Digital Libraries of the Future - and the Role of Libraries

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The DLs evolution

Knowledge Commons
(DELOS NoE)

repository of digital texts + centralized catalogue + search service

1996

user = consumer

few large institutions

2006 - …

user = producer & consumer

many virtual organizations

8th Bielefeld Conference, 7-9th February 2006
New information objects

- Multimedia documents (images, audio-videos, 3D-objects)
- Data (observation data, experimental data, specific elaborations outcomes)
- Information objects with no physical analogous
- On-demand information objects
On-demand information objects

- a fixed text
- a pollution map
- a table summarizing data from millions of observed satellite measures
- a graph reporting an analytical trend of certain information extracted from a great amount of observed data
The creation and handling of these documents require
- Access to many different, large, heterogeneous information sources
- Use of specialized services
- Large processing capabilities
Controlled sharing of resources

- Small virtual dynamic organizations usually do not have the instruments for satisfying these requirements

- To exploit controlled sharing of resources
  - information sources
  - sw components
  - computers
  - skills
Implementing “the future DLs”
A view on technology

The DILIGENT project

- Italian National Research Council - ISTI (Italy, Scientific Co-ordinator)
- European Research Consortium for Informatics and Mathematics (France, Administrative Co-ordinator)

- University of Athens (Greece)
- University of Basel (Switzerland)
- Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. - IPSI (Germany)
- University for Health Informatics and Technology Tyrol (Austria)
- University of Strathclyde (United Kingdom)

- Engineering Ingegneria Informatica SpA (Italy)
- Fast Search & Transfer ASA (Norway)
- 4D SOFT Software Development Ltd. (Hungary)

- European Organization for Nuclear Research (Switzerland)
- European Space Agency - ESRIN (Italy)
- Scuola Normale Superiore (Italy)
- RAI Radio Televisione Italiana (Italy)
The DILIGENT project

Objective

To develop a Digital Library Infrastructure that will allow members of dynamic virtual research organizations to create on-demand transient digital libraries based on shared computing, storage, multimedia, multi-type content and application resources

Digital libraries are not ends in themselves; rather they are enabling technologies for digital asset management, electronic commerce, electronic publishing, teaching and learning, and other activities.

Fourth DELOS Workshop, Budapest, 2002

8th Bielefeld Conference, 7-9th February 2006
Technical solution

- VirtualDL Creation
- Search
- Content & Metadata Mngt
- Annotation
- Personalisation
- Process Design & Verification
- Content Source Description

EGEE

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Diligent functionality decomposition
DILIGENT infrastructure

Information Service

DILIGENT Nodes

Information pull

EGEE Nodes

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The DILIGENT user scenarios

Implementation of Environmental Conventions

Research and Learning in the Culture Heritage domain

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Implementation of Environmental Conventions

ESA Metadata Repository

Search

Repository

Metadata

UI

Storage & Job Broker

Beat

ESA Metadata
Organization for the future DLs(1)

The role of libraries as producers of resources

- Provide the necessary resources
- Develop economic models to support the resources sustainability
- Define policies and standards (e.g. rights)
- Increase the amount of shared digital content (e.g. by digitalization, by awareness)
- Ensure the availability of content (e.g. maintenance, preservation) and its quality
Organization for the future DLs (2)

The role of libraries as mediators between the infrastructure and the user communities

- Proactively promote and facilitate the creation of DLs that respond to the needs of the user communities
- Assists users by providing, if necessary, the skills required to select, update and exploit the DL content and services
http://www.diligentproject.com