A Vision for the Future: New Roles for Academic Librarians

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Chapter 15: A Vision for the Future: New Roles for Academic Librarians
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Introduction - Vision and Transformation

Academic library leaders have long acknowledged the need for the library to transform itself in order to meet the needs of the 21st century University. The transformation implies a major change in form and function, suggesting that library organizational structures and functions will change along with how professional librarians conduct the work of the library. To guide the transformation, a vision will be needed, one that creates a compelling mental image of what the library should become. Vision bridges the present with the future, establishes a standard of excellence, and informs the strategic planning process.[1] Creating a vision is a challenge; it is difficult to imagine, verbalize, and communicate a future preferred state.

Today, academic librarianship is overburdened and preoccupied with attending to the details of providing traditional services to students and faculty. For library leaders and librarians it is a time for independent thinking, innovation, and the courage to undertake risk and embrace major change. Library professionals will not only look forward but, according to John M. Budd, will also need to step back and examine the profession – "purpose, ethos and the world we live in."[2] In the end, courageous leadership and management will be required, as Jordan M. Scepanski affirms, "to abandon what has worked and often worked well, to strike off on a new and perhaps perilous course."[3]

A well-articulated vision can lead naturally to the development of new competencies, the associated knowledge, and the requisite skills. In contributing to a vision of the future, this chapter takes an approach in which new roles for academic librarians are extrapolated from emerging functions in the academic library and the author's observance of incongruities that suggest the profession should be doing something differently. Totally new services will emerge with these roles and, in all likelihood, will require changes in the traditional organizational structure of the library and related management processes and practices. Some in today's world will consider the new roles unusual, unorthodox, and perhaps even detrimental to the profession, for they

fear these changes might conflict with the norms and traditions of librarianship. Jesse Shera aptly characterized the dilemma and the opportunity for the academic library:

> On the one hand there are the traditionalists, who cling close to the solid earth of library convention and shun the heights of innovation . . . . Against them are arrayed the innovators, the intrepid explorers, who reject convention as the traditionalists fear the unknown. . . . In the conflict between these two groups librarianship suffers.[4]

This chapter proposes that academic libraries will undergo change, even radical change, in order to address the information needs of the university. This premise suggests a reorientation to a service model, one that significantly extends the range and depth of creative work undertaken by faculty and students and in the process creates dynamic new roles for professional librarians.[5]

Organizational Dynamics and the Profession

Understanding the dynamics of organizational change will be important for leaders to successfully introduce and support new roles in the library. The library, an institution with well-established professional norms and traditions, will need to become more creative, continuing to support traditional services while simultaneously launching new ones. The associated new roles will develop and flourish within a more inventive culture. Although culture can constrain our actions, it can also become a vehicle for change in which library employees are empowered to search for innovation opportunities. Strategy, organizational structure, and a more turbulent external environment can stimulate ingenuity and change in the library, disrupting the status quo but also creating the space for new roles to emerge.[6] The future academic library will look quite different, yet change will be difficult in an environment where the university is embedded in an institutional bureaucracy, further restricted by faculty norms, union contracts, and the traditions of the library profession.

We all believe that librarianship is a profession. The casual observer understands that academic librarians provide access to information and are able to describe and

organize scholarly works. The librarian acts as the guardian, caretaker, and curator of the world's knowledge. Librarians provide instruction to educate students in navigating the complexities of the library and to help them understand how to interpret and evaluate information. In the ongoing dialogue and evolution of the academic library profession, Shera captures the challenge we all face:

> The first responsibility of a profession is to know itself, which means, first, knowing what a profession is; second, knowing what kind of a profession it is; and third, knowing what differentiates it from all other professions.[7]

Keeping Shera's admonition uppermost in our thinking, this chapter outlines emergent roles in academic libraries that will not only advance the mission of the library and the university but also help us develop a deeper understanding of the profession.

Technology, Research, and Marketing – Building New Knowledge and Skills

The implications of a rapidly changing technology environment, stakeholders' demands that we demonstrate value, and the need for more active engagement throughout the university will lead to new academic library roles. The impact of technological discontinuities on our society has been widely publicized. Universities and their libraries are not immune to these events. To paraphrase Henry Lucas's rhetorical question,[8] libraries and universities almost certainly will be disrupted in ways similar to for-profit firms such as Kodak and Borders. Of course, mortality and bankruptcy are not in store for the library. However, change can be more subtle and slow moving in academia, allowing for complacency and lack of action within the leadership team and a much-diminished library presence in the university.

Research.

James G. Neal has argued that academic librarianship is an "information poor" profession where "decisions are routinely not supported by evidence" and "research in the field is poorly understood, communicated, and applied."[9] If we hope to facilitate a library transformation, we can scarcely overstate the benefits of research and exploration.

We will require an increased investment in research in order to properly assimilate and deploy new knowledge and in turn create forward-looking service roles. An emerging role in the research domain would focus on advancing the profession, bringing in novel ideas, exploiting external technologies, and championing innovation.

So, what does the *research librarian* do and how is this person positioned in the library organization? In terms of traditional R&D, the research librarian focuses more on the "D" (development) rather than the basic research implied by the "R." For this reason, the person in this new role spends a considerable amount of time spanning and exploring the external world, looking for new ideas, cutting-edge technologies, and process initiatives that will benefit the library. The research librarian facilitates and expedites the transfer of new technologies, processes, and related software into the library to be customized for library applications. In pursuing these initiatives, we heed Budd's caution regarding the application of technology in the library:

> We are concerned with how the technology is used, how it may be transformative, how it may privilege some people over others, the economics of technology, the politics of technology, and other factors.[10]

If the research librarian expects to be successful, he/she will need to facilitate the flow of an idea across the organization, championing this idea throughout the decision-making and implementation processes. An associated function supporting the flow of ideas includes the development of an idea database. Robert C. Litchfield and Lucy L. Gilson[11] have proposed an approach for the management of ideas that uses a museum metaphor for curating idea collections. The idea curators do not take responsibility for the ideas nor do they necessarily generate or develop work plans to support a particular one. These curators typically seek a strategic balance in idea collections and will organize these resources to support both traditional services and emerging services. Litchfield and Gilson have combined the curator function with idea management to create a unique new role for academic libraries, one that fits nicely with the traditions and culture of the library. The research librarian might serve as the idea curator, constantly scavenging for old ideas within the organization that can be reapplied in new contexts. The curator thus

keeps old ideas alive by communicating across the organization, emphasizing how these ideas might once again prove viable in different ways. In effect, the idea database becomes an information exchange and knowledge management tool, facilitating the growth of individual and organizational intelligence in the library.

As an example, research and technology-focused initiatives include the examination of applications of artificial intelligence, expert systems, and natural language processing. Artificial Intelligence (AI) applications will have an impact on the library commensurate with that of the Internet and mobile computing. Some twenty-five years ago Charles Bailey, digital artist and publisher of the journal *Digital Scholarship*, articulated the challenge of artificial intelligence for library applications, noting that our conceptual horizons are limited by a lack of understanding of this important area.[12] AI offers the promise to create systems that rival human intelligence and, in doing so, impact or even disrupt traditional reference and bibliographic instruction services. The research librarian will not develop AI applications; rather, he/she will assist in organizational learning about AI and act as a technology transfer agent to bring systems in from the external world that could be used to offer new library services.

Organizationally, the research librarian is best positioned to support all units in the library. Embedding this role in the traditional public or technical services units would likely result in traditional innovations specific to those units. To maximize benefit to the organization, then, the research librarian should report to either the library director or a unit that bears overall responsibility for research and organizational planning. He or she will also require different academic credentials. Given that many developments will be technology-based the research librarian might need an engineering or computer science degree in addition to the MLS.

Marketing.

The value of the library to the institution's mission and the continued support of library resources cannot be assumed. Over a forty-year period starting in the mid-1970s, the library budget as a percentage of the institution's expenditures has dropped from 5% to less than 2%. An ARL study of forty research libraries demonstrated a decline from 3.7% to 1.8% of the institution's expenditures in the period 1982 to 2011.[13] Library

directors can hardly ignore the not-so-subtle message that administrators now value library contributions less and increasingly reallocate portions of the library budget to other units. Public relations activities and marketing can have a huge impact on sustaining and increasing library resources yet academic libraries have been slow to recognize the importance of this form of self-promotion.[14]

Looking to the future, Charles Martell[15] suggests that we need to create new services in the 21st century that were unthinkable in the 20th. Introducing a new service will require significant marketing efforts, not only to understand client needs but also to facilitate the introduction of this service. Kathryn Deiss describes the marketing challenge for academic librarians as a "failure to match the introduction of a new service with the customers' readiness to adopt new behaviors."[16] Faculty and students form their impressions of the library based on longstanding services and seem unlikely to propose new services beyond the traditional library portfolio. Thus, marketing library value, introducing creative new services, and communicating the concept of a broader role for the academic librarian becomes increasingly important.

The *marketing librarian* matches client needs with the services and resources of the library. In doing so, this role provides an important bridge between ongoing library research that generates new knowledge and ideas and the evolving needs of students and faculty. The convergence of new ideas, technology, and client needs can result in the specification for a totally new library service. As an example, the marketing librarian might work with a student group that is advocating for open e-textbooks in order to reduce the expense of commercial textbooks. Undergraduates are expected to spend some $1200 annually on textbooks, an unaffordable sum that causes many of these students not to purchase required texts or to take fewer courses in order to reduce expenses. After understanding the students' requirements and communicating with faculty who are interested in developing an open e-textbook, the marketing librarian works with the research librarian and other institutional partners such as the university press to develop specifications for an open e-textbook service. In this publishing endeavor a range of solutions might be possible, from the use of existing open e-textbook libraries[17] to actually providing a service for faculty members to publish their own open e-textbooks.

In a case study at the University of New Mexico (UNM) Library, the value of a marketing strategy was clearly demonstrated. Alire describes the initiative at UNM to conduct word-of-mouth marketing. The initial strategy focused on the Faculty Senate Library Committee with an objective of having faculty talk to other faculty about the value of library services. The resulting successful marketing campaign added $700,000 to the library budget to maintain the journal collection.[18]

Organizationally, the marketing librarian constitutes a new role, one whose duties differ from the marketing and outreach conducted by the library liaison. The marketing librarian spans all the scholarly disciplines and spends much of his/her time outside of the library communicating with faculty, students, and administrators. Perhaps one of the more important functions in the marketing role might be understanding how stakeholders think – legislators, provosts, and administrators.[19] Gaining this knowledge will enable the marketing librarian to assess the effectiveness of a new service and communicate value and impact to all stakeholders. In effect, the marketing librarian becomes a leader in advancing the entrepreneurial mission of the library, creating new programs and new revenue streams, and enabling the library to become a successful competitor in the information marketplace.[20, 21]

Digital Library Architect.

Broadly speaking, an architect is one who designs a plan or undertaking and advises in the ongoing construction of the resulting project. Architecting a system largely entails taking system concepts as embodied in principles, requirements, and prototypes and mapping them to physical components. The work of the architect can be undertaken at many different levels.

At the software level, the *digital library architect* maps requirements to a variety of components including data structures, databases, objects, protocols, subroutines, modules, scripts, and other similar artifacts. The architect will break down complex software applications into more manageable and smaller components. In these tasks, the architectural activity relates primarily to new library software applications, the institutional repository, and the underlying digital library architecture. However, as in most complex systems, there is architectural entropy, so the digital library architect must

also serve as an advocate for renewal to take advantage of new technologies and software methodologies.

At another level, the digital library architect addresses the information requirements of the digital object including metadata, byte streams, and special scripts that govern dynamic behavior. There are many different digital object types, reflecting the formats of physical objects – books, maps, photographs, and media. In each case, the architect must decide how to present the object to the end user and what should be preserved. In this activity the architect works with the digital archivist to ensure authenticity and trust for these resources.22 The resulting digital object must be managed as a whole. If the repository is organized in such a way that bits and pieces of the object are scattered throughout storage it becomes difficult, perhaps impossible, to keep track of all these pieces, risking the possibility of not preserving all the relevant material as one unit.

Archiving, Publishing, and Research Data – Leveraging Existing Roles

In this section we build on the traditional skills of the academic librarian to propose new functions for existing roles that represent opportunities for librarians to extend into interesting and challenging new areas. In the digital world, we are interested in more than just the published article or book. The scholarly communication process generates models, research data, working papers, blogs, emails, and lab notes. According to Lorcan Dempsey, "All of these become materials to manage and disclose effectively to interested parties elsewhere."23 By developing new knowledge in how these resources are created and used, the librarian can leverage existing skills to preserve and provide access to these emerging new formats, thereby enriching the scholarly communications process.

Digital Preservation and Archiving.

Our society produces electronic information at increasing rates while we see a pressing need to digitize cultural artifacts housed in Special Collections and other institutional archives. Much of the gray literature and ephemera along with many cultural artifacts from disadvantaged nations suffer from neglect. Scholars, archivists, and the general public have quite disparate views of the value of artifacts, ephemera, and the detritus produced by our global society; however, the risks of not preserving these

resources are almost impossible to evaluate. Digital preservation, archiving, and curation are natural extensions of traditional roles in academic libraries. These new roles are so compelling and so intimately related to the academic library's mission in the university that it seems only natural that digital preservation should become an integral part of this mission.

Many important functions of the *digital archivist*[24] are well established in academic libraries. Much has been accomplished in existing open source digital library platforms to provide capabilities for preserving digital objects including the now ubiquitous features such as persistent identifiers, integrity checks, audit trails, and resource versioning.[25] A major task and part of life cycle management involves the migration forward of archival master files to new formats and standards. Although many libraries have a digital archivist or curator in their ranks, what is new about this position is the opportunity to extend it into previously untapped areas. These new areas include providing archival and preservation services and assuming the role of a trusted archival agent for the university.

Some examples will illustrate these new functions and services. New types of research can be conducted by using the digital surrogate as in the study of ancient artifacts. The metal coins of antiquity were the principal mass media that conveyed a government's chosen image, displaying important information on a small surface through symbols and allusive images. Because of library security issues and the logistics of organizing access to a physical coin collection, digital portals become even more important in providing access to these special collections for study and teaching. The Badian Collection of Roman Republican Coins[26] is just one example of how the digital surrogate extends access to students and scholars who previously had only limited use of this unique collection. A Classics scholar may be studying the control marks on these coins while a doctoral student uses the digital images to test pattern recognition software, projects that would be virtually impossible to conduct with the physical collection.

A second example involves the archiving and preservation of email related to research and university policies and constitutes an important new service, one that could be offered by means of collaboration between the library and the university archivist and librarians. The institution's email will likely prove to be of major administrative,

historical, and legal value – each area possessing its own unique set of technical and policy issues. In addition to administrative email, faculty may also want to preserve their research-related email as part of their legacy upon retirement. The typical email package consists of headers, message bodies, and attachments. Andrea Goethals and Wendy Gogel note that the storage format for email has not been standardized. [27] The message format might be plain text or HTML and attachments can include almost any file type. Security is a major concern since email messages might contain viruses or spam content. Email can contain sensitive personal data and archiving would need to satisfy security and privacy requirements, complying with laws at multiple levels of governance as well as local security policies and practices.

For these new services, the university community has an expectation of trustworthiness, albeit one that is not well defined. Trust is a complex, multi-faceted concept and can exist between individuals or an individual and an institution. There are three dimensions of trust based on benefits, information, and identity.[28] Information-based trust relies on researchers, scholars, and students understanding the processes and mechanisms of the institution. Trust develops over time with repeated interactions between the user and the library. Libraries over the years have built up considerable trust within the communities they serve, originating primarily from traditional services such as the reference interview and reliable processes for finding a book or journal article. The library and the digital archivist must offer assurance that the institution can be trusted as a digital archival agent. How do we transform libraries to become trusted repositories of digital information?

A scholar or researcher will always want to know that a digital object can be trusted – that it is authentic and reliable. Relatively few of the digital resources in use today receive proper archival and preservation attention. Indeed, one might claim that 21st-century scholarship depends on trusted methods for archiving and preserving digital information. Digital objects can be surrogates, resulting from a digitization process, or objects whose only form is electronic (often referred to as "born digital"). These digital containers work to hold content fixed so that it can be preserved and repeated. Fixity, however, is a relative term that takes on different meanings in the world of digital documents. The fixity of microfilm and paper is generally considered to be much greater

than that of any of the digital media. How do we guarantee the authenticity of the original content as represented in the digital surrogate and what does "original" mean in the digital context? In Charles T. Cullen's words,29 a third party, ideally a trusted librarian, would put a marker on a digital object - a marker that could not be predicted or guessed – that would mark the document's time and date. Ross Atkinson30 proposes that the academic librarian is better suited than any other information intermediary to assume the role of a trusted third party. The actions of creating an authentic digital object place the digital preservationist and archivist in a key role as a cognitive authority in a trusted scholarly communication process and offer the opportunity to leverage and transform the traditional skills of academic librarianship.

Research Data Librarian.

In some respects research data has been long neglected by academic librarians. Early digital initiatives focused on text documents, providing for full-text indexing and digitization of many special collections. The role of the Social Science Data Librarian appeared relatively recently in academic library history. Today, the Inter-university Consortium for Political and Social Research (ICPSR)31 provides over 65,000 datasets for social science research and instruction covering a wide range of areas such as population, economics, education, health, political behavior and political attitudes. ICPSR comprises the world's largest archive of social science data and provides Web access to documentation and data files for use with statistical software such as R, SAS, and SPSS. As part of the vast and growing data realm, the *research data librarian* will also encounter the complexities of science data and data from the emerging Digital Humanities (DH) disciplines.

The emerging field of E-science and the establishment of data-sharing mandates by the National Science Foundation32 and the National Endowment for the Humanities33 have motivated academic libraries to pursue ways in which they might assist faculty and researchers in preserving research data and providing access to scholars for reuse of data.34 Although academic library directors appear to support data management as an important service for the institution, recent research suggests that libraries are having difficulty defining and getting started with data management services.35 Many academic

librarians feel that they lack the knowledge and skills to undertake this new service. In a recent survey of science librarians, Karen Antell and colleagues[36] report that only 23% of 155 respondents felt that they had sufficient skills to take on a data management role, citing unfamiliarity with the data lifecycle as a major impediment.

The role of research data librarian in some respects represents the change needed in the traditions and cultural limitations of the academic library profession. Clearly there will be a steep learning curve that will require the data librarian to embed himself or herself in the research process, not only understanding the data lifecycle but also dealing with copyright, data security, and university policies regarding the ownership of research data.[37] Ownership of research data presents its own unique problems, frequently influenced and complicated by institutional, state, and country jurisdictions.[38] In the organizational learning process the nature of the liaison role changes – the data librarian becomes a collaborator and partner with the scholar. Recent research demonstrates the opportunities and challenges for academic librarians who participate in grant-funded projects as part of the research team. [39] In this role we can see obvious synergies with other traditional and emerging services in the academic library. Deposited data will require extensive metadata that is specific to the research domain. It will also need to be archived and curated for reuse by researchers, and in this reuse domain academic libraries become publishers of data.[40]

Scholarly Publishing.

The academic library has both mission-oriented and economic reasons to engage in scholarly publishing. One strategic objective of the library is to support scholarly communication including the creation and dissemination of scholarly information. In contrast to other emerging services, scholarly publishing might be considered relatively mature. The recent Library Publishing Directory[41] indicates that 115 academic libraries have published 404 faculty-driven journal titles. Many academic libraries have the technology and the wherewithal to publish in a variety of formats including e-journals, blogs, electronic theses and dissertations (ETDs), and monographs. Paul N. Courant and Elizabeth A. Jones offer an economic perspective, suggesting "research libraries are natural and efficient loci for scholarly publication."[42] These authors argue that publishing

should lead to new business models for the library. Within the broad area of scholarly publishing we can identify many opportunities for the research library and the smaller academic library. In the past few years the designations for these new roles illustrate the involvement of libraries in a variety of publishing initiatives – scholarly communication librarian, digital scholarship librarian, digital initiative librarian, and director of digital publishing.

Of the many titles now in vogue, perhaps the one most relevant for this emerging new service is *publishing director.* One of the most important tasks of the publishing director is to envision and create the business concept and associated business model for a publishing service. This concept will be quite different in each library depending on the size of the institution, the strategy of the library, and the fit with the requirements of students and faculty. Gary Hamel describes the importance of strategic business innovation that requires individuals "who can think more holistically and concretely about new concepts."[43] For the library, the business concept characterizes the focus, purpose, and impact of publishing, addressing partnerships with the university press, possible revenue streams, the types of publishing that would be undertaken, and how the university's clients would benefit. Publishing initiatives can be directed at different stakeholders in the university. For example, the publishing initiative might focus on collaboration with the university press to publish humanities monographs. This initiative might take the form of a library-university press collaboration.[44] Courant and Jones suggest that in this partnership the library "can teach the press how to give information away free" and the press "can teach the library how to reach beyond the university for authors . . . and how to extract mission-enhancing revenues."[45] This publishing collaboration will likely demonstrate that these two organizations need not be separate entities. In a smaller academic library, publishing might focus on student e-journals. Given the wide availability of mature open source software such as the Open Journal System,[46] it is quite easy for a technology-oriented librarian to establish the necessary infrastructure for a journal publishing service.

The Small Academic Library

We can examine these new roles from the perspective of a smaller academic library including four-year teaching colleges, liberal arts colleges, and community colleges. In scouring data from the National Center for Education Statistics, Cy Dillon[47] reports that a small academic library serves a degree-granting institution that enrolls fewer than 2500 students. A common misconception holds that these smaller academic libraries lack the resources to innovate. Although the mission of smaller libraries will typically focus more on teaching and less on research, these libraries remain subject to the forces of change from the external environment, technological evolution, and budget pressures. However, in many respects the small library lacks the bureaucratic encumbrances of larger institutions and can therefore be more flexible, innovative, and responsive to student needs. The roles of the research librarian, publishing librarian, and marketing librarian are all relevant for the small library albeit in somewhat different form than they are for the larger library. For example, the research librarian might spend part of his/her time scanning the external environment, not so much to conduct research as to look for attractive technologies that might be readily applied in an instructional environment. The publishing librarian might work with faculty to publish an undergraduate journal of the best student papers or provide assistance in teaching students how to create a newsletter based on readily available open-source blogging software. In all of these initiatives the marketing librarian works with administrators to make sure these emerging roles and services align with the university mission and to articulate the impact of these new service roles. Depending on the size of the library, the marketing and research roles might be easily undertaken by a single individual. Similarly, the publishing role could be merged with the digital initiatives or scholarly communication librarian.

Public Services

Every profession must withstand challenges to its status[48] and for the public services librarian, the challenge is in the pervasive impact of technology. Public services are critical but still remain somewhat difficult to define, appearing in both technical and public services units. Public services professionals will need to provide the leadership to introduce and sustain the emerging new roles that have been highlighted in this text. In

discussing the qualifications for public services librarians, Dewey[49] indicates that these librarians are motivated to contribute innovative ideas and eager to experiment with new programs.

The reader may ask about how public services roles appear in the transformed academic library of the 21st century. In fact, many of the roles already discussed herein have a significant public service component. Dewey[50] notes that public services are shifting to a more proactive and collaborative model that is linked to university research and the teaching mission. This shift is evident in the aforementioned role of the *research data librarian* – a role in which the liaison acts to collaborate with researchers to acquire and preserve science data. The marketing role leverages the traditional skills of the liaison – collegiality, leadership, and management albeit with a different focus, interacting more with vice presidents, provosts, administrators rather than students and faculty. Some 20 years ago, Dewey articulated the importance of library research that can lead to new and practical public service models, citing areas for further study such as information seeking behaviors, learning technologies, and information literacy.[51] In pursuing these areas, the public service librarian does become a *research librarian.*

There are, however, continuing innovative extensions of the traditional liaison role. Stephen Bell has suggested that liaisons reach out to the broader external environment, resulting in a role of the *neighborhood liaison and public education specialist*.[52] The neighborhood liaison works through an existing college department or community relations, or an entirely new outreach initiative in order to identify, locate, and communicate with the people who are able to leverage experts and resources to create sustainable services. In a similar new role, Bell proposes the *outreach/community engagement specialist* who is tasked with connecting to high school students and their parents at the schools, at community meetings, and at public libraries. The specialist is there to create more recognition for his or her institution and to demonstrate that the library is an active participant in contributing to student success.

These extended roles of the public services librarian do not represent new skills but suggest a significant change in emphasis. The public services professional will need to reposition his/her work to engage in all facets of the information experience. This change in emphasis is critical for creating and sustaining all new roles, helping the parent

institution understand how the library and librarian can become a full partner in the academic experience.53

Conclusion

In discussing the future of librarianship, Budd argues that it would be irresponsible for us not to envision a preferred future state, one that "is not accidental; it is a conscious and intentional and attainable state."54 The accompanying vision is one in which new knowledge undergoes continuous development, where ideas and innovation frequently originate in the external (non-library) environment. For example, it is not too early for library researchers and technologists to explore the possibilities for artificial intelligence applications. IBM Watson55 is a technology platform that uses natural language processing and machine learning to reveal insights embedded in large amounts of unstructured data and documents. Watson Analytics56 provides a smart data discovery service available on the cloud that guides data exploration for all types of businesses including nonprofits. Intelligent software applications will soon be commonplace and the automated library reference assistant might be a good place to start.

The new roles cited here become part of the vision for the future academic library and, taken as a whole, represent a library that will be quite different from today's institution.57 The list is not exhaustive and there are, of course, still other emerging roles that represent promise and change for the library.58 The skills and competencies embodied in these roles emphasize the impact of the external world – technology, politics, and economics – highlighting the importance for each librarian to take a leadership role in the transformation of the academic library.

This transformation requires a reorientation, moving from the print, automated, and electronic libraries of previous eras59 to a model that embraces new digital services and new digital formats. The transformation suggests that library leaders and librarians should engage in an in-depth reflection, resulting in a theory of librarianship that links the broad and classical functions of librarianship with new roles into a comprehensive whole. In this process, organizational change becomes a fact of life, undertaken with a sense of urgency but always honoring the traditions and ethical norms of librarianship.

Discussion Questions

- All the new roles referenced in this chapter require leadership, not only from library management but also from those who are undertaking these new roles. Leadership requires vision – a preferred future state. Will the current vision and strategy of the academic library accommodate and support these new roles or will there need to be a significant change in vision and strategy?

- Should academic libraries provide revenue-generating services? Which services would be candidates and what would be the business model?

- Academic libraries are notorious for not being able to defund and cancel services that are no longer valuable for the university community. Assume the queries at your library reference desk have been dramatically reduced in recent years and you have decided that students can handle most questions. How would you handle this transition? Comment on how the change should be communicated to the members of the library, the opportunities, and the issues of reassigning and retraining professional librarians.

- Given that many of the new services in an academic library will be technology-based, how would the ratio of technical staff to professional librarians change?

- Under what conditions should an academic library become a "bookless" library?

- Provosts and administrators are demanding more evidence of the library's impact on the university. What would be the quantitative indicators that might demonstrate this impact?

Assignments

1. Your library has started to publish e-journals as a service for faculty who want to launch a new journal. The journals are peer-reviewed and are freely available to the world. The wide availability of open source platforms (such as OJS) makes it relatively easy for your library to take on this new role. You, as scholarly publications librarian, are asked to develop criteria for acceptance of new journals to be published by the library.

2. Discuss the implications of a revenue-generating service. How does such a service fit into the norms and traditions of the library profession and how might revenue be

generated for a specific service (e.g., a data service that seeks to defray the costs of storing and preserving large datasets)?

3. As a marketing librarian, can you think of a totally new service that meets the needs of one of the library's clients – faculty, students, and administrators? Describe the concept and the business model – strategy, client interface, resources, partners, and potential revenue.

4. As the digital library architect, you want to have your library certified as a trusted archival agent. What steps would you take to achieve this certification? (Hint: See the Center of Research Libraries work for certification at https://www.crl.edu/archiving-preservation.)

Notes

1 Donald E. Riggs, "Visionary Leadership," in *Leadership and Academic Libraries,* edited by Terrence F. Mech and Gerard B. McCabe, 55-65 (Westport, CT: Greenwood Press, 1998).

2 John M. Budd, *Self-Examination: The Present and Future of Librarianship* (Westport, CT: Libraries Unlimited, 2008), 2.

3 Jordan M. Scepanski, "Forecasting Forestalling, Fashioning: The Future of Academic Libraries and Librarians," in *Academic Libraries: Their Rationale and Role in Higher Education,* edited by Gerard B. McCabe and Ruth J. Person, 167-76 (Westport, CT: Greenwood Press, 1995), 173-74.

4 Jesse H. Shera, *"The Compleat Librarian" and Other Essays* (Cleveland, OH: The Press of Case Western University, 1971), 64.

5 "Changing Roles of Academic and Research Libraries" (Chicago: ACRL, 2007), http://www.ala.org/acrl/issues/value/changingroles.

6 Ronald C. Jantz, "The Determinants of Organizational Innovation: An Interpretation and Implications for Research Libraries," *College & Research Libraries* 76, no. 4 (2015): 512-36, doi:10.5860/crl.76.4.512.

7 Jesse H. Shera, *Foundations of Education for Librarianship* (New York: John H. Wiley & Sons, 1972), 350.

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