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Titel: The Digital Preservation Consortium - Mission and Goals - March 1994

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Ort: Graz

Jahr: 1994

PURL: https://resolver.sub.uni-goettingen.de/purl?514854804_0004|log21

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European Research Liberaries Cooperation:
The LIBER Quarterly, 4 (1994), 155-162.

The Digital Preservation Consortium Mission and Goals - March 1994*

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The development of the National Information Infrastructure and the growing use of the Internet are creating a rapidly-changing environment for collaborative preservation and access. Within this environment, the Digital Preservation Consortium seeks to advance the use and utility of digital technology for the preservation of and access to library materials by fostering the needed infrastructure. The original group of eight consortium members was first convened by the Commission in 1990. Today, eleven members are working cooperatively on a variety of research and demonstration projects, as reported upon in Commission newsletters and reports. This Mission and Goals Statement, originally developed in March 1992, provided a context for the consortium's current and future activities.

The Digital Preservation Consortium

Need

Preservation activities are highly dependent on cooperation among the nation's research libraries. Libraries have historically worked together to develop effective methodologies and common standard for producing microfilm, which is the preferred preservation medium. They have also developed sophisticated and effective divisions of labor. A library participating in the Research Libraries Information Network (RLIN), for example, currently has well-developed processes and mechanisms to signal the rest of the library community that it will take responsibility for the preservation of a particular item through microfilming. Other research libraries do not then need to duplicate the effort and can use the

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product of the preservation work in the first institution. In addition, libraries with particular strengths in a collection or segment of a collection have often worked together to preserve all materials in a particular field or sub field.

Accumulating evidence suggests that digital technology may be emerging as an effective and affordable preservation and access tool. If the evidence holds, the nation's major research institutions will need to incorporate this new tool by building on the collaborative methods they have already developed and currently use for preservation. They will need to generate methodologies, including appropriate divisions of labor, tailored to digital technology, as well as standards for producing and storing books and other documents in digital form. They will need to integrate the new methodologies and standards with practices already established for preservation microfilming and other library functions. Moreover, institutions will need to work together with each other and with their suppliers and clients to develop common means and standards of access and distribution for digitally preserved materials.

Mission

The Digital Preservation Consortium is a group of universities dedicated to working cooperatively so that researchers and students in various university environments across the country and around the world can make the most effective use of library materials preserved in digital form. Through the joint efforts of its members, the mission of the Consortium is to advance the use and utility of digital technology for preserving and improving access to intellectual works of national and international importance.

Goals

The introduction of digital technology for preservation and access implies the existence and development of a new, complex and shared infrastructure for making digitally preserved materials available in reliable and cost-effective ways to the wider library and academic communities. The Digital Preservation Consortium intends to achieve its mission of advancing the use and utility of digital technology for the preservation and access of library materials by fostering the development of the needed infrastructure. It will do so over the next 5-10 years through the pursuit of the following specific goals:

1. Verify and monitor the usefulness of digital imagery for preservation and access;
2. Define and promote shared methods and standards for the production, storage and distribution of digital images;
3. Enlarge the base of materials preserved in digital image form;

4. Develop and maintain reliable and affordable mechanisms to gain access to digital image documents.

1. Verify and monitor the usefulness of digital imagery for preservation and access

The application of imaging technology to the preservation and access of library materials in new and in the early stages of development. The Digital Preservation Consortium aims to verify and, as the technology matures, to monitor the usefulness of digital imagery as a preservation tool. In particular, the Consortium will:

Establish the convertibilty of preservation media

Establish the convertibilty of preservation media at production levels. The results of ongoing projects indicate that library staff can convert deteriorating material from paper to digital image, produce a printed facsimile copy to return to the shelves and provide on-line access to the image database - all at relatively cost effective levels. For projects seeking to preserve large numbers of documents however, microfilm, not paper facsimile or on-line images, remains the long term medium of choice. The Consortium needs to confirm that libraries can, at high-volume production levels, readily and economically convert (or have converted) digital images to microfilm for long term storage and microfilm to digital images for ease of access and distribution.

Foster projects to capture special types of documents

Foster additional projects designed to enhance the ability of libraries to capture documents in digital image form beyond the conversion from paper and microfilm. The Consortium especially needs to encourage projects over the next one to three years that will develop methods for preserving in digital form and at production levels a variety of special materials including oversize and bound volumes, color documents, gray-scale images, maps, archival material, etc.

Insure the longevity of digitized images

Insure the longevity of digitized images by investigating and reporting the tradeoffs in the use of various storage media, the costs and benefits of storing images at various resolutions and in standard non-proprietary formats, and the requirements for backing up image databases and refreshing them to stay current with changing technology.

Cultivate research on the application of intelligent character recognition

Cultivate at least one research project designed to apply intelligent character recognition (ICR) technology to the collection of digital images. The project will help insure that the quality of the scanned images is sufficient to anticipate the use of ICR. It will explore the use of the technology both to develop better on-line indices for the image documents and to convert images to full text documents. Finally, it will provide the basis for a cost analysis for character recognition given material already in digital image form.

2. Define and promote shared methods and standards

The amount of library material in digital image form is relatively small but growing. As current and planned projects continue to enlarge the size of the digital library, Consortium members need to develop the shared methods and standards for producing, storing and distributing digital documents so that researchers have broad and dependable access to them.

In particular, the Digital Preservation Consortium will:

- Sponsor forums to define production quality standards
- Sponsor forums enabling producer institutions to define shared standard of quality for the production of digital images. Relevant quality-control issues include standards of image resolution, of image enhancement, and of indexing levels and quality. Consortium members need to work with vendors and service bureaus in defining production quality standard so that the requirements for hardware and software products are well-known and understood among vendors and so that libraries can, with common expectations about performance and cost, depend on service bureaus to produce digital images from source documents.

Promote the development and use of the document structure file

Promote a broad technical understanding of the format and composition of the so-called document structure file. The document structure file serves as an index and thus directly affects the ability of researchers to gain access to the digital image documents. It is the newest and perhaps the most critcial component in the storage infrastructure that is emerging for digital preservation and access. The Consortium will need to work with vendors, national committees, standard setting bodies, and other organizations to establish the file and its relation to the image database as a standard component in the storage and retrieval of documents in digital image form.

Create appropriate bibliographic control standards

Create appropriate bibliographic control standards for digital image documents. Researchers need to find and use documents in digital image form. Bibliographic records in the library catalog must point the researcher to materials in digital image form at least as effectively as they point to materials in other forms. Ideally, they should provide the researcher a direct connection to the digital library. Additionally, libraries must know when materials have been converted so that they avoid duplicating the conversion effort. The Consortium must help identify standard ways of describing location, accession number, processing statuses (analogous to preservation queues) and other key features of digital image documents, and must help insure that the bibliographic and holding record structures can accomodate these descriptions.

Address copyright issues

Address copyright issues specific to the digital format. Although many materials in need of preservation are in the public domain, copyright still covers a large amount of deteriorating material. The legal and technical issues associated with copyright present imposing hurdles for a comprehensive digital preservation and access program, and the Consortium needs to address them.

Organize a document interchange project

Organize and seek funding for a special digital document interchange project. Even with an emerging production and storage infrastructure for digital image libraries, the Digital Preservation Consortium must assume, at least in the short term, that the technology for gaining access to image documents will be unevenly distributed among and within unversities, including its own member institutions. To open as many access paths as possible, Consortium members will develop, through a joint collaborative effort, mechanisms on each of their campuses to provide access to the existing base of image documents. Mechanisms may include reproduction and distribution of optial disks for use at local workstations and printers, exchange of image files over the internet network for printing or display, printing on demand at the storage site and delivery bay mail to the requesting campus, generation of microfilm from the digital version at the storage site and delivery by mail to the requesting campus, and generation and distribution of a CD-ROM version of the image document.

The interchange project will especially help identify the minimum technical means by which libraries and researchers at many campuses can reap the benefits of digital preservation and access. It will provide a vehicle for rapidly and relatively cheaply engaging institutions in digital image technology and for providing an incentive for staff and researchers to learn about its cost and

benefits. It will also enable institutions to cooperate in developing new library policies regarding access and use of materials that are readily available across networks.

3. Enlarge the base of materials

Providing a usable and readily accessible library of digitally preserved materials will depend substantially on the ability of institutions to produce a large and growing base of preserved materials in digital image form. Projects that are currently underway or planned will contribute to the growing base of digitally preserved documents. However, to enlarge the digital library even further, the Consortium will:

Encourage the involvement of service bureaus

Encourage the involvement of service bureaus as providers for the conversion of materials into digital form and, when appropriate, from digital form to microfilm. The experiences of libraries in generating preservation microfilm suggest that service bureaus can generate economics of scale that individual libraries, each with their own conversion operations, cannot hope to achieve. Similar economies are likely to accrue in the digital version arena. As libraries address the technical and organizational issues associated with digital preservation and access, they need to involve service bureaus as partners in the creation of standard of performance and cost. The sooner libraries can hand off the conversion work to service bureaus, the greater the number of deteriorating materials they can expect to convert to digital form.

Focus on the conversion of thematically-related materials

Focus on the conversion of thematically-related materials. An important dimension of projects that Consortium members undertake is to explore whether researchers will demand greater access to documents in digital form if image libraries contain thematically related materials. If the hypothesis holds true, then the Consortium will need to promote subject-related projects and to assist member institutions in selecting appropriate themes.

Mount a large inter-institutional collaborative project

Mount a large-scale collaborative project designed to capture in digital image form thematically related documents from several different and geographically separated campuses. Such a project will enable the research community to evaluate the potential for the digital library to overcome any of the physical

barriers to effective scholarship. It will build on the results of other projects designed to capture thematically related materials. Moreover, it will both require and advance efforts to develop shared methods and standards of producing, storing and distributing digital images and efforts to assist members of the research community in assimilating digital technology in their daily routines of work.

4. Develop and maintain reliable and affordable mechanisms to gain access to digital image documents

Assimilation of digital image technology into mainstream library processes for document preservation and access depends on the successful development of standard production, storage and distribution mechanisms for image documents. Equally, assimilation depends on the quality of the mechanisms that researchers and students have available to them for gaining access to digital image libraries. To insure that these access mechanisms are reliable and affordable, the Digital Preservation Consortium needs to:

- Involve a broad base of constituents in technology development
- Involve a broad base of constituents in technology development and application of the technology. Access to research materials preserved in digital image form will depend on how well developers tailor the image technology to the needs of scholarly users of varying computer skills and with varying interests in the image documents. Developers must fully and directly consult researchers as well as those who serve them, including access service librarians, to verify that image access products and services integrate well into the daily routines of scholarly work and that they meet the performance and other delivery requirements of the user community.

Forge effective support structure for end users

Forge effective support structure for end users of digital image documents. Library and campus support staff must become informed and knowledgeable about digital image technology, its costs and benefits. They must create and disseminate appropriate documentation about the use of the technology and devise and implement other coordinated strategies for assisting users who need help in gaining access to digital image documents.

Determine the efficacy of access to digital materials in the context of traditional library collections

Explore in specific imaging projects and in academic and other appropriate national forums the efficacy of access to digital materials in the context of traditional library collections. Among the many topics that will benefit from detailed investigation and thorough discussion and debate is the question of whether research libraries need new and altered organizational structures and collection management policies to facilitate the most effective scholarly use of materials in digital image form.

Conclusion

The mission of the Digital Preservation Consortium is substantial and important. The joint effort and collaboration it fosters to achieve its mission will critically affect the development of an infrastructure, consisting of high quality production standards, effective storage and distribution mechanisms and well-educated personnel, for the use and development of digital image technology in the preservation and access of deteriotating library materials. Given its mission and goals for action, the Digital Preservation Consortium needs to establish a formal constitution with defined criteria for membership and an internal organization that can sustain itself in the execution of its mission and goals.