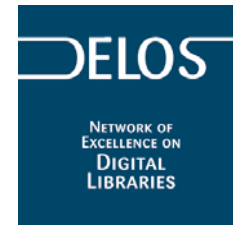


- PART I: USER BACKGROUND & DEMOGRAPHICS.
- PART II: CURRENT EXPERIENCE.
- PART III: FUNCTIONAL REQUIREMENTS. This section allows identifying the importance to DL stakeholders of several common DL functions in order to allow clarifying the functional requirements for users at the DL provider site.
- PART IV: NON FUNCTIONAL REQUIREMENTS. In this part DL stakeholders are encouraged to state their preferences and personal interest regarding a thorough list of DL non-functional requirements.
- PART V: CONTENT LIFE CYCLE collects data pertaining to content life cycle and the user interface of the digital library.

User-related research topics

- **Accessibility, usability**
- **Balancing cognitive load between user and information environment**
- **Collaboration, social context**
- **Personalized, customized, context-dependent user/information interaction**
- **Harvest info across linguistic boundaries**
- **Adding personal memory to global memory, originator notification**
- **Distributed (peer-to-peer) data creation/publication**
- **Communication via annotations**

Program of the School



Monday, 6 September 2004

8:30 - 9:00

Presentation of the School

Costantino Thanos (IEI-CNR, Italy)

Tiziana Catarci (Universita' di Roma "La Sapienza", Rome, Italy)

Yannis Ioannidis (University of Athens, Athens, Greece)

9:00 - 12:30

Use, Users, and User-Centered Design & Evaluation in the Digital Library

Helen Tibbo (University of North Carolina at Chapel Hill)

12:30 - 14:00 Lunch

14:00 - 17:30 Personalization (1)

Yannis Ioannidis (University of Athens, Athens, Greece)

Tuesday, 7 September 2004

9:00 - 12:30 Personalization (2)

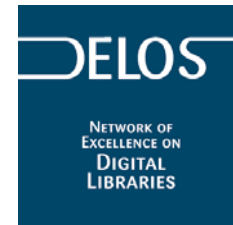
Barry Smyth (University College Dublin, Dublin, Ireland)

12:30 - 14:00 Lunch

14:00 - 17:30 Universal access to cultural web resources

Pier Luigi Feliciati (General Directorate of Archives, Rome, Italy)

Program of the School (cont.)



Wednesday, 8 September 2004

9:00 - 12:30 Museums' User Needs

Maria Economou, (University of the Aegean, Greece)

12:30 - 14:00 Lunch

14:00 - 17:30 Birds of a Feather (BOF) Sessions

Thursday, 9 September 2004

9:00 - 12:30 User Needs and Digital Libraries Design (1)

Rudi Schmiede (Darmstadt University of Technology, Darmstadt, Germany)

12:30 - 14:00 Lunch

14:00 - 17:30 User Needs and Digital Libraries Design (2)

Rudi Schmiede (Darmstadt University of Technology, Darmstadt, Germany)

Friday, 10 September 2004

9:00 - 12:30 User Interfaces (1)

Alan Dix (Lancaster University, Lancaster, UK)

12:30 - 14:00 Lunch

14:00 - 17:30 User Interfaces (2)

Alan Dix (Lancaster University, Lancaster, UK)