Engaging Research: Libraries in a Shifting Academic Paradigm

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Abstract:

Across the globe, academic research is in a state of flux. Changes that first took root in the sciences have spilled over into fields of humanistic and social inquiry. New technologies are changing the ways scholars work, down to the very types of problems they address. Multidisciplinary work is now commonplace, with boundaries crumbled by access, sharing, and collaboration possibilities unimagined a generation ago. At the same time, some things have not changed—many scholars continue to work in the ways in which they were trained. There is also concern over the meaning of these changes to research and scholarship. What will innovative digital projects mean for the well-established peer review process? If scholars begin to make their work available on the Internet for free, how will journal publishers be affected, and more pointedly how will peer review be sustained? How can researchers harness the power to collect and analyze data within the so-called "data-deluge"? These and other questions represent disruptions for scholars and the research process.

In tandem with these changes faced by scholars and researchers, librarians have debated the implications of new technology for their work. The role of academic librarians has traditionally been one of acquiring, organizing, and sharing information and knowledge. Certainly, the need for research assistance and information brokering is ongoing, and researchers continue to expect this support. Yet within the research paradigm shift, librarians have simultaneously sought to keep up with, and even to surpass, the pace of technological change and research innovation. Given the multiple valences upon which academic research is transforming, these changes will not remain isolated within the library

or within particular institutions, but involve connections between researchers, information specialists, and other players. The great struggle of 21st century librarianship has been to continue to support the old user needs, while anticipating and providing for the new.

In attempting to bridge these gaps, librarians and information specialists have begun to broker their own relationships with scholars and research. In recent years, it has become increasingly clear that libraries cannot simply scale their old services and expect them to address emerging user needs. Recognizing this conundrum, librarians have begun to explore departures from older models of simply collecting materials and providing access. Libraries now seek to anticipate the needs of researchers, building services for scholars that support transformations in their work. Librarians have become stewards for ushering in changes to research practices and knowledge brokering.

Finding the balance between supporting researchers' stated needs, and providing services they do not yet know they want, lies at the heart of cultural change in the academic library. At Emory, librarians have embarked on multiple experimental projects, seeking to add value to the research process. We have invited users to co-curate our digital collections, creating a virtual workspace where scholars can build knowledge. We have supported new forms of open access publication, engaging with faculty and technology in new ways. Information specialists have joined clinicians in the hospital and historians in the archives, partnering with faculty members from the early stages of their research projects. Librarians have sought to interrogate and rearrange pathways of information, in order to challenge and refine the relationships between content and user. The Library has refashioned parts of its physical facility, introducing dynamic, experimental spaces where faculty members and graduate students can interact in new ways. This paper examines the effects of such experiments on new organizational structure, technological innovation, collections, faculty and staff roles, the user experience, and physical and virtual space, as Emory librarians have sought to rapidly evolve new models for academic librarianship as new methods of research move forward. The resulting cultural dynamics reflect the fluidity not only of academic librarianship, but also of research itself, in the 21st century.

The Problem: Research and Resources in Flux

"One thing is sure," United States President Franklin Delano Roosevelt once declared, defending measures proposed to combat the Great Depression. "We have to do something. We have to do the best we know how at the moment. If it doesn't turn out right, we can modify it as we go along." In a 1933 radio address, the president used a baseball metaphor to explain his experimental approach, saying, "I have no expectation of making a hit every time I come to bat. What I seek is the highest possible batting average, not only for myself, but for the team."[1]

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[1] James David Barber, *Politics by Humans: Research on American Leadership* (Durham, North Carolina: Duke University Press, 1988), 14; Russell D. Buhite and David W. Levy, eds., *FDR's Fireside Chats* (Norman, Oklahoma: University of Oklahoma Press, 1992), 24.

Within the current global financial climate, an experimental mindset may be the only way for libraries to compete effectively. Successfully justifying investment and funding for research libraries has become a serious challenge. In a changing research landscape, often the services libraries offer do not go far enough to meet user needs. This situation reflects a fundamental shift. For centuries, the great strength of libraries has been consistency— reliably collecting, describing, storing and preserving materials. The careful and necessarily conservative outlook engendered by these roles served libraries well for five centuries, following the mass production enabled by the printing press. However, in today's dynamic research environment, fueled by rapidly evolving digital technologies coupled with increasingly limited institutional resources, reliability is no longer enough. In order to flourish, libraries must be agile enough to experiment with new services, retaining what proves valuable, and refashioning what does not. While users expect the library to continue to support core, traditional services, libraries can increase their reach and relevance by anticipating needs that scholars have. This dual role—both providing today's core services and experimenting with anticipatory development for tomorrow—is often the subject of organizational distress.

This sense of distress is not confined to libraries. Across the globe, research methodologies are in a state of flux. Changes that first took root in the sciences have spilled over into fields of humanistic and social inquiry. New technologies are altering the ways researchers work—down to the very types of problems they address. Multidisciplinary work is commonplace, datasets are growing exponentially in both size and variety, and the availability of open access to research leads to increased accountability. The observation that technology is transforming the landscape of research is now a cliché.

While university library budgets generally increased in the 1990s through the mid-2000's to accommodate ever-growing serials pricing escalation and new technologies, academic libraries have not maintained their proportional share of institutional research dollars, and this situation has been exacerbated by the reduction of funding due to the current global recession. Parallel decreases in special and public library resources began earlier, well before the current economic crisis. Decades before this recession began, there was concern over declines in the number of and funding for special libraries.[2] Public library funding also declined precipitously, particularly in some locales.[3] Academic libraries, the last to be hit with funding reductions, now face significant budget cuts.[4] Regardless of when funding cuts began, since 2008 - 2009, libraries around the world are "experiencing financial hardship as a result of the world-wide economic downturn."[5] It is by no means clear when relief will come; some observers suggest, in fact, that current funding models are the "new normal."[6]

Although the economic situation is dire, reductions in library resources are not only the result of external circumstances. Libraries now face heightened competition, even when it comes to core services. Google and other search engines make it possible for users to search for and access materials without library intermediation. Companies with new tools or bundled resources crop up daily, intending to compete with or replace library services. Regardless of whether the quality of information and analysis from any of these

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[2] Dean Tudor, "The Special Library Budget," *Special Libraries* 63, no. 11 (November 1972): 517-527.
[3] Denise M. Davis, "The Status of Public Library Funding 2003-2005: Impact of Local Operating Revenue Fluctuations," *Public Library Quarterly* 25, no. 1-2: 5-26.
[4] David Nicholas, et al., "The Impact of the Economic Downturn in Libraries: With Special Reference to University Libraries," *The Journal of Academic Librarianship* 36, no. 5 (September 2010): 376-382.
[5] Ibid.
[6] Michael Kelley, "The New Normal," *Library Journal* 137, no. 1 (January 1, 2012).

tools matches what a librarian could provide, many customers believe that it does—and that belief affects perceptions of library value and, as a result, the allocation of resources.

An Incremental Approach

External competition, coupled with the economic recession, make it more necessary than ever to demonstrate the relevance of libraries. Rather than "retrenchment and timidity," this is a time for "developing expanded roles and boldness."[7] Propelled by the goal of increasing our organization's agility to meet shifting criteria of relevance, the Emory Libraries have sought to sustain innovation in library services by implementing a strategy of continuously making incremental change. This approach is tantamount to having a mindset of the library as a living laboratory, constantly experimenting, analyzing and adapting services and facilities year-by-year. Rather than requiring periodic, large-scale overhauls, which require significant capital expenditures, this approach of iterative experimentation relies on smaller resource allocations on a staggered annual basis. In addition to the benefit of financial risk mitigation, implementing change in pieces is also critical to shifting culture steadily within the organization, to meet 21st century research needs.

The Organization as a Lab

The Emory Libraries are using a model consciously designed to encourage continuous incremental change—to our products and services, as well as to our culture. Throughout our processes, we have augmented customer feedback systems through a formalized "Voice of the Customer" methodology, intended as a new way to receive

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[7] Rush Miller, "Damn the Recession, Full Speed Ahead," *Journal of Library Administration* 52, no. 1 (January 2012): 3-17.

information about what our patrons need.[8] In parallel, key areas within our physical facilities are identified, and updated, on a yearly basis—often with the intention of experimenting with these reconfigured spaces, and extending these improvements across other parts of the facility if deemed effective. The staffing dimension is addressed both by creating new roles and positions, as well as by adding short-term Fellows to the library staffing model. Implementation of our Strategic Plan incorporated the use of prioritized Strategic Objectives, some of which are specially designated as experiments—products and services intended to push the boundaries of scholarship, and library services. Relying on anticipatory development, rather than looking backward to the traditional roles and relationships of the library, these experiments are intended to help us anticipate the needs of 21st century researchers.
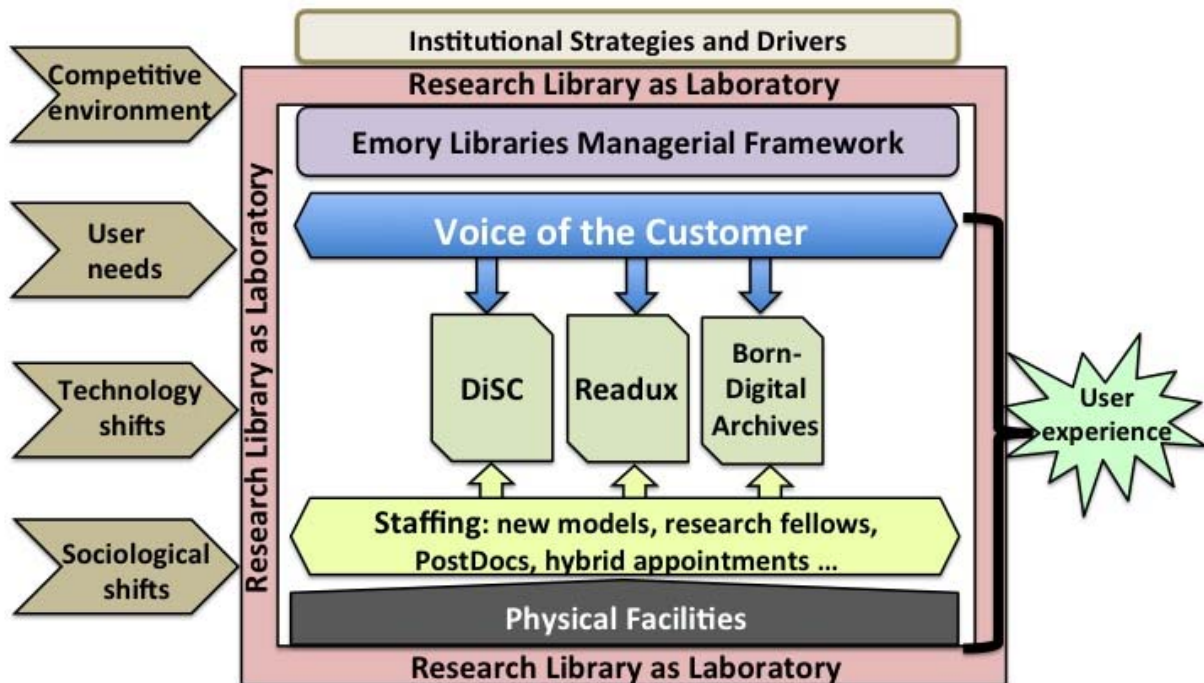
This cluster of experiments is aimed at engaging researchers in new ways. We have invited users to co-curate our digital collections. We support new and emerging forms of open access publication. Information specialists have joined clinicians in the hospitals and historians in the archives. Librarians have sought to interrogate and rearrange pathways of information, and the relationships between content and users. Rather than responding only to researchers' stated needs, we aim to engage with the future of scholarship. Failure is certainly a part of these ventures, and putting anticipatory development into practice requires accepting the possibility of misstep, and consequently changing course. The projects discussed in this paper are not the entire set of experiments attempted, but rather they are representative of this incremental, experimental approach. The organizational

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[8] Gary Burchill and Christina Hepner Brodie, *Voices into Choices: Acting on the Voice of the Customer* (Madison, Wisconsin: Center for Quality Management, 2005).

structure is intended to move the Libraries culture not only toward and adoption of an experimental ethos, but also toward a broader organizational agility.

Managing Change

Our managerial and organizational framework attempts to prioritize, support, and resource incremental experiments not only due to the value of individual projects and improvements, but also because of the growth of the culture of innovation this structure can instill. Organizations, especially academic libraries, have deep roots. Although the external situation for libraries is changing rapidly, it is unlikely that such institutions can simply change culture, from the top down. Research has shown that corporate entities can expect to realize a fundamental cultural shift over the course of seven to ten years; in more conservative institutions, such as those in academia, this span extends to ten or more years. When management acknowledges that a cultural change is necessary, then, it often makes sense to keep the bigger picture of desired cultural change in mind, but try to change the organization incrementally in a series of smaller steps. We believe that the aggregate sum of incremental changes over time will recondition the organization's adaptability, both in its focus and in its ability to be agile. Of necessity, this approach of utilizing steady and consistent incremental changes is simultaneously less conservative than traditional librarianship, and more cautious than many corporate models.

Institutional Strategies and Drivers

Research Library as Laboratory

Competitive environment

Research Library as Laboratory

Emory Libraries Managerial Framework

Voice of the Customer

DiSC   Readux   Born-Digital Archives

User needs

Technology shifts

Sociological shifts

Staffing: new models, research fellows, PostDocs, hybrid appointments …

Physical Facilities

Research Library as Laboratory

User experience

A New Way of Listening

Incremental changes cannot be implemented effectively in a vacuum; they require a consistent feedback loop from users to determine how to influence, maintain, or refine experiments. The Voice of the Customer (VOC) program is a formalized methodology intended to drive policy decisions and innovations based on customer perspectives, rather than professional personal biases or institutional traditions.[9] The VOC program involves learning how to "conduct in-depth interviews, capture customer voices verbatim, produce data that is capsulized in language, not numbers, and transform the data into a blueprint for action." In addition to conducting a traditional annual library survey, staff members at

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[9] Burchill and Brodie, *Voices into Choices*, 2005.

the Emory Libraries interview members of the faculty about their research and teaching processes. By learning about these processes, rather than only assessing users' opinions of current services, we hope our librarians can both more deeply integrate the library into scholars' work, and imagine new services and products that would be of higher value. The Voice of the Customer process is both the catalyst for experiments, and an overarching attempt to shift the culture to a more imaginative, dynamic way of looking at library services. Ensuring that researchers understand the importance of library services to their research processes involves not only improving those services, but also providing outreach and discovery tools to make the library a more visible part of research.

The Experiments

Alongside core services and customer feedback, the Libraries have implemented a group of experiments intended to capitalize on the intersections between research and technology. These efforts attempt to anticipate and respond to changing scholarly needs. Rather than using technology merely to mimic analog resources in digital form, these experiments are intended to reform understandings of library services, and to deepen the library's interactions with the research process. Because these projects rely on creative approaches, planning and development a highly iterative process that relies on feedback and consistent assessment. Overlaying and complimenting these activities, Emory Libraries software developers employ the Agile software development methodology, an iterative planning and development process that seeks to harness, rather than to resist, change.[10]

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[10] http://agilemanifesto.org/

Responding to an anticipated need for technical support for scholars—particularly in the humanities—Emory created the Digital Scholarship Commons (DiSC) as a virtual and physical co-laboratory for scholars and librarians. The ultimate goal is the creation of a trans-disciplinary, collaborative digital scholarship center that is truly of the library, not simply in the library. In development since 2007, the project was funded by the Andrew W. Mellon Foundation grants in 2009 and 2011. After consultation with scholars, librarians, and peer institutions, the renovated physical space, known as the Research Commons, was opened in 2012. The new space was designed to facilitate scholarly collaboration, to take advantage of the combination of collection resources, human expertise and advanced technologies available in the library, and to attract scholars from across the disciplines. Several rounds of digital humanities projects supporting faculty research have been vetted, and are currently in development. Since Digital Humanities is a growing field within the academy, a primary goal is to help digital novices enter the community. DiSC's mission also includes anticipatory development in training new scholars to be innovative and to be competitive on the job market, offering, in collaboration with the Laney Graduate School, a Certificate in Digital Scholarship and New Media. Although it is in its early experimental phases now, DiSC should eventually extend beyond the digital humanities to the sciences and social sciences.

Archives and special collections are another center of experimentation. Emory's Born-Digital Archives program reflects a growing understanding that archival practices must eventually accommodate the great shift as society moves to doing its work digitally. When Sir Salman Rushdie placed his literary archives at Emory, these materials included hard drives, discs, and other digital objects. After much consideration of how best to meet

future researchers' needs when looking at these materials, the 2010 release of the Rushdie archive included not only tools for full-text searching of digital content, but also authentic access to the entire computing environment he used through "emulation." The Rushdie 'born digital archives' project offers access to fifteen years of this scholar's life in a way no other literary archive matches. Emory has used this project as a basis for extending our technical systems to manage a growing collection of digital archival content. The approach focuses on a set of desired user experiences and while preserving context, and then builds tools and processes to support those objectives. The goal is to provide researchers with authentic and intuitive archival tools that can be applied to both digital and analog resources.[11]

A core innovation challenge is affecting users' experience. Readux—Read Edit Annotate Digital User Experience—is a product that seeks to address users' experience with digital content. Readux seeks to be a vital part of the whole user experience, rather than a traditional tool for discovery and access. A web-based research application, Readux will enable users to curate content and to connect with collaborators. Readux's co-curation possibilities allow for crowdsourcing of metadata work and description. The application seeks to provide a new context for researchers, and to blur the boundaries between local and remote curation. Some work is being done with OCR (Optical Character Recognition) and semantic analysis software. We believe, however, that the contributions of users themselves (often experts in these materials) can also be harnessed and shared. When experts are enabled to co-curate digital resources, adding metadata themselves, the

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[11] Patricia Cohen, "Fending Off Decay, Bit by Bit," *New York Times*, March 15, 2010. http://www.nytimes.com/2010/03/16/books/16archive.html?pagewanted=all (accessed May 14, 2012).

library's role shifts to an editorial one. The quality of curation increases due to the ability to leverage global expertise, rather than curating on an institution-by-institution basis.

Effects of Incremental Development

Emory Libraries' incremental, experimental strategy attempts to replace rigid structure with agility, encouraging staff to try new things even if these attempts need refinement or replacement. A fundamental principle of this organizational model is the component flexibility that supports removing a project from the structure and replacing it with another, without restructuring the entire flow of operations. More often, experimentation involves consistently soliciting feedback and changing course during a project, as necessary. Readux was not initially conceived with the capability for page-level ingest; that feature has been added to development plans because of expressed user-requests. The development of DiSC is perhaps the most incremental process of all, conceived as a laboratory space to allow "startup efforts to congeal and connections to evolve," rather than being a concrete set of plans for services and space.[12]

Staffing

Incremental development is also reflected in our staffing models. In order to feed this new dynamic organizational structure, the Libraries have established a variety of short-term (one or two year) fellowships, including recent MLIS graduate Library Research Fellows, Mellon Postdoctoral Fellows, CLIR Postdoctoral Fellows, and Woodruff Graduate Fellows. This approach to staffing is iterative—with each set of fellows comes new ideas and innovative approaches, with the expectation that our institutional culture surrounding staffing and resourcing our programs and services becomes more agile and adaptive.

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[12] Luce

In the Health Sciences arena, librarians have attempted to get ahead of the curve in developing capabilities to approach information and making hidden knowledge visible. As part of close collaboration with Deans in the School of Medicine and School of Nursing, academic course directors, and program directors, the Library has sought to develop an e-science cyber-infrastructure and health and life sciences knowledge center to respond to changing support needs in science and technology. In order to confront the requirements of biomedical researchers and doctors, the Health Sciences Library has embarked on a new model for reference services. Adopting a Clinical Informationist service model over the past four years, the Library has embedded *informationists* in the four Emory teaching hospitals. To supplement these information brokers, the Library has created a repository of evidence-based medicine, using the answers to questions that arise during Resident Reports, as well as a repository of answers to questions from Emory Healthcare nurses. These initiatives seek to decenter the physical library from the reference process, and to bring reference services to the locations where researchers and physicians work. Due to the success of the program, an additional Life Sciences Informationist model has been developed over the past two years.

Facilities

Refashioning the library's facilities in annual increments has allowed substantial improvements to the physical space over a period of years. The last major capital investment in the Library facilities was in 1996; large new capital projects have been deemed unlikely. Thus, since 2002, periodic renovations of the library's stack tower have been ongoing—one floor at a time, with the advantage of continuously applying new learning to the design and execution of each floor. Converting conventional shelving to

compact moveable shelving has increased onsite collection storage capacity by 50%, while the finished product of each successive floor has improved compared to the previous one. In 2010, to create an integrated Library Service Desk, the Circulation/Reserves Desk and the Reference and Information Desk were consolidated into a single point of service. One of several library classrooms was renovated in 2011, to support collaborative use of technologies—and to serve as a pilot for potential renovation of other library classrooms. The space that had formerly been occupied by a cumbersome circulation/reserves desk has been converted to the Research Commons, opened earlier this year. Consistently giving attention to the building with very modest funding has yielded improvements with updated meeting rooms, exhibition spaces and the front entrance—each effort learning from the preceding one.

Conclusion: Anticipating Needs and Implementing Change

Given the multiple valences upon which research is transforming, clearly academic libraries need to increase our rate of change and evolution. This change includes not only modifications in products and services, but also in culture and the workforce. The Emory Libraries have adopted an organizational structure predicated on continuous and consistent incremental change. We recognize that constant change, whether relatively large or small, is difficult for many and yet attractive to some others. At the same time, we also need to recognize that this is the 21st century world that we live in, and our library environments are and must be a microcosm of that reality.

Although Emory has had some success in implementing this organizational structure, there are many issues that remain to be resolved. While the project-based

structure lends dynamism and vitality to the Library, we are grappling with the challenge of sustainability of these programs and projects. In a broader context, institutions can no longer expect to solve the research and informational needs of their constituents alone. When dealing with challenges such as data curation and digital preservation, collaboration and interoperability amongst institutions and countries will be not only desirable, but also necessary. While multi-institutional and international approaches represent exciting new possibilities, putting them into practice will be a major challenge for the libraries of the 21st century library.