Creating and Managing a Digital Library

Creating a digital library takes time, effort, and resources…and the resources are readily available, thanks to the popularity of the digital movement. The librarian must take the primary role in providing tools and guidance to make the process run smoothly, both in the creation and then the management of the library.

There are several important factors to consider when deciding to develop a digital library:

- First, to what degree has the climate of library usage changed?
- How great is the demand for eBooks?
- Second, how do you most accurately measure the impact a digital library will have on your institution and its patrons? Metrics used in the past are not necessarily sufficient to apply to digital holdings and usage.
- And finally, how do you staff a library that is transitioning to a more technical environment?

Knowing what training and skills the library staff will need to manage the digital library successfully is a vital part of moving forward with such a project.

A Climate of Demand – Assessing Where You Are and What Has Changed

In determining the overall interest in moving to a digital library, the focus should be in two areas pertinent to the ongoing function of the library. Librarians should look at recent and developing trends in monograph selection, as well as the adoption (or lack thereof) of demand-driven acquisitions (DDA) in the library.

Laura Costello, head of research and emerging technologies at Stony Brook University in New York, notes that ongoing assessment is key in determining what is owned or rented by the library, which holdings are in print and which in digital format and the degree to which patron selection is replacing librarian selection in the acquisition process.

“Monograph purchases have a lot to do with budgets, particularly the static or declining budgets we’ve experienced in recent years,” Laura states. “The increase of serials budgets has put pressure on the monograph purchasing in many libraries. This is often where the cuts end up if budgets are static. The changes we’ve seen in the way we approach monographs, and the scrutiny they’ve been under in recent years, have definitely been impacted by our budgetary restrictions, and the piece of the pie that’s being allocated to serials purchases.”

Laura points out that there’s also a growing movement in library redesigns from collection space to physical space, citing a recent renovation of the Stony Book library. “Our monograph collections are still very important to the work that our students and faculty do. But the politics of space allocation is also very important. We received directives, as have numerous other libraries, to use the floor space in our reading rooms for seating and not stacks. This space crunch has led to some dramatic collection assessment and weeding projects, which definitely add to the appeal of digital collections and catalog-integrated eBook-driven programs.”

There is also a change in library technical services, according to Laura. There are fewer positions in these departments, often resulting in greater outsourcing of monographs processing and therefore further monetary benefits to going digital. Less hands-on work for technical services departments can translate for some institutions to large cost and labor savings.
“Another factor we’re facing is the changing role of libraries,” Laura says. “Physical collections are no longer our value position. Our expertise and our collections are increasingly digital, and our libraries are valued for the collaborative, study spaces they provide, not necessarily their easy access to print monographs.

Our institutions need collections that take up less space, and increasingly the ideals and values that prevented us from going fully digital in the past – including the high price of electronic items and the preferences of faculty and students – are changing. Reading on screens is increasingly main-stream and several new licensing types have developed to help us meet costs while providing content.”

All these issues have led to a shift in the characterization of monograph purchases, from print copies owned by the library and selected by librarians or librarians in collaboration with faculty members, to patron-driven digital resources that may be either owned outright or as part of a consortium, or rented to provide content access to researchers with less focus on permanently owned collections. Experimentation with these models is becoming more common due to library-driven DDA programs.

Laura, who authored the Elsevier-Chandos book, Evaluating Demand-Driven Acquisitions, in 2016, says most DDA programs have several uses built into each book before a purchase is triggered. “This is straight value-added for the library, as in some cases researchers can access a book and even use it to completion without ever triggering a purchase,” she says. “DDA also has a rental period that is sometimes built into the system, where a percentage of the total cost is charged for libraries to ‘check out’ the e-material for a particular period of time and all the uses during that time are covered.”

Laura asserts that DDA is saving libraries money, and it’s also easy to build assessment into every facet of digital materials usage. The collection strategy of a library no longer ends when a book lands on a shelf, but instead requires constant tweaking to run most effectively.

There is a whole range of new statistics related to digital holdings that were never a factor when print collections prevailed. “While comparing print to digital acquisitions is like comparing apples to oranges, we are developing ways to compare digital to digital, and libraries are in the process of establishing new benchmarks for digital usage numbers,” Laura says. “Libraries are looking at usage across different subscriptions and different licensing types, to further refine their digital monograph strategy.”

**Teachers College, Columbia University – Almost Fully Demand-Driven Acquisition**

Laura explains that Teachers College, Columbia University, where she was formerly head of library materials and acquisitions, has an in-house built system called DocDel which manages print requests, as well as catalog-integrated eBook DDA program. They are fielding requests both from faculty and students through DocDel for any type of materials, and also automating the request system through the catalog, so when people click, they’re triggering a purchase.

“The Teachers College is digital preferred, so more than half of their total monograph acquisitions are digital. There’s a small print collection of children’s and teen books, which was almost fully outsourced – the library received self-ready books on an approval plan with no selection, so that part of the puzzle was truly automated,” Laura says. “The bread-and-butter of the program is the DDA-driven strategy, which is working very well in a graduate institution with a highly focused collection, and also a fairly elastic budget, plus lots of internal multi-disciplinary collaboration.”
Using Altmetrics to Measure Digital Library Impact

Metrics have always been employed to measure the scholarly impact of libraries. But with the transition to digital libraries, new kinds of metrics must be incorporated into the measurement process. Sharon Q. Yang, professor and systems librarian at Rider University Libraries in New Jersey, says altmetrics (alternative metrics), the digital indicators derived from Internet-based events and engagement, are the perfect complement to traditional citation counts and journal impact measurements.

“Altmetrics are mostly Internet activities, like downloads, tweets, views, likes and follows,” Sharon explains. “There are two primary aggregators that collect altmetrics from a variety of sources: social media, such as Twitter, Facebook, Pinterest and blogs; traditional media, both mainstream and science-specific; online reference managers like Mendeley and CiteULike; and library data from sources such as WorldCat and Pubmed. There are new sources for collection every day.”

Collecting altmetrics by tracing a person or article across the Internet is not as easy as it would seem. Sharon takes a look at some of the ways data is uncovered. “Persistent identifiers are key to this process. The most common is the digital object identifier, pointing to the URL of a specific article on the Internet. Other useful persistent identifiers are Pubmed ID, ISBN, Scopus ID and author and title, to name just a few.”

Sharon, who co-authored the Elsevier-Chandos book, Emerging Technologies for Librarians: A Practical Approach to Innovation in 2015, adds that metadata and metatags are used heavily by the aggregators to collect altmetrics across the Internet. Standard citations in sources like Wikipedia and links in news reports are also useful in altmetrics collection. She suggests that librarians consult the 2016 report, “Outputs of the NISO Alternative Assessment Metrics Project,” in which the National Information Standards Organization recommended best practices for altmetrics, identifying specific types of scholarly communications and how the altmetrics should be collected.

Sharon notes that librarians have been trying to assess the cost, usage and user-friendliness of digital libraries and repositories for a long time. “We have worked to determine what features are useful and also easy to use. Now, we are adding another parameter – with altmetrics, we talk about the impact of a digital library’s content based on Internet activities and the attention they generate.”

“Altmetrics began to gain attention in 2010, when pioneers Steven B. Roberts at Washington University and Emilio Bruna at University of Florida became famous on the Internet by using them to get promotions and awards,” Sharon adds. “The use of altmetrics has also aided in successful grant applications, helping to lead to the general acceptance they enjoy today.”

Altmetrics Pros and Cons

Sharon warns that there are limitations and issues with the use of altmetrics that cannot be ignored. They measure attention, not quality, and can be “gamed” to affect the outcomes. Altmetrics are early indicators of future citations and impact, therefore inconclusive. In using altmetrics, libraries must be mindful of the subjects being measured (popular versus academic) and the audience (academics/students versus general public).

Despite these warnings, Sharon says libraries should develop a plan to use altmetrics consistently and meaningfully. By choosing a digital library application that readily collects altmetrics or connect to altmetrics aggregators via APIs, libraries will find altmetrics to be more effective. She also encourages librarians to use persistent identifiers in metadata or tags, supply as much metadata or tags as possible when describing an item, and use altmetrics in conjunction with other data if possible.
Staffing the Digital Library – Changes Mean New Opportunities

Libraries need to scan their environment and understand the changes underway in the library world that will have an impact on the kinds of professionals they will hire to successfully operate a digital library. Richard Jost, Director of the Law Librarianship Program at University of Washington Information School, says 21st century information trends – new technologies, new information formats, new publishing practices and new reading habits – are important factors as libraries consider their service and staffing plans.

“Libraries are changing with society at large,” Richard points out. “They are now integrated with social media, giving us ways to engage that were unavailable in the past. There is also more emphasis on resource sharing, creating greater inter-library cooperation to enable us to stretch our dollars. We are looking at a change in the concept of a library as well, from a storage facility to a community platform for publishing, research and the creation of unique content with more emphasis on patron-centered activities.”

With the adoption of electronic and digital resources, Richard poses the question, “Is there still a need for local copies, when information can be procured from all over the globe through downloads.” Pointing patrons to online materials is usually more convenient and less expensive for them, and libraries will not want to pay to buy and house print books when no one will be asking for them, or perhaps even visiting the library in person. “Ultimately, we need to have the technology in place to help our patrons access the information they seek, and a well-trained staff to make that experience efficient and fulfilling,” he adds.

New Workflows Present an Exciting Challenge for the Library World

When print books dominated libraries, librarians developed collections, made acquisitions, catalogued and processed them, then sent them to the circulation staff. But electronic resources workflow is an entirely different animal. While the print resources workflow is linear, the digital resources workflow will be circular.

“It begins with evaluation, which is similar to the collection development stage of the print book workflow. However, we’re using a different set of criteria here. So instead of just deciding that we will buy a particular book on a particular subject, we’re looking at a database or a digital resource, and we have to understand how many users can use it at one time, and will we offer full text or just an abstract,” Richard explains.

In a digital library, acquisition librarians deal more with licensing and contracts rather than just processing invoices for print materials. Also, librarians need to market every new e-resource to their faculty and students, instead of just putting it on a shelf. Managing a digital resource involves passwords, proxies, on- and off-campus access, requiring different technology skills than many librarians possess today.

The author of Selecting and Implementing an Integrated Library System: The Most Important Decision You Will Ever Make, published by Elsevier/Chandos in 2015, Richard adds, “When the digital resources are reviewed, we would look at the statistics on usage. We can get a much better idea of how the resources were used and by whom than we do when someone picks a book off a shelf, then puts it back or checks it out and then never uses it. However, we need staff that is able to do the research to ascertain the digital resource usage. Then we decide to renew or cancel the resource, and start the whole process again.”
The library staff of the future will be smaller, with smaller budgets, according to Richard. As a result, he expects more reliance on technology such as integrated library systems, as well as joint technical services among libraries in the same consortium. “At some point, not every library will have a technical services operation, but will share it with a larger organization or another library.” Staffs will need more technology and marketing skills, as well as business skills to review contracts and work in shared environments. They will be required to provide more direct service to patrons, too, with fewer back-room operations.

Library staff will need higher-level skills, and the ability to be more flexible in approaching their jobs, because they will have a wider variety of tasks than they had previously. This is reflected in the new “traditional” library jobs not even on the radar several years ago: emerging technology librarians, electronic resources librarians, and something Richard calls “hybrid jobs.” “You may have your primary role, such as reference librarian, but then you may also be in charge of systems or cataloging. People will have to take on more responsibility, and each job will be slightly different,” he says.

Continuing professional education will be necessary to retrain existing staffs in the new technologies and new formats, and libraries will look for new people entering the field who possess these skills.

**Embracing Change**

The demand for digital libraries has never been greater. While the change from print will cause some turmoil, and require a period of adjustment, most institutions will find that with the right balance of content, consistent ways to measure its effectiveness, and a competent, well-trained staff dedicated to patron service, digital libraries will become an important centerpiece of learning and collaboration.