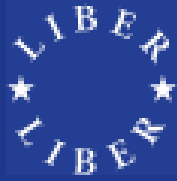**Ligue des Bibliothèques Européennes de Recherche**
Association of European Research Libraries

The role of research libraries in a European e-science environment

Wouter Schallier

LIBER Executive Director

About LIBER

- www.libereurope.eu

- The largest network of European research/academic libraries: 400 institutions, from over 40 countries

- **Mission**: to represent and promote the interests of European research/academic libraries, and of their users: students and researchers

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Ακαδημαϊκών Βιβλιοθηκών
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Πανεπιστήμιο Πατρών,
5 - 6 Νοεμβρίου 2009

What is E-science?

- **Research that requires/is**
  - Large scale computing resources
  - Data-intensive
  - Carried out over the internet
  - Collaborative (team science, virtual science communities)
  - Distributed (networked science)
  - Interdisciplinary
  - Heterogeneous

It's all about LARGE amounts of data

- "Data are no longer considered as interim products to be discarded once the research reporting them is published. Rather, they have become **important sources of scholarly content to be used and re-used**."
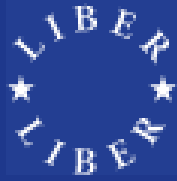
(Borgman, The role of libraries in e-science)

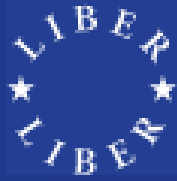Ex. Hubble telescope, CERN Large Hadron Collider etc.

Sharing data = publishing

- Documents:
  - Formal: books, journal articles, proceedings etc.
  - Gray literature: reports, working papers etc.
  - Websites, blogs, wiki's, tweets etc.
- Primary/raw data:
  - result of observation, experimentation, calculation etc.
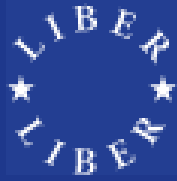- And all mixtures of these

Example: conference

- PPT's

- Abstracts

- Biographies

- Podcasts

- Interviews

- Reports of break out sessions

- …

- Full text papers

Why now?

- E-science is already a reality but we can do more

- Internet, global connectivity

- Data deluge, data collection, data mining

- New and cheap means to share, distribute and publish information quickly

- More efficient use of technology in R&E essential for **European knowledge economy**
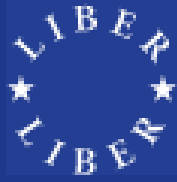
- **Time of crisis = time of opportunities**

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The paradox of e-science

- ## Race against the time: the new generations are arriving at the university
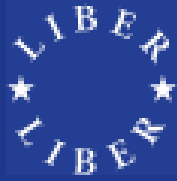
Vs.

- ## Cultural change: how do you make researchers share data?

  - ## How do you make funding agencies reward collaboration and sharing data?

  - ## Current copyright/IPR rules are hindrance for e-science

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Incentives for sharing data

- There is no other way
- Collaboration is a necessity
- Gives visibility and recognition

Europe's vision

- "Digital Europe – a vision for the next 5 years": 4 priorities:

  - Easy access to digital content ("modern copyright and IPR rules are essential for the development of attractive digital content")

  - Safe and consumer-friendly space for mobile payments

  - Digital economy open to small businesses

  - Innovative ICT solutions for low-carbon economy

  (V. Reding, Brussels, 9 July 2009)

# European e-science infrastructures

- **EC E-infrastructures Concertation and Consultation Meeting, Brussels 12-13 October 2009 (http://www. beliefproject.org):**
  - GEANT (backbone for European data networking)
  - Sharing computational resources (e-science grid, supercomputing)
  - Global virtual research communities
  - Scientific data
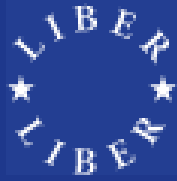 - Simulation and visualisation
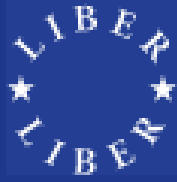
The role of OA

- ## Essential

- ## Results of publicly funded research should be available in public domain

- ## Allows verification and replication of findings

- ## Stimulates international competition based on excellence
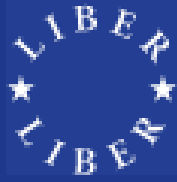
Data management issues
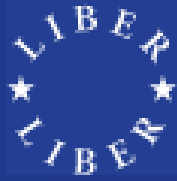
- Ubiquitous, trusted and easy access to (discovery of) research data

- Integrity

- Version management

- Semantics: how to interpret data?

- Ownership of data

- Long term preservation

- Visualisation

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Data management issues (2)

- Licensing
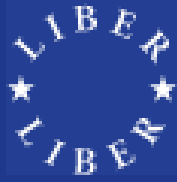
- Technology and sustainable infrastructure (funding!)

- Repositories

- Use and re-use

- HR: data managers

- "Data repositories may become the new special collections for research libraries" (Borgman)

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Into the workflow of R&E!

- Kill the library as book and journal store!

- Integration of library services in virtual research and education environments

- Support to data producers

- Recruitment of content

- Digital repositories: data!

- Enhanced publications: annotations, recommendations, primary data, podcasts etc.

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Re-invent the library

- **Observe the angry young (wo)men**

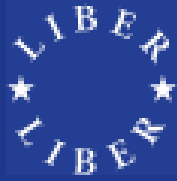- **They ALL deal with information/data!**

- **How do they:**
  - **Access**
  - **Disseminate**
  - **Preserve**
  - **Legitimise CONTENT**

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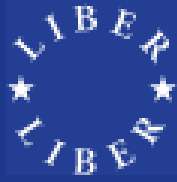5 - 6 Νοεμβρίου 2009
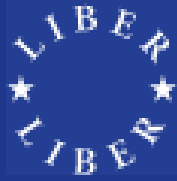
New strategies

- **E-science requires**
  - New strategies for research support
  - New infrastructures
  - Integration in scholarly workflows
  - Skilled library professionals

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LIBER events 2010

- Annual Conference "Re-inventing the library. The challenges of the new information environment", 29 June-2 July 2010

- "Books and reading in the digital age". 5-6 July 2010 (to be confirmed)

- Interested?
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  - Join LIBER on LinkedIn
  - Subscribe to RSS at http://www.libereurope.eu

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Thank you! Questions?

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"Making the case for European Research Libraries"

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