

**St. Joseph County Public Library
South Bend, Indiana**

The Public Library in Transition

**A Series of Paradigm Shifts
Toward the Beginnings of a New Millennium**

Profile of SJCPL

The St. Joseph County Public Library serves 167,000 people in eight of the thirteen townships of St. Joseph County, Indiana, constituting about 72% of the County population, and is the fourth largest public library in the state. Our Main library is located in downtown South Bend and we have seven branch libraries located in the city and the parts of the County that the library serves. A new 18,000 square foot branch is planned for a fall 1999 opening in a rapidly growing township.

In our [current long-range plan](#), our library has identified several roles for itself. Our secondary roles include being the "Preschooler's Door to Learning" and a "Popular Materials Library". Our primary role is to serve as the "Information Services Hub for the Community." Developing our Internet services has been a large part of this role.

On March 14, 1994 the St. Joseph Public Library (South Bend, Indiana) became the first public library in the United States and the second in the world to run its own web server and put up its own homepage on the Internet (<http://sjcpl.lib.in.us/>). The [Public Library of Helsinki](#), Finland holds the honor of being the first to do so, preceding SJCPL by only two weeks. Since then SJCPL's web site has become one of the most bookmarked public libraries in the world, enjoying an average of over 12,000 hits per day. Much of this activity is due to the searchable Internet database SJCPL maintains with hypertext links to nearly six hundred other public library homepages (<http://www.sjcpl.lib.in.us/Databases/PubLibServFind.html>) throughout the world.

Many people have asked SJCPL about its involvement with the Internet, starting with how the library got interested in the first place to where we see ourselves going in the future. Many of our staff have been invited to speak at local, state, national and international conferences. Some have questioned whether in this rapidly expanding global network of information services, public libraries even have a future. Will public libraries even exist or be considered as important and in need of support by the general public in the

next millennium? The following tells of our own experience over the past seven years in trying to deal with these questions.

Becoming aware of the Internet and its potential – 1992

1992 ALA Annual Conference in San Francisco, California:

As SJCPL's Director, I had been away from ALA Conferences for about 2 years, deeply involved in a Main Library renovation and expansion project. The 1992 ALA Annual Conference in San Francisco was an eye-opener when I saw and heard things that shocked me and made me realize missing even one annual conference had been too much.

As I left SJCPL's Main Library in 1992 to attend the conference in San Francisco, my feeling was that the renovation and expansion project had made SJCPL a 'state-of-the-art' facility. With its new computer workstations and its newly installed CD ROM tower connected to those workstations throughout our Main Library, we felt we were ahead of most other public libraries. Two chance happenings, both at the ALA exhibits, told me that SJCPL was about to witness a major paradigm shift and be left behind if we became too complacent and did not continue to move ahead even more boldly.

Walking by the Dynix (now Ameritech) exhibit, I saw a Macintosh computer being used as an online catalog. Since our library staff and I were Macintosh aficionados, I was naturally attracted. The menu on the screen, however, was more than an online catalog. One of the selections was something called "The Internet." Selecting this by typing in the menu number brought me to a list of more choices, one of which was the National Library of Australia. I soon found myself searching for titles in the on-line catalog of a library that was over 7,000 miles from where I stood in San Francisco. I asked the sales rep who was paying for this long-distance call from San Francisco to Sydney, and how Dynix could afford to do this for everyone at ALA exhibits? The answer was "It's free – it's the Internet."

Continuing through the exhibits, I came to the AT & T Booth and a small exhibit called *Minitel*. As I walked by, an attractive lady with a French accent called me over. Naturally, I responded. She showed me Minitel, owned and operated by the French government, with 17,000 information services, including everything from booking train and plane reservations to directory services and chat lines. Truckers could even find how best to move materials from one location to another. The French government had 6 million of these telephone devices in French homes logging over 1.6 billion transactions per year. This was also my first introduction to the cable companies versus the telephone companies' legal battles that were just erupting. Cable companies wanted to get into the telephone business and the telephone companies

wanted to get into the cable business. A communications industry battle was brewing in the U.S. Congress. Upon arriving home in South Bend, I learned from my own daughter, who had just returned from France where she lived with a French family for a year, had used Minitel herself to plan her trips around Europe. I had an early generation cyberpunk in my home and didn't know it!

While at that ALA conference I also noticed several "Internet" programs on the schedule, all of which seemed to be sponsored by academic associations with speakers from colleges and universities. Public library involvement was nowhere to be seen. Since their scheduled times conflicted with other public library programs that I wanted to attend, I purchased some of the audiotapes at the end of the conference and listened to them in my spare time. One of them had the speaker Ted Nelson who expounded on his concept of "non-sequential writing" or "hypertext," a word he had coined over 20 years before. He described hypertext as a system for linking every published thought or idea to every other thought or idea to which it was related through electronic documents, with cross-references, backtracks, and alternate versions. This would create a complete system of knowledge interrelated and linked electronically through words that were connected to other documents and other words. He called these "hyperlinks."

Having been an old fan of Mortimer Adler and his Great Books collection with its index volume called the *Syntopicon* (a cross-reference to all the great ideas throughout history), this vision of a future electronic research and development environment was fascinating to me. Probably only a few people knew at that time that in just one year (August 1993) Marc Andreessen and his team at the National Center For Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign would create *Mosaic*, the first web browser. This revolutionary tool could implement Ted's idea on a worldwide electronic network called the Web using something called "hypertext transfer protocol" or "http." When I got back to South Bend, I discovered the Library had two copies of Nelson's most recently published book, *Literary Machines*. I consumed it, thoroughly absorbed in his vision.

SJCPL begins Internet Services with dial-up SLIP connection – Fall 1992:

Back in South Bend, I asked Pat Lawton, our Main Library's Head of Adult Reference & Information Services, if she had ever heard of the Internet or Minitel. She said she had read something about them. Joyce Hug, our electronic database specialist whose husband was a physical chemist at the University of Notre Dame, knew the University had access to the Internet. For several years I had provided our reference staff with a budget of \$10,000 to cover the costs of electronic reference searching on Dialog and similar electronic databases, but the budget was always underspent. I asked Pat and

Joyce to find out from the people at Notre Dame how we might get on the Internet and asked them to use their underspent budget for this project.

Through a computer class she was taking at the University of Notre Dame, Joyce Hug asked the instructor, Joel Cooper, Assistant Director of Networking Services at the University, how SJCPL might be able to get on the Internet. Joel put her in touch with CICNet in Ann Arbor, Michigan, a not-for-profit organization that provided Internet services to the University of Notre Dame and to many other universities throughout Illinois, Michigan, Indiana and Ohio. We started with a SLIP (Serial Line Internet Protocol) connection, a Macintosh (using a program called MacSLIP) and a 9,600 baud modem. CICNet provided us with the SLIP connection free of cost as part of a pilot project which was testing the SLIP software on Macintosh computers. Our only communication expenses were the long distance phone calls to a computer in Chicago that connected us to the Internet.

By September 1992 we were up and running. CICNet even provided us with an e-mail account on their server. We used such programs as Gopher, Veronica, Telnet, FTP, and Eudora, all of which were free and readily available from such places as the gopher server at the University of Michigan. New versions of the developing software could be acquired by FTP practically every month.

Dedicated 56K Line – Fall 1993:

After almost a full year of using the Net and learning what sites had the best sources for answering certain types of reference questions, Joyce Hug informed me that we could link more than one computer to the Net at one time and also save on long-distance phone charges. To accomplish this, SJCPL needed to install a dedicated, leased 56K telephone line similar to what we used between our Main Library and our branches for our automated GEAC (formerly CLSI) circulation system. The University of Notre Dame was willing to allow us to connect to their dedicated line out to the Internet.

After looking at the costs and the proposed contracts with CICNet and Ameritech, our Library Board agreed and by September 1993, SJCPL had a dedicated line on the Internet capable of handling many of the computers connected simultaneously to our new ethernet network in our Main Library. We did not realize at the time that once we had established this type of dedicated connection to the Net, not only could each of our computers be a recipient or client for information from any other computer server in the world but they also could function as one of those servers of information worldwide. That paradigm shift would come a little later.

Convincing our Library Board to sign contracts with Ameritech and CICNet for undefined sources of information “out there” meant jumping through

some hoops. A couple of Board members were not enamored with how far and how fast we had come with our automation system and our increasing use of computers and this was one giant step further in that direction. Providing a live demonstration at the Board meeting did the trick as we found subjects on the Net that we knew would be of interest to certain Board members. A rehearsal prior to the meeting helped smooth the way for our presentation and we were able to give the impression that we knew what we were doing.

The contracts were unanimously approved by the Board with annual fees to CICNet totaling \$4,500 (as our ISP) and to Ameritech totaling \$1,880 for the dedicated 56K line. In addition, there was a one-time cost of \$10,000 for router equipment and installation. We would save almost the entire cost of the annual contracts by eliminating just one CD ROM subscription service with a for-profit reseller of government documents since we could now access this information over the Internet at a government web site. Furthermore, it would be available on many more computer workstations without additional licensing fees. The economics of the Net were beginning to become evident to us and this was our first lesson.

With the 56K line installed, we were able to access the Internet from all our staff and reference computer workstations connected to our ethernet network at the Main Library. Many more staff members were able to use Telnet, Gopher, Veronica, FTP and e-mail. The University of Notre Dame graciously provided SJCPL with ten e-mail accounts on its server so more of our staff could use e-mail.

In August 1994 we dedicated two computers to public access to the Internet and became the first public library in the State of Indiana to do so. As for our seven branch libraries, they were given access through a dial-up connection to our ethernet network at the Main Library, using desktop Macs and 28,000 baud modems at each end (one at the branch and the other at the Main Library). Only five modems with five telephone lines, however, were installed at the Main Library for this Wide Area Network (WAN) and these were all connected to a Shiva NetModem. The five telephone lines were set up so that if one of the lines were busy at the Main Library, the call would then cycle to the next available line and modem in the chain. Once connected to our WAN, branch reference staff could gain access to our Internet router through our ethernet lines and go from there out to the Internet. The assumption was that probably no more than five of our branches would need access at the same time and there would be few busy signals. This assumption proved to be correct, even when we allowed two local high schools to use the same route of access and establish their own web pages on our server. All of the computers using our WAN had to be Macintosh and had to use Apple Remote Access Client software with password access.

Gopher and another paradigm shift at Reference Desk:

In the fall of 1993 Pat Lawton, Head of Main Library Reference & Information Services, encouraged me to work at the Reference Desk one Sunday. A user who came to me needed to see a copy of the new federal budget which had just been released the Friday before. Copies had not yet reached any of our libraries, but I was able to find an electronic version over the Internet on one of the Federal government's gopher servers. This impressed on me how quickly any document, no matter what its size, could be made almost instantly available to hundreds of thousands of people with very little effort and practically no publication costs. In fact, the electronic version was better because now the digitized document was searchable electronically, could easily be copied, and even transferred to other locations anywhere, and could be made accessible to many more people. The possibilities for the availability and flow of information seemed to grow exponentially overnight because we were now connected to everything the Federal government could put on their servers. We were becoming a federal government document center. A new age of access to documents and information more revolutionary than Gutenberg's printing press was in the making and we were just discovering it.

SJCPL's Community Connection database and public access.

Since late 1989, St. Joseph County Public Library has maintained several of its own home-grown, electronic databases. Our very first electronic database, created by Linda Broyles (now our Coordinator of Networking Services), was "[Community Connection](#)," containing detailed information on over 1,200 local community organizations and services. Community Connection was our local Information & Referral (I & R) file.

The database was created with a very easy-to-use, very flexible Macintosh program called *FileMaker* (now called *FileMaker Pro*). *FileMaker* allowed the user to create any number of fields of different types and sizes. It also indexed every field as soon as the information was entered so that every field was searchable. The program also allowed one to search on any combination of fields, using Boolean search strings. Its speed was very fast, returning any number of records within 3 seconds of starting a search, and it also had great sorting and report-generating capabilities.

Having found *FileMaker* to be a very user-friendly, easy to understand, and easy to design any database system, we now use it for all seven of our staff-created-and-maintained databases for users, all of which are now accessible and searchable from our web site over the Internet. Some have been up on the Web for over four years. An article on SJCPL's use of *FileMaker* for publishing its databases on the Web was in the April/May 1998 issue of

FileMaker Pro Advisor (titled "Library Users Gain Instant Access to Databases via the Web," pp. 20 – 24) by Dan Blacharski.

Several months prior to installing its 56K line (Fall 1993), the Library had been preparing to make "Community Connection" more accessible to the general public by purchasing two new Macintosh computers and installing the database on them at a location near the Main Library's reference desk. These two new Macintoshes would be for public use and would be attached to a printer so users could easily print their search results. To publicize this, a press release was printed in the *South Bend Tribune* after about a month of testing (SBT, September 27, 1993, Section C, page 8).

The day after the "Community Connection" press release appeared in the Tribune, Joel Cooper phoned to encourage us to install the database on Notre Dame's gopher server, making it more generally accessible. When I asked how this could be done, he told us to convert the database to an ASCII text file (with certain changes) and deliver it to him on a floppy disk. When Joyce Hug and Linda Broyles delivered the disk to Joel at Notre Dame, he said he would have it loaded onto their gopher server and available on the Internet before they could get back to our Main Library (UND is three miles from SJCPL). When they returned to Main, sure enough, it was there and searchable over the Net. All of our reference computers that were connected to the Net could now use the database. In just the time it took to drive three miles, our "Community Connection" database was available from over 20 computers at our Main Library and to hundreds of thousands of computers worldwide – at practically no additional cost to anyone.

Later that day I asked Joel if the Notre Dame gopher server had any way to track how many times "Community Connection" was accessed over any given time period and of course, it did, a capability that we did not have on the two \$3,000 Macintosh computers which we had just installed at the Main Library. When we called him a day later, he informed us that the database had been accessed 200 times in the first 24 hour period, more than our reference librarians at the Main Library accessed it in an entire week or more. Encouraged, I asked Joel if we could put up another of our FileMaker databases called [TribIndex](#), an index of citations to newspaper articles dealing with local news in the South Bend Tribune. He balked a bit at first when I told him the database was 8 megabytes in size, but then agreed and this too was made available on Notre Dame's gopher server. Prior to this the *TribIndex* was available on only a few of our reference desk computers because of its size; now it was available on all of them connected to the Net. Our excitement on the potential of the Internet began to grow as we envisioned more possibilities.

Mosaic, the first Web Browser, is released

In September 1993 Joyce Hug informed us that NCSA had just released working versions of its *Mosaic* program, the first web browser, for all common platforms, including the Macintosh. Various sites had been using pre-release versions of Mosaic since June 1993, but it was not until October 1993 that I had a copy to use. New versions were being released practically every week, but the program was still clunky and crashed my computer every now and then.

I then started to look at NCSA's daily listing of new web sites on its "[What's New](#)" web page to see what new sites were coming onto the Net and what they were doing with this new protocol of hypertext, graphics and sound -- multimedia expansion of what Ted Nelson had envisioned. In addition to the graphics and sound, one of the most impressive developments Mosaic brought to the desktop computer was the integration of almost all the previous Internet protocols, calling them up on the screen as helper applications as soon as one clicked on a link. Telnet, gopher, and FTP could now all be accessed immediately from a hypertext document or web page. This was very exciting stuff!

In February 1994 I noticed a new web site called The Orange Room at the University of Notre Dame. The "What's New" blurb which was posted on February 9, 1994 stated "The University of Notre Dame WWW server is now on line at www.nd.edu. There is also an "underground" server, The Orange Room (<http://orange-room.cc.nd.edu>), which is up and running from ND. Both have image and sounds, AppleScript-based services, and some great looking pages."

The "AppleScript" reference intrigued me. I connected to the web site and read that the web server was running on an Apple Macintosh computer and was being managed by a webmaster named Mike Miller, a graduate student at UND. This "underground" web site also provided web pages for ND students, an interesting concept that was new to me at the time. What was even more fascinating, however, was the fact it was not running on an IBM or UNIX machine, but on a Macintosh and it was using AppleScript for some of the tricks it did, such as an interactive visitor registration form!

Using Mike Miller's e-mail address at the bottom of the Orange Room web page, I wrote to him and told him about the new Apple Macintosh Quadra 950 which SJCPL had just installed in the Administrative Offices. This was one of Apple's most powerful network servers and at the time we were using it for the administrative office staff to share various files, such as Library Board agenda items, the budget, Library policies, etc. In actuality, it was not being used much at all for all the power it had. I asked him if it could be used

as an Internet web server. "Of course it could," he responded, and asked when we could get together.

SJCPL first Web Server and Homepage – March 14, 1994:

Coordinating the meeting with SJCPL's Computer Room staff, we met at 7:30 a.m., March 14, 1994, in my office. Attending the meeting were Linda Broyles, our Community Connection specialist, Joyce Hug, our Internet specialist, and David Haslett, Head of our Computer Room. This meeting, at least for me, was perhaps the most pivotal in terms of what we learned about the Internet. What Mike Miller demonstrated for us in less than one hour completely changed our view of the future and much of what we would do for the next four years. We discovered, with his help, that it was easy to publish documents on the worldwide web. In fact, it was frighteningly easy. This was a paradigm shift of major proportions.

At that meeting, after we discussed for nearly an hour the "philosophy" of publishing on the worldwide Web, Mike started to fidget, shuffling in his hands a couple of floppy disks he had brought with him. He was ready to load the content of those disks onto our Quadra 950. They contained the programs and files we would need to get the Quadra started as a web server. I invited him to the room just three doors down the hall where the Quadra was. Within five minutes Mike announced that he had us up on the Web with our own homepage. He gave us the new URL (<http://192.219.111.2>) and we rushed to the Macintosh computer in my office to access it using the Mosaic web browser. The first St. Joseph County Public Library's homepage appeared on the screen, with a blue GIF image banner at the top saying "St. Joseph County Public Library, South Bend, Indiana," a brief "Welcome to the St. Joseph County Public Library homepage!" in the middle, and a blue banner bar at the bottom of the page.

Mike explained that he had installed a new web server program that he used on his "Orange Room" Macintosh called *MacHTTP*, created by Chuck Shotton, Assistant Director, Academic Computing at the University of Texas in Houston. Free copies of the program and its upgrades could be downloaded from the URL address Mike provided to us. He also gave us the disks he brought with him which contained the *MacHTTP* program, plus some other programs for making the creation of html documents easy, programs such as *BEdit*. *MacHTTP* later became *WebSTAR* which is now sold by StarNine Technologies, Inc., Berkley, CA, the most popular web server software for the Macintosh.

Mike also mentioned a new *MacHTTP* listserv where one could follow the development of the software and learn tips on how to use it. New listserves later sprung from *MacHTTP* listserv, such as *WebSTAR-Talk* and *WebSTAR-*

Dev. Other listserves dealing with supporting software also became very active, such as NetForms Talk, Netcloak-Talk, and FileMaker Pro Talk. These online discussion groups helped develop the software creators into large successful companies. Library listserves such as Web4Lib and PubLib also emerged during this period.

During those early years we learned the advantages of listserves: the rapid development of software through instant, worldwide collaboration, quick updates and widespread testing in different environments and on different platforms. We were able to share experiences with other librarians as we prepared to write specifications for a new automated system, and were even able to test those other systems through telnet sessions to their online catalogs.

We also learned that, as a public library cybercasting web pages on the Net, we were alone! University library homepages were prolific, but after querying all the known library listserves which were then available, we could find only one other public library in the world – the [City Library of Helsinki](#), Finland - with its own web page. Although a bit disappointed when we learned that they published their first web page just two weeks before us, we were consoled when we realized that we were the first in the US! We corresponded and collaborated with Helsinki Public on development and where we thought the web would all go. Two years later (February 7 - 15, 1996), I was invited by the Finish Library Association (Suomen Kirjastoseura) and the Finish Ministry of Education to give five talks at two Finish Universities (Tampere and Oulu) and at three of their largest public Libraries (Helsinki, Tampere, and Oulu) about SJCPL's World-wide Web Server and home page. With a new laptop (Macintosh Duo 2300c) in hand and a digital camera, I traveled to the arctic circle and sent back news and images of the events (<http://sjcpl.lib.in.us/Finland/FinlandTrip.html>) for my staff to see as they unfolded, adding them to our web server remotely using a software package called Timbuktu. What would this new technology, I asked myself, mean for the news or travel industries as they became more aware of the Net?

In November 1994 we created our Public Library Internet Servers List with links to the only five public libraries that we could find on the web. Since then our list of hypertext links has grown to over 500 public libraries. (<http://sjcpl.lib.in.us/homepage/PublicLibraries/PublicLibraryServers.html>).

At that significant meeting on March 14, 1994, Mike Miller also showed us that the installation of a web server was easy and fast. What was even more remarkable was that publishing anything on a worldwide basis was also so quick and easy! The publishing industry was about to go through a revolution of major proportions! At the end of the middle ages the printing press replaced the professors notes and every student could then have access not only to their professor's knowledge but also the collective knowledge of many

other professors on the same subject. With the Internet anyone anywhere in the world could now publish without even going through the rigors of the publishing industry and peer review. This was a frightening shift for any librarian. How could one validate the authenticity and accuracy of any publication? What did this mean for libraries and librarianship? At the time I was too excited to worry about these thoughts as I started thinking about the possibilities of how SJCPL might use this new medium.

After everyone left my office that March 14th, I went to my desktop computer to look up the html standards and codes for what was being published on the web. Accessing our new web server remotely, I started to experiment with the html code and found that I could, for example, create a hypertext link from our new homepage to the two searchable databases Joel Cooper had mounted on the Notre Dame gopher server. Looking at examples of how other web sites constructed the code made it easy. In many ways it seemed as easy as the early forms of word processing. All one had to do was use the proper codes. In fact, many of the codes reminded me of what I had used in those first word processing software programs. I shared my excitement with Joyce Hug about how our databases were now available from our first web page. We found that we could also create an introduction to these databases, explain to the user what they contained and how they could be accessed. We could create other html pages too for each of our departments at Main Library and for each of our branch libraries, with links from the homepage to each of them. We could provide a listing of our library programs, with links to the branches where those programs would be held. The possibilities started to grow as Joyce Hug and I started to learn everything we could about hypertext markup language. Since then programs like *Adobe Pagemill* and *Cyberstudio* have rendered learning html codes unnecessary just as the new word processing programs did over ten years ago.

Soon after this meeting, we began purchasing a number of hardware and software tools, which we would need to create web pages. A color scanner (LaCie Silverscanner II) and a digital camera (Apple QuickTake 100) came first. A little later we added a data projector (Proxima Desktop Projector) to demonstrate the Web to others, especially to our staff. Software packages such as *Photoshop* were used to create and enhance GIF images, the graphic format that was prevalent at that time for transferring images over the Internet. As time went on, the ease and speed by which one could take a digital photograph of a library program or scan high quality photographs of a Library building or department and place it up on a web page for everyone to see became intoxicating. We invited each department and branch to submit text and photos for their own homepages and encouraged some competition for the best examples of what could be done. We learned how to create interactive forms and forums. Common gateway interfaces (CGI's), small programs that allowed our web server to interact with other types of software programs, were being developed to create clickable maps. A map of South

Bend and the locations of our branches came next, linking their locations on the map to their homepages. One CGI even provided a means to query our FileMaker databases through a web browser (the first software package to do this was *TR-WWW.cgi* by Chris Priestley followed by *ROFM.cgi* by Russell Owen) and send the search results back over the Internet through our server as an html document. Most of these early programs were experimental and free or shareware, but they kept opening up more and more exciting possibilities as web pages started to become multimedia tools for publication and portals of entry to databases.

Management software such as *WebStat* (1994) and *ServerStat* (1995) for web servers also began to appear, allowing us to analyze server logs to see who was accessing the Library's web server, what html pages were being accessed most often, what days and times of week and month were busiest for the server, etc. At first most of the hits on our server came from educational and government institutions with a ratio of 3 to 1 when compared to commercial sites, but as time went on, this ratio reversed itself as more and more commercial sites started to appear and access our web server. A whole new dimension of commerce began to develop across the Internet. Internet marketing, and market analysis began to open up within just a year or two after Mosaic was released. Other web browsers appeared briefly and died as Marc Andreessen formed his own commercial firm, Netscape, and with a team of young, bright programmers, created the most popular web browser on the Net today.

Staff Training becomes a priority at SJCPL

By August 1994, one year after installing our first 56k line to the Internet for reference staff use, SJCPL provided on an experimental basis Internet Access for public use at its Main Library on one of the Macintosh computers that were originally purchased for public access to our Community Connection database. We did this without any fanfare and gave no public service announcement about it, but with this workstation SJCPL became the first public library in the State of Indiana to provide such direct public access.

The idea all along was to offer Internet access to the public, but before we could do that at any more of our public workstations, we needed to see how the public might react and more importantly we had to train our staff. In that same month, we hired an Internet training specialist, Faith Fleming, a professional librarian who taught the Internet to professors and students at Cornell University. Ms. Fleming's job description and first assignment was to train our professional and para-professional staff in the reference uses of the Internet, working with Joyce Hug. Faith and Joyce worked hard selling the Internet as a reference tool to our librarians. They also lobbied the administration for a place for the staff to practice their skills. Soon we created

a staff training room with five workstations in a non-public area. All professional and para-professional staff were encouraged to take time each week to spend an hour or two in the training room. In addition, Ms. Fleming and Ms. Hug presented Internet-related lessons at staff meetings. It took the improvements in web browsers and the response time of the new T-1 line to sell the staff on using the Internet for reference questions. Another very big plus for the reference staff was getting access to the Internet from every terminal at the reference desk.

Once most of the reference staff was somewhat comfortable, we prepared to offer what we had to the public. We had started with the one lonely unpublicized Internet Macintosh at the back of our bank of CD-ROM workstations in August of 1994. This was in use constantly and we found that security software had to be installed. Next we set up a cluster of three Macintosh computer workstations across from our Main Library Information & Reference desk, which we named "The Internet Connection" (taken from the book *The Internet Connection: system connectivity and configuration* by John S. Quarterman and Smoot Carl-Mitchell, which I had read earlier). Along with these stations came Internet workstations in our Children's Room and our Magazine department. At the Internet Connection we offered Telnet, Gopher, Archie, FTP, and Mosaic.

The Integrating Force of the Internet - another Reference Desk eye-opener:

In the fall of 1995, while working again at the Main Library Reference & Information desk, I found myself trying to answer reference questions by jumping back and forth between three different networked terminals or computer work stations. Access to our online catalog was provided for the most part through dumb terminals connected to our main frame with dedicated lines; our Internet workstations also provided access through web browsers with a Telnet link from our homepage. Access to our CD-ROM tower and its CD-ROM databases was provided through several IBM-compatible computer workstations connected by a local area network (LAN). Because of software limitations, we could not give the branch libraries access to this CD-ROM network. Access to the Internet was through our Macintosh computer workstations linked through an ethernet/router system to our T-1 line.

Running from platform to platform and network to network to answer reference questions to me seemed ridiculous. After four hours of doing this, I resolved to plan with my staff another migration to one fully-integrated network of Internet protocols on one common platform, and to make this available first at every reference desk and next at every public workstation. At the time we had about 150 terminals or workstations on these three different networks. Based on our budget, we developed a plan to replace one third of

them (50) per year with intelligent workstations over a three-year period, and to upgrade our online catalog software. With the upgrade to a T-1 line to the Internet and 64k lines to the branches late in 1995, we were able to add many more workstations, which we dubbed "Infostations." Most of these were within sight of our reference desk. Like the CD-ROM workstations that they replaced, the Infostations were placed in clusters of four machines, two facing each other. Initially, each pair shared a printer.

With the introduction of WebPac by Innovative Interfaces, the burgeoning of Internet access to magazine indices and full-text articles with products like Infotrac, and the availability on the Web of leased information products which were formerly only available in CD-ROM formats, we completed this integration by the summer of 1998 to the point where we now have nearly all our electronic databases integrated into one Web browser interface at intelligent workstations for both staff and public. We have also exchanged our ink jet printers, which were a constant source of maintenance problems, for much faster, more reliable, better quality laser printers and networked them to one location in our Main Library and in our branches. This gave us better control of hardcopy production, improved quality, and strengthened one of the weakest links in our networked chain.

Only a few of the leased CD-ROM databases now remain on our CD-ROM tower. Via the Internet, we now have General Business File and *Encyclopedia Britannica* in addition to *EbscoHost*, both Web-based databases. The UMI's Full-text Newspaper Database, which includes the *South Bend Tribune*, and other major Indiana papers, plus the *Chicago Tribune*, *NY Times*, *USA Today* and the *Wall Street Journal*, were added just recently. We also have College Catalogs in a web-based product and *Electric Library* which has full-text articles from various sources and is excellent for homework assignments.

Further Training & Development for the entire staff:

Finally, in May of 1996, on a long-range planning retreat of our administrative and system coordinators, we determined that, because of increasingly rapid change and the stress all this was having on our staff, much more emphasis needed to be placed on training and development. We needed to improve and build up their self-confidence, give them better planning and management tools with which to work, improve interpersonal relationships, and develop team spirit and camaraderie in and between departments. Debra Futa, Assistant Director, who led the staff team which developed our primary role as an "information hub of the community," was a strong advocate of this approach and provided strong leadership to move us in this direction. As a result of that first planning session and later discussions with our department heads and their staffs, we created a staff-training plan. We were guided by a planning consultant Sharon Wiseman,

from Prospect Heights, IL. The plan included the training of our administrative and top management staff in Dr. Stephen R. Covey's *Seven Habits of Highly Effective People*. All of the administrators and coordinators first went through the three-and-one-half-day Covey course and followed that with the four-day course to become licensed facilitators of the 7-Habits program. The first step, in other words, was to "train the trainers," and then have the administrators and coordinators (including the Director) train the rest of the staff.

By fall of 1998 we will have trained 180 staff members in the Seven Habits. To improve and deepen our understanding of the Seven Habits, we have also asked our staff to go through the Myers Briggs Type Indicator (MBTI) testing and analysis program. Again working with our consultant, each branch and department discussed the results of their tests in order to learn to understand and appreciate each other's differences (a Covey principle), with the aim of developing stronger, nurturing teams and generating staff creativity to meet the challenges of a rapidly changing work environment. We see the development of a set of core values peculiar to our profession and public service commitment, along with a new vision statement with customer service and satisfaction as one of our number one priorities, as the next phase of staff training.

Network Resources Development Training Team (NRDS) is born

In 1997 we consolidated our staff training efforts by creating a new service department, Networked Resources Development Training Team, with Michael Stephens as our Training Specialist and Joyce Hug as our Web Specialist. NRDT (or Nerdts, as it is affectionately called) now specializes in continuous training of our professional and paraprofessional staff in the use of our networked electronic resources, including the Internet. Staff members who attend "Train the Trainers" sessions in turn offer training programs for the public. We learned from Covey that the best way to learn is to teach it to others, and to do so on a regular basis.

The next step, as I see it, is to integrate our computer workstations with our telephone services through unified voice messaging. This will bring our communications devices, information resources and protocols. The reference librarian will be able not only find the answer to any question in any source in any format from anywhere in the world, and can transmit that information through any means of communication to the user, whether it be by voice, visual, e-mail, fax, FTP, Telnet, or Web telephony.

Before we can begin to do this, however, staff must first learn and become comfortable with this new multifaceted approach to providing customer service. Like that first Macintosh SLIP connection, we will start by

experimenting with the possibilities in a back room or in the new NRDT department, demonstrating, discussing and sharing experiences with our professional staff and then developing a training program before placing such services at our reference desks. Administrators will also become familiar with this new way of transacting business through one interface in order to find ways of extending their own management, communicating, training, and coaching skills with their staffs.

SJCPL provides training to the public:

Within less than a year after providing that first Macintosh computer with public access to the Internet, Faith Fleming, Joyce Hug, and another new reference librarian, Michael Stephens, were teaching not only the staff but also the public on the uses of the Internet as an information resource through a program which Ms. Fleming developed called, once again, "The Internet Connection." Previously, our main opportunities for instruction were at our service desks, but the public was asking for more.

Beginning in March of 1995, our classes and demonstrations covered Internet basics and were designed for people with some computer experience. Both beginners and advanced courses were offered early in 1995 three times per month at the Main Library and once at one of our largest branches. At the branch library the first basic class took place during a blizzard and still drew fifty people. Extending the series in 1996, we had about 200 people over a three-night period at the Main Library. Following the success of this series, we went on to schedule Internet instructional programs once every month, refining the offerings to include "special topics" which focused on subject-specific classes dealing with business on the Internet, mailing lists, job searching resources on the Web. Other topics such as basic html, using search engines, and such topics as 'Gardening Sites', 'Travel Resources', 'College & Career Resources', and 'Business & Finance' were presented. These also remain very popular and are well attended.

With the recent addition (spring 1998) of ten new workstations in a public area near the Main Library reference desk, we now also offer regular, continuing hands-on Internet sessions for the public. The classes are an hour and a half long and are for people with little or no computer skills. We have sessions every other Saturday morning and every other Wednesday afternoon. We cover basic Netscape navigation, search engines and run through our Internet resources from our Hotlist. A rotating pool of our reference librarians teaches the classes. This sharpens their skills, and establishes our librarians as the Internet experts in our community. We have offered these sessions to area clubs, business organizations and social agencies and many have come in for training. Again, we are seen as the Information hub for our community, the primary role of our current Mission Statement.

Among those who have asked for special sessions were a group of reporters from our local newspaper, *The South Bend Tribune*.

Joyce Hug created our first Hotlist that now serves as our home for Netscape. On March 14, 1998, the fourth anniversary of our web page on the Internet, Joyce introduced us to a completely revamped homepage with the use of Java scripts, a new Intranet for staff communications, and several new interactive forums. Most recently, the Adult Reference & Information staff also introduced our new interactive online reference service to the public called Electronic Reference.

We now have a committee of reference librarians to recommend sites and organize our Hotlist. They have a similar selection role to the one they have enjoyed with books. This is a wonderful way of organizing the Internet for reference use and in getting the staff involved in the Internet. Our Hotlist is a helpful way to guide patrons to the useful sites on the web and it is the first thing our public sees when they open up Netscape on our Infostations.

Our staff currently provides basic start up assistance, troubleshooting and limited help with search strategies at our public desks. We limit our staff to about 20 minutes with each patron, less if there are other patrons waiting. Patrons have a 2-hour per day limit on the Infostations. There is a 1-hour limit on the computers when others are waiting, and on Sundays the limits are cut in half. We make no distinction between adult and juvenile users, except in our children's room, which we limit to children only.

SJCPL began providing Internet access as an information tool for its reference librarians as early as September 1992. Today we offer Internet access to the general public on over 50 computer workstations, called Infostations, at the Main Library and seven branches. Our Main library alone has over 30 Infostations, and we are adding new stations each year in a three-year planning cycle to replace one-third of our computer workstations as the technology changes. Currently most of our Infostations are Apple Power Mac 7200 and G3 platforms. Internet access to the Main library is provided by a T-1 line, with 64k dedicated digital lines going out to the seven branches from the Main Library. These lines not only provide Internet access but also data transmission for our Innovative Interfaces automated system. Early this winter (1998), we have plans to add a second T-1 line from the Main Library to the Internet and it will work in tandem with our current T-1 line. In addition to the current 64K lines from the Main Library to our larger branches, we will be adding five T-1 lines, one for each of these busier branches.

Sharing our knowledge and experience with the broader community:

Michiana Free-Net Society, Inc. is founded with help from SJCPL:

Purely by chance just as SCJPL was about to have installed its first 56K in the fall of 1993, we were approached by a small group of local businessmen who wanted to start a community-based computer network, linking people and organizations in an exchange of information and ideas, what Don McLaughlin, the leader of the group, called “our community's access ramp to the information superhighway.” Don, a local stockbroker working for A. G. Edwards, Inc., had become an Internet user himself through a home computer and his own connections at the University of Notre Dame. He had an avid interest in electronic music and found he could acquire some great digital sound files by FTP over the Internet.

Don McLaughlin became the founding father of what was to become know as “Michiana Free-Net” (<http://michiana.org/>). With SJCPL’s assistance, MFN put up its first web page on SJCPL web server on August 26, 1994. With seed money from MCI (\$53,000 on June 14, 1995) and a grant (\$32,000) from Access Indiana Information Network (<http://www.state.in.us/>), Michiana Free-Net was able to purchase its own web server early in early in 1996. By May of that year, MFN began taking subscribers as Indiana’s first Free-Net, providing services to over 500 residents. Since then MFN has become an important resource to the Michiana community, serving St. Joseph and Elkhart Counties of northern Indiana and parts of lower Michigan, benefiting its users with links as broad as national and international information services and as narrow as their local friends and neighbors. Michiana Free-Net still has its web server housed in SJCPL’s Main Library computer room and contracts with SJCPL as its Internet Services Provider. With the technical expertise of Joyce Hug as its web site specialist and the business management skills of Steve Ross, its CEO, Michiana Free-Net has become one of the most successful, healthy not-for-profit, community nets in the U.S. with nearly 1,800 subscribers and about 96 phone lines.

SJCPL becomes an IPS (Internet Service Provider)

In September 1995, just before migrating from our GEAC system to a new Innovative Interfaces automated system, SJCPL upgraded its 56K line to a T-1 and seven 64k lines from its Main Library to all its branch libraries. Later that year three other Indiana public libraries (Mishawaka-Penn Public Library, Plymouth Public Library, and the Bremen Public Library) which contract with SJCPL for their automated services also joined our Internet cluster with four more 64K lines to our Main Library. Finally, Michiana Free-Net contracted with SJCPL, locating their new Internet server at our Main Library and connecting directly into our new T-1 line. SJCPL negotiated a new contract with CICNet, Inc. which enabled SJCPL to become a reseller of Internet access to these and similar not-for-profit entities. This made SJCPL one of the first

public libraries in the United States to become an Internet Services Provider as well as a user.

SJCPL creates the PLA's first National Conference Web Site – March 1996

At the 1995 ALA Annual Conference in June, as a member of the Public Library Associations Board of Directors and a member of the PLA National Conference Program Planning Committee, I volunteered to have SJCPL create and host on one of SJCPL's web servers the PLA web site for its 1996 National Conference in Portland, Oregon, March 26 – 30, 1996. The PLA Board and Planning Committee accepted my offer and the very first PLA national conference web pages appeared on the Net in the fall of 1995, providing service to the profession from our web server in South Bend, Indiana. CICNet provided SJCPL with an additional proxy name, "pla.org," for its server address in South Bend. All of the important lessons and skills we learned in maintaining our own web pages were brought to bear on this new, important responsibility for PLA, including the use of tables, clickable maps, animated gifs, interactive forums, predetermined page, column and fonts sizes for conference registration forms, etc. The ability to locate a web server anywhere in the world to serve another organization in another part of the world and make it appear that it was coming from that organization was another important lesson for us. We even found it possible to create web pages with images that came from another web server, such as those among PLA's conference tour companies that had their own web sites. The use of the Internet as a tool for collaboration between organizations and sites throughout the world was once again opening up new vistas for us.

SJCPL becomes known worldwide:

During this entire period of time SJCPL was also enjoying the publicity that being a leader on the worldwide Web brought. We mentioned earlier the most recent article in the April/May 1998 issue of *FileMaker Pro Advisor*. In April, 1995 issue of *Searcher: the Magazine for Database Professionals*, SJCPL was recognized for its Worldwide Web homepage (*Searcher*, April, 1995, pages 8, 10). In the August 28, 1995 issue of *Washington Post* newspaper SJCPL was recognized nationally for its Worldwide Web homepage on the Internet (*Washington Post*, August 28, 1995, pages A1 & A9, column 1). Thanks to the efforts of staff members like Linda Broyles, Joyce Hug, Nancy Korpala, Dave Haslett, and Faith Fleming, SJCPL was recognized as a national "success story" by the **U. S. Advisory Council on the National Information Infrastructure (NIIAC)** in its final report to President Clinton and Vice-President Gore, titled **KickStart Initiative: Connecting America's Communities To the Information Superhighway** SJCPL was also recognized by the **Office for Research and Statistics, American Library Association**, in its report "Profiles of Public

Library Internet Projects" for its innovative work and "no grants, just guts" attitude in being the **first** in the United States to provide World-Wide Web Internet access to the public. Joyce and Faith also co-authored an article for *Indiana Libraries* magazine (Winter, 1995, pp. 51-63), titled "Internet Basics for Reference."

Finally, in addition to all that we have said about the people on our staff who made this all possible, special mention needs to be given to staff members such as Dave Haslett, Head of Computer Services, and Nancy Korpala, former Head of Technical Services who is now Head of Main Library Adult Services, and Linda Broyles, "the Mother" of nearly all our home-grown databases, for the outstanding work they and their technical staff have done in keeping up with constant upgrades in equipment and software throughout this seven-year period. Without the positive "Let's get it done!" attitude, we could never have come as far as we have.

SJCPL Now & Tomorrow:

Where are we now, after being active on the Web for nearly 7 years? Here is a bullet list of changes at SJCPL either recently accomplished or about to be accomplished:

- ❖ Five T-1 lines to be added to the five busiest branch libraries in Oct. 1998 (these five branches will retain their present 64k lines which will continue to handle only Innovative Interfaces data transmissions; all other Internet traffic will go over the new T-1 lines on new separate routers);
- ❖ A T-1 from the Main Library to ND with a second T-1 planned for Oct. 1998;
- ❖ Over 50 Infostations systemwide where with Internet access for the public;
- ❖ Over 160 staff computers with access to the Internet;
- ❖ Two free public Internet classes/month -2nd Monday is Introduction to the Internet, 4th Monday is Special Topics;
- ❖ Four free hands-on training sessions for the public per month;
- ❖ Our own mail server with over 100 e-mail accounts;
- ❖ Extension of Internet access to three cluster libraries with over 100 public and staff Internet computers;
- ❖ Two Web servers with over 12,000 hits per day;
- ❖ One staff Intranet accessible to all branches and departments that contains important internal information in electronic form;
- ❖ One FTP server;
- ❖ Seven leased databases that are accessed over the Web;
- ❖ A web version of our online catalog;
- ❖ An electronic Reference service where people ask questions over the Internet;

- ❖ Housing and support for Michiana Free-Net with 1800 users and 96 phone lines;
- ❖ Five in-house databases accessible from the Internet;
- ❖ An extensive staff training program with eight Internet classes offered each month. In addition special departmental and branch sessions are offered to handle specific Internet/electronic questions;
- ❖ An entirely new department called Networked Resources/Development Training with one full-time trainer and one full-time web specialist.

In retrospect, would we have done anything differently?

We probably should have gone to a 56k line connection immediately, making the Internet available to more of our professional librarians sooner so that they were all better prepared. Although we quietly installed that first public access computer to the Internet, we should have begun staff training at least six months prior to this. We also probably should have planned on the full integration of access to all of all our databases before purchasing more terminals and before upgrading our CD-ROM tower. We did not know, however, how the technology would develop. We did our best, taking advantage of what was available and where the technology was moving at the time. This is really all one can expect from anyone in this fast-changing environment. Overall, there is not much that we would or could have changed. We are very thankful to the University of Notre Dame for their support, to CICNet, to Michiana Free-Net, to our Automated Cluster members, and to the many, many individuals and staff members who worked hard and long to get us where we are.

Where is SJCPL going and do public libraries have a future? No one is certain where the Internet will take us. Some of the best thinkers in the world, I have heard, cannot predict where this new world of instant multi-media communication of anyone with anyone else in the world will lead. Certainly the old national boundaries will fade and distance will have no meaning with respect to education and commerce and access to information. Public libraries, we think, will continue to be the public's broker for access to information in all its formats so long as we make it very user friendly and client-centered and much more economical to do so through a publically supported institution. But these are very exciting times. What does the future hold when the most creative minds in the world can talk to each other, instantly and constantly, at any time and can share their thoughts with the rest of the world? No one can tell. Everything will certainly move even faster as this creativity feeds on itself.

If SJCPL's staff and Library Board can continue to respond to rapid changes as well as they have over the past seven years, then I have no fear about the

future for this public library. So long as we continue to focus on service and the needs of others, and we engender in our plans and efforts the values of our mission statement to “solve problems, spark curiosity, and inspire dreams,” public support will be there and SJCPL will create its own future as a key participant and leader in meeting the information needs of its community.

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