Gophers in the Archives: Planning and Implementing an Archives and Records Management Gopher

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Gophers in the Archives: Planning and Implementing an archives and Records Management Gopher

Michael Holland and Elizabeth Nielsen

Introduction* This paper was prepared and revised by the authors in 1993-1994 and accepted for publication by "Provenance" in 1994. Consequently, it presents the use of Internet technology by the OSU Archives and other repositories as of that time. Rapid advances in technology have been made during the last 2+ years, most notably in the use of the World Wide Web (WWW). In 1995, the OSU Archives launched its website

<http://www.orst.edu/Dept/archives>

which has gradually replaced the Gopher as our preferred provider. The OSU Gopher was discontinued as of March 1, 1997.

The archival community is within the early and unsettled stages of an important transition in information access as an increasing number of repositories and records management

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programs utilize powerful communications tools such as the Internet Gopher, Cello, and Mosaic.¹ By the spring of 1994, the authors identified well over a dozen academic institutions that had made descriptive guides to historical materials or records management information available through the Internet. Among the first repositories to make historical records descriptions available in this way were Johns Hopkins University, Wheaton College, Trent University, and the University of Virginia. Internet resources dealing with historical records are not, however, the sole province of academic institutions; the Texas State Archives, the Library of Congress, the National Archives and Records Administration, and the British Columbia Archives and Records Service have developed Internet finding aids.

This essay examines the planning, development, and implementation of the archives and records management Gopher located at Oregon State University. The authors will

¹ Internet access tools such as Mosaic and Cello, which are based upon non-hierarchical and non-document information structures, possess interesting potential for use by archives and users of historical information. Mosaic is a freeware Internet communications and search application developed by the National Center for Supercomputing Applications in Champaign, Illinois. Cello is a similar application developed by the Legal Information Institute of the Cornell Law School. Cello’s hardware requirements are significantly lower than those required by Mosaic. At this writing, Cello functions only in a Windows environment while Mosaic is available in both a Windows and a Macintosh version.
also discuss several issues that the archives and records management communities must address if the Internet is to live up to its potential. The authors do not present the Internet Gopher resources developed at Oregon State University as the only successful application of this technology or as the model for other archival and records management programs to emulate. The OSU Gopher, with its diverse yet integrated content, does however invite examination, criticism, and analysis.

The Internet Gopher, which is currently the most well-established and widely deployed Internet access application, is a user-friendly communications program. It allows one to find and use text files and databases located around the world through a unified and seamless set of directories and menus without the user having to know where the actual information resides or the specific Internet pathway. The program was developed at the University of Minnesota in early 1991 and is named for that institution’s mascot, the Golden Gopher.² Gopher, Mosaic, and all

other members of the family of network communication tools utilize the long-established Internet electronic communications network to link individual personal computers, public access file servers, and supercomputers. These new and easy to use communications technologies have made descriptive and records control information widely available. Internet access to detailed inventories and descriptions no longer requires the user to visit the institution's research room to consult finding aids. The researcher using finding aids on the Internet does not even need to contact the repository staff directly to request photocopies of finding aids. This passive reference service provided through the Internet Gopher

2(...continued)
the Internet and its basic tools are found on the Internet itself. These guides, such as *The Big Dummy's Guide to the Internet*, published by the Electronic Frontier Foundation in 1993 and again in 1994, contain the most timely and up-to-date information available on the Internet and its uses.

3 The Internet is a network of smaller networks that can trace its origins to the Department of Defense ARPAnet of the early 1970s. The communications protocol developed by ARPAnet designers was widely adopted and has been refined into the TCP/IP communications suite. The public Internet now in use is derived from a network, NSFNET, established by the National Science Foundation for use primarily by scientific researchers. Electronic files on the Internet are made available for public use by government agencies, academic institutions, and commercial as well as not-for-profit organizations.
saves the repository initial reference staff time and postage as well as providing the researcher with almost instantaneous access to finding aids. This creation of a virtual research room allows an archives user to avoid the time and expense of travel to collections of uncertain research value and to be better prepared when travel and research are warranted. Similarly, institutions wishing to provide wide public access to information about their holdings can utilize the Internet and avoid the considerable expenses associated with published finding aids, repository guides, and records disposition schedules.

Assessing Program Needs

The OSU Archives has had, since its inception in the early 1960s, the dual responsibility of the management of institutional records and the preservation of historical records and materials. Balanced service to a dual constituency—institutional and administrative users as well as public, student, and faculty researchers—has been a primary goal of the program. However, providing wide access and timely information has been difficult. Our goal of publishing a guide to the historical records and manuscripts of the university has not been achieved due to revision and distribution concerns as well as budgetary limitations. Descriptions of the historical materials held by the University Archives were relegated to unpublished finding-aids housed in the repository research area. The reliance upon unpublished finding-aids to describe historical materials forced researchers to either come to the facility to use the finding-aids and then determine their need to
consult the primary documents, or request the reference staff to do some time-consuming preliminary research. Either of these alternatives required the investment of time and/or financial resources that electronic access to finding-aids might eliminate or at least moderate.

An additional limitation of reliance upon in-house finding-aids rather than a published and widely available guide was the problem of collection identification and location. Researchers involved in a project without obvious geographical or institutional ties might never find relevant records and historical collections. The Archives is currently engaged in a development project to load USMARC AMC-format catalog records onto the University Library on-line catalog and subsequently OCLC. But at present no cataloging records exist which could direct researchers to potential primary resource materials. Electronic publication of detailed finding-aids to archival holdings with full text searching could do much to reduce this serious collection location and identification problem.

For almost a decade the records disposition aspect of the program has been served by the publication and occasional revision of the Archives and Records Management Handbook, which includes a sizable records schedule. While the records program satisfactorily achieved distribution of records control information to departmental records managers through a printed handbook, new retention information was not easily distributed.

Recognizing the shortcomings of relying only upon published administrative directives and unpublished in-house finding-aids, the OSU Archives evaluated means of
wide information dissemination with practical update capabilities. Distribution of ASCII based record schedules to all departmental records managers on floppy diskette or via an electronic-mail platform was considered, as was providing FTP-able files. Significant shortcomings discouraged such attempts to improve access to both archives constituencies. Traditional methods of information distribution and publication seemed either overly expensive, as in the case of hard copy publication; excessively difficult to update, as in the case of paper or diskette publication; or too complex for wide use, as in the case of FTP file sites.

Gopher Development

In early 1993, OSU's University Computing Services announced that an OSU Gopher server had been established and that Gopher client software was available for personal computer installation. Network users both on

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4 FTP, an acronym for File Transfer Protocol, is a communications program which allows one to transfer files between Internet-connected computers. FTP users are required to know some basic UNIX-like commands.

5 Gopher is a client-server publication, meaning that it consists of two independent software programs: the client or search engine program typically resides on a personal computer or work station, and the server or data management program exists on a mainframe or other large computer system. A particularly important feature of the Gopher software is its ability to conduct stateless communication. Stateless communication means that (continued...)
and off campus were encouraged to browse through the files already available, and university information providers were urged to use the Gopher for "publishing" their files or other resources.

Coincidental with this announcement, the University Archives was completing the editing and production of a new campus-wide records disposition schedule and an accompanying Archives and Records Management Handbook for distribution to all university administrative offices and academic departments. The OSU Archives immediately realized that the Gopher might well fill the need for the electronic publication of the new records schedule and handbook because it offered a cost-effective, easily-revised, and user-friendly means of information dissemination.

At the same time, as part of a comprehensive appraisal and processing project of all the Archives holdings, archives staff were continually preparing inventories and collection-level descriptions of institutional records as well as

\[5\text{(...continued)}\]

queries are sent from the client work station in discrete packets and the query is processed after the direct communication from the client to the server has been temporarily discontinued. The results of the search are then sent back to the client by the server program as discrete data packets. Thus while there appears to the user to be a continuous on-line connection, in actuality the connection has been open for a very short time. The Gopher client-server application creates a virtual on-line connection rather than a true continuous on-line communication session.
manuscript collections. These were being created electronically using both desktop cataloging software, MicroMARC AMC, for collection level cataloging records and word processing software for inventories. Older inventories were being converted into digital form by both document scanning and re-keying. The ultimate intent was to make summary cataloging records available on the University Library’s on-line public access catalog (OPAC) and have inventories and full descriptions available in the Archives for use by researchers. It was immediately obvious that the Gopher would allow finding-aids to be used not only by researchers in the Archives but by anyone possessing Internet access. During the next months, the OSU Archives extensively explored other Gophers, developed a draft outline of directory and file structure, and were trained by the campus Gopher administrator on the procedure for loading and updating files. The staff began loading files onto a developmental area of the OSU Gopher server in late March 1993 and continued to load files and modify the file and directory structure for the next several months. The developmental area of the OSU Gopher server was not available for public access. This developmental phase allowed the archives staff to experiment with various file formats and organizational structures away from public view.

All files were transferred to the public access area of the OSU Gopher server, and thereby the Archives and Records Management Gopher became available to on and off campus Internet users in early June 1993. The Archives Gopher included the new handbook and records retention schedule, collection descriptions and inventories, the
program newsletter, and other files describing the services and holdings of the University Archives. New and revised collection descriptions and inventories are added to the Archives Gopher regularly.6

Gopher Description

The Archives Gopher files comprise a portion of the OSU Gopher server and reside on a Sun 6/690 computer maintained by University Computing Services. The OSU Gopher includes information posted by academic departments, research institutes, student and faculty organizations, and the University Library, as well as other administrative units. Archives Gopher files are accessible through two different directories on the OSU Gopher’s main menu—one for library and reference services and another for administrative units.

The organization of the Archives Gopher reflects the primary services and functions of the program and consists of four major components: the Archives and Records Management Handbook, records disposition schedule, quarterly newsletter, and collection descriptions and inventories to the holdings. The hierarchical directory and file structure serves the casual browser by presenting short

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6 In June 1993, the Archives Gopher consisted of 616 files in 47 directories. Six updates have been made to the Archives Gopher, primarily the addition of new collection descriptions and inventories. As of August 1994, the Gopher included 745 files in 71 directories.
and unitized files in a logical outline format. The number of directory levels between the main menu screen and a text file varies, depending on the complexity and file size of the information being provided.

The first menu within the Archives Gopher includes three introductory files. "About This Gopher" explains how the Archives Gopher is structured, gives instructions for access, and outlines the directory and file structure. "Recent Additions and Changes" describes for the well-initiated user new and updated files that have been added to the Archives Gopher. "About the University Archives and Records Management Program" consists of the text of the program's brochure describing services and holdings. In addition, announcements of upcoming workshops and other events are occasionally posted on this main menu.

Handbook. The Handbook section includes all of the text and tabular information of the 1993 Archives and Records Management Handbook, presented in twenty files that directly parallel the chapters and sections of the forty-eight page printed version. The handbook provides information on a variety of records management topics including confidentiality and destruction of public records; electronic records; temporary inactive records storage; filing

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7 No Gopher file is larger than twenty-five kilobytes or about ten single-spaced pages. This limitation was originally imposed by software and communication speed constraints; however, it has been found that this file size serves the Gopher user quite well.
systems and equipment; and procedures for transferring permanent records to the Archives.

**Records Schedule.** The "Records Retention and Disposition Schedule" directory includes all of the information in the 275-page printed schedule. The files under the schedule directory consist of an introductory preface and about 500 series descriptions divided into twenty-six functional sections. Each of the series descriptions is an individual text file which includes the series title, alternate titles, a series description, the retention periods for both the record copy and other copies, and occasional special notes about the series.

**Newsletter.** All issues of the quarterly newsletter of the Archives, *The OSU Record*, are available on the Archives Gopher. Each issue of the periodical is included in a separate subdirectory with each article loaded as a separate text file. The latest issue of the newsletter is added to the Archives Gopher as soon as the printed version is distributed.

**Holdings Descriptions.** The most extensive component of the Archives Gopher is the holdings descriptions.8 Unlike the handbook, schedule, and newsletter which have been

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8 Although the 172 files in the holdings section comprise only about twenty percent of the total number of files on the Archives Gopher, they represent about two megabytes of the total three megabytes of Archives Gopher files.
distributed in paper form, these files have been published only in electronic form. The "Archives Holdings" directory consists of five subdirectories representing the five major components of the archives' holdings: "Institutional Records," "Photographs," "Manuscripts," "Memorabilia Collection" and "Films and Videotapes". Each of these subdirectories includes a file describing that portion of the holdings, a list of the constituent collections, and collection descriptions and inventories. The number of files per institutional record group or manuscript collection ranges from one to thirteen, but more than seventy-five percent of the collections are described in one file, and only ten percent require more than three files. While not all of the archives holdings are currently described in detail, the general information and lists of collections provide researchers with a preliminary indication of the scope and variety of primary materials held. The OSU Archives initially loaded general descriptions of the holdings and has subsequently added more detailed collection descriptions as they are prepared.

Other University Archives and Records Management Gophers. One of the fundamental features of the Internet Gopher software is its capacity for making files at other locations easily available. The Archives Gopher attempts to increase ease of use by providing direct access to other university archives and records management Gophers through a main Gopher menu option. This is intended primarily as a service to our on-campus users who may not be familiar with other repositories. A similar service
provided by The Johns Hopkins University Special Collections and Archives was the model upon which the OSU system is fashioned. The "Other University Archives and Records Management Gophers" menu option directs the user to only those Gophers that meet selected criteria. The information provider must be a higher education institution. The Gopher files must be full-text files that describe a repository's archival holdings and/or manuscript collections or provide records management information. Gophers that only direct or refer users to an on-line catalog or database are not included.

**Searching.** One of the primary advantages of Gopher is the ability to perform full-text file searching. We have attempted to organize the Archives Gopher files in a logical way that allows for browsing and will not require the familiar user to always employ the search program. However, full-text searching provides greatly increased access to both the records schedule and the holdings descriptions. Searching is available for all the Archives Gopher files from the main Archives Gopher menu or is available for only certain sets of files, such as the schedule or holdings descriptions from

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9 The Johns Hopkins University Special Collections and Archives staff volunteered, in early 1993, to create and maintain a "master list" of other university and college archives Gophers as a menu option on their Gopher server. The University of Michigan clearinghouse of subject-oriented guides also includes a preliminary guide to archives providing information via the Internet.
subordinate section menus. With some large text files, it may be advantageous to download the file to the user's personal computer and use the search capability of a word processing program to locate the exact search terms within a file.

Gopher searching is not limited to a single Gopher or the files of only one particular institution or agency because of Veronica, a service for limited searching of all public-access Gopher servers. Veronica does not provide full-text searching of Gopher text file contents, but its capability to search all the file and directory names on all Internet Gophers allows users to locate resources that otherwise might remain unknown. Access to Veronica is provided through the main directories of most Gophers under the heading "Other Gopher and Information Servers" or "All the Gophers in the World." Like the Internet Gopher, Veronica is a new product and continues to be refined and upgraded.

Gopher Usage

The Gopher server software automatically produces periodic access reports indicating which files and directories have been selected by users and how many times for each. Because of the newness of the Archives Gopher, we are unable to draw broad conclusions regarding usage and access, and we have not performed a rigorous scientific
survey; however, we have noted the following preliminary observations.\(^\text{10}\)

The OSU Archives Gopher is being accessed hundreds of times per month. All of the different types of files on the Gopher are being accessed—collection descriptions, records dispositions, and the program newsletter.

Usage reports also indicate an increase in the retrieval of records dispositions after the Archives offered several records management workshops for departmental personnel that included on-line training on use of the Archives Gopher. This suggests that offering a workshop on the use of the Archives Gopher to our "researcher" audience, primarily students and faculty, would probably increase retrieval of files in the holdings section.

Contacts by electronic mail, telephone, and post indicate that the Archives Gopher has been used by individuals not affiliated with OSU. Not only have the holdings descriptions been retrieved by off-campus users, as one would expect, but the records disposition files have been of interest and use as well, primarily to individuals at colleges, universities, and other public institutions who have the dispositions as

\(^{10}\) Interest of the archives community in the impact of providing electronic access to finding aids was evidenced in an extensive discussion on the Archives and Archivists Listserv in December 1993 as well as a November 1993 survey by Jeremy Megraw and Deborah Sherman of Long Island University Palmer School of Library and Information Science.
guidelines in preparing dispositions for their own institutions.

The Archives Gopher has also proven to be a useful tool for researchers who come to the Archives. The Gopher seems to be especially useful to researchers whose interests or topics are broad and who could benefit from understanding the full scope of the repository's holdings. Researchers who visit the University Archives also benefit from the search capabilities of the Archives Gopher.

**Some Observations on Developing a Gopher**

Based upon OSU's experience in setting up an Archives Gopher, the authors suggest that a hierarchical organization will make files more accessible to all users, including browsers and especially those who are unfamiliar with the repository. An outline-style directory structure also facilitates smaller file size. In addition, it is best that the selection of the archives title or program name is not too institution-specific, i.e., assuming that a Gopher user will know to which administrative subdivision or library section the repository reports. It is essential to remain mindful of the limitations of the Gopher on-screen format; a document that looks good in a printed guide may not provide a satisfactory form for a screen display. All Gopher files are in ASCII format, which means no graphics or textual enhancements such as bold, underline, or italics are available. Even centering of text, which will transfer easily into ASCII format, may not be an appropriate use of the limited space on a Gopher screen and may not deliver a useful printout.
It is important to be aware that Gopher software is new and constantly being revised and updated and therefore data migrations and compatibility concerns must become part of institutional routine. It is also important to understand that the Internet Gopher is freeware software, and, while it is available at no charge, it also comes with the disadvantages of limited technical support and written documentation.

Finally, using a "developmental area" not available for public access to load and re-organize files and directories is highly recommended. This preliminary step allows for testing and manipulation away from public view. Once significant numbers of files are loaded they can then be easily transferred to a public-access Gopher.

Conclusions and Considerations
Making finding-aids to archival materials and records management information accessible through the Internet has proved beneficial to the OSU Archives and Records Management Program. The Gopher allows researchers with an Internet connection to have access to the Archives finding-aids at little or no cost to the researchers or to the Archives program. Publishing and distributing a conventional printed guide to OSU's holdings would have been prohibitively expensive. Without the Internet Gopher there would have been little possibility that the finding-aids and records schedule would have been widely available beyond the boundaries of the campus. The Internet Gopher created for the University Archives not only a virtual
research room but also a virtual records management manual and records schedule.

Internet finding-aids are more immediately beneficial to users than printed guides because partial and newly created descriptions may be quickly and easily added to the Gopher. In producing a published guide to holdings, which must be as comprehensive as possible to justify the expense of printing and distributing, the institution must complete all descriptive materials before publication may proceed. The capabilities of the Internet Gopher for frequent revision can result in the researcher gaining access to a finding-aid shortly after the archivist gains intellectual control of a newly acquired or newly processed record group or collection.

The Internet Gopher is also an excellent planning tool. Much like a printed guide to the holdings of an institution, finding-aids on the Internet should move one to plan and establish processing, preservation, and description priorities for the collections and record series in one’s holdings. While publishing finding-aids and reference tools through the Internet Gopher alleviates the need to gather all descriptions prior to sending the guide to the printer, placing descriptive materials on Gopher does stimulate the responsible archivist to develop a comprehensive plan for administering archival holdings. Consequently the OSU Archives has established priorities for arrangement and description. The need to prepare succinct and comprehensive descriptions to the records of the University President’s Office led staff to take the decisive step of fully describing and reconciling microfilm and paper holdings.
It has also served to point out areas of weakness in institutional documentation. 11

The Internet Gopher, as it now exists, is not a substitute for cataloging and subject analysis. Researchers continue to need a means of locating specific materials through subject terms. Full-text searching of all files on all Gopher servers will be essential before any move away from bibliographic utilities and cataloging can be considered. Veronica, with its many impressive features, is not the tool that will eliminate or even ease reliance upon cataloging and on-line public access catalogs.

One of the advantages and thereby the attractions of Gopher is the lack of standards for format and content. This allows institutions the flexibility to establish Gopher descriptive programs that best serve their needs. However, this is at the same time a disadvantage. Without standards, there is a wide variability in the format, quality, searchability, and content of archives and records Gophers. Because of the easy availability of digitizing technology, it has become easier for repositories to digitize and load inventories and calendars without much forethought or editing for consistency and convention. Loading files onto an archives Gopher does not relieve one of the responsibility of following established professional guidelines for arrangement and description, including rigorous subject

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analysis and vocabulary control, which at present can only be provided by "cataloging." Gopher allows one to creatively implement existing descriptive guidelines within a new medium. The OSU Archives Gopher intentionally includes collection-level descriptions with the standard descriptive components of Title, Date, Scope and Content Note, Physical Description, Biographical or Historical Note, and Provenance Note, from which the USMARC AMC cataloging records are derived.

The development of a clearinghouse or coordination center for all institutions, agencies, and organizations loading records control and historical records descriptions on the Internet would be most helpful. This is a potentially daunting task for any single institution that might take up the challenge. The Johns Hopkins University Special Collections and Archives Department has served as a model for development of "Other Archives" directories. OSU and several other institutions have emulated Hopkins in this area. However, the difficulty and practicality of a single institution serving as a coordinating center for hundreds of institutions with established records and archives Gophers is intimidating.

In conclusion, the development of the Archives and Records Management Gopher at OSU was a very productive experiment. The Gopher is an impressive tool, but it is also in its infancy and thus somewhat crude in appearance and performance. The authors are not of the opinion that the Internet Gopher, in its current form, is the Internet product destined to dominate archives, records management, or any other information management
endeavor. Refined Internet Gopher versions or alternative products, such as World-Wide-Web servers (WWW), which perform similar tasks in enhanced ways, will undoubtedly be developed in the near future. Nevertheless, the experience gained in the planning and development of the OSU Archives Gopher was valuable. The comprehensive digitization of all record schedules, finding-aids, and other publications potentially is of even greater importance to the program. This systematic creation of electronic resources will allow the Archives and Records Management Program to migrate with and adapt to the changing technology of the Internet. Like hosts of FTP archives, Gopher information providers have achieved sound footing upon the path of migration to future Internet technology.

Michael Holland was the university archivist for the Oregon State University in Corvallis, Oregon, from 1989 until January 1997, when he became the University Archivist and University System Archivist for the University of Missouri at Columbia. He was previously the assistant director of the Local Records Division of the Texas State Library and Archives in Austin, university archivist at Appalachian State University in Boone, North Carolina, and worked as an archivist at the Tennessee State Library and Archives in Nashville and the Oklahoma Department of Libraries in Oklahoma City.

Holland delivered an earlier version of this paper to a meeting of the Reference, Access, and Outreach Section at the annual conference of the Society of American Archivists held in New Orleans in September 1993, summarized in that section's Fall 1993 newsletter (v. 9, no. 1).

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