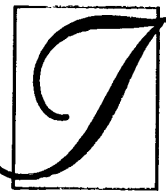


**INSPIRE; THE FIRST STEP  
IN THE VIRTUAL  
NETWORKED LIBRARY**

*by Millard Johnson*



In January 1998 the citizens of Indiana became the first Americans to have universal, free public access to a large suite of commercial databases. They are able to peruse this million dollar resource from any computer connected to the Internet—that is, computers in homes, classrooms, businesses and libraries. Users of this system can search databases in general periodicals, health information, newspapers and other information resources and print out the full text. Clearly, this project—titled Inspire—is a valuable resource for the citizens of Indiana, particularly the users of our libraries. Inspire is the fruit of years of library networking and, more recently, cooperative activities by librarians from all types of libraries. Indiana's librarians have every right to be proud of this remarkable achievement. The purpose of this article is to give a brief background of this project, its scope and progress, and its effect on libraries in the future.

We tend to think of technological achievements like this one as being "sudden."

As though there is nothing one day and the next day—there it is! But that is a misconception of technological advancement. The Mazarin Bible produced by Johannes Gutenberg in 1455 is an example. We tend to think that Gutenberg, a metalsmith, had a flash of insight while sitting at a bench in his shop one day: that printing could be done from movable type. It was that flash of light that marked the beginning of the age of printing. Presumably, if Gutenberg had not had that inspiration, we might all be reading hand lettered scrolls. In fact printing was an amalgam of developing technologies in metalsmithing, paper making, secular literacy, and printing playing cards from woodcuts that made printing not only possible but inevitable. The best research indicates that the concept of printing from movable type was also developed simultaneously and independently at a site hundreds of miles away from Gutenberg.

The same kinds of inevitable evolutionary result of the convergence of technologies is true for Inspire. For years, streams of technology have been converging to allow more and more people to participate in the Information Age. In our field, computer literacy among librarians and media personnel, ubiquitous high speed digital telecommunications, interactive computing, and related information technologies (not to mention the relentless advances in commercial publication of index information in electronic me-

dia) have contributed to the advent of Inspire.

What was not inevitable was that Inspire would be created as a free, public extension of libraries. In particular, it is unlikely that Inspire would have been possible now except for the cooperative networking among school media specialists, public librarians, college and university librarians, and their colleagues in special libraries.

Having begun this report (as befits a librarian) with the invention of printing, we will skip over a few centuries to the advent of the age of electronic computing. It has been said, perhaps too frequently, that we are entering into the Information Age. For many people, even information professionals, it is not clear what this means. At a minimum, however, it implies that more and more people will be employed in the management and manipulation of information. The Industrial Age began when powered machines made it possible for a single person to do far more work in a given period of time that was previously possible. This capability led (among other things) to a shift in economic power and prosperity from those places that had the agricultural base to support massive subsistence farming to places where raw materials, transportation infrastructure, and other resources necessary to support manufacturing were available in abundance. Cities grew up in areas with raw materials, entrepreneurial strength, and transportation infrastructure. The cities grew at the expense of farming communities as farmers left farms for employment in manufacturing centers.

If the Information Age replicates the paradigm, we would expect wealth and influence to migrate once again—this time to places with highly developed information infrastructure (computing base and telecommunications network) and highly skilled knowledge workers. We anticipate that the new jobs that sustain families and build strong communities will go to people who have the skills, technology, and infrastructure to manipulate information better and more quickly than their competitors. As librarians and educators, it is our responsibility to see that our communities and the children of the citizens of our communities are competitive in the Information Age. This is the fundamental idea behind Inspire. Our children will have access to essential information systems earlier and more conveniently than children in states without equivalent systems. Our universities, our citizen entrepreneurs, and our researchers will be able to freely access strategic information that is available

in other places only with considerable difficulty and expense. Finally, the residents of our communities will have access to information that can help them create better quality of life in their communities. Quality of life in our communities will not be a luxury in the Information Age. Knowledge workers are not tied to real estate or to cities where factories are located. They are extraordinarily mobile. They will take their business and the economy they generate to places that supply them with life affirming, family friendly environments that feature clean water and air, freedom from crime, social security, cultural attractions and good schools and libraries.

Frankly, the Inspire idea is not original. The first widely available unlimited access to commercial databases was done in Georgia with project Galileo. Galileo started as a system for public academic libraries and is growing to include public and school libraries. Inspire, however, is unique in that it is the first statewide system designed to serve all of the citizens of the state, not only from terminals in libraries but from computers in homes and offices.

The seed for Inspire was planted at five regional Windows On the World (WOW) workshop sponsored by the Indiana Library Federation in cooperation with INCOLSA and the Indiana State Library. At these meetings in public libraries around the state we presented legislators, community leaders, and librarians with a "Virtual Library Card" that allowed them to get on the Internet on any computer and search a suite of databases that were provided by commercial vendors. We followed this with mailings to attendees explaining the Inspire concept. We also demonstrated the Virtual Library prototype at INCOLSA regional and board meetings. In fact, we presented Inspire at every place we had a group of librarians willing to take time to consider the concept.

The Virtual Library prototype created enormous excitement among librarians who had a chance to view it. Even librarians who had minimal experience with online database searching could clearly see the advantage of providing this new, immediate resource not only from terminals within their libraries but to patrons in their homes and businesses as well. As soon as it was clear that there was almost unanimous support for this initiative from the library community, the Indiana Library Federation began to lobby the Indiana legislature for funds to support such a system. Simultaneously INCOLSA invited two representatives each from the Association of Indiana Media Educators, school libraries, public academic libraries, private academic libraries, (public libraries?), the Indiana Library Federation, and the Indiana State Library. These librarians and media specialists came together as the Inspire Steering Committee and formed a Database Selection Committee and a Technology

Advisory Committee to help with the planning.

The lobbying effort with the state legislature was somewhat less successful than we might have hoped. The project had no vocal adversaries and relatively strong support, but no new money was appropriated. The legislature retained the appropriation for library technology that was allocated in the previous biennium and suggested that a part be used for Inspire. Our plan was to use the \$ million for licensing databases. To purchase the necessary computer and telecommunications capacity we turned to the Indiana State Library. The State Library appropriated funding for the purchase of a computer and the first year's salary for a staff of two technicians. The final piece of the implementation was made possible by a grant from a private endowment, which was used to purchase software that is particularly relevant to schools.

There is no shortage of bibliographic or full-text databases. (Bibliographic databases usually contain author, title, and subject information for articles published in magazines and other periodicals. Full text databases, in addition to the data in bibliographic databases, also include the text of the article itself.) Unfortunately commercial offerings all have different search software. While each of the "native" interfaces has its own advantages, a user must learn to use the different software for each vendor's database. To further complicate the situation, the "native" interfaces are all different and appropriate for different user groups. For example, the interface useful for a professional reference librarian at a university helping a client with zoological research may be inappropriate for a fifth grade student writing a paper on butterflies. From a network standpoint, the difference in databases often obscures the quality of the database and makes selection more difficult than it must be. We used our Lilly grant to purchase software (SiteSearch WebZ from OCLC) to help resolve this problem. Web Z is a toolbox that can be used to program interfaces to databases. We plan to develop several different interfaces for our different constituents. In particular, we plan to have an expert interface and an interface more appropriate for school-aged children. Plans are to begin designing these interfaces with input from librarians in spring 1998.

By March 1998 Inspire was being used more than 80,000 times a week by people in libraries, homes, businesses, and schools all across Indiana. While orientation and training programs are being planned, these programs will focus on the use of the statistical and management features and the specific needs of reference librarians. Most users agree that the system is highly effective without training.

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## THE VIRTUAL NETWORKED LIBRARY

The concept we are exploring is the Virtual Networked Library. The Virtual Library implies that any service of a physical library, as well as some information services that cannot be provided by a physical library, should be considered as possible candidates for services that are provided over an electronic network. The Virtual Networked Library adds to the Virtual Library concept the idea of networking—that libraries working cooperatively together can accomplish more than any of them can accomplish alone. This concept has proven itself in Inspire and we expect it to prove itself again as we begin to offer other kinds of library services over the electronic network.

Among the things we can do to extend Inspire functionality are:

1. Add additional databases.

Inspire has freed considerable money previously being paid by local libraries for database access. INCOLSA is inviting libraries by library type to discuss their needs and see if they can gain the economy of consortia purchase by pooling their resources. INCOLSA will include these databases behind the Site Search software so library users will be able to see both Inspire and locally licenses databases in the same menu and search all of them with the same search interface.

2. Add Internet resources other than commercial databases.

Many libraries currently identify high quality URLs from the Internet and include these on their library pages. It is possible for libraries to pool their efforts to create a "library quality" set of Internet resources. It is also possible to license this database from OCLC (NetFirst) or some equivalent resource.

3. Union list of serials with end user initiated interlibrary loan.

The specification for vendors of Inspire databases was to include as much full text as possible. Still, nearly half of the approximately 4,000 titles in Inspire databases are available in citation only. The SiteSearch/WebZ software has the capability for users to request interlibrary loan. All that is needed to implement this feature is to load the union list of serials and to obtain commitment by participating libraries to support rapid interlibrary loan.

4. End user initiated interlibrary loan from a union catalog of books.

The same feature that supports interlibrary loan of periodical articles will also support interlibrary loan of books. While conceptually equivalent to interlibrary loan of periodicals, the magnitude of interlibrary loaning of books is much greater. First, the number of records in the union files is much greater. Second, books cannot currently be delivered by fax or other electronic means. This makes

the system inherently ground-based, slower, and more expensive. Finally, the demand is likely to be greater and therefore the expense and personnel effort substantially greater.

5. Virtual reference service.

Many libraries currently respond to electronically mailed reference questions. The Virtual Networked Library can carry this concept a step further. The local library can handle more reference questions, but questions that are beyond the scope of the local library, questions requiring particular expertise or unique reference materials can be referred to a center of excellence reference library. The system could also handle off-hour or overflow reference questions. There is also potential that libraries could reduce the cost of reference service by pooling their talents in a virtual reference center.

## CONCLUSION

It is almost certain that the most exciting features of the Virtual Networked Library are those that we, because of the limits of our experience, cannot now imagine. For that problem there is no solution but to move forward. Fortunately the future we can envision is more exciting than anything we could have imagined only 20 years ago. Inspire has given us an impressive database resource that is available to every citizen of the state. But the most precious thing it has given us is the certainty that anything we can imagine we can create in a breathtakingly short time if only we can share a common vision and work together to achieve it.

## ABOUT THE AUTHOR

Millard Johnson is Executive Director of the Indiana Cooperative Library Services Authority (INCOLSA), Indiana's library network consisting of more than 740 institutional members from school, public, academic, and special libraries. Johnson is a native of Seattle. He spent his boyhood years on a remote oyster farm on Hood Canal at the edge of Washington's Olympic National Park. After high school he joined the U.S. Air Force where he played saxophone in military bands in the U.S. and Europe. He holds a B.S. in experimental psychology and an M.L.S. from the University of Washington. Most of his professional career has been in computing and systems design in medical libraries. Before coming to Indiana in 1995, Johnson was Director of Network Development at PORTALS, a consortia of 14 academic and research libraries in Portland, Oregon.