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**Technology, Libraries and the Internet:
A Comparison of the Impact of the Printing Press
and World Wide Web**



**Plenary Session Speech given October 9, 2001
International Scientific Conference in Library-
Information Service
V. Vernadsky National Library of Ukraine, Kiev, Ukraine
October 9-11, 2001**

Gentry Lankewicz Holbert, MLIS
Lecturing Fulbright Scholar, Ukraine

It is my honor to be here today at this grand institution, the Vernadsky National Library of Ukraine, to deliver words about the impact of technology on libraries. I have spent the past few weeks discovering and learning about the Vernadsky Library, one of the largest and most unique collections in the world, housed in architecturally significant buildings in historic Kiev.

In thinking about technology and libraries, what struck me most is that we are living and experiencing a great turning point in history. "May you live in interesting times" is an ancient Chinese curse. Interesting times indeed, with all their glory, advantages, and pitfalls. We are still in the process of discovering what to do with new technology in the dissemination of information.

With the dawn of the Internet, computer automation, and intricate databases, I feel that, as a librarian, I am at the helm of the true information age. And how interesting to be here at the Vernadsky Library, whose collection includes ancient and rare documents from the beginning of book printing days.

As I recently visited the Ancient & Rare Book Department here and was in awe of the collection including Gutenberg to the 19th century, incunabulas and old printed Cyrillic books, I began to think of parallels between the book and Gutenberg's invention of the printing press in the 1400's to the invention of the Internet and the World Wide Web in 1989. Some historians suggest that print was instrumental in bringing about all the major shifts in science, religion, politics and the modes of thought that are commonly associated with modern Western culture. What will the Internet and new computer technology bring?

The Internet, like the evolution of the printing press, has changed and will continue to change history. Like the printing press, it's a new way to disseminate information to larger amounts of people faster than ever before. While new technology is available, new questions arise. How do we fund this new technology? How do we keep up with technology doubling every 18 months? How do we educate our users? So much information is coming so fast that it's like drinking from a fire hose.

I am not the first to see parallels between the printing press and the Internet. Others have compared the impact of the two, but I would like to highlight some points I see particularly relevant to libraries today: freedom, access, and control.

Freedom

Print technology facilitated a communications revolution that reached deep into human modes of thought and social interaction. Print, unlike the oral traditions, encouraged the pursuit of personal privacy. Less expensive and more portable books lent themselves to solitary and silent reading. This orientation to privacy was part of an emphasis on individual rights and freedoms that print helped to develop (*Rubinstein, 1999*).

Like the printing press, the Internet offers freedoms of privacy of thought and inflection and freedom from institutional control. Even in modern times, information has always been controlled through TV, radio, and newspapers. The Internet allows for more freedom; there is no one single owner or interest behind the Internet (*Every, 1999*).

With the Internet, we each have our own printing press. We've cut out the middleman. The amount of information and the speed of access is astronomical. It's instant and it's interactive. Allowing immediate feedback, it entices the user in a different way than ever before.

Access

After the advent of the printing press, there was still a low literacy rate in Europe. Most people did not know how to read at all. But non-literates were still affected by the book trade because the elites, who controlled society, were affected by books. And people who could not read still had access to book culture because there were traveling entertainers who stood in the market and read.

The printing press and subsequent publication of books for mass consumption began to yield to the rise of an intellectual middle class. The possibility of changing one's status infused the less privileged with ambition and a hunger for education.

It has been stated that the printing press is a 'one-to-many' technology. The Internet is a 'many-to-many' technology. And that was what changed in 1989 with the advent of the World Wide Web (*Southon, 2001*).

Today, libraries try to fill that hunger for knowledge and education. Public libraries strive to offer Internet access to all patrons, regardless of social class or ethnic background.

However, we still have a long way to go. At last report, half a billion, or about 8.46% of the world's population have Internet access (*Foley, 2001*). The numbers are growing as some countries have more than half of their populations online. Every day more and more people have access to the Internet. But in general, most people, on the grand scale of human population, are Internet illiterate.

Control

The Industrial Age was about centralization and control. The Information Age is about de-centralization and no control. No government and no media magnate control the Internet. This is the crucial thing to understand about the Information Age (*Southon, 2001*).

Interestingly enough, there were almost immediate issues around copyright and censorship with the advent of the printing press just as there are issues with copyright and intellectual property surrounding the Internet. Some interesting examples I found online were (*Mann, 1998*):

* In 1637 an Act was passed to limit the number of publishing houses in England and in 1644 a Licensing Act followed, which required all publications to go before an official censor for approval.

* In 1790, Immanuel Kant wrote that every artistic work consists of a physical object and a piece of its creator's spirit. Thus readers can freely copy books, but only in ways that respect the writer's integrity -- an idea that slowly grew into the current European system of copyright.

* In the 18th century, Germany consisted of about 350 tiny states, each with its own laws. When writers published books in one state, printers in adjacent states were free to copy it -- and did.

Different states with different laws. Different jurisdictions with different laws. Doesn't this sound familiar in our new Information Age as we try to standardize copyright and intellectual property laws?

Downsides

With the glory of freedom, access, and control there are also downsides and naysayers to this new technology just as there was with the printing press. So explosive was the demand for literature in the 18th century that some worried commentators decried the "reading plague" that had swept the populace (*Mann, 1998*).

Other downsides to the printing press included propaganda wars, secret societies, and other abuses that were created or enhanced by the capabilities of the printing press.

Security, online terrorism, viruses, loss of privacy, incorrect and harmful information, censorship, and lack of censorship are all issues facing the Internet (*Dewar, 2001*). I discovered some of the downsides firsthand with my own Internet company last year: scam artists, misleading information, misleading statistics, Web site sabotage.

Impact

In past and present eras, information technology seems to be driving history.

We don't know the full impact of the Internet. Today, attempts to explain the impact of computers and the Internet on the economy, education, and society, have recreated the early modern problem of information abundance. How, they ask, have information technologies really affected workplaces, organizations, and society? How are people and institutions actually integrating computers and networks into their everyday work, and how do they find new uses for these technologies?

Let us not forget that digital information is as dependent on physical systems-- hard drives, servers, monitors-- as the printed word is on books. It doesn't necessarily eliminate work or jobs, but changes the structure and processes. It changes the dissemination of information. Librarians are far more accommodating than search engines of the circuitous ways people go about looking for information. It's important to understand the limits of technology as we integrate it into the workplace.

To utilize new technology, we must bond together as libraries, share information, and work together to make the best of what's available. Later in the conference, I will talk about one particular new program, Prospero, that has changed the way many libraries deliver documents to patrons. It's a free, Web-based program, which delivers full text and images to patrons, while controlling copyright issues. As newer technology, I believe it offers freedom, access, and control. The question is, how do we make the best use of it?

I am a librarian, an information specialist. I have experience in the academic, non-profit, and private business arenas related to library science, information management and retrieval. As a librarian, I have a passion for information and research, and the skills to share this knowledge through teaching. As librarians, we must network and train each other as well as our users. I believe this new age of technology only enhances my job as an information specialist and librarian. These are interesting times indeed, and it is our job as librarians to take the helm and steer technology to our benefit.

Gentry Holbert, MLIS, is the Library Director at the Mobile Infirmity Medical Center and Adjunct Assistant Professor at the University of South Alabama in Mobile, Alabama, USA, where she teaches e-commerce courses. She has more than 10 years of experience with the Internet including teaching, Web page development, and library integration in a variety of settings including academic and special libraries. She is currently a Lecturing Fulbright Scholar in Kiev, Ukraine.

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