Toward a New Understanding of the Library Mission:
Vision and Implementation

David F. Kohl
Presented at ICAL 2009
University of Delhi
Delhi, India

Abstract
Author argues that recently libraries are witnessing a transformation of the information environment far eclipses earlier changes, even those brought by the advent of printing press. This presents both a wrenching challenge and a remarkable opportunity – both of which we will be exploring together in the coming days. The author argues that librarians need to change both their approach and thinking and need to learn how to make these ideas visible. We must see the digital revolution as not just a better way of doing our traditional business, but as a fundamentally different way of doing business altogether.

The Library Mission
I am pleased and honored to be here today at this International Conference on Academic Libraries as we consider the future of academic libraries in India. The last quarter of the 20th Century and the first decade of the 21st have witnessed a transformation of the information environment in which libraries live, move and have their being which far eclipses earlier changes, even those wrought by the advent of printing so many centuries ago. And much like a sea animal suddenly forced to live on land, libraries must change in radical and fundamental ways. This presents both a wrenching challenge and a remarkable opportunity – both of which we will be exploring together in the coming days as we seek to understand the way forward for Indian academic libraries in the 21st Century.

I believe the first important step in charting our future course is to appreciate just how radical our task must be. In particular, we must change our worldview in fundamental ways. I once had a History of Religions professor who started his class one day by saying the hunting and gathering cultures could not see seeds. What it turned out he meant by that was not that the seeds were invisible or that these early peoples suffered from some weird blindness, but that seeds played no significant role in their mental map of the world. The potential of seeds as the basis of an agricultural society could not be grasped by these hunters and gatherers until they made a fundamental shift in their worldview. Since then history provides repeated examples of fundamental transformations brought about by key shifts in human thinking, with profound consequences for human history and progress: the Ptolemaic view of the universe giving way to the Copernican revolution, or centuries later Newton’s worldview being supplanted by Einstein.

But the example which most readily comes to mind here in India is the West’s struggle to find a route to the East. As you know, in the late Middle Ages Europeans had discovered the riches of the Orient, particularly India, with its spices, silks, and gold. Sailing eastward to trade with eastern cultures made huge fortunes for both governments and individuals in both cultures. But there was a problem—a lengthy detour around Africa, months spent sailing first south and then back north to reach the markets of the Orient. A direct route could potentially provide trading fortunes beyond the dreams of avarice.

The key stumbling block to finding such a direct route was not developing better ships or increasing sailors’ skills or even improving navigation technology. It was the need for a changed mind set, a new way of looking at the world. An earlier, lingering view of the world as flat meant that the only way to go East was to sail eastward—and that meant a huge detour around Africa. Columbus, however, had developed a different vision of the world. He came to see the world as round. That seemingly simple change in a way of thinking had huge implications. It meant that you could go east by sailing west, and so could arrive in the Orient without the huge African detour. As it turned out, the world was a more complicated place than Columbus expected and although he didn’t find a new route to India, he did discover a “New World” (the New Indies) with new riches – and changed the course of history.

The point here for us today is the power which our traditional view of the world has over us and the degree
to which it shapes, directs and even blinds us to the possibilities of the future. Today, for librarians and information science professionals generally, I would argue that we need to learn how to make seeds visible, how to see the implications of a round world, by adopting a new vision of the library. More prosaically put, we need to see the digital revolution as not just a better way of doing our traditional business, but as a fundamentally different way of doing business altogether – one which allows us to “see” the opportunities and effectively deal with the challenges of the new, and still emerging, digital environment.

As is often the case with the need for radical and fundamental change in our way of thinking it is very hard to move away from a traditional worldview. Let me briefly illustrate how difficult is this struggle for librarians today. By and large it is a history of using digital technology to solve the traditional problems of a print world rather than to see and exploit the opportunities of a truly digital world.

The first serious application of digital technologies in libraries was to enhance library procedures for dealing with print collections, specifically circulation systems and catalogs. Based on the Quadraplanar structure developed at the University of Chicago in the early 70s the goal of this and similar automation was the use of digital technology for inventory control and record display of print (and other physical items) in library collections. While we talked about it in revolutionary terms, it simply represented a more efficient and accurate way of doing traditional library tasks. We were, so to speak, simply sailing slightly more well run ships around Africa.

The next key development was a better way to provide intellectual access to the print collection. In the 1980s we saw the development of online searching, i.e. digital databases which began to increasingly replace the library’s print indexes and abstracting reference tools. Costly and complicated to use (at least for the untrained) such resources were generally mediated by specially trained librarians to here too provide better access to print library resources. Although once again hailed as revolutionary this development also simply represented a more efficient and effective way of delivering traditional library services.

By the early 1990s a more fundamental transformation was beginning to creep into the library world as digital content began to seriously enter the collection. Joining such pioneers as ICPSR (Inter-University Consortium for Political and Social Research) – longitudinal databases maintained on rows of computer tapes – were CD formatted databases such as Sir Chadwyck-Healey’s English Poetry (700-1900), compact discs for music collections and even, in the US, the Government Printing Office was increasingly distributing its massive information avalanche in a digital CD format.

By this time libraries had progressed to the point that they saw themselves providing not just print resources but resources in a variety of formats, e.g. microforms (3 main types with subtypes), audio tapes (two types), slides (two types), video tapes (two types), etc. So, digital discs and tapes were seen as just one more addition to a United Nations of collection formats. More profoundly, although these new digital materials were again seen as a revolutionary development, they were still packaged in a physical format, even at times deliberately made to look like books so that they could be shelved with the “real” collection. We were still just sailing better ships around Africa.

In the late 1990s the foundations began to truly shake as the first of two even more radical digital earthquakes hit. Developments such as the Big Deal (mass journal purchases) and JSTOR (retrospective digitizing of core journals) created a worldwide explosion of access to digital journal literature while print access to this same literature began to plummet. Both libraries and their users began a slow but steady withdrawal from print journal publications while simultaneously journal publishers not only provided digital versions of their journals going forward, but also began comprehensive digital retrospective conversion. While I am aware of no full and systematic census reporting the degree of academic journal digitization for the 20,000+ academic journals, patron use and library purchase patterns clearly indicate that digital journals are now the major and increasingly exclusive format for academic journals. Almost universally these digital journal collections are not held in libraries.

By the middle of the first decade of the new millennium the second radical digital earthquake struck. Google, Microsoft (for a while), the EU and Open Content Alliance had all begun massive book digitization projects. In a complementary manner, access to government documents also shifted. In the US, for example, rather than continuing to provide the digital information to libraries on physical discs, the government has made a substantial shift to information access via online websites, bypassing the library middleman. Additionally, we have seen in this period the widespread development of high density storage facilities and a growing migration of library physical collections to them. Taken together, these developments in conjunction with those of the journal literature earlier, reveal the same profound two part message for librarians.

The first part of the message is that digital information is no longer simply an additional format for 21st Century libraries; it is increasingly the only format. Not just the central elements of traditional library collections, journals, books and government documents, but music, the visual arts, everything can be and, in fact, is, now represented digitally. The library increasingly is no longer a United Nations of formats, but a single world government unified around the digital format.

The second part of the message is that information is no longer, in an important sense, physically based. Not only is all information increasingly digital, but that digital information is increasingly independent of
physical storage devices such as CDs or computer tapes. Software, whether tools such as Microsoft Office, content such as Netflix movies, or research data such as Hubble astronomical data, is increasingly distributed not in physical packages but as data streams. It seems inescapably clear that while we have yet a long way to go, the tipping point has been passed and the destination is obvious. Except for maintaining a relatively small archive of important print materials, libraries will no longer be able to find their primary identity as a storage place for information artifacts whether print on paper books or digital CDs. In other words, our image of the library as a building filled with books needs to change. I believe it is not inaccurate to say that information is rapidly moving into the “cloud” and is, as far as libraries are concerned, no longer physically based. This represents a profound change in how libraries must now learn to think about themselves and their mission.

So what kind of a road do we see ahead of us as we attempt to look ahead with a new vision, to see the possibilities of seeds, to grasp the opportunities of a round rather than flat world? Although I think it is probably too early to have definitive answers, the shape of at least some of the key issues is already emerging. Let me briefly attempt to identify a few of these along with various preliminary attempts to address these issues which may prove helpful in starting the creative juices flowing as we prepare for the coming panels, discussions and presentations of this conference. These issues arise in four broad areas which we shall now consider.

Remember, the goal is to help us see with new eyes, rather than through the limiting notions of our past. As a unifying thread, let me propose a metaphor or image to keep in mind. Try to set aside the traditional image of the library as a building filled with shelves of books. In the digital world of information I think it is more appropriate to think of the library, not as a warehouse, but possibly as a service, a guide and facilitator to information most of which is not held in the library — in short, from storage building to guide, or possibly more appropriately here in the shadow of the Taj Mahal, as guru.

**The Erosion of the Local Collection**

One of the most pronounced trends of an increasingly digitized world of information for libraries is the shift from storage to connectivity. Technically of course libraries still own the information they purchase, but increasingly they no longer store it. As noted earlier, it is no longer necessary for information providers to create physical artifacts in order to distribute information. Instead information is provided locally by connecting to a central, invariably remote, server. This can be seen most clearly with journals. Here, for instance, the overwhelming pattern is negotiating access to a publisher website whether commercial such as Elsevier or public such as PLoS. Library organizations which actually download journal content in order to make it available to users, probably number less than a dozen worldwide and none serve only a local library. North America has one site (OhioLINK), Canada has one (University of Toronto), and there are a few other sites in Italy, Japan and Australia. Further, as noted earlier, the same remote access pattern is emerging for government documents, as evidenced by the US and even for books as well, as shown by Google, HathiTrust Digital Library, Open Content Alliance, and various European Union digitization initiatives.

**Action Possibilities—Form consortia**

One of the most powerful tools libraries have developed to deal with the new digital environment is that of consortia and its attendant concept of the Big Deal for purchasing digital materials. Although libraries have long cooperated with each other it has traditionally been at the fringe of their activities, e.g. interlibrary loan, developing common standards, etc., but retaining the local library as the key unit. Foreshadowed by the earlier development of OCLC, the rise of library consortia can for convenience be more usefully dated at February 3, 1997 with the first meeting of what has come be the International Coalition of Library Consortia (ICOLC) in St. Louis, Missouri (US). Representing not individual libraries but formally organized groups of libraries it has and continues to support consortia and their dominant role in the purchase of digital library resources. Providing economic leverage in dealing with publishers as well as significant economies of scale, the consortial approach to acquiring digital library resources is far and away the dominant model worldwide.

As significant as the power and effectiveness of the consortial model has been, equally significant is their variety, particularly in the range of the internal organization of consortia and their source of funding. OhioLINK is a voluntary group of Ohio academic libraries with a combination of state and local library funding with a purchase policy of all materials for all members. The New England Research Libraries (NERL) is a voluntary group whose funding comes solely from individual libraries following a policy of “opt in,” i.e., the group negotiates a deal and libraries choose whether they wish to participate or not. HEAL-Link is a state defined group of Greek academic libraries whose resource purchases for all participants are funded directly by the Greek Ministry of Education. ANKOS and TUBITAK are twin Turkish organizations, the first being a voluntary group of Turkish academic libraries whose specialized purchases are funded by local library participation based on an “opt in” principle while TUBITAK is funded centrally and buys basic resources for all Turkish academic libraries. In short, consortial structure and policy are determined by the local environment, politics and needs but the principles of organized joint action and large volume purchases are common to all.

**Action Possibilities—Digitize local collections**

While most newly created information of interest to academic libraries is now found in digital form, we
still have large legacy print collections. Consequently, to ensure that these print records of the past do not fade into invisibility in a digital world, we have recently seen major efforts in North America and Europe to digitize these materials. This has been the result of a happy confluence of interest in cultural preservation, technological advances in scanning, and, frankly, commercially perceived economic opportunity.

Digitizing the monographic collections involves three issues, largely settled but whose effectiveness and implications we are still sorting through. These are: funding source, technology, and copyright. Although various beginnings were made earlier to digitize small, specialized monographic collections in Europe and North America using local or state funding, serious digitization did not begin until Google, followed quickly by Microsoft and then large scale grant and government funding, developed serious programs of monographic digitization. Microsoft has since dropped out, but three distinct modes of funding continue. Google represents the main commercial thrust partnering so far with major North American and European libraries (7 million titles); the Internet Archive, a project of the Open Content Alliance represents a committed approach to using local and grant money (1 million titles), and Europeana and European Digital Library are probably the best examples of government funding. While there has been a certain amount of argument regarding the pros and cons of each approach, I’m not sure any of it really matters. Most libraries, at least in the US, seem to see the digitization projects as essentially practical problems requiring practical solutions. Many libraries, in fact, use multiple funding models, even at times with the same book being scanned repeatedly in order to fit the conditions of different projects. Still, entrusting a major part of our cultural heritage to a commercial entity, Google, the dominant player by far at this point, requires caution and thoughtful reflection. The considerable financial advantages which Google provides libraries in this area needs to be carefully balanced against possible negative tradeoffs. Perhaps the more important point in digitization is insisting on a two level approach to the scanning, i.e. providing what we might call an ASCII scan so that the digital content is searchable and can be manipulated, and an image scan so that condition, marginalia and graphics are preserved.

The question of developing the necessary technological tools may also be largely over. Some years ago when I was at Gottingen in Germany I was shown the complex scanner and procedures for digitizing their copy of the Gutenberg Bible. The scanner was not exactly custom made, but close to it. This January at ALA Midwinter there was something like six vendors actively selling machines to digitize monographs. While the decision of which specific scanner to use remains, the projects and their tools are now mainstream, easily available, and apparently affordable for institutions.

For a while it appeared that copyright would be a serious stumbling block. But the recent settlement between Google and copyright holders seems to have removed this as a serious issue in the US (although now the question of monopoly has introduced a new stumbling block). Nevertheless, although we are not completely out of the woods, there does appear to be daylight ahead.

**Action Possibilities—Ensure preservation of digital records**

New technology can be a double-edged sword. Who would have guessed that a 19th Century breakthrough in paper making, using an acid based process to produce abundant and inexpensive paper, would lead to the “slow fires” which 100 years later are slowly but surely destroying our collections of books, journals and newspapers. As a result of lessons learnt there is a great concern for ensuring the preservation of these new digital records.

Here too there are three issues to keep in mind: catastrophic loss, readability loss, and loss of access. Catastrophic loss refers to the physical or electronic destruction of the actual record and is both the most serious and the most unlikely of the three. The creation of dark archives by the major commercial publishers, e.g. Elsevier and Springer at the Koenigslichke Bibliothek in the Netherlands, communal library projects such as LOCKSS (Lots of Copies Keeps Stuff Safe) and CLOCKSS (Controlled LOCKSS) as well as the non-dark archive illustrated by OCLC’s CONTENTdm, all represent efforts to deal with this widely acknowledged problem.

Similarly, the second issue of un-readability due to outdated equipment or software, that is, digital migration, while a real potential problem is widely appreciated and understood. Just as the year 2000 software scare turned out to be a tempest in a teapot, digital migration seems to me to be unlikely to represent a real difficulty. Curiously, the most practical threat to date has been a library (or a consortia’s) loss of access due to non-renewal of licensed access. Originally, the library community thought this issue could be handled by “perpetual access” clauses in their contracts with publishers. The first instance of non-renewal, several years ago by a Virginia library consortium (VIVA) based in the US, clearly demonstrated the problem. Upon invoking the perpetual access clause after deciding not to renew access to Academic Press titles, they received hundreds of CD ROMs with the appropriate information. Making such information available to their members, however, represented a logistical nightmare, involving as it did the need to hire staff, buy equipment, lease telecommunications lines, etc. The episode clearly revealed that there was a large difference between legal access and practical access. Fortunately, since that time a number of providers have stepped forward to provide “insurance” in just such cases, including PORTICO (from JSTOR), Electronic Collections Online (from OCLC) and, naturally, the vendors themselves...