

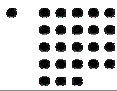
Qualification issues in Digital Long-Term Preservation (DLTP): Experiences from Germany

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Cologne University of Applied Sciences
Institute of Information Science

in Cooperation with Goethe-Institut Hongkong

Sun Yat-Sen University
Guangzhou 11/9/2007



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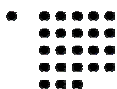


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Cologne, Germany



<http://www.weltkarte.com/europa/deutschlandkarten.htm>



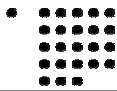
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Cologne University of Applied Sciences

- ▶ Founded on 1st August 1971
- ▶ The largest University of Applied Sciences in Germany
- ▶ More than 450 professors and about 16.000 students
- ▶ Ten faculties with a broad spectrum of subjects: Faculties of ...
Applied Social Sciences; Culture Sciences; **Information Sciences and Communication Studies**; Economics and Business Administration; Architecture; Civil Engineering and Environmental Technology; Information, Media and Electrical Engineering; Automotive Systems and Production; Process Engineering; Energy and Mechanical Systems; Computer Science and Engineering Science
- ▶ More than 60 study programs

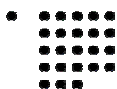


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Cologne University of Applied Sciences



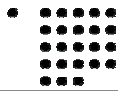
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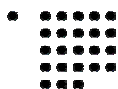
Institute of Information Science

- ▶ Founded in the 1920s focusing on Library Studies
- ▶ Today part of
Faculty of Information and Communication Science
- ▶ 21 professors
- ▶ About 600 students
- ▶ 4 programs related to Library and Information Science:
 - **Library Science** (Bachelor)
 - **Information economics** (Bachelor)
 - Online Editor (Bachelor)
 - **Library and Information Science** (Master)
- ▶ All the 3 programs highlighted in blue cover the topic DLTP which is getting more and more important in the future !



Digital long-term preservation: Introduction (1)

- ▶ A challenge to every modern society
because digital information has become a part of our cultural
and scientific heritage
- ▶ Requires additional and sustained effort by policy makers,
authors, publishers, hard and software manufacturers,
and the cultural and scientific memory organisations
- ▶ IPRES 2007 in Beijing (11th-13th October) will offer another
occasion for such discussions



Digital long-term preservation: Introduction (2)

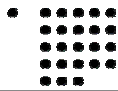
Problems we are facing during the preservation of digital objects:

- ▶ The short durability of digital archiving media



Source of graphics: Wikipedia

- ▶ Viruses (= reason of 7 % of all losses of data)
- ▶ Human mistakes in dealing with information technology (32%)
- ▶ Hardware problems and technical problems in general (44%)
- ▶ Availability of operating software and application software which we use (including compatibility problems of software)
- ▶ Availability of know-how to deal with the technology of former times



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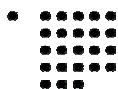


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Digital long-term preservation: Introduction (3)

Questions to be solved now and in the future:

- ▶ What are the characteristics of digital objects in general?
- ▶ Which of these objects should be preserved?
- ▶ Who is going to do that?
- ▶ Which techniques and strategies should be applied for the process of DLTP?
- ▶ What are the costs?
- ▶ What is the current technology and what are the most important current issues?



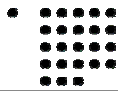
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DLTP related activities in Germany (1)

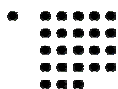
- ▶ Since the beginning of the 1990s German National Library started with DLTP joined by several major University Libraries, State Libraries and other German institutions
- ▶ Cultural heritage institutions performed projects funded by European Union and German Ministries as well as by other organisations
- ▶ About 60 projects on the national and regional level are listed at <http://www.langzeitarchivierung.de>



DLTP related activities in Germany (2)

At least 5 lines of activities:

- ▶ German National Library and other State Libraries of the Federal States searching for conceptual and practical solutions in long term preservation
- ▶ Specialized libraries focusing on a subject-based collection of digital and digitalized documents, databases, primary data of research results and applications based on this material
- ▶ Archival institutions like State and Regional Archives or museums focusing on special digital objects
- ▶ Computer centers and IT-experts looking for practical solutions
- ▶ Research institutions looking for a short and medium term solution for everyday archiving procedures of their research results

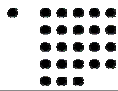


Project nestor (1)

- ▶ A project funded by the German Ministry of Research and Science
- ▶ First phase: 2003-2006; second phase: 2006-2009
- ▶ Cooperating with PADI (Preserving Access to Digital Information) run by the Australian National Library

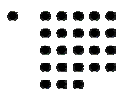
3 websites

- ▶ Network of Competence (www.langzeitarchivierung.de), the basic site for the public
- ▶ nestor information platform (nestor.sub.uni-goettingen.de)
- ▶ nestor communication platform (www2.hu-berlin.de/nestor)



Project nestor (2): Free access to information

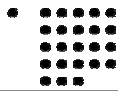
- ▶ Basic idea of publicly funded projects in Germany and the EU: Free provision of results and findings
- ▶ Before the 90s: printed reports
Since mid 90s: digital provision via the internet because nearly 100 % of academics and students and about 63 % of German households have access
- ▶ All major research organisations and funding bodies have signed the Berlin Declaration on Open Access (2003)
- ▶ A main principle of nestor: open communication!
All reports and presentations made by nestor and related to nestor's activities are accessible free of charge via the Internet



Project nestor (3): Working Groups

Several work packages and working groups (WG):

- ▶ WG Trusted Repositories – Certification
- ▶ WG Media
- ▶ WG Long-term preservation standards
- ▶ WG Cooperative long-term preservation
- ▶ WG eScience and long-term-preservation
- ▶ **WG Cooperation with universities in qualification**



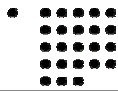
nestor's qualification partners: Cooperating universities



Project nestor (4): Memorandum

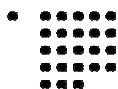
Memorandum on the long-term accessibility of digital information in Germany;
31st March 2006:

- ▶ „18. Long-term digital preservation generates new tasks for the preserving institutions. Professionally trained staff must be used. The requirements and tasks of long-term digital preservation need to be given appropriate attention in the initial and further training programmes. Specific training courses need to be set up which sensitise their participants to specific topic areas and which also qualify them to perform the tasks at hand.“
nestor - Memorandum, 2006, p.4



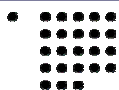
Qualification needs for DLTP in Germany

- ▶ DLTP has not been a topic in traditional LIS education
=> lack of knowledge with regard to operational staff and management
- ▶ DLTP specialists of nestor have started with presentations of the project findings = limited audiences and events
- ▶ Experts are looking for a concept of systematic distribution of knowledge related to DLTP
- ▶ There should be different applications of media and different educational concepts for different target groups



Target groups within the DLTP qualification

- ▶ Top Management of institutions to which DLTP is or will be a relevant topic - by raising awareness of the challenge to be faced
- ▶ Middle-management in cultural heritage institutions - by providing them information on concepts, methods and technological developments of DLTP
- ▶ Staff members of cultural heritage institutions who are involved in or organizing DLTP activities on an operational level
- ▶ BA-students in programs qualifying for jobs in cultural heritage institutions
- ▶ MA-students in programs qualifying for projects and management jobs in cultural heritage institutions.



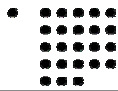
Programs with DLTP related courses: State-of-the-art at German Universities (1)

- ▶ Several of the LIS-related BA programs offer courses on the topic of DLTP. Most of them concentrate on a basic introduction in the field. When specialized courses are related to preservation or information technology some of them take the chance to go into detail.
- ▶ Topics in **Bachelor- and (non-dedicated) Master programs** are
 - Long term preservation of digital data
 - Metadata
 - Archival repositories / Open Archival Information System
 - Persistent identifiers
 - Formats
 - Open Access
 - Legal issues
 - Data protection and archiving



Programs with DLTP related courses: State-of-the-art at German Universities (2)

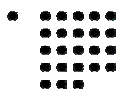
- ▶ IMARK (Information Management Resource Kit) modules of UNESCO and/or the Tutorial on Digital Preservation Management of the Cornell University are used – beside other material and exercises developed by lectures
- ▶ For obvious reasons, there is a trend to attain an in-depth qualification in DLTP within a **MA program**. This offers the opportunity to combine existing knowledge in a specific field with DLTP know-how; most likely it will be provided as part-time program
- ▶ Until now, there is no specialized MA-programm focusing on DLTP only



nestor based activities in DLTP-related Qualification: overview

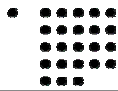
*There are at least 5 lines of activities in
DLTP-related qualification:*

- ▶ nestor seminars
- ▶ nestor Spring and Winter Schools
- ▶ The nestor Handbook
- ▶ Development of a cooperative curriculum
- ▶ Development of e-learning modules



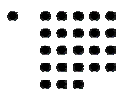
nestor seminars

- ▶ Special seminars focusing on special topics
- ▶ Provided time by time
- ▶ Presented by nestor experts and activists
- ▶ Participation was free of charge until now
- ▶ Some of them were recorded as videos and distributed on DVD free of charge



nestor Spring and Winter Schools (1)

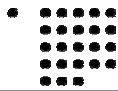
- ▶ Designed to provide an ongoing option of qualification in DLTP for unexperienced and experienced staff
- ▶ The concept was inspired and is supported financially by nestor, Digital Preservation Europe (DPE) and DELOS (“Network of Excellence on Digital Libraries”), whereas the latter partially funded by the European Commission in the frame of the Information Society Technologies Programme
- ▶ Take place in remote locations and last for 5 days
- ▶ About 35-45 participants learning and living together
- ▶ Participants receive a certificate equivalent to 2 credits in the European Credit Transfer System, ECTS, which will be recognised by participating universities



nestor Spring and Winter Schools (2)

Topics of Nestor Spring School 2007, e.g. have been

- ▶ Introduction to digital long-term preservation
- ▶ Metadata: What is it? Why needed? How to be applied?
Followed by a group exercise: Which metadata is relevant for DLTP? List and explain at least 20 elements (descriptive, technical, administrative)
- ▶ Format: an important metadata element
- ▶ OAIS as a model for DLTP – followed by a group exercise: Apply OAIS to a given collection. Identify the AIP.
- ▶ Criteria for the selection of digital objects to be preserved
- ▶ ...



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nestor Spring and Winter Schools (3)



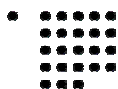
Cyriakus-Hostel in Gernrode/Harz



Participants of nestor Spring School 07

nestor Winter School 2007 (at the same location) will focus on a special aspect of DLTP.

Schools like this will be held again in 2008 and 2009



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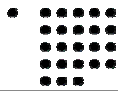


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nestor Handbook

- ▶ nestor Handbook was created by contributions of several experts in the field and published as version 0.1 in March 07
- ▶ The Handbook is called “An Encyclopedia in digital preservation” (Eine kleine Enzyklopädie der digitalen Langzeitarchivierung)
- ▶ Mission statement:
„The nestor-Handbook tries to bundle the recent state of knowledge on digital long-term preservation and its various components. Collected and compiled in this "small encyclopedia" the authors give the german speaking community access to the subject in a structured manual.“
- ▶ Provided under Creative Commons License and available for download

http://nestor.sub.uni-goettingen.de/handbuch/nestor-Handbuch_01.pdf



nestor Handbook

Some of the chapter titles are:

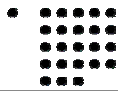
- ▶ State-of-the art of legal aspects
- ▶ National Preservation Policy
- ▶ Institutional Preservation Policy
- ▶ The OAIS (Open Archival Information System) reference model
- ▶ Trusted repositories
- ▶ Formats
- ▶ Standards of DLTP
- ▶ Strategies of DLTP

In 2007 an updated version of the Handbook will be published; to improve accessibility, it can be downloaded on chapter basis



Development of a cooperative curriculum

- ▶ nestor never planned a curriculum on its own, BUT aims to stimulate the development and realization of such a program at Universities
- ▶ 10 partner institutions agreed on a “Memorandum of understanding” (July 2007) to cooperate in developing and adjusting modules focusing on selected topics of DLTP
- ▶ Courses of other universities will be accepted in a local curriculum
- ▶ The workload of each module will be calculated in credits in regard to the European Credit Transfer System (ECTS)
- ▶ There are plans to keep the developments in the EU compatible with those in the USA - to be discussed at IPRES 2007 in Beijing



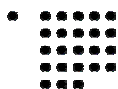
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Development of e-learning modules

- ▶ A further step will be the development of e-learning modules on digital preservation
- ▶ Opportunity to cooperate with other initiatives in European and other countries
- ▶ It will then be a chance to provide the content of the handbook in e-learning modules, and to empower them with didactical content
- ▶ An option will be to provide the content in English



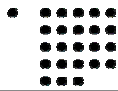
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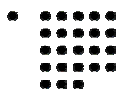
Further steps

- ▶ Updating the nestor-Handbook
- ▶ Organisation and implementation of nestor Winter School 2007 and the Schools in 2008 and 2009
- ▶ Development of complementary modules which will constitute a virtual MA curriculum or – at least – provide a set of courses which people interested in DLTP can choose and take part in
- ▶ Development of guidelines for e-tutorials to be provided within DLTP-related modules of a curriculum



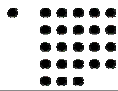
Summing-up: Qualification in DLTP in Germany

- ▶ Major German libraries have gathered expertise in DLTP since the 1990s
- ▶ Qualification issues related to DLTP have been taken into focus since about 5 years and are driven by project activities
- ▶ Qualification needs in DLTP are to be differentiated by
 - target groups
 - methods of dissemination & didactical concepts connected to them
- ▶ Project nestor has stimulated a great deal of activities like
 - Spring and Winter Schools
 - nestor Handbook
 - cooperative curriculum



Summing-up: Qualification in DLTP in Germany

- ▶ Integrating the findings of nestor and other DLTP research in University-based education as well as in further education during the following years
- ▶ Innovative dissemination via e-learning modules offers the chance to go beyond existing language barriers



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Thank you for your attention!
Please feel free to raise questions!

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