

‘Attend to Your Configuration:’
Libraries in a Smaller, Flatter World
Military Librarian’s Workshop
San Antonio, TX, December 5, 2006

Thank you, Greta, for that gracious introduction. I am very pleased to be here with you today to participate in the Military Librarians Workshop. Please allow me to join in welcoming you to Texas.

When I was invited to speak to you today, I was asked to provide an overview of the world of librarianship in the current century, “the big picture” is the phrase that was used. That necessarily entails making predictions, and as Yogi Bera said, making predictions is difficult, especially when they are about the future. Trying to predict the future is always a perilous endeavor.

The world is changing fast. The focus of most of our attention, of course, is the rapid pace of technological innovation. Over the past two hundred years most of the major changes in our society and the way we live our lives have resulted from technological innovation. And over the past two centuries we have been consistently and spectacularly wrong in perceiving and understanding the impact of those changes as they occurred, let alone in predicting what future changes would be like. We were wrong about trains, we were wrong about automobiles, we were wrong about airplanes, we were wrong about radio, we were wrong about telephones, we were wrong about almost everything. Here are just a few examples of how spectacularly wrong some very smart people were in understanding and predicting the future:

- In 1876 the chief executive of Western Union (the telegraph company) was quoted as saying “This ‘telephone’ has too many shortcomings to be seriously

considered as a means of communication. The device is inherently of no value to us.” Two years later he had modified his view and admitted that sooner or later “every town will have one.”

- Lord Kelvin, president of the Royal Society, said in 1895 that “Heavier-than-air flying machines are impossible.” And in 1897 he said that “Radio has no future.”
- In 1943 Thomas Watson, founder and chairman of IBM, said “I think there is a world market for maybe five computers.”
- Ken Olsen, the President of the Digital Equipment Corporation, said in 1977 that “There is no reason for any individual to have a computer in their home.”

And even Bill Gates, who specifically set out to prove Olsen completely and utterly wrong about computers in the home, famously said that he couldn't conceive of anybody needing more than 640K of memory in their computers. Try running today's Microsoft Windows with even 20 times that.

We all know that the world in which libraries operate, and the institutions and communities that they serve, are changing at a pace perhaps never before experienced in the history of the world. Undoubtedly the most important factor in the pace of change is the impact of networked digital information technology. Recently, at a symposium on research libraries in the 21st century at the University of Texas, University of Michigan President-Emeritus James Duderstadt noted that information technology has been and will continue to be a disruptive technology, profoundly altering the way universities operate. And Duderstadt commented that “in many ways the library is the poster child for this phenomenon.” 1

Duderstadt cited the 2002 study by the National Academies, *Preparing for the Revolution: Information Technology and the Future of the Research University*. The report noted that Moore's law shows no sign of slowing down. If anything, the IT revolution is proceeding more rapidly.

“the extraordinary pace of the IT evolution is not only likely to continue but could well accelerate. One of the hardest things for most people to understand is the compound effect of this exponential rate of improvement. For the past four decades, the speed and storage capacity of computers have doubled every 18 to 24 months; the cost, size, and power consumption have become smaller at about the same rate. As a result, today's typical desktop computer has more computing power and storage than all the computers in the world combined in 1970.”²

We used to speak of storage in terms of kilobytes of data. I remember the IBM 1620 computer that I learned to program on as an undergraduate had 32KB of RAM. The first personal computer that I owned (a KayPro) had 64KB. We soon advanced to megabytes, then gigabytes, then terabytes. We now think in terms of petabytes.

In 2000 Peter Lyman and Hal Varian estimated that “if digitized with full formatting, the seventeen million books in the Library of Congress contain about 136 terabytes.” We now have the capacity to store that in a device about the size of a football. Think of that—the Library of Congress on your desktop.

This information technology is profoundly disruptive. The cyberinfrastructure is ubiquitous, it is interactive, and it is functionally complete. As a result, we now operate with the open paradigm—open source, open content, open learning, open knowledge.

Brewster Kahle's vision of "universal access to all human knowledge" used to seem quaintly quixotic to me; it now begins to appear not only possible but highly probable.

As the National Academies report points out, "the impact of IT on the university is likely to be profound, rapid, and discontinuous, affecting all of its activities (teaching, research, and service), its organization (academic structure, faculty culture, financing, and management), and the broader higher education enterprise as it evolves toward a global knowledge and learning industry."³

What is said here about higher education pertains, I think, to *all* of the environments in which libraries operate. It is undeniable that we now operate in a networked global environment. Globalization is a key phenomenon. Thomas L. Friedman is perhaps the best known and most widely read prophet of globalization. In his best-selling *The World Is Flat: A Brief History of the Twenty-first Century* Friedman analyzes the progress of globalization with an emphasis on the early 21st century.

Friedman posits that the world is now entering the era of "Globalization 3.0." Globalization 1.0, ran from the end of the fifteenth century until the beginning of the twentieth century. Toward the end of this period was the boom of railroad construction and the advent of the ocean-going steamship. This first phase of globalization took off under coal-and-steam power. There was no shortage of fuel, the colonial boundaries were stable, and the pipeline of raw materials from them to the factories of western Europe ran smoothly. Trade boomed between the great powers. It all came to a screeching halt, however, with the Great War and the realignment of world government and trade that followed.

Globalization 2.0, lasted through the twentieth century. In this period "the key agent of change, the dynamic force driving global integration, was multinational companies, driven to look abroad for markets and labor, spurred by industrial-age "breakthroughs in hardware" such as trains, phones and computers. That epoch ended around 2000, replaced by one in which individuals are the main agents doing the globalizing, pushed by "not horsepower, and not hardware, but software" and a "global fiber-optic network that has made us all next-door neighbors."

Friedman's analysis has received a great deal of criticism, much of it accurate and valid. But the essential notion that local, regional and national boundaries are now of considerably less significance in the knowledge marketplace is hardly subject to serious challenge.

WSIS

I personally have had the opportunity to experience the international aspect of library development in the past few years, and would like to take this opportunity to share some of those experiences, and the perspectives I have developed as a result.

Let me turn first to the World Summit on the Information Society (WSIS). In 1998, the International Telecommunication Union (a suborganization of the United Nations) adopted a resolution requesting the UN to convene a World Summit on the Information Society. A majority of UN organizations and agencies expressed support for the Summit, and it was decided that the Summit would be held under the high patronage of the UN Secretary-General, with ITU taking the lead role in preparations.

The Summit took place in two phases; the first phase was in Geneva in December, 2003, the second phase was in Tunis in November, 2005. The Geneva meeting addressed

a broad range of themes concerning the Information Society and adopted a Declaration of Principles and plan of action. The Tunis meeting focused on development themes, assessed progress that has been made and adopted a plan of action.

The preparations for the Summit were coordinated by a Preparatory Committee, which organized a series of Preparatory Conferences, or “PrepComms” in UN –speak, which met from July, 2002 to December, 2003. These meetings were to develop the Declaration of Principles and the Action Plan.

In my view, the primary outcome of the PrepComms was to demonstrate a broad range of issues about which there appeared to be little agreement. WSIS had started out as an event, suggested by the ITU, primarily intended to focus on issues related to the extension of Information Communication and Technology (ICT) infrastructure in developing countries. It was primarily to address issues related to technology and governance, with a focus on ICT as an engine for sustainable economic development. As participation in the planning process broadened to include many other players, however, the range of issues quickly broadened to embrace many social, political and financial factors. In other words, the focus shifted from building networks of boxes and wires to concerns about who would use the networks, for what purposes, and also to considerations about what content would be made available. As you may imagine, this enormously complicated the process of developing a declaration of principles and action plan.

One facet of this evolution was the engagement of UNESCO in the preparations for WSIS. As the UN organization primarily focused on issues related to education, science, and culture, UNESCO quickly realized it was a major stakeholder in WSIS. And

UNESCO is much more interested in content and application than in boxes and wires. In an effort to influence the focus of WSIS, UNESCO organized (within the framework of its biennial General Conference in Paris) a special Ministerial Round Table on “Toward Knowledge Societies.”⁴

The perspective of UNESCO on the role of ICT is apparent in the title for this conference within a conference. The juxtaposition of UNESCO’s “Knowledge Societies” with the ITU’s “The Information Society” is by no means accidental; it reflects an intent with a significant difference of perspective. UNESCO asserts that it is important to focus on knowledge rather than merely information. And the use of the plural form of “society” connotes the importance of recognizing the diversity of social and cultural contexts in which ICTs must be implemented and adapted.

Because in 2003 the United States had decided to rejoin UNESCO after an absence of almost twenty years, I had the opportunity to participate in the General Conference in Paris as part of the U.S. delegation. And I was selected to represent the U.S. as our representative to the Round Table on “Knowledge Societies.”

Representatives of more than 90 countries participated in the Ministerial Round Table, most of whom were (as the name implies) of Ministerial (or Cabinet) rank. It was a two-day event, chaired by the UNESCO Director General, Koichiro Matsuura. I was given the opportunity to speak, representing the U.S., in the session labeled “Cultural Policies in Knowledge Societies.” The session was chaired by Sari Bermudez, the President of Mexico’s CONACULTA (*de facto* Minister of Culture of Mexico). The other speaker was the French Minister of Culture, Jean-Jacques Allegon.

I also had the privilege of serving on the small working group that, supported by UNESCO staff, produced a draft Ministerial Communiqué. I am very pleased to say that the Communiqué included the following significant sentence:

“Libraries, archives and museums, and the professions which permit them to function, are at the heart of knowledge societies, and should be strongly supported and promoted within national policies”

I was again privileged to be part of the U.S. Delegation to the World Summit in Geneva in December 2003. The Summit itself featured plenary sessions, as well as topical Round Tables on such themes as creating digital opportunities, diversity in cyberspace, and “ICT as a Tool to Achieve the Millennium Development Goals.” The participants in these Round Tables included numerous heads of state, as well as ministerial-level delegates from many nations.⁵

Equal in importance to the formal proceedings of the Summit were the numerous ancillary events hosted by a range of different organizations and entities. There were 297 such events listed on the official WSIS web site, and there were probably many more less official forums, discussions, and protests.

I was invited to speak at two of these events. One was at a conference on the Role of Science in the Information Society, organized by CERN, the International Council for Science (ICSU), the Third World Academy of Sciences (TWAS), and UNESCO.⁶ The second was at the UNESCO High Level Symposium on Building Knowledge Societies, which followed up the Ministerial Round table in Paris and continued exploration of the differences between an Information Society and Knowledge Societies.⁷

In the latter event I was a member of a panel on “Shaping Knowledge Societies.” I must admit that it is a bit intimidating to participate in a panel that includes two heads of state (the Presidents of Latvia and Mozambique), one former head of state (former President of Lithuania), a cabinet Minister (New Zealand), and a Nobel Laureate (Gary Becker, Economics).⁸

My only participation in the plenary sessions of WSIS itself was as an observer. From my observations I developed significant concerns about the exaggerated expectations for the implementation of information technology in developing countries.

The WSIS PrepCom process, informed by input from a plethora of sources, including the UNESCO Ministerial Round Table, had finally produced a draft Declaration of Principles and Action Plan in the days immediately prior to the opening of the Summit. According to the Declaration of Principles, WSIS was intended to develop a "commitment to build a people-centered, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge." On its face, this seems unremarkable. But the Declaration does not stop there, and one can get a flavor of the grand scale of expectations for by sampling other parts of the document.

Not only did WSIS intend to develop mechanisms that ensure information for all, it also wanted to harness the potential of information to “promote the development goals of the Millennium Declaration, namely the eradication of extreme poverty and hunger; achievement of universal primary education; promotion of gender equality and empowerment of women; reduction of child mortality; improvement of maternal health; to combat HIV/AIDS, malaria and other diseases; ensuring environmental sustainability,

and development of global partnerships for development for the attainment of a more peaceful, just and prosperous world.” All of this while paying “special attention to the particular needs of developing countries, countries with economies in transition, Least Developed Countries, Small Island Developing States, Landlocked Developing Countries, and Highly Indebted Poor Countries.” There are 67 paragraphs of similar verbiage.

From this language I think you will get a sense of the kind of hyperventilation that feeds almost hysterical expectations of the developing world for the potential of information technology to resolve all ills. If we can only provide universal broadband access to the Internet, it seems, all of the social, economic and political problems of the developing world will be resolved.

On the other hand, the Declaration of Principles also contains important references to the central role that libraries can play in achieving WSIS goals. Libraries are cited as important to ensuring universal access to ICTs. And libraries and other cultural institutions like archives and museums should be strengthened to promote preservation of documentary records. More importantly, libraries are mentioned repeatedly in the Plan of Action, as central points of public access to ICTs and as community centers for education. One paragraph of the Action Plan asserts that we must:

“Develop national policies and laws to ensure that libraries, archives, museums and other cultural institutions can play their full role of content—including traditional knowledge—providers in the Information Society, more particularly by providing continued access to recorded information.” Another paragraph admonishes that we “support archives, cultural collections and libraries as the memory of humankind.”

At its General Conference in Paris in October, 2005, prior to the Tunis meeting of WSIS, UNESCO adopted a resolution laying out its role in implementing the outcomes of WSIS, which made the following observations:

“UNESCO’s position has been that, as both a description of present trends and as a characterization of a desirable future, the notion of a single global information society does not capture the full potential of the information and communication revolution for human development. By contrast, the concept of “knowledge societies” stresses plurality and inclusiveness instead of global uniformity. It maintains that the new technologies offer remarkable possibilities for advancing development. With these messages, UNESCO has helped to open up the Summit’s agenda and make it more relevant to the concerns of all Member States.”

The document asserted UNESCO’s role in implementing the outcomes of WSIS, claiming a role co-equal with the ITU.

The second phase of WSIS in Tunis (in which I took no part) adopted an Agenda, consisting of 116 paragraphs of verbiage not unlike that of the Declaration of Principles. The Agenda concludes with an Action Plan with eleven elements. It is significant that of these eleven elements, UNESCO has sole responsibility for implementation of two and shared responsibility for five others. These are:

- C3. Access to information and knowledge (UNESCO/ITU)
- C4. Capacity-building
- C7. ICT applications: E-learning and E-science
- C8. Cultural diversity and identity, linguistic diversity and local content

- C9. Media
- C10. Ethical dimensions of the information society
- C11. International and Regional cooperation

In short, UNESCO has been extremely successful in asserting its perspective into the WSIS arena. What started out to be a conference focusing on building ICT infrastructure in the developing world morphed into a conference—and an agenda—focusing on the broader impact of information technology and society. In the words of UNESCO Assistant Director General Abdul Waheed Kahn, “the emphasis should not be on technology, but on what ICTs can do to improve people’s lives.” This is a perspective that I think we as librarians can and should embrace. And it is a perspective that may have significant influence on the global context in which libraries will engage in the coming years.

World Digital Library

I have just returned from a UNESCO meeting in Paris to discuss the development of the World Digital Library. This initiative had its inception with the U. S. National Commission on UNESCO. By way of background, every member state of UNESCO is required to have a National Commission, the purpose of which is to provide guidance and advice regarding issues that come under UNESCO’s purview. When the US re-entered UNESCO in 2003, the National Commission was reconstituted. I have had the privilege to serve on the Commission since that time.

At the first meeting of the Commission in June 2005, Librarian of Congress James Billington (also a Member of the National Commission) suggested “that the time may be

right for our country's delegation [to UNESCO] to consider introducing to the world body a proposal for the cooperative building of a World Digital Library. This would be a new type of activity that ... would hold out the promise of bringing people closer together precisely by celebrating the depth and uniqueness of different cultures in a single global undertaking.” The Commission endorsed the proposal and created a Committee to develop the idea.

UNESCO convened a “Meeting of Experts” on the WDL on December 1, 2006. The participants in this meeting include representatives of leading libraries in countries with which the Library of Congress already has pursued or is pursuing digital library partnerships (Brazil, Egypt, France, the Netherlands, Russia, and Spain), as well as representatives of the International Federation of Library Associations (IFLA) and UNESCO staff. In addition to these participants, a number of participants from other countries have been invited to establish a better balance among regions and to solicit additional viewpoints.

It was noted that, while much has been achieved at the national level in terms of the creation of digital cultural content and many regional projects promise substantial benefits to their users, two challenges are likely to persist for the foreseeable future.

First, not enough digital content is being created. This is true for Europe, North America, and developed Asia. The situation in the developing world is of course far more problematic. In many countries, relatively little is being done to digitize collections and to make them available on the Internet. The result is that the distribution of digital content on the Internet is uneven with regard to geographic regions, cultures, language, and types of institution.

Second, content is often hard to find, difficult to search, and presented in a multiplicity of ways that confuse and frustrate users. Multilingual search and display are not well developed, and many features that young people are used to finding on commercial sites are not available on the cultural and educational sites maintained by libraries, archives, and other cultural institutions.

The WDL project will not be able to solve these problems on its own, but it can attempt to make progress toward doing so and help to point the way for other national and international projects aimed at improving both the quantity and quality of cultural content on the Internet.

The major objectives of the WDL include:

1. the promotion of international and inter-cultural understanding and awareness;
2. service to education;
3. the expansion of non-English and non-Western content on the Internet;
4. promotion of awareness of foreign languages (which in turn could encourage and facilitate language learning); and
5. contribution to scholarly research.

The Meeting of Experts was a wide-ranging discussion of issues revolving around content and selection; system design and architecture; participation and governance; and funding. Participants repeated the refrain that the world is smaller and flatter. As a result of its robust presence on the Internet, the Library of Congress has been transformed “from the library of last resort to the library of first choice.” It was also noted that over one-half of the world’s population is under the age of seventeen, and it is for this rising

generation that the World Digital Library should be planned and developed, for they are the ones who will use it.

Although there was by no means unanimous support for the idea of a central global repository, much less for some of the specific designs floated for its construction, there was sufficient support to forge ahead. ADG Kahn of UNESCO is extraordinarily supportive. It was agreed that the first order of business was to begin to develop criteria for selection of resources to be included in the WDL initially. These criteria can be based on criteria already in place for other UNESCO projects. A timetable was established for developing a working prototype to be introduced at the UNESCO General Conference in October, 2007. It appears that this project is going to go ahead. The Library of Congress has already received commitments for funding from several corporate sponsors and more are anticipated. The World Digital Library initiative bears watching.

Flatland

You may be puzzled by the apparently quaint title that I have adopted for my remarks today. What do I mean by “Attend to your configuration” (in quotes) as a title? Well the phrase is taken from Edwin A. Abbott’s classic novella *Flatland: A Romance in Many Dimensions* which was first published in 1884. It has never been out of print.

The story posits a two dimensional world (Flatland). The narrator, a humble square (named A. Square), guides us through some of the implications of life in two dimensions. A. Square dreams of a visit to a one-dimensional world (Lineland), and attempts to convince the realm's ignorant monarch of a second dimension. The narrator is then visited by a three-dimensional sphere, which he cannot comprehend until he sees the

third dimension for himself. He then dreams of visiting Pointland (which comprises a self-aware point that occupies all space and knows nothing but itself) and learns that he cannot "rescue [the point] from his self-satisfaction." In the book, men are portrayed as polygons whose social class is directly proportional to the number of sides they have; therefore, triangles, having only three sides, are at the bottom of the social ladder and are considered generally unintelligent, while the Priests are composed of multisided polygons whose shapes approximate a circle, which is considered to be the "perfect" shape.⁹

The priests expound a single doctrine: "attend to your configuration." In Abbott's words:

"Whether political, ecclesiastical, or moral, all their teaching has for its object the improvement of individual and collective Configuration - with special reference of course to the Configuration of the Circles, to which all other objects are subordinated."¹⁰

I find in this admonition—"Attend to your configuration"—a useful catchphrase that may guide our thinking as we contemplate the future of libraries—and librarians—in the rapidly changing world we now inhabit.

So what is our configuration that we should attend to?

I would assert that the mission of libraries hasn't changed. There remain two broad and interrelated roles for the library in the twenty-first century.

The first of these is the traditional role of gathering the record of human knowledge and organizing it so that it can be transmitted as needed. We can view this in the microcosm of specific knowledge objects in a system, and we can also take the broader perspective of the responsibility for the preservation and transmission of human

culture. Libraries have done both for thousands of years, and they will continue to perform this indispensable function in the future.

As Ken Herold notes in his very interesting article on the philosophy of information:

The perennial duty of the librarian as midwife to the birth of knowledge has not changed appreciably with the passing of centuries. If anything, there has been increased recognition of our responsibilities for preserving cultural heritages in an age of virtuality and transience. ...the tradition of the librarian as critical mediator in the flow of knowledge between creators and clients of tablets, scrolls, manuscripts, books, documents, recordings, pages and files has endured.¹¹

When the seventeen year olds of today need access to reliable sources of information and knowledge, where are they going to find them? Not the open Internet – it's too unreliable. They are going to need ready access to a store of reliable and verifiable, authoritative and valid information, otherwise known as the library. And because they are working collaboratively, they need a place to go, whether real or virtual, to do their work together. Why not the library?

The second, and related role, of the library is to support, encourage and facilitate learning, whether by individual learners or by learning communities. And sometimes this is best carried out by providing real, physical spaces where individuals and communities can address their free-choice learning needs.

So the mission of the library hasn't changed that much, if indeed at all. But the way we address that mission has changed dramatically and will continue to evolve

rapidly in the near future. David Penniman once observed: “In order for the library to remain what it is, it must change. If it doesn’t change, it will not remain what it is.”

What must we do? We must, of course, master the rapidly evolving technology that we use for capturing and disseminating the human record. We must especially develop approaches to preserving the increasingly elusive and impermanent media in which knowledge is produced and recorded. As Cliff Lynch put it at the recent UT Austin symposium, “The question should be: what are our collective strategies for collecting, organizing, preserving and providing access to the evidence, outputs and products of scholarship?” These are not questions that can be addressed alone. They must be considered and addressed in a global context.

Beyond this, however, and probably of equal importance, we must recognize and embrace the social nature of continuous learning, free-choice learning, that lasts the length of the lifetime. Libraries of all types must be conceived as learning environments, providing spaces—both real and virtual—that foster and support the individual learner, as well as learners in every imaginable form of social grouping.

We are at a turning point in our history as a profession. To paraphrase one of the other speakers in your program, Stephen Abram, we have the brains, knowledge, resources, and tools to succeed. It is up to us to work together to create an environment in which motivation, experimentation, and innovation can flourish.¹²

As Alan Kay said in 1971, “The best way to predict the future is to create it.”¹³ And as you celebrate the golden anniversary of this remarkable organization, I encourage you also to develop strategies to shape the next half century of libraries and the library profession, to join together in creating the library of tomorrow.

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1. James Duderstadt, Keynote Lecture, The research Library in the 21st Century, University of Teas at Austin, September 11, 2006.
<http://www.lib.utexas.edu/symposium/>
 2. William A. Wulf and James Duderstadt, "Information Technology and the University," *Issues in Science and Technology Online*
<http://www.issues.org/19.4/wulf.html>
 3. Wulf and Duderstadt.
 4. See http://portal.unesco.org/ci/en/ev.php-URL_ID=10593&URL_DO=DO_TOPIC&URL_SECTION=201.html
 5. See <http://www.itu.int/wsis/geneva/index.html>.
 6. See <http://rsis.web.cern.ch/rsis/>.
 7. See http://portal.unesco.org/ci/en/ev.php-URL_ID=13013&URL_DO=DO_TOPIC&URL_SECTION=201.html
 8. My remarks are at http://portal.unesco.org/ci/en/ev.php-URL_ID=13905&URL_DO=DO_TOPIC&URL_SECTION=201.html
 9. "Flatland," Wikipedia. <http://en.wikipedia.org/wiki/Flatland>
 10. Edwin A. Abbott, *Flatland: A Romance in Two Dimensions*, Chapter 12, "Of the Doctrine of Our Priests," (consulted online at <http://www.geom.uiuc.edu/~banchoff/Flatland/>).
 11. Herold, "Libraianship and the Philosophy of Information"
 12. Stephen Abram, "Five Big Questions to Drive Strategic Thinking," *SirsiDynix eBuzz* October 24, 2005.
 13. <http://www.smalltalk.org/alankay.html>