Overview

• The KB: Governance, Funding, Organizational Structure

• Research & Development

• Partnership KB and IBM

• Functionalities of the KB e-Depot System, content

• Digital Preservation: policy and approaches

• Designated Community
The National Library of the Netherlands and IBM
Governance, funding, organizational structure

- Koninklijke Bibliotheek
  - Medium-sized national library, founded in 1798
  - Financed by Ministry of Education, Culture and Science
  - Annual budget € 40 million, 250 fte

- Digital archiving and R&D Permanent Preservation:
  - € 1,1 million structurally allotted to staff, system maintenance
  - € 1,2 million permanently dedicated to research
  - Funding is expected to increase, subject to approval by the cabinet

- Digital archiving and preservation embedded in organization
- Departments: e-Depot, Digital Preservation, ICT
Innovation at the KB

- Innovation at KB is customer (service) driven
  - National Library: responsible for scientific infrastructure in the NL
  - Deposit Library: collection of all Dutch publications
  - International collaboration (The European Library, International e-Depot)

- Service development
- Maintenance and access/delivery of electronic resources
- Mass digitization of historic paper resources

- Carried out by R&D-division (70+ fte)

- Supported by IT-division (department Application Development)
The KB-IBM partnership

Pilot Deposit System design and delivery:
DNEP – Pilot of Deposit system of Netherlands Electronic Publications

Deposit System design and delivery:
Deposit System of Netherlands Electronic Publications
Implementation: DIAS v1

System Maintenance 10yr

Study & Research on Long Term Preservation
The e-Depot system
The e-Depot system

- First experiments with AT&T, IBM from 1995-2002
- DIAS: OAIS-compliant, developed with IBM, implemented in 2002
- Initial study on digital preservation performed with IBM Research
- Integrated with other library modules
- Functionalities:
  - Ingest of electronic journals, e-books, and CD-roms (installables)
  - Authentic publications are archived, standard formats (PDF, XML)
  - Automatic validation (checksum, JHOVE), error handling
  - Metadata conversion
  - Batch delivery
- KB aims at continuous auditing, resulting in certification
Content Characteristics

- 1993: Decision to start pilot e-Depot
- 2002: Landmark archiving agreement with Elsevier (public)
- More archiving agreements:
  - General agreement Dutch Publishers Association (updated 2005)
- Publisher transmits all files upon publication directly to e-Depot
- CD-ROMs, electronic journals, monographs (e-books)
Scale

• Volume
  • 7 million e-publications currently
  • 10 million e-publications eventually (based on current agreements)

• Size
  • 1 e-publication equals 1 Mb on average
  • 1 Terabyte for every 1 million publications

• Additional
  • More than 250 Tb to be added in the next years

• Capacity
  • 5,000 – 50,000 e-publications ingested per day
The challenges of Digital Preservation
Digital Preservation

- Difficulties when archiving digital publications:
  - Carriers of digital information are volatile
  - Software and hardware are required to read the publication
  - Technology is changing rapidly
So… *Windows*<sup>95</sup> gets obsolete..

And… *Acrobat for AIX* is no longer supported..
Digital Preservation

• In 2000 – 2002 KB and IBM performed a research on those topics (see: [http://www-5.ibm.com/nl/dias/preservation2.html](http://www-5.ibm.com/nl/dias/preservation2.html))

• Collaboration with British Library, German National Library, Japan

• Web Archiving

• Preserving mass digitization output

• Academic output

• International standards

• Digital Preservation as an emerging research issue
The KB Digital Preservation Policy: background

• Electronic journals dominate the field of academic literature
• Who ensures long-term accessibility of international e-journals?
• Traditional geographic model not sufficient for systematic approach
• No obvious guardian: risk of information getting lost forever
• Publishers are unlikely to deposit at large number of places
• Spread the (geopolitical) risk and identify trustworthy partners
• Collaboration and coordination are essential
• Centers of expertise may emerge: the Safe Places Network
The KB Policy (cont.)

- Safe Places Network secures systematic, coordinated preservation
- In case of loss, libraries know where to go
- Publisher cooperation is essential so as to ensure timely deposit
- Permanent archives presuppose permanent commitment
- Permanent archiving also calls for a substantial investment and continuous efforts and permanent R&D
- The KB is committed to be part of a Safe Places Network
Addressing risks

• No obvious guardian for international publications

• Disrupted Access
  • Range of possible disruptions
  • Calamities damaging publisher’s services
  • Withdrawal of publications, journals (commercial motivation)
  • No successor

• Technological Obsolescence
  • Inaccessible file formats
Publishers

Research Libraries, End Users

Disrupted Access

Obsolescence

Publications without natural fatherland

National Libraries
Digital Preservation activities

- Preservation functionality for the e-Depot
  - Preservation manager, in collaboration with IBM
  - Universal Virtual Computer (IBM Research)
  - Permanent access strategies
  - Emulation (keep the object, change the environment)
  - Migration (keep the environment, change the object)
Designated Community: Publishers

- e-Depot access does not compete with publisher-provided access
  - On site access for KB visitors
  - Interlibrary loan supply within the Netherlands
  - Remote access only if allowed by publishers
  - Access conditions restrict interference with commercial interests
    - Retrieval, access, printing, downloading *for private use only*
    - Systematic reproduction is not allowed
    - Real-time monitoring of user behavior, COUNTER compliant
Designated Community: Libraries, End Users

• The e-Depot is a safe place for the scientific community

• Regularly: Limited, but useful access

• Exceptional: Trigger events cause broader access
  • If a publisher stops making journals available: Open access to all
  • In case publishers cannot meet obligations: Part of interim service

• Additional service for publisher’s customers
Summary

• Growing volume of international e-journals without natural fatherland

• Must be preserved by institutions who take responsibilities; Systematic and coordinated by means of Safe Place Network

• KB is committed and equipped to be part of the insurance collective; policy is acknowledged by government

• Close collaboration with IBM

• KB seeks international collaboration, e-Depot to be audited/certified

• KB continues to perform R&D activities with various parties to handle the current and newly arising challenges
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