» "Why buy a book when you can join a library?" -RICKY GERVAIS

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A Library's Role in Preserving History

» Through two innovative projects, the Orange County Library System is creating an oral and written history of its community.

BY DONNA BACHOWSKI

Libraries have long played a role in the preservation of local history. In many libraries, the local history collection holds a place of honor, and rightly so. The information contained in these collections is priceless and irreplaceable.

In today's world of rapidly disappearing or changing information, it is more important than ever that libraries preserve their community's history, and not just the traditional "old" history, but tomorrow's history—the things that are happening now.

The librarians at the Orange County Library System (OCLS) recognized that our community's history and culture was not being recorded and preserved. As a result, we have created two tools to aid in preserving this vital information: Orlando Memory and EPOCH (Electronically Preserving Obituaries as Cultural Heritage). These two resources mesh with OCLS' goals: creating and preserving information, inspiring innovation, and thinking of information in new ways.

EPOCH
PRESERVING LOCAL LEGACIES

RECAPTURING ORLANDO

Recognizing the importance of local historical information, the OCLS staff continually searched for ways to support the preservation of these incredibly valuable assets. The search cumulated in the launching of

the Orlando Memory Web project (**www.orlandomemory.info**) in 2008.

In the ensuing years, OCLS librarians have worked with community members to record memories and oral histories of the greater Orlando area and to invite others to comment on and expand these memories. To date, several thousand items have been added to Orlando Memory, including oral histories of World War II servicemen and Holocaust survivors.

Orlando Memory is not a professionally curated history site; it is a site for everyone who lives in, has lived in, or has visited the greater Orlando area. At preservation events, we encourage all attendees to share their memories of Orlando, whether they have lived here for decades or just arrived in the last few months.

For example, during Black History Month, librarians collaborated with patrons at branches located in historically African-American neighborhoods such as the Eatonville Branch serving the community of Eatonville, one of the first incorporated black towns in the country. There are plans to participate in Hispanic Heritage Month by collecting histories from patrons at branches with strong Hispanic roots.

Our librarians have refocused on becoming more involved in capturing the area's history through these efforts. We have received training on collecting digital histories, which includes sections on oral history interviewing techniques, using audio and video editing software, and uploading the information to the Orlando Memory database.

When most people think of Orlando, they instantly think "theme parks." OCLS is using Orlando Memory to expand people's perspective. Yes, the theme parks have played a huge role in the development of the area, and will continue to do so. But with Orlando Memory, we are able to show people that a vibrant and fascinating Orlando really did exist before the 1970s.

To document this growth, librarians worked with the Lockheed Martin retirees group and gathered incredible histories of the engineering and military developments that occurred here. We have photos and stories of when a Navy training base was here. Through interviews with long-time residents, we have uncovered the history of why the Orlando International Airport has MCO as its code (it was originally home to McCoy Air Force Base, and when the base closed in 1975, the current airport was established). The collection of photos, documents, and oral histories weave together to give expansive, and often emotional, memories of Orlando, past and present.

By posting the history of the library itself to the site, we've essentially preserved ourselves. The archive includes a gem of a letter dated Feb. 5, 1931 from Melvil Dewey (inventor of the Dewey Decimal Classification System) to the Orlando head librarian, Olive Brumbaugh. In the note, written in his Simpler Spelling method, Dewey invited Brumbaugh to visit his family at their retreat in Lake Placid, Florida.

HISTORY OF THE FUTURE

One of the goals of Orlando Memory is to preserve all the fleeting moments that make Orlando such an amazingly diverse and fascinating place to be. Capturing and preserving tomorrow's history is essential to meeting this goal.

With the transitory nature of today's information, we want to make sure that memories are saved for future generations. As an example, when we talk with customers, we remind them about all the photos they have on their phones: have they been printed or are they backed up somewhere? What would happen to the pictures if their phone was lost or broken?

In response, customers state that many of the photos they have are not that important, just pictures of activities with friends. Our response is this: if what you were doing was important enough to take a picture of who you were with, then that is a memory that should be preserved.

We are also using Orlando Memory is as a place for different cultures to come together and learn about one another. With the upcoming launch of "Cooking with Mom," we will be focusing on how food transcends languages and cultures and provides a common ground. We will capture memories of favorite meals, family traditions, and treasured recipes. Partnering with our Cuisine Corner (a demonstration kitchen at our Main Library), we hope to interview local chefs to find out what defining moment brought them to the culinary world. We will host daylong events along the lines of the StoryCorps model, where two people interview each other and share their food-related memories.

» **We already knew that our community was looking to their library to be a repository for local heritage information, to be a place where the community's history will always be retained and available. EPOCH enables community members to preserve their family members' history and biographical information along with their contributions to the community.**

By reaching out to the culinary community in the area, we believe we will be able to not only preserve these tasty memories, but also demonstrate that no matter where you are from, we all treasure memories of celebrating with loved ones through cooking and sharing meals.

EXPANDING MEMORIES

As the library for the Florida State Society of the Daughters of the American Revolution, genealogy is a core component of OCLS' services. Local historical and genealogical information is critical to preserving a community's history. A vital part of this genealogical research is obituaries.

As Orlando Memory became more popular, patrons asked if they could post information on the site about family members who had passed away. These personal requests, combined with our genealogical experiences, led us to our next project, EPOCH: Electronically Preserving Obituaries as Cultural Heritage (**www.epochlegacies.org**).

Over the past several years, there has been a marked increase in the amount of research being conducted at OCLS by genealogists and local historians. By reviewing the usage statistics of the two genealogical databases, Ancestry.com and HeritageQuest, we have identified a significant upward trend. Most recently, there have been monthly double digit percentage increases in the use of these two resources.

With the advent of popular television entertainment programs such as "Who Do You Think You Are" and "Genealogy Roadshow," we are seeing even more interest from people undertaking deeply personal journeys of discovery to understand who they are and where they came from.

The use and value of obituaries in genealogical research is multifaceted and should not be underestimated. Most obviously, they provide a final public record for an individual. But they also contain biographical sketches of the deceased's life, which may be the only source of information for those doing specific research. When they contain a wealth of information, obituaries may be of even greater importance to researchers than other public records, providing a deeper perspective on an individual's contributions to the community.

Obituaries can help a genealogist form a timeline of events for a family they are researching. They provide and preserve biographical information about an individual and, many times, other family members as well (see **sidebar on page 4**). In the aggregate, obituaries create a mosaic of a community and its history through individual records. Of course, the more information included in an obituary, the more valuable it becomes to a researcher.

The tradition of publishing obituaries in local newspapers is rapidly declining. During the past seven years, the Orlando area has experienced a 63 percent reduction in the number of obituaries published in the newspaper. According to funeral professionals, the families of the deceased often cannot afford the increased cost of publishing obituaries. Some funeral homes offer an online tribute for up to six months in lieu of a published obituary. But after the six months, this information is lost to the community.

This decline in published obituaries is detrimental to both preserving local history and future genealogical research. These original source records are being lost, and will never be recovered.

We already knew that our community was looking to their library to be a repository for local heritage information, to be a place where the community's history will always be retained and available. EPOCH enables community members to preserve their family members' history and biographical information along with their contributions to the community.

ACCESS TO ALL

OCLS applied for and received a three-year National Leadership Grant from the Institute of Museum and Library Services (IMLS), which enabled us to develop and launch EPOCH. Because of the support from IMLS, we have been able to create a resource that can be shared beyond Orange County.

By developing this project with open source software that has a strong support system (Drupal), this project can be freely replicated in libraries throughout the United States. OCLS has worked with interested organizations to implement EPOCH in their communities by providing training, marketing guidance, and support materials. These tools allow groups to capture and contribute to vital local historical information and preserve the heritage of their communities.

With a user model that is free to customers, EPOCH ensures that no matter what the financial situation of a family may be, every loved one who dies can have a meaningful tribute to their life, a tribute that will be preserved for as long as libraries exist. Families don't have to worry about how many column inches they can afford in a newspaper, be concerned about whether someone will pay the hosting fees to keep an obituary posted on a commercial site, or even whether a commercial site will still be in business a few years from now. EPOCH gives them that piece of mind, and helps close a bit more of the digital divide.

Users merely create a free account by signing up with a self-chosen username, password, and email address. Once the information is verified and the account is activated, users can begin creating and posting tributes. Users are prompted to include basic information such as birth and death dates and the city and state of the person's last residence. They are then presented with a high-capacity text box in which to write the tribute. They can also add up to fifteen media items such as photos, documents, and audio or video files. Users have the

The following information about an individual who lived in the past, which may be of interest to genealogical researchers, is often found in obituaries:

- Name of the deceased, his or her age, and birth date
- Place of residence
- Spouse and children's names
- Details on other survivors, including siblings, aunts, uncles, grandchildren, nieces, and nephews
- Cause of death
- Occupation
- Religious membership and/or church affiliation
- Fraternal or social memberships
- Past social or government positions
- Migration information, including birth town, parents' names, and information on grandparents and ancestry
- Funeral arrangements
- Cemetery of burial
  Noteworthy life events, including military service

option to allow moderated comments to be added to the tribute.

Everything has been designed to make EPOCH easy to navigate so that users can focus on what they are doing without worrying about the technical aspects. The finished tribute can be shared through social media platforms, send via email, or saved as a PDF or .GEN file.

OCLS has committed to providing continued support and development of this project. We believe that EPOCH will become a key component of any genealogical collection. The trend already exists for genealogical groups to collaborate by posting this sort of information online. With its easy-to-use format, EPOCH provides an opportunity for everyone to contribute.

Throughout the United States, local genealogy groups are working to preserve and provide access to as many obituaries as possible. While there are multiple sites that local groups manage, there is not a consistent method for creating, indexing, and managing them. With the creation of EPOCH, libraries and local their genealogical groups can partner to develop their own valuable resource that is consistent and has a set of best practices for ensuring that quality information is retained.

EPOCH provides a resource that can be used by anyone who has lost a loved one, not just genealogists. With full search capabilities, community members can easily find deceased neighbors, coworkers, and friends. Local historians and students can find information about their community and its heritage.

Most importantly, the information will be available to the public for an unlimited time, providing a repository of valuable local genealogical and historical information that otherwise might very well be lost to the community. While there is great value for the community members who are using EPOCH now to post tributes, we feel that it will be of even greater value years from now, when the next generation of researchers is tracing their family or exploring the history of their community.

ADDRESSING CHALLENGES

EPOCH is a limited point-of-need resource. Fortunately, most people do not have to deal with the death of a loved one very frequently. So even if citizens may be aware of EPOCH and think it is a wonderful idea, when that tragic event occurs, they may not recall it.

Faced with that reality, OCLS has expanded outreach efforts. In the last three years, we have worked with libraries in Florida and other states, attended conferences for funeral directors and for hospice and palliative care workers, and shared information with and offered training sessions to churches. While EPOCH was well received, we were not getting the usage we wanted.

After talking with many people, we launched our latest and most successful marketing effort: "Forget Me Not" workshops. During the regularly scheduled workshops, OCLS staff helps patrons write and post a tribute to EPOCH. We make equipment available to digitize photos and other items for inclusion in the tribute.

Many people have never written an obituary, are often overwhelmed, and don't know where to begin. We created a user workbook to assist, which is a very popular resource. The workbook covers what EPOCH is, how to create a free account, how to post content, and how to write a tribute with examples. Blank pages are included for making notes or gathering information. We have discovered that after a customer successfully creates one or two tributes, they often don't return to the workshops, but continue posting on their own.

REACHING BACK

The initial focus for EPOCH was to gather contemporary and future obituaries, but we quickly realized the value in including older obituaries. An EPOCH tribute can almost serve as a scrapbook of sorts, gathering all the relevant information about not only the deceased person's life, but also about everything related to their death and burial.

Customers have been delighted to be able to post an obituary for a loved one who passed away a number of years ago, but the family couldn't afford a published obituary at the time. Or, a traditional obituary was published, but no photo was included. Now, they can post that obituary and include favorite photos such as a picture of the grave marker, a copy of the Mass card, or images of comments left in a condolence book.

Going back even farther in history, we have had inquiries from local members of the Daughters of the American Revolution, asking if they could post a tribute for their patriot. We are pursuing this idea, and are in the process of creating workshops to aid in accomplishing that task.

FUTURE PLANS

OCLS librarians are continually looking for ways to improve both Orlando Memory and EPOCH. As more people use EPOCH, we are able to gather valuable feedback about what we can do to make it even easier to use. We have ever-growing wish lists for both projects, including ideas for improved functionality, better ways of doing things, or new things to try.

As pleased as we are with both projects, the OCLS culture is very strong on innovation and improvement, and we will continue to fine-tune and add new resources with these projects. For example, we tie EPOCH and Orlando Memory together whenever we can. When someone who has an oral history posted in Orlando Memory passes away, we add a tribute in EPOCH and include a link to the relevant posts in Orlando Memory.

Preserving our community's history by gathering personal details is a vital role for our library, and OCLS, is honored to provide this service to the residents of Orange County. ■

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Data Mining on Vendor-digitized Collections

» Yale University library facilitates faculty research through access to large datasets.*

BY LINDSAY KING

Data mining leverages computational methods for the analysis of large digital collections of text and images. It is an umbrella term for an array of tools that enables us to go beyond the capabilities of keyword or full-text searched—for example, to quantitatively compare the language usage of male vs. female authors within a library of books, map the birthplace of artists represented in a museum's collections, or chart the appearance of Tiffany & Co. ads in Vogue magazine over time.

Using image analysis techniques, we can even sort pictures by color or analyze variations of hue and saturation over time. Computer science techniques enable further analyses such as face recognition or segmentation of the geometry of the page. Human scholars come up with the questions and interpret the results, but they can also zoom out on a body of material in ways that were prohibitively labor-intensive before.

WHAT IS THE LIBRARY'S ROLE?

Access to large datasets comes to many researchers via the library, including historical newspaper databases, digitized literary texts, census data, and geospatial data. The subject librarian's role is to connect researchers to the information in their fields and to identify possibilities for tools and cross-campus projects.

At Yale, we are fortunate to have a librarian for digital humanities research and have a Digital Humanities Laboratory in the works. Numerous faculty members and graduate students are interested in this kind of work for themselves and for their students. These scholars see the library as a starting point for their research.

ROBOTS READING VOGUE

A particularly exciting project I am involved in at Yale Library, one of many underway here (http://digitalhumanities.yale.edu/) applies data mining techniques to a well-marked-up corpus of data: the ProQuest Vogue Archive (http://www.proquest.com/products-services/vogue_archive.html). Peter Leonard [who is he?] and I call this collection of data mining experiments Robots Reading Vogue (http://dh.library.yale.edu/projects/vogue/). We have used it to demonstrate the research opportunities a large and robust collection of digital data can provide to researchers.

The Vogue Archive includes an image of every page of every issue of American Vogue back to 1892, with XML markup of content, including advertisers, photographers, editors, and the full texts of articles. But when a user is presented with the opportunity to search or browse through such a vast archive, how does he or she even begin to know what to look for?

Our n-gram search tool (http://bookworm.library.yale.edu/collections/vogue/) allows users to chart the usage of individual words and phrases across Vogue's 122 years of publication. It uses Bookworm (http://bookworm.culturomics.org), the open source "bring your own books" version of the Google Books Ngram Search developed by Google and the Harvard Cultural Observatory. The n-gram tool defaults to sample searches of terms rising and falling in Vogue over the years. The search boxes can be easily adjusted for different queries, even comparing frequency of the same word in advertisements versus articles, for example.

Another way of digging into large datasets is letting the data organize itself, using a technique called logic modeling (http://dh.library.yale.edu/projects/vogue/topics/),

» **Digital humanities approaches have been shifting from the margins to the mainstream of academic work in recent years—not replacing, but augmenting research methods for scholars in fields such as literature, history, and art history. The digital shift is necessitating revisions in standards for publication, promotion, and tenure, as well as expectations of technological proficiency.**

which is borrowed from computer science. Logic modeling groups the words into clusters that statistically tend to appear in proximity to each other. Those clusters form recognizable topics, such as "art" or "advice and etiquette." We can then track those topics over Vogue's history to see what was being written about and when it was written.

The tool that facilitates comparisons of advertisements (http://dh.library.yale.edu/projects/vogue/ads/) relies on the metadata in the archive to count, average, normalize, and sort. It can help answer the following types of questions: Which tobacco advertiser placed the most ads and when? Which automobile company first advertised in Vogue?

In creating these and other experiments mining the Vogue Archive, we were not interested in replicating the search features and presentation of the ProQuest interface. We also do not make copyrighted material publicly available. In fact, our expectation is that use of Bookworm and other data mining tools will actually drive new traffic to digitized archives such as the ProQuest Vogue Archive.

COLLABORATION IN THE SERVICE OF RESEARCH

The September 2012 issue of Vogue is old fashion news; the aggregated 122-year archive available for digital investigation sparks interest from computer scientists and gender studies professors alike.

This type of work represents new opportunities for collaboration between vendors and librarians to serve the research needs of faculty and students. At the moment, many people's work is needed to securely transfer files of licensed content from vendors to libraries and to steward their use by researchers. As digital humanities methods become more widely used, systems to facilitate this transfer of data will have to scale up to meet demand.

Vendors are recognizing the need for scalable approaches to making raw data readily available for researchers at libraries that subscribe to their products. Two examples are JSTOR Data for Research (http://about.jstor.org/service/data-for-research) and Gale Digital Collections from Gale/Cengage Learning (http://news.cengage.com/library-research/gale-leads-to-advance-academic-research-by-offering-content-for-data-mining-and-textual-analysis/).

Robots Reading Vogue would not be possible without the systematic digitization and metadata markup undertaken by ProQuest, as it would require a prohibitively expensive outlay of resources for any library to recreate. In short, this is work that we in the library world are glad to have done by vendors. We hope that our discussions based on real-world data-mining applications have helped outline the requirements for specifications on these types of database products.

Digital humanities approaches have been shifting from the margins to the mainstream of academic work in recent years—not replacing, but augmenting research methods for scholars in fields such as literature, history, and art history. The digital shift is necessitating revisions in standards for publication, promotion, and tenure, as well as expectations of technological proficiency.

Students and faculty at Yale have been excited for years about having access to great historical resources such as the Vogue Archive. But it's even more exciting to think about them leveraging data-mining tools to ask questions none of us could have imagines answering before. ■

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Library as Infrastructure

» Reading room, social service center, innovation lab. How far can we stretch the public library?*

Photo 1: *Bohlin Cywinski Jackson, architect, Ballard Library and Neighborhood Service Center, Seattle. (Photo by Jules Antonia)*

BY SHANNON MATTERN

Today's libraries continue to materialize their underlying bureaucratic and epistemic structures, from the design of their web interfaces to the architecture of their buildings to the networking of their technical infrastructures. This has been true of knowledge institutions throughout history, and it will be true of our future institutions. I propose that thinking about the library as a network of integrated, mutually reinforcing, evolving infrastructures can help us better identify what roles we want our libraries to serve and what we can reasonably expect of them.

LIBRARY AS PLATFORM

The library has always been a place where informational and social infrastructures intersect. Today we are seeing the rise of a new metaphor: the library as "platform," a buzz word that refers to a base upon which developers create new applications, technologies, and processes.

In his 2012 article, "Library as Platform," David Weinberger proposed that we think of libraries as "open platforms," not only for the creation of software, but also for the development of knowledge and community.[1] Weinberger argued that libraries should open up their entire collection, all their metadata, and any technologies they've created and allow anyone to build new products and services on top of that foundation. The platform model, he wrote, "focuses our attention away from the provisioning of resources, and the messy, rich networks of people and ideas that those resources engender."

Yet the platform metaphor has limitations. For one thing, it smacks of Silicon

Photo 2: *Moshe Safdie, architect, Salt Lake City Public Library. (Photo by Pedro Szekely)*

Valley entrepreneurial epistemology, which prioritizes "monetizable" knowledge solutions. Further, its association with new media tends to bracket out the similarly generative capacities of low-tech, and even non-technical, library resources.

One key misconception of those who proclaim the library's obsolescence is that its function as a knowledge institution can be reduced to technical services and information offerings. Knowledge is never solely a product of technology and the information it delivers.

Another problem with the platform model is the image it evokes: a flat, two-dimensional stage on which resources are laid out for users to do "stuff" with. The platform doesn't have any implied depth, so we're not inclined to look underneath or behind it, nor to question its structure.

Libraries are infrastructures because they are made of interconnected networks. In this age of e-books, smartphones, firewalls, proprietary media platforms, digital rights management, mega-bookstores, Amazon, Google Books, Google Search, democratized media production, DIY, and activist cultures, libraries play a critical role as mediators—at the hub of the hubbub. We need to understand how our libraries function as, and as part of, infrastructural ecologies—as sites where spatial, technological, intellectual, and social infrastructures shape and inform one another. And we must consider how those infrastructures can embody the epistemological, political, economic, and cultural values that we want to define our communities.[2]

LIBRARY AS SOCIAL INFRASTRUCTURE

Public libraries are often seen as "opportunity institutions," opening doors to and for the disenfranchised.[3] People turn to libraries to access the Internet, take a GED class, get help with a resume or job search, and seek referrals to other community resources.

Branches of Opportunity, a report by the Center for an Urban Future, highlights a library's benefits to immigrants, seniors, individuals searching for work, public school students, and aspiring entrepreneurs. "No other institution, public or private, does a better job of reaching people who have been left behind in today's economy, have failed to reach their potential in the city's public school system, or who simply need help navigating an increasingly complex world."[4]

The new department of Outreach Services at the Brooklyn Public Library, for instance, partners with other organizations to bring library resources to seniors, school children, and prison populations. The Queens Public Library employs case managers who help patrons identify public benefits for which they are eligible. "These are all things that someone could dub as social services," said Queens Library President Thomas Galante. "But they're not. A public library today has information to improve people's lives. We are an enabler; we are a connector."[5]

Partly because of their skill in reaching populations that others miss, libraries have recently reported record circulation and visitation despite severe budget cuts, decreased hours, and the threat of closure or sale of "underperforming" branches.[6] As a result, we need to attend more closely to their social infrastructures.

In a recent interview, sociologist Eric Klinenberg argued that urban resilience can

Photo 3: *Rem Koolhaas/OMA, architect, Seattle Central Library, Spacesaver bookshelves. (photo by brewbooks)*

be measured not only by the condition of transit systems, basic utilities, and communication networks, but also by the condition of parks, libraries, and community organizations: "open, accessible, and welcoming public places where residents can congregate and receive social support during times of need and also every day."[7]

The need for physical spaces that promote a vibrant social infrastructure presents many design opportunities, and some libraries are devising innovative solutions. Brooklyn and other cultural institutions have partnered with Uni, a modular, portable library. Other modular solutions—kits of parts—are under consideration in a design study sponsored by the Center for an Urban Future and the Architectural League of New York. *New York Times* architectural critic Michael Kimmelman reflected on the roles played by libraries during recent hurricanes in his article, "Next Time, Libraries Could Be Our Shelters From the Storm." He suggested that the city's branches, which have "become our de factor community centers," could be designed in the future with "electrical systems out of harm's way and set up with backup generators and solar panels, even kitchens and wireless mesh networks."[8]

But is it too much to expect our libraries to serve as soup kitchens and recovery centers when they have so many other responsibilities? The public library's broad mandate means that it often picks up the slack when other institutions fall short. Given the effort librarians expend promoting basic literacies, how much more can this social infrastructure support?

We need to look at the infrastructural ecology, the larger network of public services and knowledge institutions of which each library is a part. Perhaps we should we regard the library as the territory of the civic mind, and ask other social services to attend to the civic body, with each operating with a clear sense of its mission and obligation.

Seattle's City Librarian, Marcellus Turner, is big on partnerships—with local theaters and even the Seahawks football team.[9] He tasked several working groups to consider marketing, funding, staff deployment, and partnerships that "leverage what we have with what the partners have." These partnerships lead, however, to a design challenge, requiring librarians and architects to consider what physical infrastructures would be needed to accommodate such partnerships.[10]

Many libraries have renovated their buildings to incorporate public gatherings and even commercial spaces. In Seattle's Ballard branch, a large meeting room hosts regular author readings and a writing group that typically attracts 30 participants [see **Photo 1**). In Salt Lake City, the library plaza features an artists co-op, a radio station, a community writing center, the Library Store, and a few café's—all private business whose ethos is consistent with the library's (see **Photo 2**). The New York Library recently announced that some of its branches will serve at learning hubs for Coursera, the provider of massive open online courses (MOOCs).

These entrepreneurial models reflect

» **We need to develop—both among library patrons and librarians themselves—new critical capacities to understand the distributed physical, technical, and social architectures that scaffold our institutions of knowledge and program our values. And we must consider where those infrastructures intersect and where they should be or perhaps aren't mutually reinforcing one another.**

what seems to be an increasingly widespread sentiment: while libraries continue to serve a vital role as opportunity institutions for the disenfranchised, this cannot be their primary self-justification. They cannot duplicate the responsibilities of community centers and social service agencies.

What programs and services are consistent with an institution dedicated to lifelong learning?" Should libraries be reconceived as hubs for civic engagement, where communities can discuss local issues, create media, and archive community history?[11] Should they incorporate media production studios, maker-spaces, and hacker labs, repositioning themselves in an evolving ecology of information and educational infrastructures?

These new social functions, which may require new physical infrastructures to support them, broaden the library's narrative to include everyone, not only the "have nots." This is not to say that the library should abandon the needy and focus on an elite patron group. Rather, the library should incorporate the "enfranchised" as a key public, both so that the institution can reinforce its mission as a social infrastructure for an inclusive public, and so that privileged, educated users can bring their knowledge and talents to the library and offer them up as social-infrastructural resources.

Many among this well-resourced population—those who have jobs, enjoy home Internet access, and can navigate the government bureaucracy with relative ease—already see themselves as part of the library's public. They regard the library as a space of openness, egalitarianism, and freedom within a proprietary, commercial, and secured landscape. They understand that no matter how well-connected they are, they actually don't have the world at their fingertips. Material protected by stringent copyright and held in proprietary databases is often inaccessible outside libraries, and they need libraries to help them navigate an increasingly litigious digital terrain.

Finally, we must acknowledge the library's role as a civic landmark, a symbol of what a community values highly enough to place in a prominent site. A well-designed library can reflect a community's character back to itself, clarifying what it is and what it stands for.[12] Its dignified architecture communicates an openness to everyone, which should engender the support of sufficient public funding despite the fact that it will never make a profit.

LIBRARY AS TECHNOLOGICAL/INTELLECTUAL INFRASTRUCTURE

Of course, we must not forget the library's collection itself. The way a library's collection is stored and made accessible shapes the intellectual infrastructure of the institution. The Seattle Public Library uses translucent acrylic bookcases, which cultivates a character, an ambience, that reflects the library's identity and its intellectual values. It might sound corny, but the luminescent glow permeating the stacks acts as a beacon, a welcoming gesture (see **Photo 3**).

Today, there is a lot of talk about and action around integrating hacker labs and makerspaces in libraries.[13] As Anne Balsamo explains in her article "Videos and Frameworks for 'Tinkering' in a Digital Age," these sites offer opportunities, often inter-generational learning experiences that are integral to the development of a "technological imagination," which are rarely offered in formal learning institutions.[14]

One might think that major funding is needed for these kinds of programs. But the trend actually began in 2011 in tiny Fayetteville, NY, (pop. 4,373), thought to be the first public library to have incorporated a makerspace.

The following year, the Carnegie Libraries of Pittsburgh, which for years has hosted film competitions, gaming tournaments, and media-making projects for youth, launched, with Google and Heinz Foundation support, The Labs: weekly workshops at three locations were teenagers can access equipment, software, and mentors. Around the same time, Chattanooga, a city blessed with a super-high-speed municipal fiber network, opened its lauded 4th Floor, a 12,000-square foot public laboratory and educational facility that supports the production, connection, and sharing of knowledge by offering access to tools and instruction. The tools include 3D printers as well as laser and vinyl cutters, and the instruction includes everything from tech classes, to incubator projects for female tech entrepreneurs, to business pitch competitions.

A typical month on the Brooklyn Public Library's event calendar includes resume editing workshops, a Creative Business Tech prototyping workshop, individual meetings with business counselors, Teen Tech tutorials, computer classes for seniors, workshops on podcasting and oral history, "adaptive gaming" for people with disabilities, and an audio-recording and editing workshop targeted to poets to help them disseminate their work in new formats.

The Martin Luther King, Jr. Memorial Library in Washington, DC, opened its Digital Commons, where patrons can use a print-on-demand bookmaking machine, a 3D printer, a co-working space known as the Dream Lab, or try out a variety of e-book readers. The Chicago Public Library partnered with the Museum of Science and Industry to open a pop-up maker lab, featuring open-source design software, laser cutters, a milling machine, and three 3D printers.

These new activities come with new

» **Ultimately, we need to ensure that we have a strong narrative that explains how the library promotes learning and how it is a steward of knowledge so that everything hangs together with some institutional coherence.**

spatial requirements—lighting designs, acoustical conditions and furniture arrangements to accommodate multiple sensory registers along with modes of working and postures. Librarians and designers are now designing for activities that make noise and can occasionally be messy.

Yet, given all the hoopla over "making," what knowledge is produced when a user churns out a key chain on MakerBot? While librarians have long been advocates of free and democratic access to information, I trust that they are also helping their patrons to cultivate a critical perspective on "technological innovation."

Library staff might also want to take up a critique of innovation. Each new Google product, mobile technology development, and new e-reader launch brings new opportunities for the library to innovate in response. While keeping current is a crucial goal, it's important to place that pursuit in a larger cultural, political, economic, and institutional context. Striving to stay technologically relevant can backfire when it means merely responding to the profit-driven innovations of commercial media.

READING ACROSS THE INFRASTRUCTURAL ECOLOGY

Public libraries need to stay focused on their long-term cultural goals, which should hold true regardless of what Google decides to do tomorrow. What ethics are embodied in the single-minded pursuit of the latest technologies or the equation of learning with entrepreneurialism?

In her article, "Some Assumptions About Libraries," Barbara Fisher, a librarian at Gustavus Adolphus College, argues that libraries will always be at a disadvantage to Google and Amazon because they value privacy; they refuse to exploit users' private data to improve the search experience.[15] There is room for entrepreneurial learning in the library, but there also has to be room for learning that isn't driven by a profit motive. A library can accommodate both, provided that it knows how to read itself as a social-technical-intellectual infrastructure.

We need to develop—both among library patrons and librarians themselves—new critical capacities to understand the distributed physical, technical, and social architectures that scaffold our institutions of knowledge and program our values. And we must consider where those infrastructures intersect and where they should be or perhaps aren't mutually reinforcing one another.

Ultimately, we need to ensure that we have a strong narrative that explains how the library promotes learning and how it is a steward of knowledge so that everything hangs together with some institutional coherence. We need to sync the library's intersecting infrastructures so that they work together to support our shared intellectual and ethical goals. ■

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FOOTNOTES:

[1] David Weinberger, "Library as Platform," Library Journal (September 4, 2012).

[2] Most references to infrastructural ecologies—and there are few—pertain to systems at the urban scale. I believe a library is a sufficiently complicated institution, residing at the nexus of myriad networks, that it constitutes an infrastructural ecology in its own right.

[3] Center for an Urban Future, "Opportunity Institutions" Conference (March 11, 2013). See also a video by Jesse Hicks and Julie Dressner, "Librarians Now: A Day in the Life of NYC's Branches," New York Magazine (May 16, 2014).

[4] Center for an Urban Future, *Branches of Opportunity* (January 2013).

[5] Quoted in Katie Gilbert, "What Is a Library?" *Narratively* (January 2, 2014).

[6] Scott Sherman, "The Hidden History of New York City's Central Library Plan," *The Nation* (August 28, 2013).

[7] Eric Klinenberg, "Toward a Stronger Social Infrastructure: A Conversation with Eric Klinenberg," *Urban Omnibus* (October 16, 2013).

[8] Michael Kimmelman, "Next Time, Libraries Could Be Our Shelters From the Storm," *New York Times* (October 2, 2013).

[9] Author interview with Marcellus Turner, March 12, 2014.

[10] Ken Worpole, *Contemporary Library Architecture: A Planning and Design Guide* (New York: Routledge, 2013). This book offers a comprehensive look at the public roles that libraries serve and how they inform library planning and design.

[11] See Bill Ptacek's contribution to Library 2020, Joseph Janes, Editor. (Lanham, Maryland: Scarecrow Press, Inc., 2013). p. 117+

[12] I dedicate a chapter in *The New Downtown Library* to what makes a library "contextual," and I address just how slippery that term can be.

[13] Gary Price, "Results From 'Makerspaces in Libraries' Study Released," *Library Journal* (December 16, 2013). See also James Mitchell, Beyond the Maker Space," *Library Journal* (May 27, 2014).

[14] Anne Balsamo, "Videos and Frameworks for 'Tinkering' in a Digital Age," *Spotlight on Digital Media and Learning* (January 30, 2009).

[15] Barbara Fister, "Some Assumptions About Libraries," *Inside Higher Ed* (January 2, 2014).

MARC Isn't Dying Fast Enough

» Libraries must agitate to acquire the technology that allows them to build relationships that connect to the World Wide Web.*

BY LORI BOWEN AYRE

In 2002, Roy Tennant wrote a *Library Journal* article titled "MARC Must Die" (see **References**). Sadly, the article remains relevant today. We are still saddled with MARC, and we are still operating in a technological backwash when it comes to our library systems. And worse, we are isolated technologically because our attachment to MARC makes it impossible to participate in a meaningful way with the rest of the interconnected, web-based world.

One might have the impression that we'd stepped into the current century when we began being offered "library service platforms" instead of the traditional "integrated library system." But, in truth, these new platforms are faster horses more than they are cars (to paraphrase Henry Ford when he said, "If I had asked people what they wanted, they would have said faster horses.")

In Tennant's article, he explained some of the problems concern MARC as a syntax as well as the MARC data elements themselves. He suggests that the path forward is to begin with the requirements of bibliographic description (replacing the Anglo-American Cataloging Rules) and then create an encoding standard that provides more flexibility. Well, that's pretty much what is happening.

It's just happening very slowly. And it's definitely not happening in Internet-time.

WHAT'S IN THE WORKS?

In 1998, the International Federation of Library Associations (IFLA) was developing Functional Requirements for Bibliographic Records (FRBR), which is a conceptual model that focuses on relationships. The idea was to come up with a way to think about bibliographic description that focused more on the user's needs, and then use the conceptual model to come up with the plan for replacing whatever needs replacing. Resource Description and Access (RDA) is the cataloging standard that is based on the FRBR conceptual model.

Prior to FRBR, a book was described both in terms of its content (author, publisher, year published) and its physical attributes (size, format, length). But these descriptions lead to a lot of duplication in library catalogs because there are many instances of things (same author, publisher, or date, for example). This old system also doesn't take into account the relationship of things. And those relationships increasingly matter.

FRBR, on the other hand, distinguishes between entities, attributes, and relationships among entities. For example, George Elliot and Mary Ann Evans are entities and *Middlemarch* as a book, DVD, and e-book are also entities. And all of these entities have relationships that can be described with FRBR. Describing these entities and relationships helps the user find related things, eliminates a lot of duplicate effort, and creates a growing web of related resources instead of clunky databases full of single bibliographic records and their associated item records.

The conceptual framework of FRBR is much like the conceptual framework of the Semantic Web and Linked Data. Tim Berners-Lee describes the Semantic Web as "a web of data that can be processed directly

and indirectly by machines," and Linked Data is the way to get to the Semantic Web (see **References**). Berners-Lee proposes three simple rules behind the idea of Linked Data, which I have simplified as:

1. Use URLS to name things.
2. When someone looks up a URL, provide useful information (using broadly adopted standards).
3. Include links to other URLs so searchers can discover more things.

My point is that the Semantic Web and Linked Data are also all about relationships. So, while librarians are working on FRBR and RDA, the World Wide Web Consortium (W3C) is working on the Resource Description Framework (RDF), which is one of the standards that could make the Semantic Web a reality. The fact that we are all focusing on relationships is good news. We appear to be on the right track.

However, while we are developing our new, state-of-the-art approach to bibliographic description, we are still using MARC in our integrated library systems and library service platforms. The web, in the meantime, has moved on to XML because it is a markup language that is both human-readable and machine-readable.

With XML, it is actually possible to describe the relationships between things living on the web. XML is the way forward for the Semantic Web, and it is also the way forward for libraries.

WHERE WE ARE GOING

Enter BIBFRAME. Per the Library of Congress (LoC), "The BIBFRAME Initiative is the foundation for the future of bibliographic description that happens on the web and in the networked world," (see References). The goal of the Initiative is not only to replace the MARC format but also to take all aspects of bibliographic description, as well as data creation and exchange, into account as they do so. In other words, they are working on getting away from MARC by using FRBR/RDA.

As long as the LoC aligns its work with the rest of the World Wide Web, we may have a positive path forward. Even so, BIBFRAME has a long way to go and the process of getting from our MARC-based systems to a system that bears some relationship to the rest of the computing world will take some time.

My experience with the library system marketplace is that it is a big ship that doesn't move easily. I'd like to think that library system vendors are following the BIBFRAME Initiative and eagerly planning all the great things that they'll make possible once there is an alternative to MARC. But sadly, I doubt this is the case. Library system vendors have a captive market. No other industry knows how to deal with MARC (and no one else wants to), so there is some advantage to the vendors to keep it that way.

FOSTERING RELATIONSHIPS

But let's think positively. What happens if we were aligned with the rest of the world using RDA and RDF and XML and we're all about relationships—just like everyone else! Our patrons could become another entity with relationships to our resources, our spaces, and our staff. We might also have information in our library systems about our community entities. Our job might be to help weave together the relationships between various community resources as well as library resources, patrons, and staff.

The greatest libraries are increasingly engaging with the community. This goes beyond "outreach" where we take our physical "stuff" to people or try to lure them inside to use our "stuff." Community engagement is about creating relationships and connecting resources of various formats and types, and our library system might actually—someday—facilitate what we are already starting to do.

In the meantime, we operate in disconnected worlds. We use the web. We use our catalogs. We engage our communities. But our work on the web, with our catalogs, and in our communities isn't integrated. Plus, we are marginalized from the rest of the networked world. The longer this situation goes on, the less effective we are, and the harder it will be to build relationships between our resources and the resources already available out there on the web.

We need software tools that make sense for our needs today while simultaneously connecting us and leveraging the capabilities of the web. We need to start focusing more on relationships and become part of the great weaving together of stuff based on those relationships. The more time we spend fussing with MARC records that no one else can use, the farther behind we get.

The work of the librarian is to connect the user to the things they need, and yet, ironically, we are completely disconnected from the vast majority of things out there. So let's agitate for library systems that leave MARC behind. Ask for support for BIBFRAME in your next ILS procurement. Keep abreast of BIBFRAME developments by attending webinars and providing feedback.

Let's make sure the process to replace MARC doesn't take another decade, and that, when it is done, we end up with something that really will help us do our jobs and participate with the rest of the online community. ■

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Debunking the MOOC Myth

» With hype waning for MOOCs and the backlash in full swing, what does the post-MOOC environment look like for higher education and libraries?*

BY SIMON LINACRE

If 2012 was the year of the massive online open course (MOOC), according to the New York Times, then perhaps 2015 will be the year of volatility, uncertainty, complexity, and ambiguity (VUCA). With its origins in the military, a world dominated by VUCA is a much more appropriate—if just as ugly—acronym to summarize the current higher education landscape.

As with MOOCs, however, a convenient acronym to use as a pigeon hole will not be of great comfort for university administrators wrestling with the increasing complexity of the environment they find themselves in. What makes the VUCA problem more acute for university leaders is that, while they are more than aware of recent trends and pace of change in educational technology and pedagogy in the last twelve months, the challenge is bridging the gap between the cutting edge and many academic practices.

In the last year, the higher education space has seen developments such as the launch of FutureLearn in the UK backed by a number of British and international universities, and the gradual adaptation of MOOCs as part of established university programs. One of the most high-profile is the course offered at Georgia Institute of Technology, where students can study for a Master's in Computer Science for just $6,600 (http://www.omscs.gatech.edu).

However, the MOOC hype has subsided from its peak in 2012 to 2013, as noted by Australian academic Jonathan Tapson, who refers to the slowdown in commentary on MOOCs and growing criticism from some communities in terms of the Gartner Hype Cycle (http://www.gartner.com/technology/research/methodologies/hype-cycle.jsp).

According to the hype cycle model, MOOCs should now be exiting the "trough of disillusionment" and entering the "slope of enlightenment" as second generation products and services come onto the market and best practice is established. In terms of MOOCs, collaborative ventures such as the program at Georgia Tech may be indicative of that trend, involving platform provider Udacity and corporate AT&T as partners.

Just as important as this collaboration with a university for an accredited course is the turnaround in strategy from Udacity at the end of 2013, which it started to push toward more commercial opportunities. Many see the idea of "following the money" as the antipathy to the "education for all" idea. However, as universities assess their own e-learning capabilities, innovation will come in hybrid pedagogies in the space between MOOCs for hundreds of thousands of students, and the traditional face-to-face courses for just a few dozen. This scenario also fits with many universities' stated aims of widening participation and access from students internationally.

But these dynamics require much greater flexibility from legendarily sloth-like higher education institutions. If the essence of a university has not changed since ancient Greece and key drivers are hardly any more modern, expecting academics to change habits of a lifetime so swiftly is optimistic at best. An example that illustrates this observation involves online tutorials. Rich data from MOOCs has shown that the time most students are engaged is Sunday evening, and so this would be the best time for discussion forums with tutors to take place. Yet, this is a step change for academics, who have been more used to posting visiting times on their office doors.

AFFECTS OF VUCA

The varieties in the pace of change and resulting stretch are the context with which to apply the VUCA model, which should al-

» Managing organizations in these kinds of environments is, of course, nothing new. However, the different paces of change exhibited by stakeholders in the academic research process makes the dynamic of the situation far more challenging. Often, responses to these issues result in denial or outright defiance in the face of inevitable change, which inhibits potential solutions to the problems and strangle any opportunities.

low university leaders to better understand an increasingly complicated environment.

In the new VUCA world, there is *volatility* in funding, with international moves toward showing impact and return on investment in academic research. There is *uncertainty* in emerging educational trends such as MOOCs, including increased competition in education from non-university providers, and questions about how the international flow of students will affect the ability of universities to leverage student numbers to increase revenues.

Complexity comes with the increasingly blended approach of direct funding, student funding, public/private partnership initiatives, and knowledge transfer partnerships, while *ambiguity* comes with issues such as open access, metrics, and the effect on research.

Managing organizations in these kinds of environments is, of course, nothing new. However, the different paces of change exhibited by stakeholders in the academic research process makes the dynamic of the situation far more challenging. Often, responses to these issues result in denial or outright defiance in the face of inevitable change, which inhibits potential solutions to the problems and strangle any opportunities.

ROLE OF LIBRARIES

Part of the solution may lie in academic research itself. There is currently a healthy output of academic journals that both highlight the issues under discussion and help paint the future in terms of what some answers may look like.

For example, libraries could emerge as a key knowledge hub where MOOCs could be managed and supported. A key ally for the FutureLearn MOOC initiative in the UK is the British Library, and it is well placed to facilitate blended learning.

The move toward MOOCs may reduce formal teaching capacity as informal learning and strategies designed to create personal learning environments facilitate different paths to learning in higher education. They also herald a further shift to globalization, particularly in institutions such as business schools where there is a great push from stakeholders toward internationalization. MOOCs offer a greater opportunity to deliver more education to more people without the environmental impact caused by travel and campus living.

PARTNER OR PERISH

One key theme evident throughout the emergence of MOOCs and new learning strategies has been the need for extensive collaboration. For example, Cousera has more than 100 partner universities; FutureLearn combines universities with institutions such as the British Library; and Georgia Tech is partnering with both a MOOC platform provider and corporate partner to link the verticals from learning to application.

One future partner that should be included is the publisher, which can enable knowledge sharing, foster learning activities, and promote the outputs of research. An example is the recently launched Pathways to Information Leadership (P2IL), a UK collaboration among Aberystwyth University, Emerald Group Publishing, and the library association, ASLIB. It allows anyone interested in studying information management and leadership to choose what and when they study, while providing the resources of a formal university qualification.

The program offers more than 30 courses designed specifically to meet the needs of those who are in the process of becoming, or aspire to be, information leaders. The program includes the following sections:

- Accredited eLearning courses by Aberystwyth University;
- Options to gain Master's level credits for postgraduate qualifications in information leadership;
- Continuous enrollment enabling learning to start at any time;
- Access to course materials online on desktop and mobile devices; and
- Support from a major information management publisher and leading association.

What will need to change to make this kind of project happen in the recognition within higher education of the value of outputs other than the research article? Innovation in this regard is already happening in many different forms, with international publishers such as Pearson becoming involved in everything in higher education from textbooks, examinations, and MOOC courses to even a university.

This last development is just one example of an international trend of corporations entering the higher education space as providers. In a VUCA world within higher education, not only is teaching and learning disrupted, but also the very existence of universities themselves is put under the spotlight. ■

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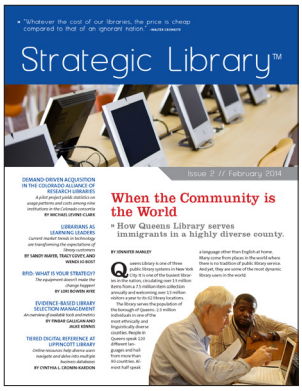

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