Searching for Wisdom on the World Wide Web: A Modest Beginning

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I'd like to begin with a quotation from someone concerned about a new technology:

> ...this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories...they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality [2].

The writer is not a contemporary doomsayer, not Sven Birkerts, author of *The Gutenberg Elegies*, or Clifford Stoll, author of *Silicon Snake Oil* [1, 3]. No, the source is Plato, and the speaker is a character in a Socratic dialogue, in conversation with the god who invented letters. For the technology that so concerned Socrates was the written word: he saw that it would replace what he perceived as the only true way to communicate information – orally – with a new, inferior, method of communication – writing.

Many scholars, I believe, are approaching the electronic world with somewhat the same feeling of impending doom, and with a greater sense of potential loss – of control, of structure, of boundaries – than of gain. Though I do not want to minimize the potential difficulties, I would like to offer some words of encouragement, and to provide some examples of uses of the World Wide Web that offer truly remarkable opportunities.

There is no doubt that members of the academic community feel themselves pushed toward electronic methods of information dissemination. They are pushed from both above and below. On one side, libraries and administrators see an opportunity to provide and maintain more information at less cost, with the result that some types of information are now available only in electronic form. If you walk the halls between Widener and Pusey libraries at Harvard University, you will find them lined with those beautiful old oak card catalogue drawers – dozens of chests, hundreds of drawers – all of them empty. Their entire contents now reside on HOLLIS – the Harvard On-Line Library Information System. The same is of course true for many other libraries.

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On the other side, faculty find themselves pushed by students. Incoming college students in the mid-1990s have grown up with Atari, Nintendo, and Sega games, have graduated to *Zork*, *Doom*, and *Myst*, and think of an encyclopedia as something put out by Microsoft on a CD-ROM, not as a shelf's worth of oversized, cumbersome, but occasionally fascinating books. These students may not know the Dewey Decimal System, but they can telnet, FTP, and surf the Web without hesitation, and they will not be put off by the presence of a computer monitor at their desks. The electronic classroom, as evidenced by the one at the University of Maryland, College Park, is already here, and it will become more prevalent in the next few years. Teachers need not fear, however, that the use of computers in classrooms rings the death knell of the teacher's role – quite the contrary.

Indeed, my purpose in this essay is to make the argument that there is a need for academics to understand this technology and, even more important, to learn how to use it well and to create content for it, just as they have done for the print books and journals that have been the more familiar currency of scholarly exchange.

The electronic medium, particularly the World Wide Web, offers several advantages for dealing with certain kinds of information:

- Preservation – Fragile or rare documents can be digitized and stored electronically.
- Wider Access – Once digitized, information can be widely shared, because the materials are not handled. Students can be introduced to primary source materials, even rare and fragile documents, allowing them to work directly with the historian's tools.
- Multiple Simultaneous Access – A single copy of a work or manuscript, placed on-line, can be accessed at the same time and from any location by as many users as the system can accommodate.
- Comparatively Low-Cost Quality – Color, design, and various complex types of organization can all be employed to enhance the value of information, because the costs of printing and distribution are minimized.
- Searchability – Large and complex amounts of information can be made searchable when texts and images are digitized.
- Timeliness – Because production is easy and distribution instantaneous, time-sensitive information can be placed on the Web very efficiently.
- Interactivity – The use of forms and other programming devices can allow feedback between the user and the server; the existence of hyperlinked text that provides a nonlinear way of moving through materials can also turn sites into a "choose your own adventure" experience.
- Communication – Because information can be made available on the Web quickly and relatively easily, it is efficient to provide it; even short-term information can be posted and deleted as necessary, making it cost-effective to reach a wide audience quickly.
- Experimentation – As with any new technology, we are in a period of experimentation and rapid change; the entry costs are small and barriers

are few. This is a situation that may not last long, and it is important that the academic community participate and experiment while the opportunity exists.[1]

Because the World Wide Web is such a visual tool, the best way to demonstrate its potential is through example. To this end, and as a small step toward making information available to this group electronically, I have been working this spring to revise the Business History Conference WWW site, located on the Cliometric Society server at Miami of Ohio.[2] I wanted to make a distinction between fairly static information about the BHC and more dynamic material by and for BHC members. So, in the main BHC area, there is information about the history of the Conference, a list of past presidents and meeting sites, a bibliography of the contents of *Business and Economic History*, the contents of the most recent volumes, a list of awards available to business historians, Newcomen and Krooss prize winners, and so forth. In the second area, to be called "The Exchange," I am creating a set of "departments": "New and Forthcoming Books," "Archival essays," "Original Documents," "Professional News," "Demonstration Projects," and "Hot Links" to other WWW sites of interest to business historians. The "Books" section currently has only a prototype up, but it will eventually include a bibliography that changes twice a year based on the Spring and Fall offerings from publishers' catalogues. The "Documents" section will have digitized versions of useful primary sources in business history; the first will be Alexander Hamilton's "Report on Manufactures."

One of the primary goals of "The Exchange" is to provide a forum for experimentation with scholarly materials in business history on the Web. As a start, today I am going to show you the beginnings of such a project. The material I chose is based on two papers that JoAnne Yates presented at earlier Business History Conferences, detailing her work on the growth and evolution of record-keeping devices and methods and their impact on the managerial enterprise [5, 6]. I chose these materials for a number of reasons: first, I know JoAnne and thought she might be interested in such a project; second, her work is of a nature that can be greatly enhanced by visual presentation, and indeed her book, *Control through Communication* [4], is thoroughly illustrated. Finally, her work was based on records that are both accessible and, in the case of printed primary source documents, old enough to present few copyright problems. To my great pleasure, JoAnne was extremely enthusiastic, and appeared on my doorstep one evening with two armloads of documents and pictures, the bulk of

[1]The appendix at the end of this essay lists the WWW locations that demonstrate in part the characteristics I have outlined. There is not time to examine each of them here, but I hope you will take some time to explore those that interest you.

[2]In April 1996, the owner of this server, now designated the Economic History Server, became EH.Net, a non-profit organization dedicated to the dissemination of economic history materials on the Internet. The BHC is represented in this group.

her primary research materials for those articles and her book.[3] The version that I am presenting here, "For the Record," is a work in progress; it is not yet available on the Web, but we hope to have it publicly available soon. There are two or three ideas behind the project. First, it is conceived primarily as a teaching tool, although it is certainly also a "publication." Many of the objects and methods JoAnne addresses, such as punch cards and letter presses, are things about which students in the 1990s will have no mental images. So we provide links in the text to images of those objects. Similarly, when she writes of the need to manage railways over long distances and the ever-present fear of wrecks, we can link to images depicting railroad rules, train wrecks, schedules, and early examples of railroad rules.

Second, and perhaps more useful at a scholarly level, we can provide full texts of some of the primary sources cited, because space is not at premium. When JoAnne mentions Daniel McCallum's well-known report to the president of the Erie & New York Railroad about his organizational methods, we can link to the actual report, as well as to a photograph and brief biography of McCallum. In the course of her argument, JoAnne uses records of DuPont, particularly those about the Repauno plant, and of the Scovill Manufacturing Company. In both cases, we can use available materials to provide both portraits of some of the main actors and illustrations of the documents and tools about which she writes. When she discusses Frederick W. Taylor, Alexander Church, and other proponents of scientific management, we can link to texts of their writings, so that the student can have at hand a more lengthy example of their work than the essay itself has room to provide.

One of the purposes of this project is to provide an opportunity to discover the pitfalls as well as the promises of Web publication, and we have already run into several of those. Indeed, one of the interesting – and somewhat problematical – things about the Web is that projects need never end. The costs of changing and rearranging material are so small that the temptation is to go on forever. Anyone who has ever made an error in print and realized that it was there for all time can only be jubilant about the ability to go back and fix such things. But then, what is publication? What is a "true" record? In this ever-changing sea of information, where does one find verification? When is something "on the record"? On a more mundane level, how do we make these pages citeable? There are no page numbers, just many paragraphs, images, and screens. We know that the main citation will be the URL, but we have to go beyond that to make it possible to find, for example, a quotation that occurs in the middle of a many-screened document.

So, as you can see, we have much more to do on this project. But I hope exploring it even in this abbreviated and preliminary way has opened up for you some of the possibilities for placing scholarly material on the World Wide Web.

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[3]I must express my gratitude to JoAnne Yates, who trusted me to take her research and make it the basis of an experiment, and to Glenn Porter of the Hagley Museum and Library, which is the source of much of the material used, for giving us permission to place the images and other primary documents on the Web.

If we want the electronic world to be full of wisdom rather than show, then the scholarly community must devote the same effort to make available effective, informative, and useful material in this medium as they have for centuries in the print world.

Appendix of Web Page References

Harvard On-Line Library Catalog (HOLLIS)
http://www.harvard.edu/home/library.html

University of Maryland Computer Classroom
http://www.bgmt.umd.edu/tqproject/theater.html

Thomas Jefferson Letter
http://etext.lib.virginia.edu/images/modeng/public/JefCoop2.jpg

Project Muse at Johns Hopkins University Press
http://muse.jhu.edu/

Government Statistics Server
http://www.stat-usa.gov/BEN/subject.html

SIC Search Engine
http://www.lib.virginia.edu/socsci/sic.html

Organization of American Historians
http://www.indiana.edu/~oah/index.html

The Valley of the Shadow Project
http://jefferson.village.virginia.edu/vshadow2/

Business History Conference Home Page
http://cs.muohio.edu/~bhc/

The Exchange Home Page
http://cs.muohio.edu/~bhc/Exchange/

References

1. Sven Birkerts, *The Gutenberg Elegies: The Fate of Reading in an Electronic Age* (New York, 1994).
2. Plato, *Works of Plato: Phaedrus*, trans. Benjamin Jowett (New York, 1956), p. 323. I first found this quotation in Laura Fillmore, "On-Line Publishing: Threat or Menace?" conference paper (March 1993), at http://www.press.umich.edu/jep/works/fillmore.threat1.html.
3. Clifford Stoll, *Silicon Snake Oil: Second Thoughts on the Information Highway* (New York, 1995).
4. JoAnne Yates, *Control through Communication: The Rise of System in American Management* (Baltimore, 1989).
5. JoAnne Yates, "For the Record: The Embodiment of Organizational Memory, 1850-1920," *Business and Economic History*, 2d ser., 19 (1990) 172-82.
6. JoAnne Yates, "Information Systems for Handling Manufacturing and Marketing Data in American Firms, 1880-1920," *Business and Economic History*, 2d ser., 18 (1989) 207-17.