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IT Assessment in ARL Libraries

Rebecca L. Mugridge
University at Albany, State University of New York, rmugridge@albany.edu

Janetta Waterhouse
Kansas State University, jwaterhouse@ksu.edu

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Rebecca L. Mugridge(a) and Janetta Waterhouse(b)
(a)Cataloging and Metadata Librarian, University Libraries, University at Albany, SUNY, Albany, NY, USA; (b)Associate Dean for Collections, Discovery and Information Technology Services, Kansas State University, Manhattan, KS, USA.

Corresponding author:
Rebecca L. Mugridge
rmugridge@albany.edu
814-777-6480
1400 Washington Ave LI-B35i
Albany, NY, 12203

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Abstract

With the rapid pace of change and the high cost invested in information technology, it is important for academic libraries to evaluate the information technology solutions they use in their institutions to determine whether they are meeting the needs of their students, faculty, staff, and other users of their libraries and resources. This study presents the results of an online survey of Association of Research Libraries (ARL) academic library members to benchmark the assessment strategies that they used to evaluate their IT activities. This article compares their responses with earlier studies to identify trends and make recommendations for effective assessment practices.

Introduction

Assessment has long been of interest to academic and research library managers. From 1973 to 2018, the Association of Research Libraries (ARL) used surveys to benchmark management and other practices, publishing them as SPEC Kits, with 361 of them published before the series concluded. ARL also developed and then spun off the LibQual survey instrument, which allowed libraries to conduct assessment on their own services, collections, and space. ARL's Research and Analytics Committee and program "collect and analyze data on all aspects of research libraries' roles in scholarly and scientific production, learning facilitation and learner success, and knowledge access and sustainability" and ARL co-sponsors a biannual Library Assessment Conference (*Data & analytics*, n.d.). The Association of College & Research Libraries published *The Value of Academic Libraries* (Oakleaf, 2010), which launched more than a decade's worth of research and publication in the area of assessment. Since 2006, the TechQual+ survey has been used to conduct assessment on information technology services, and similar services exist to evaluate IT services in public libraries. This study gathered information about how Association of Research Libraries academic member libraries conduct assessment on their information technology activities. Both qualitative and quantitative assessment methods can be used to measure library IT services, and such assessment can include both an evaluation of the success of an IT project, or the quality of existing IT services.

Assessment is a valuable tool that can provide libraries with information that helps them make strategic decisions or improve services. Customer service surveys, whether those customers are internal to the library (i.e., staff) or external (faculty, non-library staff, students, or members of the public) can provide useful feedback on IT services. Focus groups can provide similar fodder for library and IT staff to consider as they attempt to increase their effectiveness or improve efficiencies. Assessment can also help libraries identify service gaps between what users expect and what the library provides. Data collected through assessment may also be used by managers and administrators to advocate for additional funding, staff, or other resources. Managers may use assessment techniques, such as tracking helpdesk tickets, to gauge the productivity of their staff or department. Benchmarking may assist in identifying best practices for a particular activity. In some cases managers may need to demonstrate accountability to their library or university administrators, to ensure that they are meeting their functional obligations. Information that is learned through assessment may help managers set the direction for the department or division, and it can be used to communicate value or impact on the library, institution, or profession.

Literature review

Assessment of information technology activities in libraries at institutions of higher education is important, as noted by many researchers and practitioners. Barth (2011) recognizes that executives may be sufficiently removed from the work that they want to assess that they cannot

rely on their gut feelings and need to rely more heavily on metrics based on the collection of statistics and employment of surveys (p. 149). Block (2017) states that "what gets measured gets done (or at least gets the most attention)" (p. 80). He further points out that for many libraries, there are two distinct groups of customers for information technology work: staff and patrons, and assessment efforts need to be geared to them in different ways (p. 85). Decker, Givens, and Henson (2017) note that "Assessment is essential to understanding the efficacy of any service change" (p. 22). After any technology has been implemented, it is important to assess how well it is working; Burke (2020) recommends gathering evidence of successful and unsuccessful examples to provide feedback that can be used to identify problems and tweak the implementation of new technology (p. 116).

Few studies have addressed how academic libraries assess or evaluate the broad spectrum of responsibilities that fall under library systems offices. The Association of Research Libraries published *Library Assessment* addressing assessment in ARL member libraries (Wright and White, 2007). The survey included only one question that touched on the assessment of information technology activities: "Please indicate which of the following departments/units your library has assessed since 2002 and what methodologies were used for those assessments" (p. 22). This was followed by a list of 26 functional areas, of which "IT Systems" was one. Of the 62 libraries that responded to that question, 42 (67.7%) indicated that they had conducted assessment of IT activities, and 20 had not. Of those that had conducted some form of assessment of IT activities, the form of assessment included surveys (12), qualitative methods (13), statistics collection and analysis (27), usability (11), and other (3). Respondents were able to provide free text comments to explain the "other" response. Additional assessment techniques that relate to technology included the following, both of which could have fallen under the category of qualitative assessment:

- Web site: Card sorting tests on technology and organization
- IT Systems: Informal feedback and in-house assessments

Another question in *Library Assessment* was "Please describe up to three demonstrable outcomes that have been made to your library's programs, policies, or services based on information collected via assessment activities" (p. 37). Of the 64 libraries responding to this question, 37 listed one or more outcomes that are directly related to information technology functions or responsibilities. These include 26 libraries that mentioned improvements to their web site, 9 libraries that made changes to their integrated library system or online public access interface, 5 libraries that increased the availability of public computers or software, and 11 libraries that implemented or upgraded technology or library applications. Of the 179 total outcomes provided by respondents, 28.5% were directly related to information technology activities or responsibilities.

Library Systems Office Organization examined how information technology activities were organized in ARL member libraries and included one question that addressed the evaluation of systems office activities: "What techniques does the library use to evaluate the effectiveness of systems office services?" (Muir & Lim, 2002, p. 21). Of the 61 libraries that responded to this question, 77% conducted some form of assessment of the effectiveness of information technology. The most highly noted form of assessment included tracking the use of web pages and the integrated library system, tracking the number of service calls, and tracking the number of hardware and software installations, with more than 70% of responding libraries conducting those forms of assessment. Fewer than 50% of responding libraries indicated that they conducted focus groups, interviewed external users such as faculty or students, or conducted user surveys. Slightly more than 50% of responding libraries indicated that they conducted interviews of internal users such as the library staff or deployed the LibQUAL+ survey. Other forms of assessment included "tracking downtime and turnaround time on service calls, using Web-based tracking systems, external and internal review, and planning retreats" (p. 21).

The Higher Education TechQual+ Project provided a survey instrument that could be used to learn about student, faculty, and staff satisfaction with broad university- or college-wide IT services. Originally developed by Timothy Chester, the survey is now available upon request and may be used by anyone with access to the Qualtrics survey software (Chester, n.d.). Inspired by the ARL LibQual survey instrument, questions focus on users' minimum and desired expectations along with actual service performance in these key areas: connectivity and access (internet, wi-fi, cellular); technology and collaboration services; and support and training (including timely resolution of technology problems) (Chester, 2010).

The Measuring Information Services Outcomes (MISO) survey similarly investigates the success of library and technology services including which services are important to users, benchmarks for success, effectiveness of communication about library and technology services, and more. The MISO survey has been used to target IT services such as the provision of laptops for student use (Lowe-Wincentsen & Bettencourt-McCarthy, 2019) and the use of e-books by undergraduate students (Hobbs & Klare, 2016). A 2013 study that evaluated MISO survey data from 2008-2010 at 38 institutions showed that the most frequently used services by faculty were those supported by library information technology: the online catalog, library databases, and the library website (Allen et al., 2013, p. 130). The most frequently used service by students was similarly one supported by library IT: public computers (p. 130).

A review of the library literature since 2000 reveals many examples of specific assessment projects relating to information technology activities. These include articles reporting on the success of IT-related projects such as the implementation of a new software application as well as studies examining the quality of service provided in a particular responsibility area. Some examples include an assessment of workflows and services before and after a migration from Voyager to WorldShare Management Services (WMS) (Hartman, 2012); an assessment of 39

metadata generating tools (Park and Brenza, 2015); the assessment of a circulating laptop service, including frequency of use, wait time, and problems experienced (Feldman, Weiss, and Moothart, 2008); the creation of benchmarking criteria to assess digital asset management systems (Wu, et al., 2016); the development of a methodology for evaluating the success of IT projects (Guo, 2019); usability testing of local customizations to a new Primo interface (Galbreath, Johnson, and Hvizdak, 2018); and an evaluation of technology tools used for remote services at the start of the pandemic (Ibacache, Koob, and Vance, 2021).

Joseph R. Matthews (2007) provides a useful discussion of the value of both quantitative and qualitative assessment methods when assessing an integrated library system, writing "Quantitative research is usually used to estimate or predict a future outcome or to diagnose the existing or current state of a subject" (p. 61) and notes that qualitative methods, on the other hand, "are particularly helpful when attempting to better understand complex relationships among and between variables" (p. 47). Matthews claims that qualitative methods "use smaller samples, which means that making generalizations is much more difficult" (p. 47), that they are often thought of (anecdotally) as more time consuming, and therefore may be employed less often for library IT service assessment.

While not the focus of this article, the assessment of information technology activities in public libraries has garnered some attention. The Primary Research Group (2011) published a study that documented IT benchmarks in 48 public libraries in the areas of workstations and personal computers, e-book reading devices, IT staffing, technology training, outsourcing, information commons and computer centers, and the future of wireless and wireless devices. Blowers (2012) documents a public library tool available for benchmarking public access technologies in the areas of community value, engaging the community and decision makers, and organizational management.

Methodology

The authors conducted a survey in 2021 that gathered information about the organization of IT activities in academic library members of the ARL (Mugridge & Waterhouse, 2022). The authors used Qualtrics software to manage the survey and responses. The survey was deployed in April 2021 and remained open until June 4, 2021, eliciting 72 completed surveys. One of the questions asked in the survey but not reported on in the earlier published study addressed assessment of IT activities: What techniques does the library use to evaluate the effectiveness of information technology services? Respondents could select from a list of eight assessment techniques, or select "other" and provide a written response. Demographic data was also collected, including whether the institution was publicly or privately funded. The assessment techniques listed in the survey question are listed below, and respondents could select as many as were applicable. This list was adopted from the 2002 SPEC Kit Library Systems Office Organization (Muir & Lim). The full text of the survey can be found in Appendix A.

- Track usage of web pages, ILS, etc.
- Track the number of helpdesk tickets
- Track the number of hardware or software installations
- LibQUAL+ survey
- Interview internal users
- Conduct user surveys
- Interview external users
- Conduct focus groups
- Other (text entry required)

Findings

Respondents were asked to note which types of library assessment methods had been employed by their organization. They were asked to select all assessment options presented that were applicable and were required to enter text if "Other" was one of the values selected. One institution did not select any assessment methods and noted in "Other" that "Central IT is not monitoring this." Another institution selected only "Other" and noted they assess "How long helpdesk tickets are open, progress on projects." All other institutions selected at least one assessment method. Five institutions employed all assessment methods presented but no additional.

Table 1 shows the percentages of respondents who use the assessment methods listed. The most common assessment methods for library technology services are tracking usage of the library website and the ILS (93.1%) and tracking the number of helpdesk tickets (84.7%). Other commonly-used methods of assessment of IT activities are tracking hardware and software installations (62.5%), conducting user surveys (66.7%), and the use of focus groups (61.1%). Interestingly, although user surveys are used by two-thirds of responding libraries, only 31.9% of respondents indicated that they use the LibQual+ survey to assess IT activities. Interviewing internal and external users were also less likely to be used as an assessment method, although the numbers using those methodologies were not negligible (47.2% and 38.9%, respectively).

Table 1: Usage of specific assessment methods

[INSERT TABLE 1]

Table 2 breaks down the prevalence of assessment methods used based on whether the institution is public or private, with 55 public institutions responding to the survey and 17 private. Public institutions were more likely to conduct the following types of assessment: tracking the number of help desk tickets, tracking the number of hardware and software installations, use of the LibQual survey, interviewing internal users, conducting user surveys, and "Other." Private institutions were more likely than public institutions to track website or ILS usage, interview external users, and conduct focus groups.

Table 2: Usage of specific assessment methods by private vs. public institutions

[INSERT TABLE 2]

Eighteen respondents noted additional assessment methods used in their respective libraries. The most common method mentioned was related to user experience testing with seven libraries indicating that as an option. Their responses included:

- UX studies (more than surveys, e.g. interviews with eye and movement tracking
- Usability testing
- Usability work
- User testing, accessibility testing of libraries websites and web applications
- We have a dedicated UX department, which is an incredible asset
- Some of the user-facing approaches listed above are conducted via our UX initiative
- Structured user testing

Other methods of assessment provided by respondents included:

- How long helpdesk tickets are open, progress on projects
- Track content of helpdesk tickets from library staff and users
- Anecdotal, word of mouth
- Conducting a campus-wide needs assessment
- MISO survey
- Track hardware and software usage (LabStats)
- Have a Technology Strategies [Committee] with representatives from across the Libraries
- Detailed assessment projects

Conclusion and further research

Based on our survey, the top five forms of assessment most likely to be used by academic research libraries are tracking usage of the library website and the ILS, tracking the number of helpdesk tickets, tracking hardware and software installations, conducting user surveys, and the use of focus groups. There is some overlap with the top assessment methods reported in the 2002 SPEC Kit *Library Systems Office Organization* which were tracking usage of web pages, ILS, etc.; tracking the number of service calls, tracking hardware and software installations, LibQUAL+ survey; and interviewing internal users of the services (Muir & Lim, p. 21). The increase in the use of user surveys and focus groups likely reflects the rise of user experience studies in academic libraries, and is reflected in the number of respondents who specified user studies in the "Other" category in our question. The top forms of assessment used by survey respondents reflect a mix of qualitative and quantitative assessment methods, including the collection of statistics that monitor various activities along with surveys and focus groups. Libraries in public institutions appear to be more likely to participate in the LibQUAL+ survey

and interview internal users; whereas, libraries in private institutions appear to be more likely to conduct focus groups.

Based on this study and the associated literature review, there are several areas that merit further research. What forms of assessment do library managers find most useful, or for what purpose? How do administrators use assessment results to inform strategic planning and make staffing or organizational decisions? How are the results of assessment communicated to the wider university community and university administration? Do library or university administrations regularly or systematically conduct assessment before and after making organizational changes?

Communicating the results of assessment activities is critical to the success of any assessment project. Whether the assessment project addressed productivity, service quality, process improvements, or some other issue, there are many ways to share the results of the assessment. A typical method of communicating is in the form of an annual report or informational report to library administration, but there are other ways to convey the results of an assessment project that will demonstrate the value of IT activities and services. Presentations at all-staff or department meetings, in-service days, or other staff programs are useful in showing the commitment of IT staff to providing good service to their users. Mass emails to staff are a good way to share announcements or accomplishments and to elicit feedback. A quarterly or biannual department newsletter is a useful vehicle for sharing assessment outcomes with library and institution-wide staff and administrators. Assessment outcomes may also be shared more widely through articles written for a lay audience and shared through the library's newsletter; this is effective if donor funding has been used to support any of the services or activities that are being highlighted. It would be especially helpful for IT staff and librarians to consider writing articles for publication in the library literature, whether it is in a professional organization newsletter or a peer-reviewed publication; case studies are particularly useful as models for other libraries. Sharing the results of assessment activities at professional conferences is a great service to the profession.

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Appendix A. Survey instrument

IT Organization

The survey asks the same set of questions for a variety of library systems and services to get more information about responsibility and satisfaction. The time frame for consideration is from 2000 to early 2020, prior to the pandemic.

The library systems and services being asked about are:

- Web design and development
- Server and systems administration
- Email
- Calendar
- Integrated library system or library services platform
- Library specific applications
- Desktop support of staff computers
- Desktop support of public computers
- Digital scholarship technology or equipment
- Hardware or software purchasing
- Institutional repository development and support
- Other digital content management systems
- Audiovisual or media technology or equipment
- Disability services technology or equipment

The same set of questions being asked about those systems and services are:

Please indicate who is primarily responsible for **[service from list]** for your library:

- ○ Library systems office or other units or personnel within the library
- ○ Institution-level information technology unit
- ○ Vendor
- ○ Consortium
- ○ Other _____

How satisfied are you with the **[services from list]** services provided?

- Very satisfied
- Satisfied
- Neutral
- Unsatisfied
- Very unsatisfied

Please explain

_____

Has this responsibility for **[services from list]** changed since 2000 (prior to the pandemic)?

_____

If No, skip to the set of questions for the next service
If Yes, these additional questions will be asked:

Please explain

_____

What year did this responsibility change?

_____

Why was the decision made?

_____

The final survey questions are:

Please list the top three challenges the library systems operation in your institution will face in the next two years

- ☐ 1 _____
- ☐ 2 _____
- ☐ 3 _____

What techniques does the library use to evaluate the effectiveness of information technology services? **Please select all that apply**

- ☐ Track usage of web pages, ILS, etc.
- ☐ Track the number of helpdesk tickets
- ☐ Track the number of hardware or software installations
- ☐ LibQUAL+ survey
- ☐ Interview internal users
- ☐ Conduct user surveys
- ☐ Interview external users
- ☐ Conduct focus groups
- ☐ Other (text required) _____

Name of institution:_____

Is your institution public or private?

- ○ Public
- ○ Private

What organizational unit does the library report to?

- ○ An academic unit, such as Academic Affairs
- ○ An administrative unit, such as Finance and Administration
- ○ Other (text required) _____

What is the title of the person that the library head reports to?

_____

Please submit any additional information regarding library technology services at your institution that may be relevant to this survey topic.

_____

Table 1. Usage of specific assessment methods

Assessment Method	Yes
Track Usage of web pages, ILS, etc.	93.1%
Track # helpdesk tickets	84.7%
Track # HW/SW installations	62.5%
LibQual Survey	31.9%
Interview internal users	47.2%
Conduct user surveys	66.7%
Interview external users	38.9%
Conduct focus groups	61.1%
Other	25.0%

Table 2. Usage of specific assessment methods by private vs. public institutions

	Private (17)	**Public (55)**
Assessment Method	**Yes**	**Yes**
Track Usage of web pages, ILS, etc	94.1%	92.7%
Track # helpdesk tickets	82.4%	85.5%
Track # HW/SW installations	52.9%	65.5%
LibQual Survey	11.8%	38.2%
Interview internal users	35.3%	50.9%
Conduct user surveys	64.7%	67.3%
Interview external users	41.2%	38.2%
Conduct focus groups	88.2%	52.7%
Other	23.5%	25.5%