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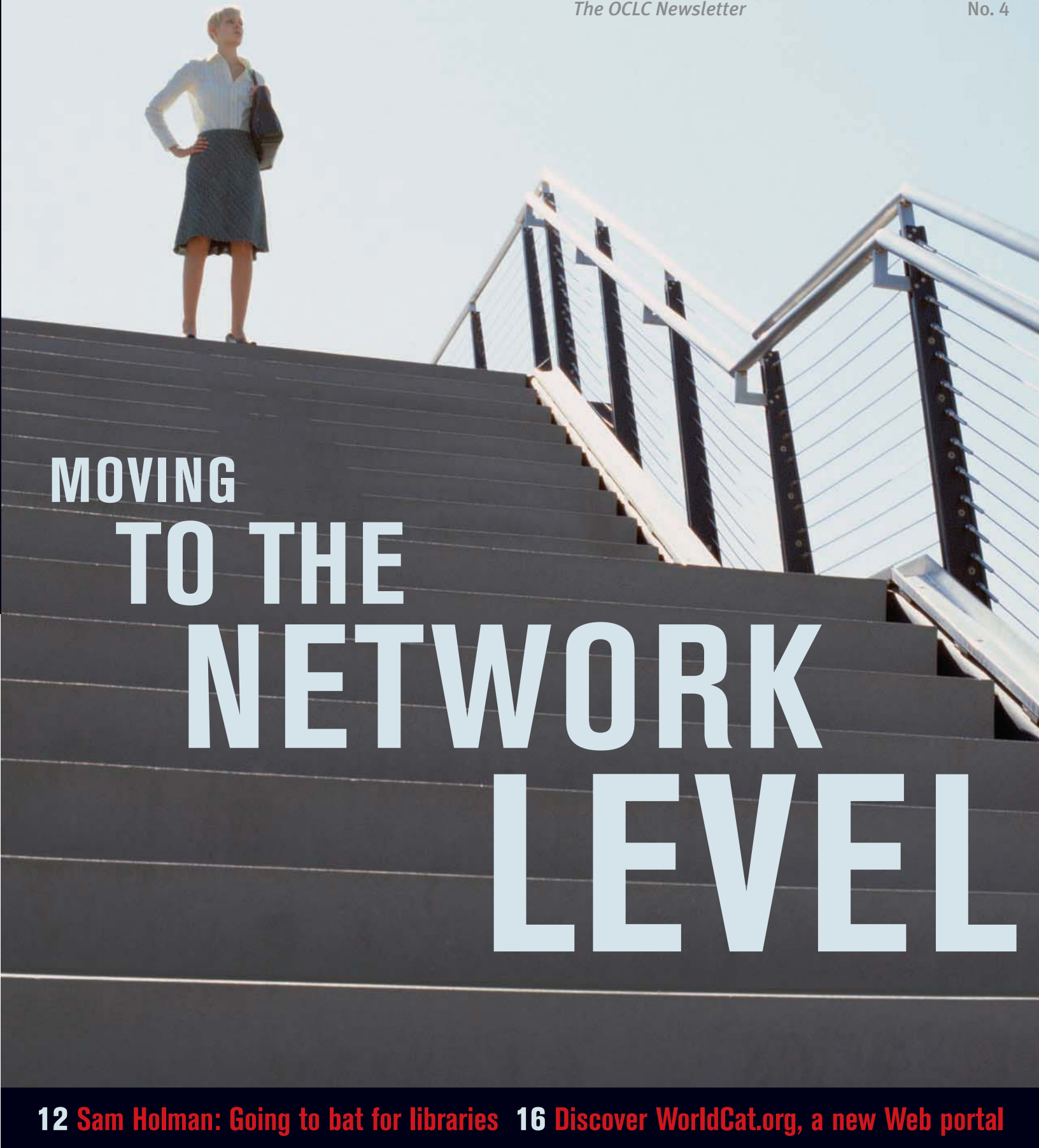
NEXT SPACE
The OCLC Newsletter
No. 4



MOVING TO THE NETWORK LEVEL

Search that makes your library stand out.

People are looking for answers. And they have more choices than ever about where to get them. Now they can search among more than a billion items in thousands of libraries all over the world all from one little box. A box that will point them to the amazing, distinct materials that make your library unique.

WorldCat

Get the WorldCat Search Box

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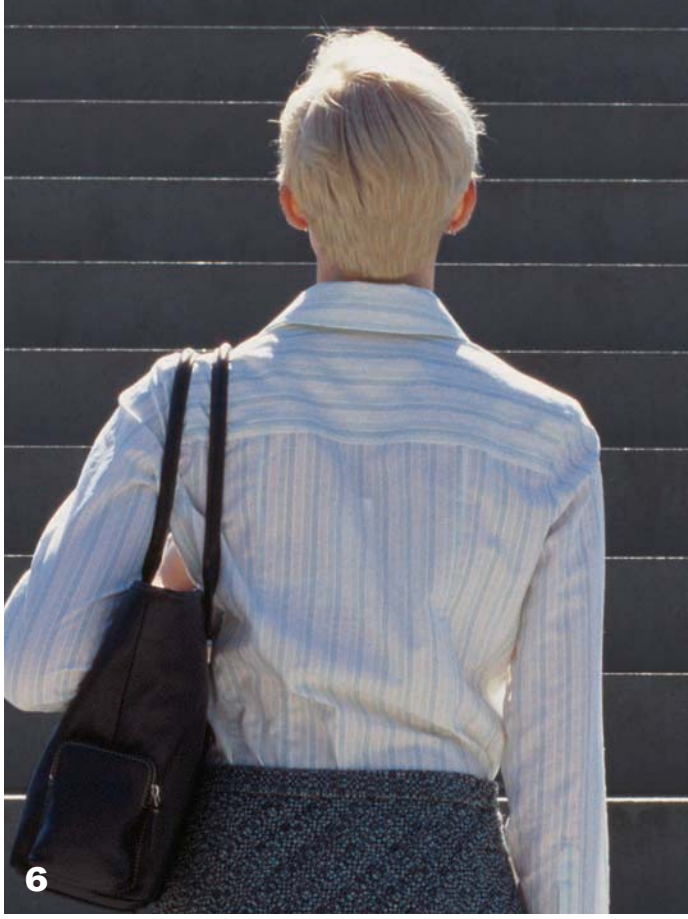

NEXT SPACE

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Previous issues were published in January 2006 and June 2006. A special edition honoring OCLC Founder Frederick. G. Kilgour also was published in September 2006.

WorldCat goes public

IT WAS A 35-YEAR MARCH, BUT WE DID IT!

On August 8, 2006, OCLC launched the WorldCat.org Web site. This site offers a search box that people can download and use to search the more than 71 million records and 1.4 billion location listings in WorldCat. For the first time, collections in OCLC member libraries are now visible on the Internet to people everywhere.

This is one of the signal achievements in the history of the OCLC cooperative. It is a tribute not only to the vision of OCLC Founder Frederick G. Kilgour, but to the perseverance and hard work of catalogers and librarians who have built WorldCat record by record over the past 35 years.

Our long march began on August 26, 1971, when the OCLC online union catalog and shared cataloging system came up for the first time. Ohio University was the first institution in the world to do online cataloging. That first night, the OCLC computer system was struck by lightning—a dramatic beginning!

The OCLC database began life as a cataloging and resource sharing tool, but Fred Kilgour and the OCLC pioneers always dreamed that one day, it would be widely available to the general public.

Indeed, the first OCLC public use terminals began appearing in libraries as early as 1974. Back then, users grappled with the derived search keys (an author-title search was 4,4—the first four letters of the author's last name, first four letters of the title; a title search was 3,2,2,1). An OCLC study noted that "most of the recorded use of the terminal was done by young, registered, frequent patrons of libraries." People still had to go to the library to use the library, but we were making progress.

In 1980, OCLC and Columbus Metropolitan Library combined WorldCat with cable television in a home delivery of library services experiment. People in 200 households could access the library's catalog and order books. The remote control device was slightly smaller than a breadbox and was attached to the TV set by a 10-foot cable, but no matter, the future was just around the corner!

In 1991, we made another leap forward with FirstSearch. For the first time, people could search WorldCat by subject. Plus, they didn't have to bother with derived, truncated search keys. We hailed this latest advance as "a revolutionary new concept in providing the general public with online reference information."

In 2005, we launched the Open WorldCat program, which let people search a subset of WorldCat through popular search engines, such as Google and Yahoo!

Now, in 2006, people can search the entire OCLC database on the Internet through the OCLC Cooperative's search site—WorldCat.org—and find the item in a nearby library.

Ten years from now and millions of records and billions of location listings later, WorldCat will likely be available in new ways that are now only dimly perceived through the haze of emerging technologies. In the meantime, we in the OCLC cooperative have much to be proud of. We have indeed come a long way!

Jay Jordan
OCLC President and Chief Executive Officer

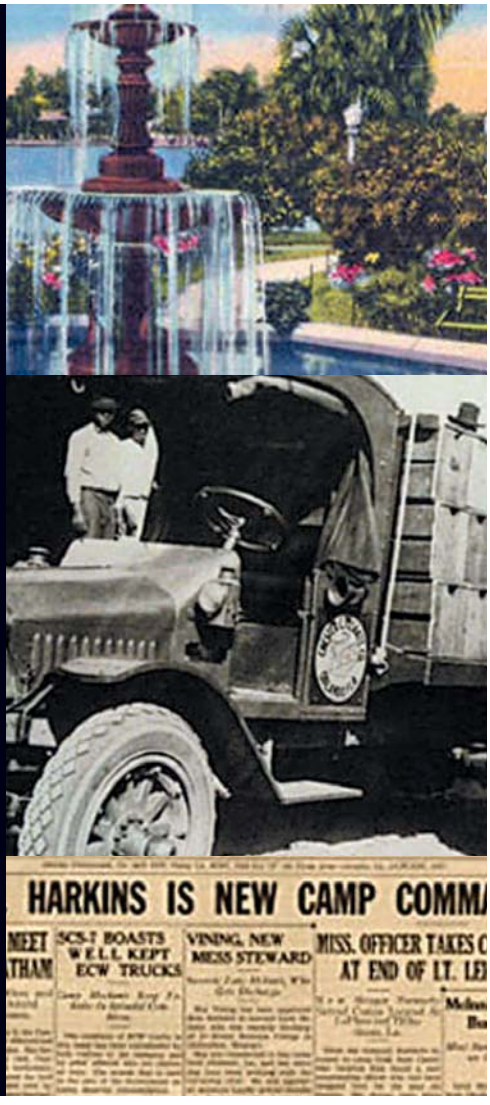
WebJunction launches E-Learning Clearinghouse

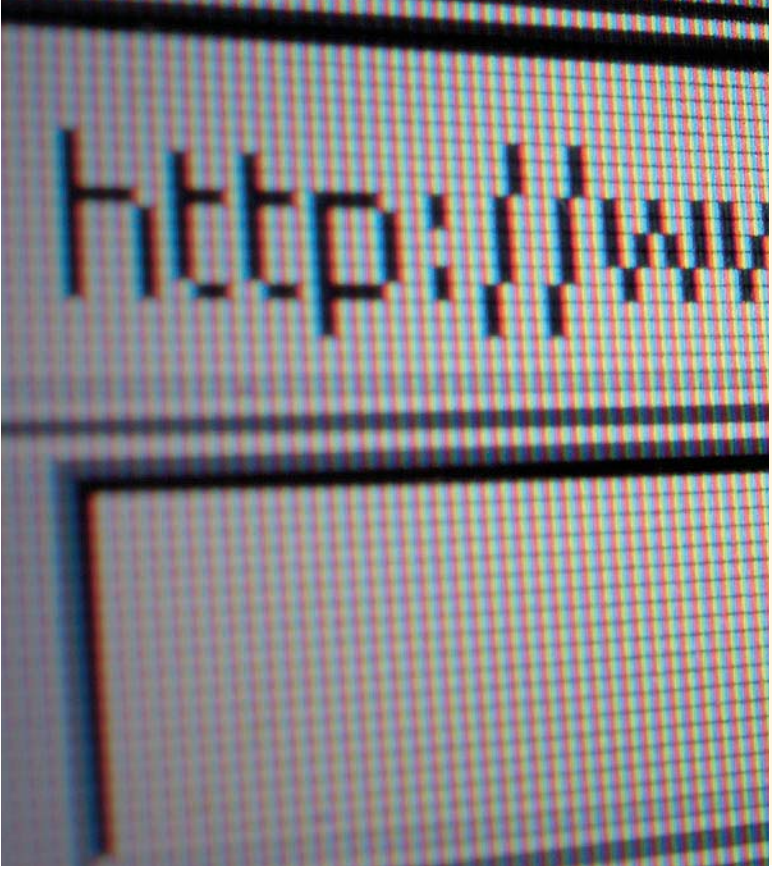
FUNDED IN PART BY A NATIONAL LEADERSHIP GRANT from the Institute for Museum and Library Services, the E-Learning Clearinghouse is a database of online courses and academic programs for library staff and information professionals offered by organizations serving the library field.

Programs offered include Master of Library Science and Bachelor of Science in Library and Information Science, as well as continuing education and training relevant to library staff. More than 50 eLearning organizations have contributed content on a wide range of topics–from technology trends and library management to grant writing and marketing. Visit **WebJunction.org** for more information.

OCLC acquires DiMeMa

DIMEMA (DIGITAL MEDIA MANAGEMENT), the organization that developed and supports CONTENTdm, the leading digital management software for libraries distributed by OCLC, is now a part of the OCLC cooperative. OCLC acquired the company on August 14. Greg Zick, founder of DiMeMa and former Professor at the University of Washington, will be Vice President of OCLC Digital Services, and the DiMeMa staff of 11 will maintain its office in Seattle, Washington. "DiMeMa and OCLC have worked very closely for the past four years and we have enjoyed tremendous success in moving libraries into the digital age," said Dr. Zick. "Together we will be able to reach more libraries and other organizations interested in managing and exposing their unique content to the worldwide information community." Read the news release at **www.oclc.org/news/releases/200633.htm.**



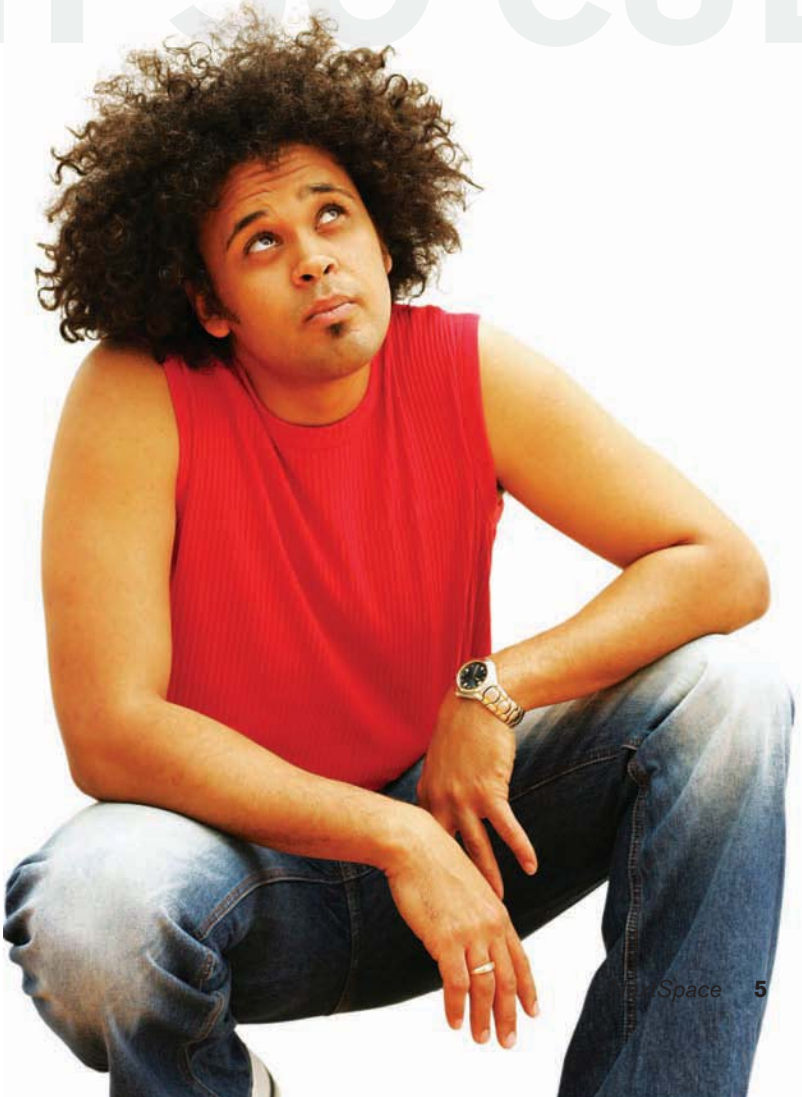


Catalog at Web speed

A NEW OCLC CONNEXION CATALOGING TOOL lets librarians automatically harvest and create WorldCat records for digital resources. Using either the Connexion client or browser, just type in a URL and the Metadata Extractor will capture and format data into a bibliographic workform for Web sites as well as locally stored .htm, .html, .pdf and .doc files. This will speed cataloging for more types of e-resources, such as electronic dissertations, theses and government documents, by reducing typing and cut-and-paste operations. Go to **www.oclc.org/connexion/** for more information.

It's soooo cool: WorldCat Selection!

OCLC AND CORNELL UNIVERSITY LIBRARY are developing a new service to streamline the selection and ordering process of new library materials. Based on Cornell University software called Integrated Tool for Selection and Ordering (IT SO CUL), the WorldCat Selection service allows selectors to view records from multiple materials vendors in one comprehensive system and import WorldCat records for newly purchased materials into their ILS early in the technical services process. The libraries' holding symbols also are automatically set in WorldCat. The service will launch in the second half of 2006. Go to **www.oclc.org/selection/** for more information.



MOVING TO THE NETWORK LEVEL

The architecture of the Web is transforming the way systems are built and services delivered, providing libraries with an opportunity to extend their impact **BY TOM STOREY**

In October 2004, 500 titans of the Internet world met in a plush San Francisco hotel to explore the future of the Web. The invitation-only event included some of the Web's foremost leaders and influencers: Jeff Bezos, Founder of Amazon; Jerry Yang, co-Founder of Yahoo; Marc Andreessen, Founder of Netscape; Mark Cuban, co-Founder of HDNET; Steve Berkowitz, CEO of Ask Jeeves; and Christopher Payne, Vice President of MSN Search.

For three days, the group discussed the state of the Internet industry and listened to presentations from leaders of innovative start-ups. They debated the most important issues and strategies driving the Internet economy. They evaluated the 2001 dot.com bust–still fresh in the minds of many–and analyzed why certain organizations had failed and others survived. They knew the Web had reached a critical crossroads.

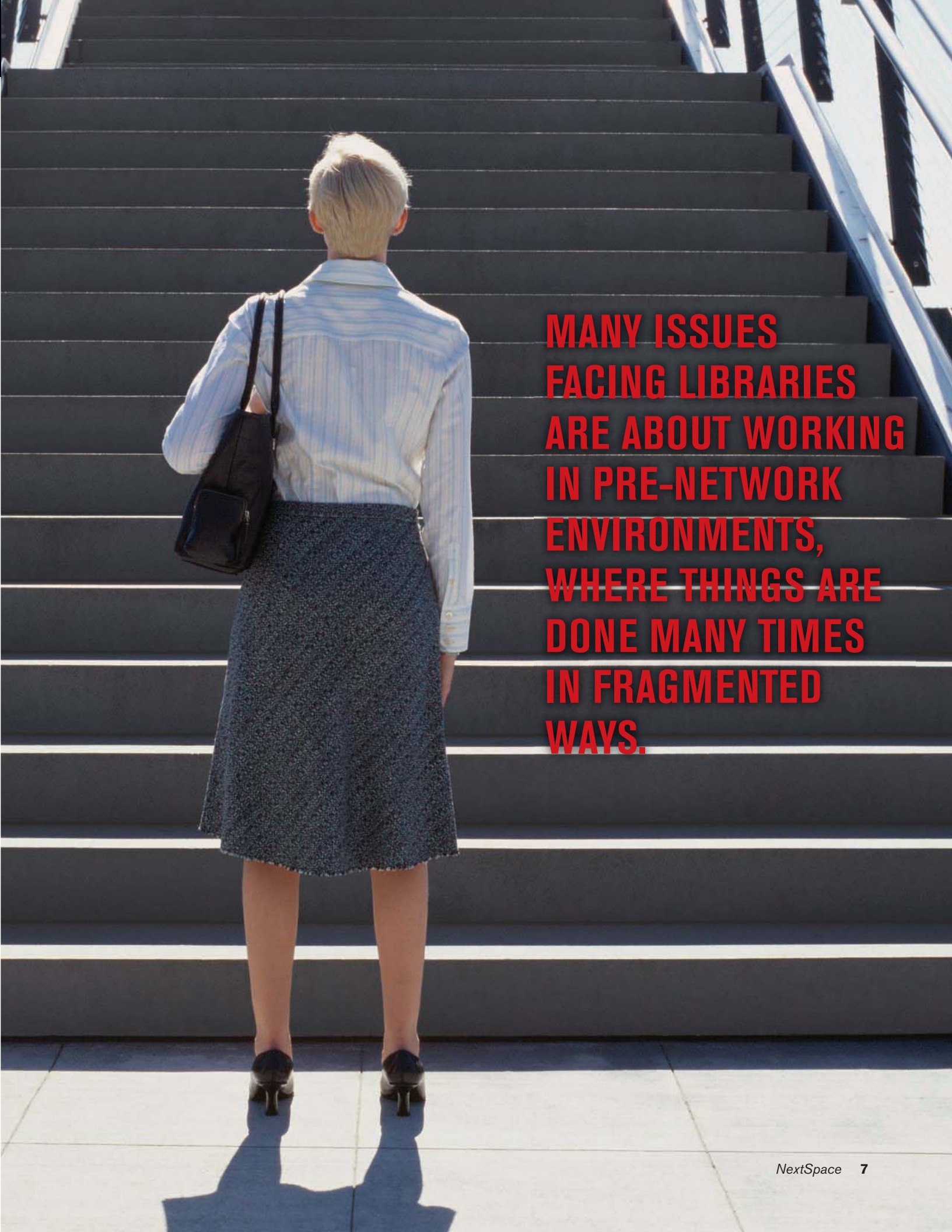
WHAT WAS HAPPENING?

Nothing short of a major paradigm shift, most agreed. The Web was emerging as a full-fledged computing platform–a robust development environment where mixing services and content from disparate, even competing, organizations and Web sites was becoming the norm.

Today, two years later, the trend has not only taken hold but seems to be accelerating. Each day, new businesses and Web sites launch new services and functionality by building on and integrating Web-based applications across the network. And network-based, on-demand computing that organizations can easily plug into is replacing many traditional IT infrastructures and software.

As Tim O'Reilly, co-Founder of the Web 2.0 conference, puts it, "We are at a turning point in the technology industry. The Internet is on the verge of replacing the personal computer as the dominant computing platform. Platform shifts are times of enormous disruption and enormous opportunity."

Indeed, even Microsoft, the dominant software company for the past decade with its aggressive vision of a personal computer in every home and office, acknowledges that a sweeping transformation in Internet services is taking place. On July 27, 2006, Ray Ozzie, Microsoft Chief Software Architect, told a group of financial analysts that all



MANY ISSUES FACING LIBRARIES ARE ABOUT WORKING IN PRE-NETWORK ENVIRONMENTS, WHERE THINGS ARE DONE MANY TIMES IN FRAGMENTED WAYS.

technology companies must embrace the Internet services transformation in some way if they wish to expand their relevance to their customers moving forward.

"In the previous era, when looking at opportunities, Microsoft would naturally begin by thinking with a PC mindset," Ozzie said. "But we're in a new era, an era in which the Internet is at the center of so much of what we do. It's important to start with a different vantage point. So, we start with an Internet service-centric perspective."

DEFINING THE NEW NETWORK PLATFORM

Since the 1980s, software development and system engineering has centered primarily on the personal computer. The PC era was characterized by monolithic, proprietary operating systems and programs that had long development times and release cycles. In that environment, the design of software was isolated and all attention focused on a single application.

WHAT DOES MOVING TO THE NETWORK LEVEL MEAN?

Functionality traditionally installed and run on a local computer in a single application is now performed on the network inside workflows that involve many applications. In essence, the Web becomes the "operating system" to which programmers write reusable, constantly updated software components that are delivered over the network and embedded or loosely coupled with other Web applications.

The most popular method of combining, or exposing, these modular applications is through Web services. Web services allow different applications from different sources to communicate with each other without custom coding using emerging Web protocols. The services are not tied to any one operating system or programming language.

Web services range from simple URL requests and XML responses to more complex SOAP messaging defined by a language called WSDL. Even formerly complex standards are migrating toward simple, easily integrated Web services, such as z39.50 moving to SRU.

The new network platform is starting to erase the line between the Web and desktop software and become the foundation on which developers create software.

O'Reilly says that the Internet as the platform is the sum of all connected computers and devices. True Internet applications can be thought of as software above the level of a single device, he says, where applications run not on any individual computer but on the network that connects them. Ultimately, the network ties together all those devices into a single vast computer.

WHY IS TECHNOLOGY MOVING IN THIS DIRECTION?

Using the Web as a platform boosts creativity and speeds application development by removing redundancy in the coding process; there is less duplication among software engineers and more innovation brought to the market faster.

It also reduces costs. Companies and organizations don't build software from scratch. They create applications that build on top of other applications. In addition, the modular approach based on a shared network platform simplifies complex processes and technologies, resulting in low-cost, reusable components.

In addition, platform services create additional capacity for organizations far beyond what they could create themselves.

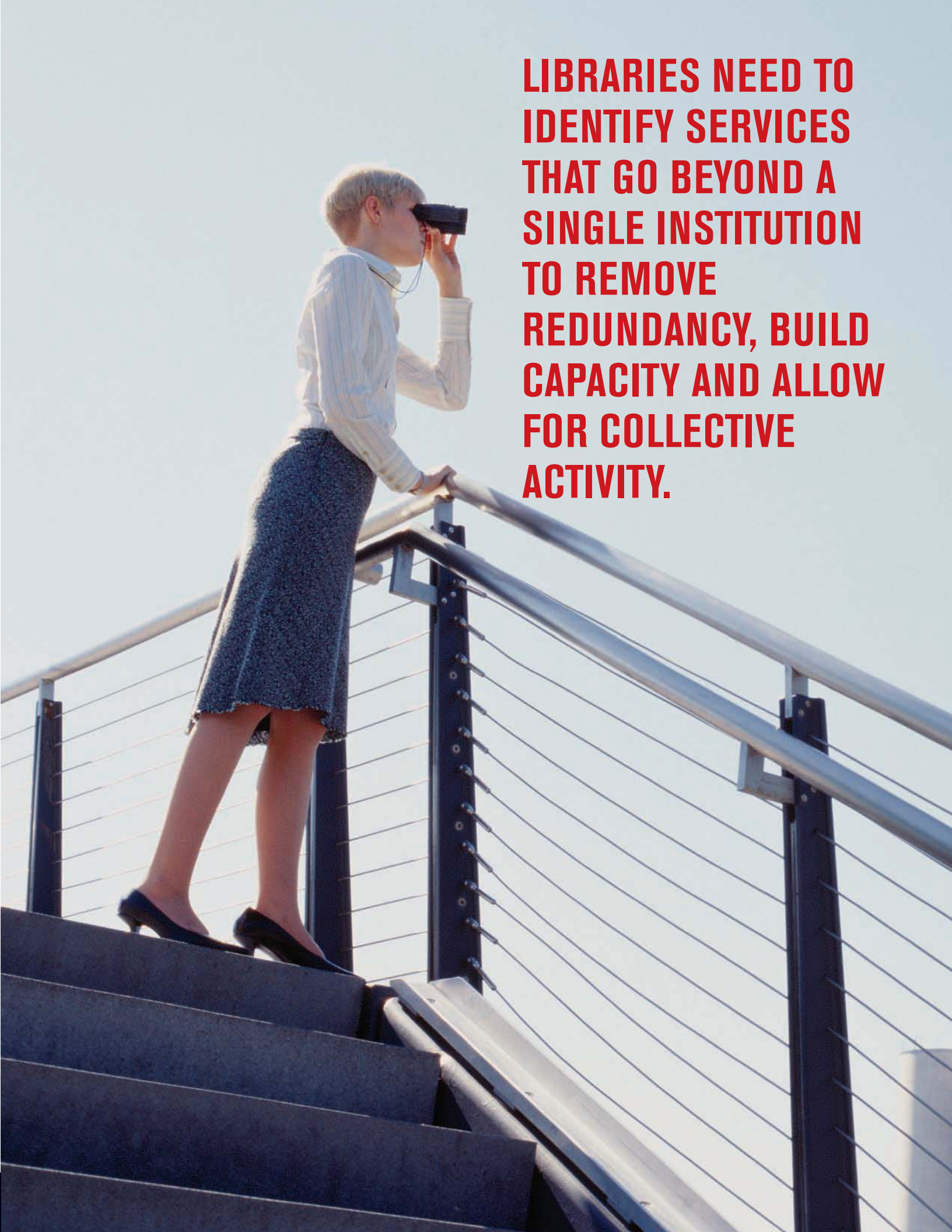
But perhaps the most unique aspect of this trend is its business implications: the technology has enabled business reuse. With Web services, organizations can inherit another organization's successful business model and insert it into their own applications. Previous code reuse models have essentially failed because they lacked this key component.

GETTING THE AMAZON, EBAY EDGE

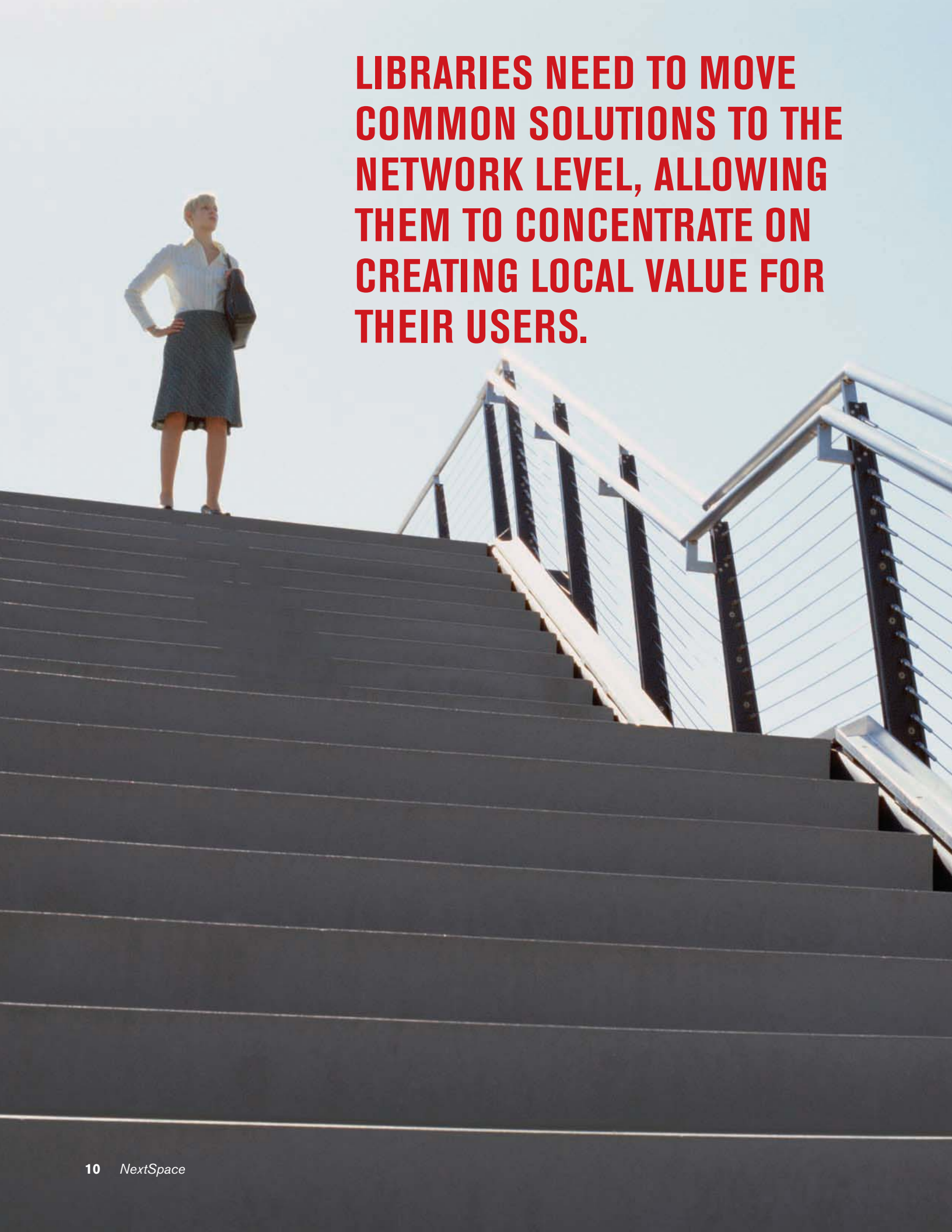
Amazon was one of the first companies to use the Web as a development platform and open up its technology for other organizations to use and build services on. Through its Web services, Amazon exposes its content and e-commerce tools to software developers and Web site owners, allowing them to leverage the data and functionality that Amazon uses to power their own e-commerce services. As a result, about 1 million businesses with more than 140,000 developers are building innovative applications by mixing their software applications with Amazon's.

Among the Amazon functionality that other organizations use: product information, images, pricing, search function, shopping cart and inventory management.

eBay is another example of an organization using the network as a platform. The online auction king has been expanding its impact by essentially turning its Web site into a platform. The auction site's developer section gives soup-to-nuts information about deploying eBay Web services that allow developers to communicate directly with the eBay database and build custom interfaces,



LIBRARIES NEED TO IDENTIFY SERVICES THAT GO BEYOND A SINGLE INSTITUTION TO REMOVE REDUNDANCY, BUILD CAPACITY AND ALLOW FOR COLLECTIVE ACTIVITY.



LIBRARIES NEED TO MOVE COMMON SOLUTIONS TO THE NETWORK LEVEL, ALLOWING THEM TO CONCENTRATE ON CREATING LOCAL VALUE FOR THEIR USERS.

functionality and specialized operations not otherwise afforded by the eBay interface.

eBay offers more than 100 Web services to developers to build applications that can connect to those services. They include pricing information, buy-it-now features and payment options through its PayPal subsidiary.

With a mix of on-demand computing solutions and Web services, Salesforce.com provides a network-level platform for salespeople to use for partner relationship management, sales force automation, marketing and customer service. Users plug in and subscribe to services built on the company's infrastructure, as well as extend its functionality by creating new applications on top of the platform.

More than 444,000 subscribers at 22,700 companies worldwide use Salesforce.com hosted online services and Web services to manage their sales, marketing and customer center operations.

WHAT DOES IT MEAN FOR LIBRARIES?

In the 1970s, libraries moved cataloging and interlibrary loan to the network level with OCLC online services, in which libraries combine to create value that could not be achieved at the institutional level. The community is exploring how to do this with virtual reference in QuestionPoint. The challenge moving forward is to identify other places where libraries will benefit from this model, says Lorcan Dempsey, OCLC Vice President Research and Chief Strategist.

"What has happened is that the network has come 'inside,' it has entered our experiences," Dempsey says. "It has changed forever what is possible. It is the medium which realizes workflow and process and it requires a different way of thinking and working."

Dempsey says that many of the issues facing libraries are about working in pre-network environments where things are done many times, redundantly and in fragmented ways. Think of metasearch, he says, where the fragmentation caused by legacy technology and business practices is inefficient and ineffective. Google Scholar is one approach to moving this issue to the network level.

"Things are moving up, moving to the network level. This is the burden of the long tail argument; it is at the root of many of the major forces which are changing our world."

In the new network environment, libraries need to identify services that go beyond a single institution and remove redundancy, build capacity and allow for collective activity. Think about preservation, storage, tools for analysis, reformatting, transformation, data curation—even a storage framework and logistical network for physical collections, Dempsey says. It simply does not make sense to tackle these with institution-level development. It is expensive and functionally suboptimal.

"We need to move common solutions to the network level, allowing libraries to concentrate on creating local value for their students and scholars rather than redundantly working on everyone's problems."

Gregg Silvis, Assistant Director for Library Computing Systems, University of Delaware Library, agrees that removing redundancy is important to financially strapped libraries and a huge incentive to opt for network-level services. He cites the library catalog as a prime example of how the Web platform could be used to reduce costs and serve users better.

"Local OPACs have served a purpose but if I were designing an information discovery system today there would be no local catalog," he says. "OPACs represent a tremendous duplication of effort." Silvis says that his library would be better served using a network-based database with links to local acquisitions and circulation systems.

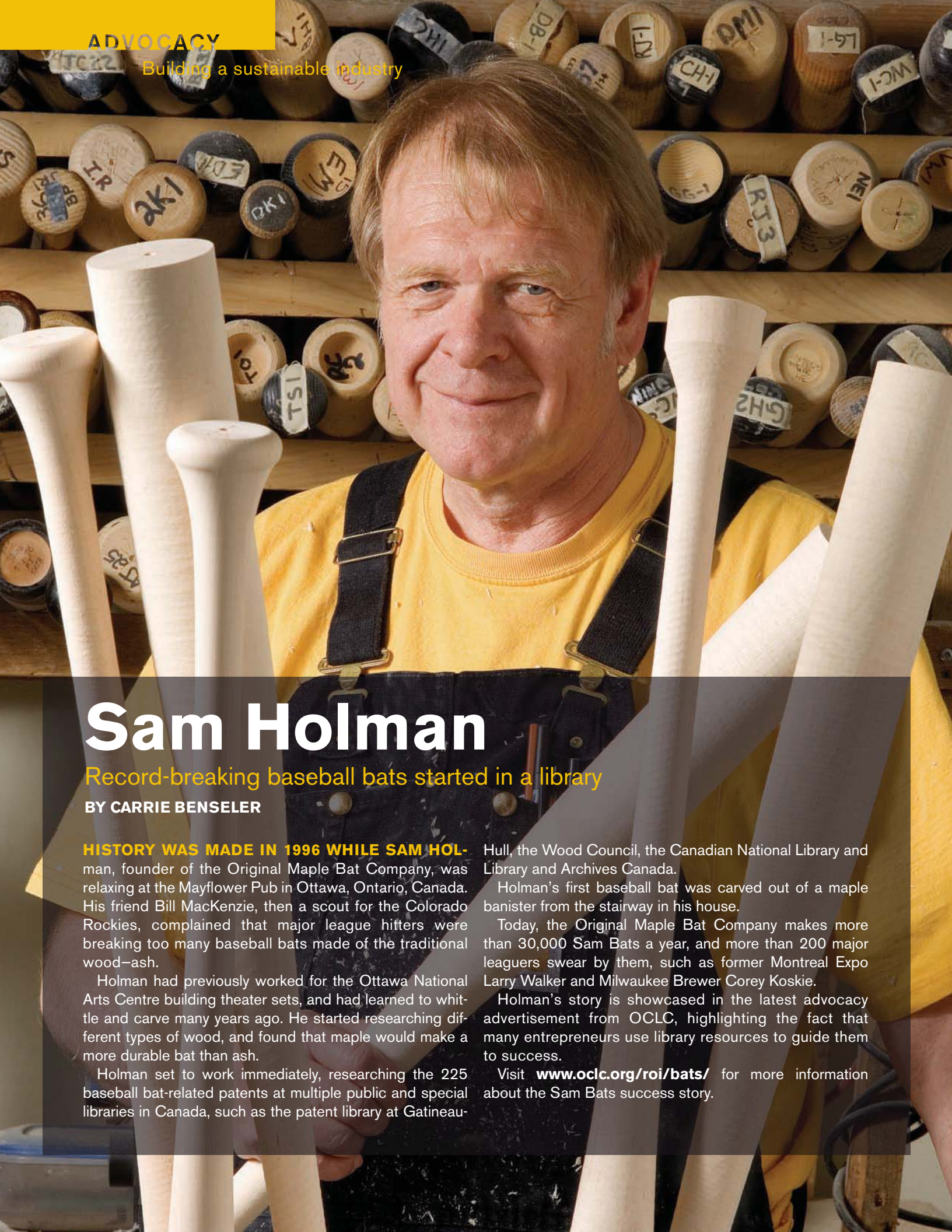
To him, the issue is delivering library services to the point of need. "We have to start thinking about the library in the user environment rather than the user in the library environment. You have to come to the OPAC to use it. The Web allows libraries to offer services where users are."

Silvis says that Open WorldCat is a good example. This service puts library resources on the Web—where most users are these days—and allows his users to search Google to find things in his library. He also noted that the library's ArticleExpress service does the same thing by meeting users on the Web and linking them to library-supplied eJournals, eBooks and other content.

Clearly, it is a new computing environment Silvis says that requires change. "What it means to me is we have to break our services into little discrete pieces that we can insert where the users are."

"This is the general direction in which libraries have to move to maintain their relevance for users. However, it represents a fundamental shift in librarian thinking. Librarians had become used to, and actually expected, the user to come to them. This is clearly no longer the case. Librarians and the resources and the services that they provide to their users must go to the user."

To O'Reilly, one of the founding fathers of the network platform, the organizations that succeed in this new computing environment are those that deeply understand what it means to be network applications. "It's as simple as this. The secret in the networked era is to create or leverage network effects, by which networks grow as a result of the connections they make." ■



Sam Holman

Record-breaking baseball bats started in a library

BY CARRIE BENSELER

HISTORY WAS MADE IN 1996 WHILE SAM HOL-man, founder of the Original Maple Bat Company, was relaxing at the Mayflower Pub in Ottawa, Ontario, Canada. His friend Bill MacKenzie, then a scout for the Colorado Rockies, complained that major league hitters were breaking too many baseball bats made of the traditional wood–ash.

Holman had previously worked for the Ottawa National Arts Centre building theater sets, and had learned to whittle and carve many years ago. He started researching different types of wood, and found that maple would make a more durable bat than ash.

Holman set to work immediately, researching the 225 baseball bat-related patents at multiple public and special libraries in Canada, such as the patent library at Gatineau-Hull, the Wood Council, the Canadian National Library and Library and Archives Canada.

Holman's first baseball bat was carved out of a maple banister from the stairway in his house.

Today, the Original Maple Bat Company makes more than 30,000 Sam Bats a year, and more than 200 major leaguers swear by them, such as former Montreal Expo Larry Walker and Milwaukee Brewer Corey Koskie.

Holman's story is showcased in the latest advocacy advertisement from OCLC, highlighting the fact that many entrepreneurs use library resources to guide them to success.

Visit **www.oclc.org/roi/bats/** for more information about the Sam Bats success story.

Q+A

Name Sam Holman

Age 61

Education I attended the University of South Dakota for one year. I was then drafted into the Vietnam conflict, and sent to Germany. I later spent two years at L'Ecole de Commerce in Beil, Switzerland.

How you stay motivated Sleep as little as possible. When the world's best players are using your product, you're motivated.

Best thing about libraries There is a sereneness about them. They are better than a place of worship for me.

Worst thing about libraries Their fate with the Internet. People forget the usefulness of three dimensions and hands-on experiences.

The world without libraries Knowledge is what corrects society. We need a free flow of information. People using misguided information is frightening.

Favorite authors Kurt Vonnegut, James Michener, Peter Matthiessen.

Last book read A book my mother gave me on Barry Bonds.

For the Original Maple Bat Company, producing more than 30,000 Sam Bats a year is a true team effort.

Favorite television shows *Formula One Racing*, History Channel, Discovery Channel.

Type of music I like it all. Especially blues on guitar and live music. When I worked for the Ottawa National Arts Centre, I would listen to the orchestra practice–it was really nice.

Magazine cover you would most like to be on and why I've already had a *Sports Illustrated* feature story, sandwiched between two Louisville Slugger advertisements–you can't get much better than that!

Most visited Web site Google.

Personal motto Be persistent.

Proudest moment The Canadian Prime Minister (The Right Hon. Paul Edgar Philippe Martin) invited me to dinner to meet President George W. Bush. Sam Bats were presented to both George W. Bush and George H.W. Bush.

Memorable library experience Researching the 200-plus baseball bat patents at the patent library at Gatineau-Hull. It was a pleasant experience–they just kept bringing me books!

On library funding cuts When communities cut library funding, it is an example of society being cruel to itself. It's being cruel to those who need it most.

Why reading and libraries are important Reading is the foundation of knowledge. It expands how people think.

Items you have made out of wood (besides bats) I've made Formula One race cars out of white pine at a scale of 1/25. I carved the coffee table in my living room entirely from Japanese hand tools.

Marketing and advertising strategy We make trips to spring training each year. We find out the players' bat specs, and take bats for them to try. They usually like them. We do not advertise at all. Promotion is purely by word of mouth.

Famous baseball players who use Sam Bats Barry Bonds, Albert Pujols, Joe Carter, Corey Koskie and Larry Walker, to name a few.

Where you live In Ottawa, two blocks away from the bat factory, in a brick farmhouse built in 1904. My wife, Denise, and I have lived there since 1985.

The future of Sam Bats We are currently trying to streamline our effort to reduce costs. I'm looking into buying a new factory in Point Gatineau, Quebec, that will allow a better workflow and be less expensive to own. It's the perfect site for us, but I've been running into some zoning laws. I guess I have a tendency to fight City Hall!

Load, link, launch

Here are three tips to ignite use of NetLibrary eContent

BY TOM STOREY

LOOKING TO MAXIMIZE YOUR NETLIBRARY ECONTENT USAGE?
Take these steps, and then watch your usage stats grow.

LOAD Loading MARC records for NetLibrary holdings into your local database enables users to find eContent with your main navigation tool: the catalog! Each OPAC record has a URL in the 856 field that connects users to the digital content. How much will usage increase? Based on OCLC eBook studies, it varies but could be as much as three times with MARC records in the OPAC.

LINK Creating "deep links" in WorldCat puts your NetLibrary eContent one click away on the Web, the place where many users start their research. Search engines harvest and index OCLC's WorldCat database, which contains more than 100,000 MARC records for NetLibrary eContent, including a record for each eBook. When these records show up in search engine result lists, and users click them, deep links take users directly to the record in your catalog.

LAUNCH Launching a promotional campaign will get the word out and create interest in eContent. According to OCLC research, one of the biggest reasons for low use of electronic resources is lack of awareness. Promoting availability will make sure users know that they can get eBooks and eAudiobooks from your library. Try customizing free marketing materials from OCLC or working with a local marketing group.

In 2002 at Texas A&M University, average weekly eBook accesses jumped 533 percent when the library worked with the undergraduate student chapter of the American Advertising Federation on eBook Push Week. More importantly, the campaign appears to have helped build long-term awareness, as usage of the eBook collection more than quadrupled from 2001-2004. Some of the campaign's advertising materials are still in use today.

Letting users set up access for home and hotspot usage will also help drive additional traffic to your NetLibrary collection. A variety of authentication options are available for remote access, including the NetLibrary Authentication Server, IP authentication, proxy servers and Secure Referring URL. Creating a personal NetLibrary account from any computer authenticated to your library is another way to gain remote access. For more information on maximizing your library's NetLibrary use, visit **www.oclc.org/support/documentation/netlibrary/tips.htm.** ■

Special delivery

Libraries have the option to send items direct to users in WorldCat Delivery Pilot

BY CARRIE BENSELER

OCLC IS TESTING A NEW SERVICE THAT WILL facilitate requests for library materials across disparate library system platforms and will interact with different circulation systems. The service will also test the optional delivery of requested library items directly to users at their homes or offices.

By using NCIP (NISO Circulation Interchange Protocol), OCLC is facilitating joining together of disparate integrated library systems (ILS) to create a circulation-based resource sharing service.

The goals of the pilot are to understand how libraries and library users would use direct delivery, if made available, and also to understand how libraries would use interoperability between their ILS to simplify their workflows. The pilot will include several representative library groups that use different ILS. A group of libraries in Montana will be among the first to pilot the new service, starting in September. Other pilot participants are in the process of being identified.

The pilot began July 2006 and will continue through December 2006. The new service is planned to launch in early 2007.

How it will work

WorldCat Delivery is a resource sharing brokering system that will integrate OCLC's WorldCat Resource Sharing and ILLiad services with local ILS implementations. The service is an expansion of traditional interlibrary loan that crosses system platforms so that lending and borrowing becomes integrated with circulation activity.

If the resource sharing request cannot be filled by a WorldCat Delivery partner, it is automatically routed via WorldCat Resource Sharing as a traditional interlibrary loan request. An additional request does not need to be created by either the user or library staff.

The interoperability between OCLC services and library ILS will streamline library workflows and increase patron satisfaction by quicker fulfillment and direct delivery options. ■

Discover WorldCat.org

This new Web portal is a new way for users to reach the riches of the world's libraries

BY TOM STOREY

Today's users want the universe of information—including library resources—at their fingertips, as part of their Web experience. To help meet this demand, OCLC is rolling out a new destination site with a downloadable search box designed to elevate the visibility of library collections and services on the Web.

WorldCat.org is a permanent Web page dedicated solely to searching WorldCat libraries. Students, researchers, librarians and other information seekers can go to this site to search the WorldCat database or add the new WorldCat search box, which will reside on WorldCat.org, to their Web sites. Instructions for downloading and installing the new box, as well as other tools for helping libraries and other organizations make better use of WorldCat, also will be available at WorldCat.org.

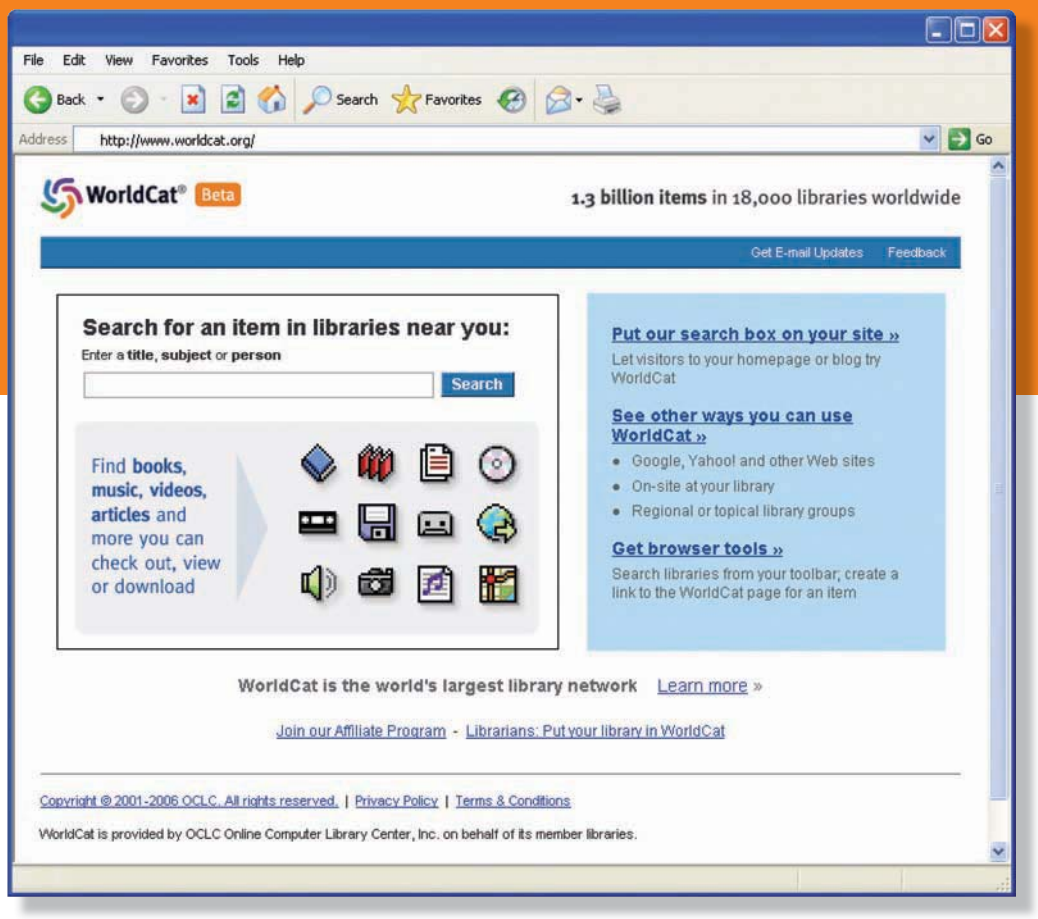
The initial focus is on discovery of library collections, but content delivery and virtual reference services will be added in later versions so users can connect to a more complete array of library resources.

The new WorldCat.org Web site and search box will let more people discover the riches of library-held materials cataloged in WorldCat by making the complete database accessible for free on the open Web. It complements access that is now available to library collections through Open WorldCat, an OCLC program started in 2004 that puts WorldCat records in the results lists of search engines, online bibliographies and Internet booksellers.

Open WorldCat has demonstrated the value of making WorldCat records and library holdings available to the general public on the Web. Each month, there are about 5 million click-throughs from search engine sites, such as Yahoo! Search, Google, Google Scholar and other partners, to the Open WorldCat Find in a Library page. Traffic from the Find in a Library page to library services—OPACs, ILL services, full-text articles, virtual reference services—totaled some 1.5 million from July 2005 to June 2006, with approximately 80 percent of click-throughs going to library OPACs.

WorldCat.org expands this program by further exposing the resources of libraries to Web users who are not in the habit of turning to libraries for information. Users will have a more fulfilling search experience with WorldCat.org because it gives them access to the entire database of 70+ million records, rather than the 3.4–4.4 million subsets harvested by search engine partners. Essentially, with WorldCat.org, WorldCat becomes the largest open access catalog of library materials.

The idea of establishing a dedicated portal for libraries and users through WorldCat.org is an important strategic move for OCLC to take on behalf of member libraries, says Stewart Bodner, Associate Chief Librarian–General Research Division and Acting Curator, Rare Books



Students, researchers, librarians and other information seekers can go to WorldCat.org to search the WorldCat database or add the new WorldCat search box to their Web sites.

Division at the New York Public Library.

Bodner says that the WorldCat.org platform will help libraries, both individually and collectively, deliver content and services to the network and build a unified, high-value consumer presence on the Web.

"I am wedded to the concept of quick access to our cataloged materials from the desktop," says Bodner. "WorldCat.org will help libraries move into a more search engine mode, which is how most people search now. Using a browser might be the easy way to gain access to a particular library's records and serve people more quickly and efficiently."

Initially the main attraction of the new site is the WorldCat search box, which allows Web users to search the WorldCat database with the method most familiar to them: simple keywords. Search results in this public view of WorldCat are generated directly on WorldCat.org, instead of through search engine partners. Just as in Open WorldCat, each linked search result leads to a Find in a Library information page for an individual item. There the user can enter geographic information, receive a list of nearby WorldCat libraries that own the item, and link right to a library's online catalog record to initiate circulation activity or access electronic content directly.

More tools that put libraries in the Web workspace

WorldCat.org also will offer these features designed to appeal to a new generation of Web users accustomed to instant access, lots of options and anything that facilitates personalization and redistribution:

- Free Web toolbars and other plug-ins that let people search WorldCat information from an ever-present browser pane.
- A variety of open-source software and Web services, such as RSS feeds, which anyone can register for and use. These technology components—part of the developing WorldCat Affiliate Program—continuously pull defined sets of information out of WorldCat, link to WorldCat search results, or link to WorldCat libraries' online catalogs and services.
- The ability to contribute reviews and notes to WorldCat records, or to directly buy an item from a trusted e-commerce partner, both introduced in Open WorldCat.

Links from Open WorldCat results pages to WorldCat.org let people who arrive from partner sites discover the destination site and these library-information accessories.

In the coming months, OCLC will expand search options available in WorldCat.org to include other content, including databases that now reside on the OCLC FirstSearch service as well as content on other Web platforms.

To Bodner, leveraging WorldCat records and reference databases through search engines, Internet booksellers and Web portals is just the beginning of the creative ways libraries can make their resources more useful. ■

Recombination, mashups and remixing

Some OCLC Research Web services

BY LORCAN DEMPSEY Vice President, Research and OCLC Chief Strategist

The Web introduced the idea of a large, interconnected information space. It has mostly been for human users, who read, digest and bring together Web pages. This is changing as browser technologies develop and as 'Web services' become more widely adopted. Increasingly, we also see applications communicate with each other over the Web, making it a much richer environment.

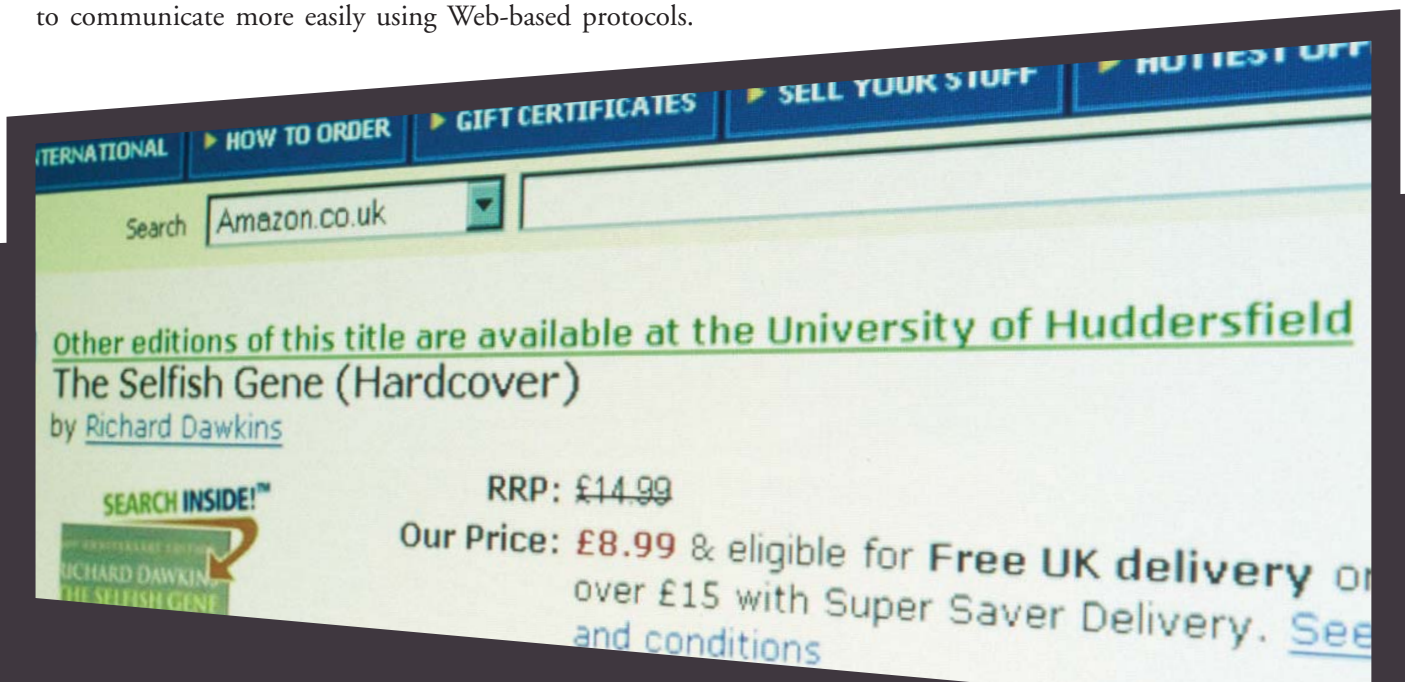
Think of Amazon, which was one of the first to allow other applications to mix its own services or data into their offerings. Google Maps is another good example; 'mashups' between Google Maps and other applications are now common. Both of these Web services allow functionality from several places to be recombined, remixed or mashed up to meet new needs.

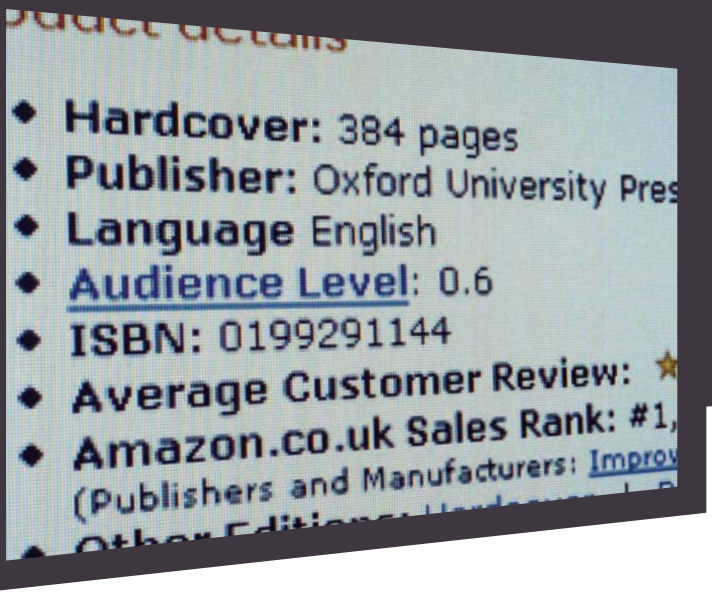
OCLC Research has been working on a range of efforts using Web services in this way. Our general approach is to identify functionality that may be embedded in several larger applications, or to identify some new functionality, and to make it available in a Web services environment so it can be reused more easily by other applications.

First, some clarification: 'Web service' is the term used for a set of emerging approaches that allow applications to communicate more easily using Web-based protocols. Effectively, Web services are a way of allowing applications to interconnect in the way that we have been used to seeing with Web pages. A Web service's functionality is available through a machine interface and can be reused within other applications.

Two Web services developed within OCLC Research are xISBN and the Audience Level indicator. xISBN is a service that accepts an ISBN and returns all the ISBNs we know about in the same work set. So, if I give the service an ISBN for *The Adventures of Huckleberry Finn* sitting on my table, it will return the ISBNs for all the other versions of *The Adventures of Huckleberry Finn* we have mined from WorldCat.

The Audience Level service provides an indicator of the potential interest of an item based on its pattern of distribution across libraries. If something is held only by research libraries it will have a higher audience level, whereas if it is available only in school libraries it will have a lower audience level. In itself, this value may not be definitive, but it is an interesting addition to the range of indicators that we might use to refine a search, provide additional hints to a user about whether something is of interest or not, and so on.





Functionality from different Web sites is brought together in the browser using Web services developed by OCLC Research.

How Web services work

Above and on the previous page are examples of a simple application that uses both of these Web services. In each case we are using Greasemonkey scripts and some other things to extend the functionality of a Firefox browser. The scripts interact with some Web services and what we see is functionality from different places brought together in the browser.

The first screenshot shows a search on Amazon.co.uk for Richard Dawkins' book, *The Selfish Gene.* A line appears above the title: "Other editions of this title are available from the University of Huddersfield." If I click on this, I am brought through to an earlier edition at the University of Huddersfield catalogue.

What is happening here? The Greasemonkey script that is looking at the ISBN on this page, going out and checking the Huddersfield catalog, not finding the ISBN, checking our xISBN service to see if there are additional ISBNs for other versions, checking the Huddersfield catalog for those, and, being successful, inserts this line in my browser. This is based on interesting work by Dave Pattern at the University of Huddersfield, which incorporates our xISBN service.

In the second screen shot the line "Audience level: 0.6" is inserted among Amazon's product details. What this tells me is that this is a college-level read, but not reaching an over-specialized audience. It gives me a hint. What has happened here? Another script, a different one this time, has looked for the ISBN and sent it to our audience-level Web service. This has taken it, and returned the Audience Level indicator, which is dynamically inserted in the Web page.

These are quite simple applications with a user focus. They are mashups: they mash external functionality up with an existing Web page.

Web services are also becoming more important within the enterprise. There is a trend toward simplification of large applications, making them from smaller pieces that communicate with each other. This is developing side by side with the emergence of 'Web services,' which provide the 'connective tissue' to make these links.

Why is this happening? In general, working with smaller components improves organizational flexibility and responsiveness. It allows particular functionalities to be specialized, either within an organization or between organizations, so that appropriate focus and expertise can be brought to bear on a particular task. It allows applications to be built more quickly from preexisting pieces to meet new and changing needs. Again, think of how Amazon, eBay or Google Maps accelerates development of other applications by making appropriate functionality usefully available.

Schema transformation services and terminology services are two OCLC-developed Web services that make common functionality available in many environments. Our schema transformation Web services streamline the process of moving metadata between metadata formats and professional domains. The Terminology Web services provide a way of making multiple terminologies available to multiple editing environments. Both are going into production at OCLC and we also provide research prototypes.

These examples show another feature of working in this way: loose coupling. These applications are not tightly bound into bigger pieces. They can be reused in many contexts. Loose coupling, recombination and Web services are examples of how the network is increasingly influencing the construction of applications. These new approaches provide interesting challenges and show great potential. ■

8

Videos created by a Ball State University film student to educate students about library services on campus. (Sample titles: *Why I Like the Library*; *Read Great, Even Late*; and *Interlibrary Loan at Work 4 U*.)

42

Percent of college graduates who never read another book after college.

530

Miles of shelves that hold the world's largest library collection at the Library of Congress in Washington, D.C.

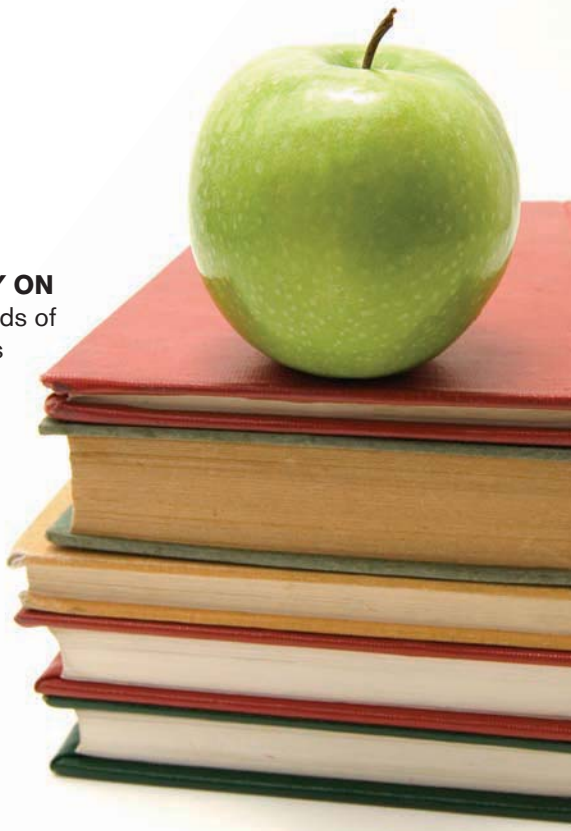
0.9 X 0.9

Size (in millimeters) of the smallest printed book, an edition of *Chameleon* by Anton Chekhov.

5,000,000

Articles accessible via the Web through the Utah Digital Newspapers Program using CONTENTdm.

Blast from the past



NEW MATERIAL ADDED TO THE MLA INTERNATIONAL BIBLIOGRAPHY ON THE OCLC FirstSearch service significantly increases access to electronic records of scholarly material. The new content features journals, series, essays, dissertations and other scholastic material from 1926–1962 under subjects such as folklore, language, linguistics and literature. The content comes from 38 print volumes of *The MLA Bibliography*; all 160,000 new records have been reviewed.

Along with the new data, journal abbreviations and acronyms for nearly 3,500 titles have been expanded for easier navigation. In addition, full journal names and series titles were standardized, and ISSNs attached. Almost 11,000 subject names and terms also were standardized according to current practices.

With the addition of the new retrospective content, library professionals and end users can now search an MLA database of more than 2 million records from over 5,000 titles to meet their research needs.

The retrospective content is available at no extra cost to libraries as part of their current subscriptions. Learn more about the MLA International Bibliography database on FirstSearch at **www.oclc.org/firstsearch/content/databases/.**

Highest OCLC record number (as of July 31, 2006)	**70,809,218**
Languages in WorldCat	**458**

Watch WorldCat grow—a new record and 13 new holdings are added about every 10 seconds: www.oclc.org/worldcat/grow.

Format	Number of records	Percentage of total	Locations of items cataloged
Books	**56,918,325**	**84.57%**	**977,343,069**
Serials	**2,804,569**	**4.17%**	**30,843,370**
Visual Materials	**2,141,669**	**3.18%**	**20,714,381**
Maps	**1,020,448**	**1.52%**	**4,680,495**
Mixed Materials	**281,535**	**0.42%**	**291,553**
Sound Recordings	**2,264,637**	**3.36%**	**25,426,100**
Scores	**1,553,729**	**2.31%**	**10,587,813**
Computer Files	**317,426**	**0.47%**	**1,289,064**
Totals	**67,302,338**	**100.00%**	**1,071,175,845**

as of July 2006

The OCLC Cooperative

Governing Members	**9,031**
Members	**20,181**
Participants	**21,374**
Libraries outside the United States	**10,985**
Countries and territories served	**112**

EVENTS

Going on the road

OCLC will be exhibiting at the following events:

Illinois Library Association
October, 3–6, 2006
Chicago, Illinois

Association for Advancement of Librianship
October 11–14, 2006
Quebec City, Quebec, Canada

Joint Conference of Librarians of Color
October 11–15, 2006
Dallas, Texas

NetSpeed
October 18–20, 2006
Edmonton, Alberta, Canada

Internet Librarian
October 23–25, 2006
Monterey, California

Museum Computer Network Conference
November 8–11, 2006
Pasadena, California

California Library Association
November 11–13, 2006
Sacramento, California

Online Information
November 28–30, 2006
London, United Kingdom

American Library Association Midwinter
January 19–22, 2007
Seattle, Washington

Check the OCLC Web site for a complete list of upcoming conferences.

www.oclc.org/education/events/

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