

» “I think the health of our civilization, the depth of our awareness about the underpinnings of our culture, and our concern for the future, can all be tested by how well we support our libraries.”

– CARL SAGAN



Issue 50 // May 15, 2018

# The 2017 Public Library Data Service Report

## » Characteristics and Trends

BY IAN REID, EDITED BY CARL THOMPSON

**T**he Public Library Data Service (PLDS) annual survey is conducted by Counting Opinions (SQUIRE) Ltd. (CO) on behalf of the Public Library Association (PLA). This 2017 survey of public libraries from the United States and Canada captured fiscal year 2016 (FY2016) data on finances, resources, service usage, and technology. Each year PLDS includes a special section. This year the supplemental questions focused on young adult services.

The PLAmetrics online service offers subscribers access to the longitudinal PLDS data sets from FY2002. Also included is the Public Library Survey (PLS) annual data (from FY2000) as provided by the Institute of Museums and Library Services (IMLS). PLAmetrics provides real-time access to meaningful and relevant public library data

for peer benchmarking and trend analysis using a custom reporting service.

This report includes an analysis of selected measures from the FY2016 PLDS and trends, conducted by CO using the PLAmetrics reporting service.

### RESEARCH METHOD AND CONTEXT

Participation in the PLDS is voluntary and participants have the option to provide responses to any and/or all questions that comprise the survey. As in previous years, public libraries in the United States and Canada are invited to participate in the survey.

CO sent 5,564 emails to launch the survey (January 2017). In addition, public libraries and state agencies were notified of the survey via email, social media, and web page posts. Postcards promoting participation were handed out at the Ameri-

### TAKING CARE OF BUSINESS

*Why Libraries Should Incorporate Listening into their Social Media Goals*

### USER-CENTERED PROVISIONING OF INTERLIBRARY LOAN

*A Framework*

### THINGS THAT SQUEAK AND MAKE YOU FEEL BAD

*Building Scalable User Experience Programs for Space Assessment*

can Library Association (ALA) Midwinter Meeting (2017). In total, over 5,591 unique libraries were contacted. Follow-up letters and emails were sent throughout February and March. The original deadline for submission (March 31, 2017) was extended to April 30, 2017.

State data coordinators from the U.S. and Provincial/Association coordinators in Canada were contacted about promoting the survey to their libraries. Their involvement led to increased participation including, 3,055 (2,704 in 2016) of U.S. and Canadian public libraries partially or fully responding to the request for data, a response rate of 54 percent (a 12.9 percent increase over 2016).

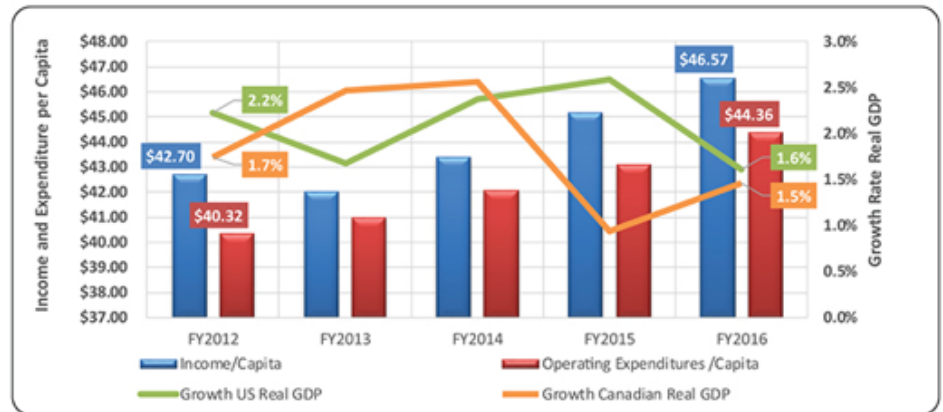
Copies of the survey including definitions are available online via the [PLDS Survey site](#) and at [www.plametrics.org](http://www.plametrics.org).

## SUMMARY

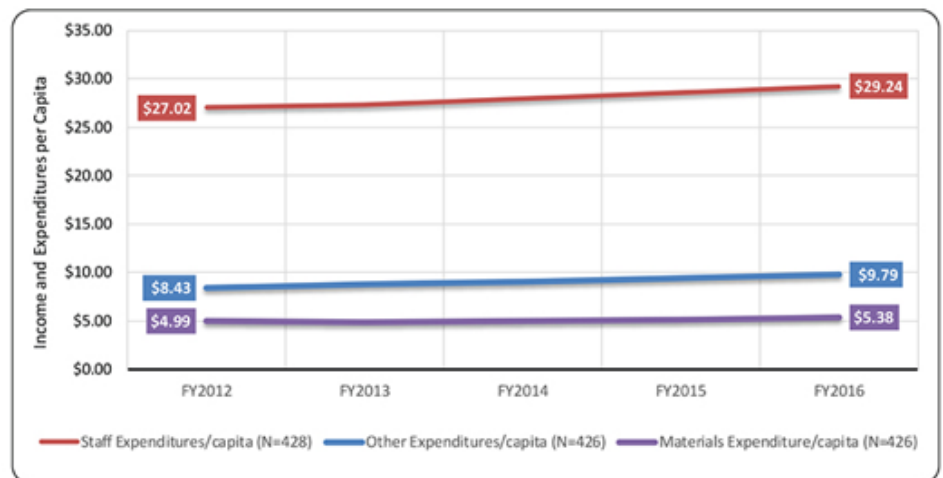
The following summary of key findings is based primarily on analysis of results from the cohort of continuously reporting libraries:

- Over the last five years library programs per capita have grown at a rate (6.3 percent) twice the decrease in circulation per capita (-3.0 percent).
- Since 2012, staff expenditures (representing over 67 percent of operating expenditures) increased 7.05 percent while the number of staff/capita decreased -1.5 percent.
- Electronic circulation is growing steadily at a rate of 11.7 percent, but not sufficiently to offset the decline in physical materials circulation.
- Consortial sharing relationships for electronic materials significantly increased Holdings for libraries with a Population of Legal Service Area <100,000.
- Declines in circulation may in part be a result of changes in measurement over time (differences in circulation policies especially for electronic materials) and due to an overall decline in library usage that mirrors the decline in unemployment-

**Figure 1. Income and Expenditure Per Capita and Growth US and Canadian Real GDP (N=428)**



**Figure 2. 5YR Trend Expenditures Per Capita by Type**



- ment rates (that have dropped steadily since 2011), reductions in usage of CD/DVD materials and a slowing uptake in electronic usage.
- While expenditure on CD/DVD materials (\$2.26/capita) decreased \$0.02 in FY2016 there was a decline in share (-4.08 percent) of overall circulation.

## OPERATING FINANCES

Figure 1 shows that since FY2012, library

income per capita increased \$3.87, an average of 2.9 percent/year, whereas the US and Canadian economies grew at an average annual rate of 2.06 percent and 1.86 percent respectively over the same period.<sup>1</sup>

In the year between FY2015-16 the library group serving populations between 100,000 and 499,999 received the largest increase in income per capita, 5.2 percent (N=144), compared to increases of 2.3

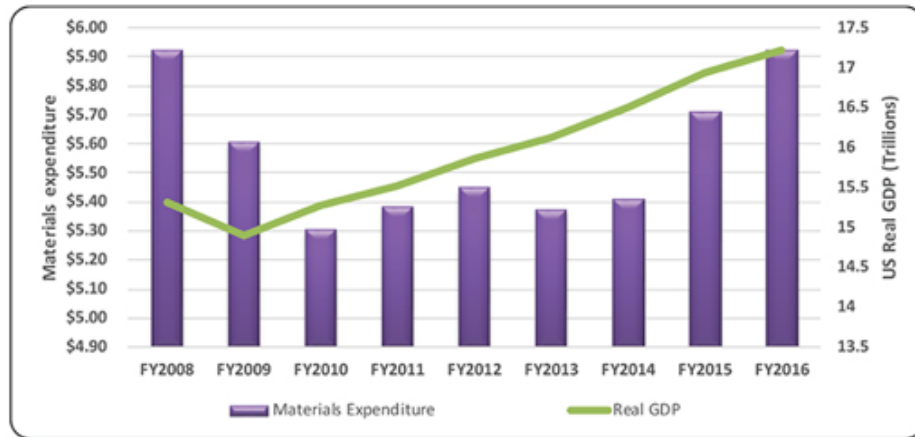
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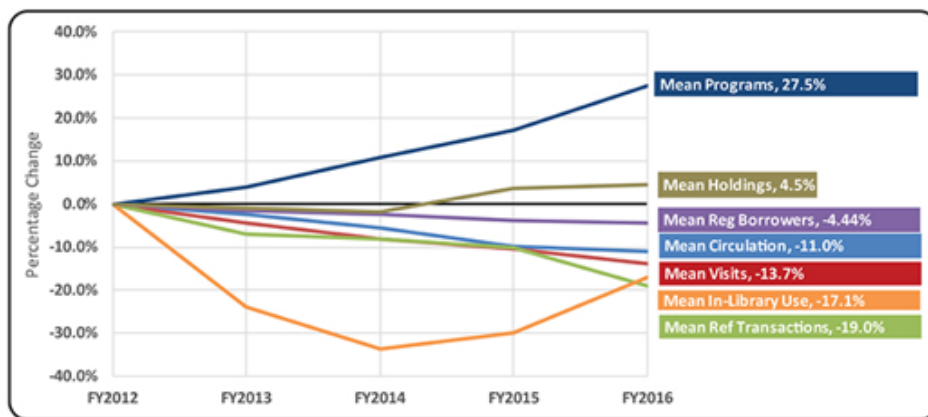
**Figure 3. Materials Expenditure Per Capita (N=161) and US GDP**



percent (N=221) for those serving populations under 100,000 and 2.2 percent (N=63) for those serving populations over 500,000. Large library expenditures increased at 2.9 percent, a 0.7 percent rate higher than their change in income. Expenditures for the small and medium libraries increased at 1.3 percent and 3.7 percent respectively.

**Figure 2** shows the five-year trends for the continuously responding libraries for staff (N=428), materials (N=428) and other expenditures (N=426) per capita since FY2012. Since 2012, spending has increased \$2.22/capita (1.99 percent annually) on staff, \$0.39/capita (1.89 percent annually) on materials, and \$1.36/capita (3.81 percent annually) on other expenditures.

**Figure 4. Percentage Change in Service Levels from FY2012 (N=428)**



**Table 2. Five-Year Trend, Circulation and Electronic Circulation Per Capita By Population Group, Continuously Responding Libraries (N=429)**

Circulation/Capita	FY2012	Percent Change	FY2013	Percent Change	FY2014	Percent Change	FY2015	Percent Change	FY2016	Five-Year Growth Rate	N
< 100,000	12.03	-1.8%	11.82	-3.3%	11.43	-2.8%	11.11	-2.4%	10.85	-2.6%	221
100,000 - 499,999	10.06	-1.5%	9.90	-2.5%	9.66	-3.0%	9.37	-3.4%	9.05	-2.6%	144
500,000 or more	9.40	-4.1%	9.01	-6.0%	8.47	0.3%	8.49	-2.9%	8.25	-3.2%	63
All Libraries	9.81	-3.1%	9.50	-4.7%	9.06	-1.1%	8.96	-3.0%	8.69	-3.0%	428
E-Circulation/Capita	FY2012	Percent Change	FY2013	Percent Change	FY2014	Percent Change	FY2015	Percent Change	FY2016	Five-Year Growth Rate	N
< 100,000	0.39	19.4%	0.46	27.1%	0.59	26.7%	0.75	12.0%	0.84	21.1%	208
100,000 - 499,999	0.39	31.4%	0.52	28.3%	0.66	24.4%	0.83	12.9%	0.93	24.0%	144
500,000 or more	0.37	45.6%	0.54	49.8%	0.80	25.8%	1.01	16.2%	1.18	33.6%	62
All Libraries	0.38	39.5%	0.53	41.9%	0.75	25.4%	0.94	15.0%	1.08	30.0%	414

As discussed later in this article, number of staff per capita has decreased -3.4 percent since FY2012, suggesting the combination of hours worked, staff composition, and costs and not overall head counts, are driving the increase in staff spending.

Based on those libraries that have responded continuously for the past ten years (N=161), spending levels on materials in FY2016 (\$5.92 per capita) is just shy of the pre-recession levels (\$5.93 per capita) which peaked in FY2008 (**Figure 3**). This pattern of spending also appears to be consistent with the growth in US GDP (most continuously responding libraries being American).

## SERVICE LEVELS

**Figure 4** shows a significant increase (5.4 percent) in holdings per capita in FY2015, which increased from 2.83 to 2.86 items per capita (0.9 percent) in 2016. It bears noting that the FY2015 increase in average holdings per capita was primarily the result of several libraries reporting, for the first time, electronic materials holdings accessible through consortium agreements (see also **Table 2** and related discussion).

**Figure 4** also shows that since FY2012, almost all output service level indicators (on a per capita basis) continue to decrease except for programs (11.7 percent), and in-library use (0.28 in-library uses/capita), which has rebounded significantly since FY2014, but still well below FY2012 counts. In the past year (FY2015-16) the following have decreased (least to greatest: circulation (-3.0 percent), visits (-3.6 percent), and reference transactions (-9.8 percent). Since 2012, only programs per capita (27 percent) from 11.97 to 15.26 programs/capita. This increasing emphasis on programming is one indication of how library services are transitioning. Pew Research, found from the “Libraries 2016” survey that 80 percent of respondents (U.S. adults 16 and older) say libraries should offer programs to teach people digital skills.<sup>2</sup> As programming gains importance and requires more resources of the library (money, staff, space, collateral, equipment, etc.), libraries will need to better prepare to demonstrate their efficiency and effectiveness in service delivery. Efforts by the PLA and [Project Outcome](#) support measures of program effectiveness that are increasingly important. Libraries will also need to find better measures of program delivery costs and efficiencies, to complete the new measures of effective-

Table 1. Materials Expenditure by Population Group, Continuously Responding Libraries

<100,000 PopLSA	FY2012	FY2013	FY2014	FY2015	FY2016
N	215	215	211	219	221
Mean	\$6.08	\$6.10	\$6.26	\$6.33	\$6.45
Median	\$3.87	\$3.60	\$3.93	\$3.69	\$3.82
100,000-499,999 PopLSA	FY2012	FY2013	FY2014	FY2015	FY2016
N	142	143	144	144	144
Mean	\$5.01	\$4.97	\$5.10	\$5.08	\$5.19
Median	\$4.33	\$4.33	\$4.10	\$4.32	\$4.29
500,000 or more PopLSA	FY2012	FY2013	FY2014	FY2015	FY2016
N	63	63	63	62	63
Mean	\$4.85	\$4.72	\$4.81	\$5.03	\$5.34
Median	\$4.90	\$5.10	\$5.16	\$5.19	\$5.72

ness in programming as evidence for stakeholders to support libraries as they maintain and grow these services.

It is equally important to better inform library administrators as they allocate resources. Currently, most data sets (PLDS included) have no data on budgets and program development expenditures. These might be combined with “other expenditures” and/or buried in the “staff” costs. While it is reasonable to assume that as more programs are offered, costs are also increasing, currently there is no data support measures at a macro level, and in most instances, libraries do not know their true programming costs at a micro level (e.g., per program, per participant, etc.). Currently, therefore, it is difficult to assess the impact on budgets resulting from increases in library program service delivery and on comparative resource allocations.

Unemployment rates more than doubled in the United States (Figure 5) during the recent recession.<sup>3</sup> At the same time, library visits and circulation increased before steadily decreasing as unemployment declined to pre-recession levels. This is not likely the only factor affecting the decline in traditional measures of library usage, but it does indicate why libraries now need to consider new and better measures of their efficiency and effectiveness.

## MATERIALS EXPENDITURES AND USAGE

Table 1 shows mean materials expenditures by population group since FY2012. Small and Medium Libraries serving populations less than 500,000 generally show year-over-year increases in mean expenditures. Medium and Large libraries show more variable spending on materials. The larger libraries serving populations of 500,000 or more spent more on materials in FY2016 than the previous 4 years, a 6.2 percent increase over FY2015. Ten large libraries reported greater than 25 percent increases in material spending compared to FY2015; resulting from increases in mill levies and other funding increases.

Figure 6 shows changes in mean materials expenditures per capita by type. Mean electronic materials expenditure increased \$0.56 (55.9 percent). While average spending on print materials decreased \$0.12 (-4.5 percent) and mean CD/DVD expenditures decreased \$0.03 (-3.2 percent). Mean other material expenditures increased \$0.11 (23.2 percent).

These per capita spending trends align

Figure 6. Mean Materials Expenditures Per Capita by Type

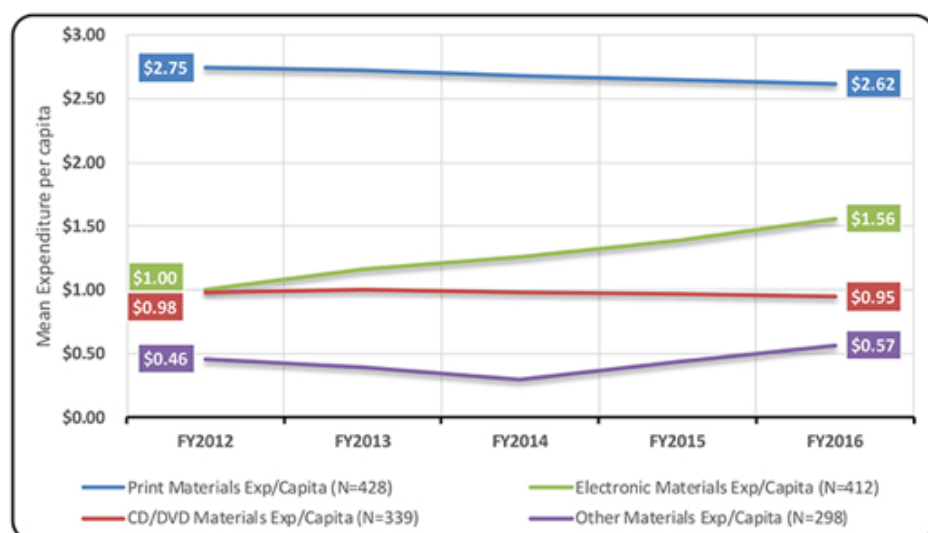
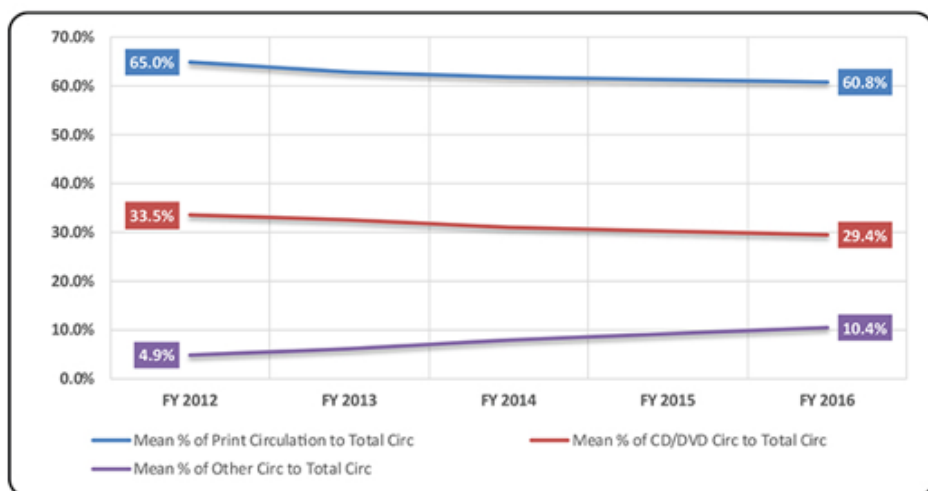


Figure 7. Circulation Per Capita by Type of Material as a Percentage of Total Circulation, Continuously Responding Libraries (N≤266)



with patterns of usage that emerge from the data. For example, among the continuously responding libraries (N=427), **Figure 7** shows per capita circulation by type of material as a percentage of total circulation for those that report circulation by type of material (i.e., not total circulation only).

Print and CD/DVD materials circulation per capita continue to decrease relative to total circulation while other materials circulated (includes electronic materials), continue to increase. As a percentage of total circulation per capita, both print circulation and CD/DVD continue to comprise a smaller proportion of overall circulation. Since FY2012, increases in electronic circulation per capita (7.0 percent), as shown in **Figure 8**, account for a corresponding decrease in CD/DVD circulation per capita (-6.0 percent) and the remaining proportion by the decrease in print material circulation/capita (-4.2 percent).

Correspondingly, libraries are adjusting their spending on materials. As **Figure 9** demonstrates, overall circulation per capita continues to decline at a rate of -3.0 percent per year while overall materials spending has increased at a rate of 1.9 percent per year.

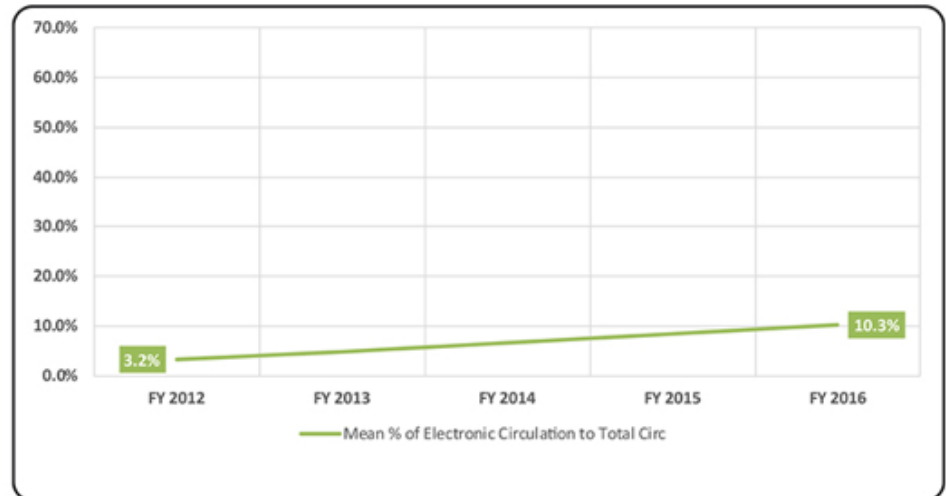
Spending on CD/DVD, as shown in **Figure 6**, is relatively unchanged over the last five years but mean circulation of these items has decreased at -6.5 percent per year, as shown in **Figure 10**; likely a result of increases in use of music and video downloading services.

Similarly print materials circulation has decreased by -2.9 percent each year, as depicted in **Figure 10**. Since 2012, print materials expenditure has decreased at a rate -1.1 percent (see **Figure 6**).

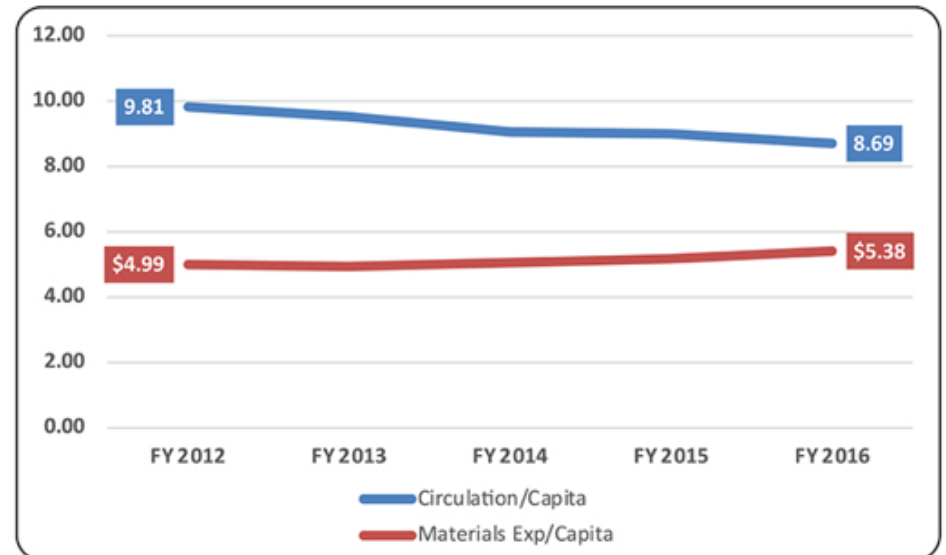
Conversely electronic material circulation continues to expand at a rate of 30.0 percent per year (**Figure 10**), and expenditure on these materials has increased at a rate of 11.7 percent (**Figure 6**). Between FY2015-16 Electronic circulation increased at a rate of 15.0 percent indicating the service is maturing and growing at a slower rate each year. The costs for this rapid growth in electronic circulation is not always fully born by each library given widespread use of consortial purchasing arrangements many libraries have engaged in to provide these materials. As a result, spending on these materials has not had to increase at a similar rate.

**Table 2** shows the five-year trend for total circulation and electronic circulation per capita for all continuously responding

**Figure 8. Electronic Circulation Per Capita as a Percentage of Total Circulation (N≤275)**



**Figure 9. Circulation and Material Expenditure Per Capita (N=428)**



**Figure 10. Circulation by Type Per Capita**

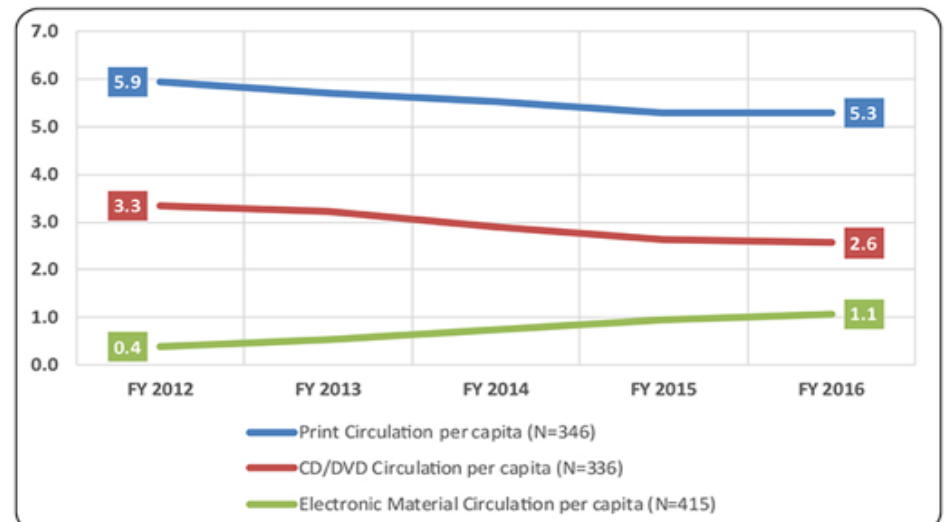


Table 3. Five-Year Trend, Holdings Per Capita by Population Group, Continuously Responding Libraries (N=429)

Holdings/Capita	FY2012	Percent Change	FY2013	Percent Change	FY2014	Percent Change	FY2015	Percent Change	FY2016	Five-Year Growth Rate	N
< 100,000	4.27	5.6%	4.50	5.4%	4.75	30.5%	6.20	-3.8%	5.96	8.7%	221
100,000 - 499,999	2.86	-0.9%	2.83	-0.5%	2.82	5.2%	2.96	6.8%	3.16	2.6%	144
500,000 or more	2.47	-2.6%	2.41	-2.0%	2.36	-0.6%	2.35	-1.1%	2.32	-1.6%	63
All Libraries	2.73	-1.1%	2.70	-0.6%	2.69	5.4%	2.83	0.9%	2.86	1.1%	428

Figure 11. Five-Year Trend, Collection Turnover Rate by Population Grouping and All Libraries, Continuously Responding Libraries (N=428)

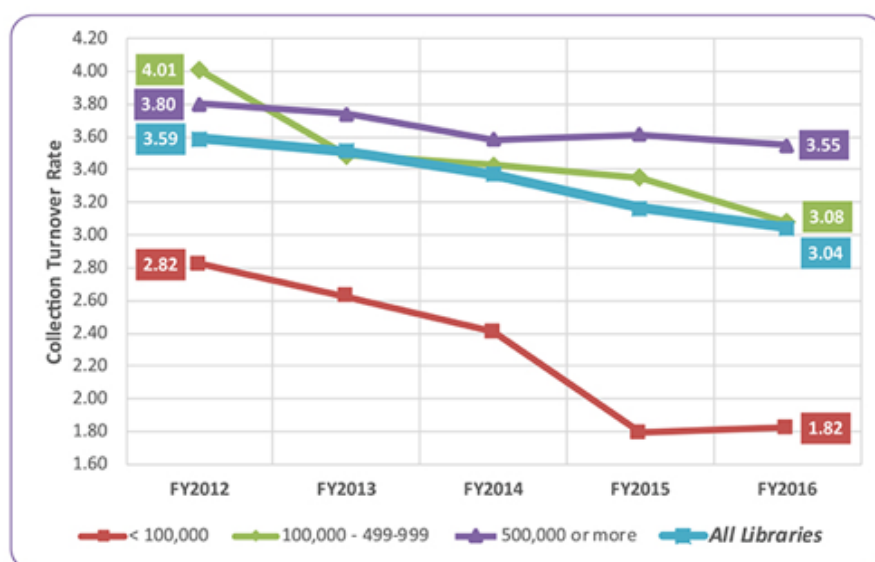
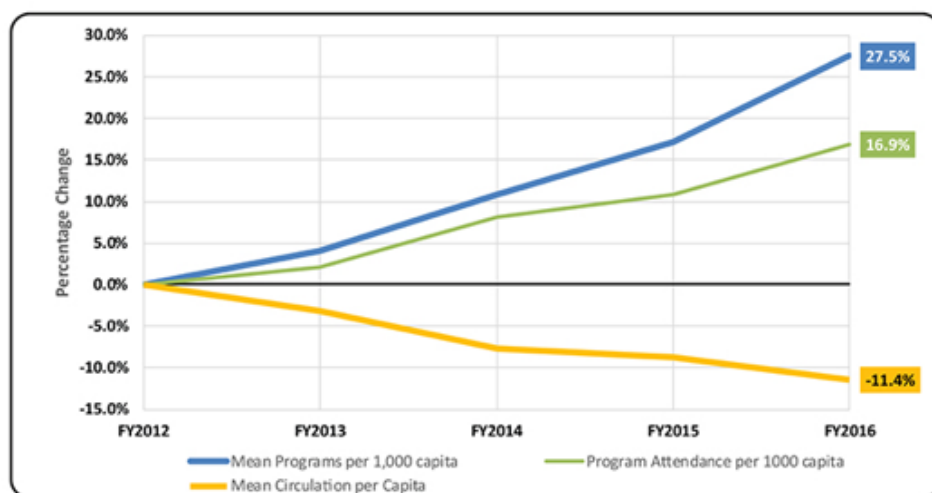


Figure 12. Percentage Change Annual Mean Programs per 1000 Capita and Annual Mean Circulation, Continuously Responding Libraries (N=429)



libraries, grouped by population of the legal service area. Large libraries serving populations of 500,000+ show the highest decline in overall circulation per capita (-3.2 percent annually) whereas electronic circulation per capita shows the strongest growth rate (33.6 percent annually).

There are challenges in comparing electronic circulation with other types of materials circulation given the differences in lending policies across materials types. While a circulation means an item has been lent to a library user, a policy that mixes shorter and longer lending periods and/

or auto-renewals will impact comparative analysis and turnover rates and other measures of materials availability (for lending). This means that circulation counts between peer institutions and between material types within the same institution and over time, are becoming increasingly difficult to compare. Some policies may not be solely at the discretion of the library especially with e-materials downloaded from third parties and/or as part of a consortium. Factors such as number of copies, simultaneous uses and/or total days of use also factor in consistent measurement of circulation. As a result, the upcoming 2018 PLDS survey includes new questions about circulation policy and counts for various material types, in hopes of developing better measures for understanding these trends.

Table 3 shows the five-year trend for holdings per capita for all continuously responding libraries grouped by legal service area. Small Libraries serving populations less than 100,000 (N=222) show the highest per capita increase in holdings (8.7 percent annually), largely impacted by consortial membership agreements providing access to large repositories of electronic materials, first reported in FY2015. The addition of these titles has significantly increased the average number of holdings per capita. Similarly, libraries serving populations of 100,000– 499,999 also increased their holdings per capita in FY2015 (5.2 percent) and FY2016 (6.8 percent). This new reality likely means greater variability in holdings trends given the immediate impact of sizeable changes afforded by such consortial arrangements. The large libraries have reduced their holdings on average -1.6 percent despite higher spending in FY2015-16 as compared to the three preceding years (see Table 1).

Collection turnover rates also reflect the trends in the composition of holdings and circulation. These large increases in holdings have led to lower collection turnover rates.

Figure 11 shows that since FY2014 libraries serving populations less than 500,000 have the highest decline in the turnover rate. Larger libraries serving populations over 500,000 show a decrease in holdings over the last five years, with corresponding declines in circulation and turnover.

Decreasing circulation and collection turnover rates create a perception that the need for and/or value of libraries is somehow diminishing. Instead these measures continue to emphasize that the

mix of library services are changing, and that holdings and circulation counts are increasingly becoming more difficult to consistently measure.

### PROGRAMS AND ATTENDANCE

In contrast to the downward trend in circulation/capita (-11.4 percent since FY2012), there has been significant growth in programs per capita (27.5 percent since FY2012) and program attendance per capita (16.9 percent since FY2012) (Figure 12). Interestingly, circulation/capita has decreased annually at a rate of -3.0 percent since FY2012, programs per capita has increased by more than twice that rate (6.3 percent) and attendance per capita a rate of 4.0 percent.

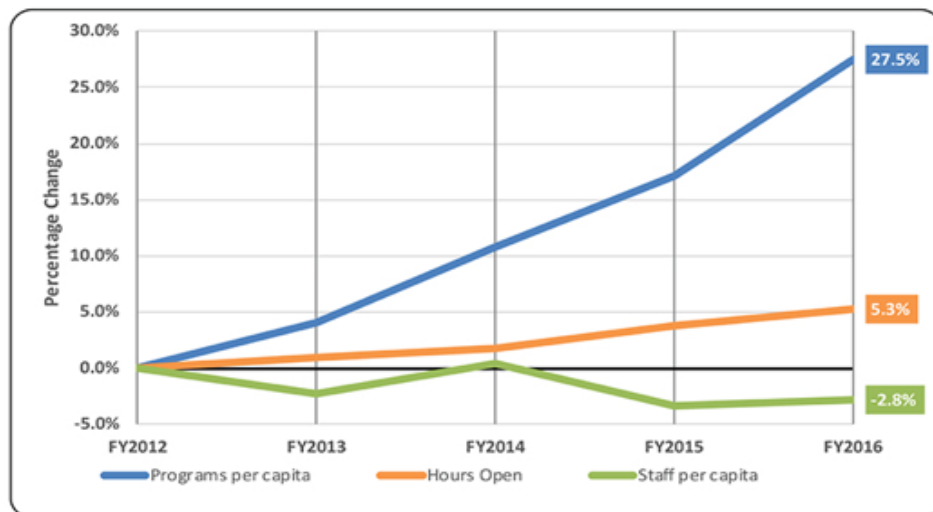
While libraries continue to invest in holdings (despite decreasing use), it is apparent that they are allocating more resources to programming although there are no specific measures available to confirm this other than the obvious. Programming competes for resources including space, personnel, equipment, materials, management time, time spent on community engagement, and more. As this trend continues, library management will increasingly need better ongoing measures (efficiency and effectiveness data) as they adapt and optimize the mix of traditional and new services including programming.

Figure 13 contrasts the rate of increase in programming with a much slower growth in hours of operation and declines in staff per capita. If the growth in programming continues, it may be constrained by potential capacity issues, such as hours open, staff resources and space, although these may not be of immediate concern depending on where/when and how programs are delivered (in-library, online, asynchronously, in community). Nevertheless, expanding the number of hours open to accommodate more programming (perhaps at more convenient times) implies a potential increase in commitment for additional resources, including staff. Correspondingly, there will be a need for libraries to justify those commitments.

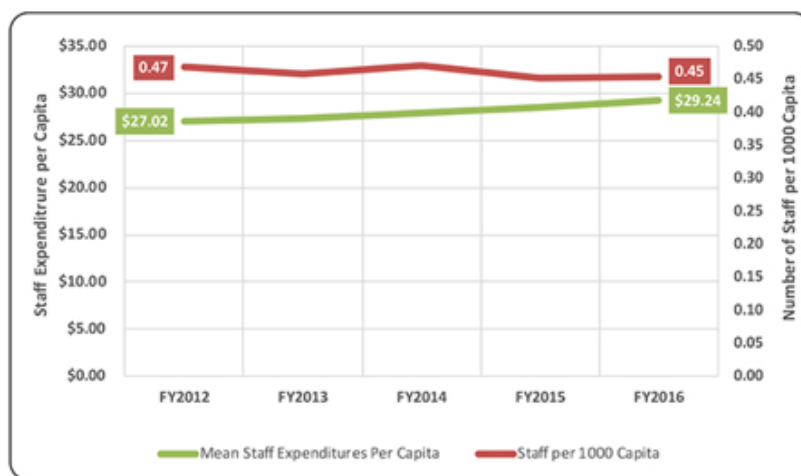
### STAFF

In the past five years, as shown in Figure 14, little has changed regarding staffing head counts among the continuously responding libraries (N=429). The average number of staff is relatively static over the past five years decreasing at a rate of -0.71 percent,

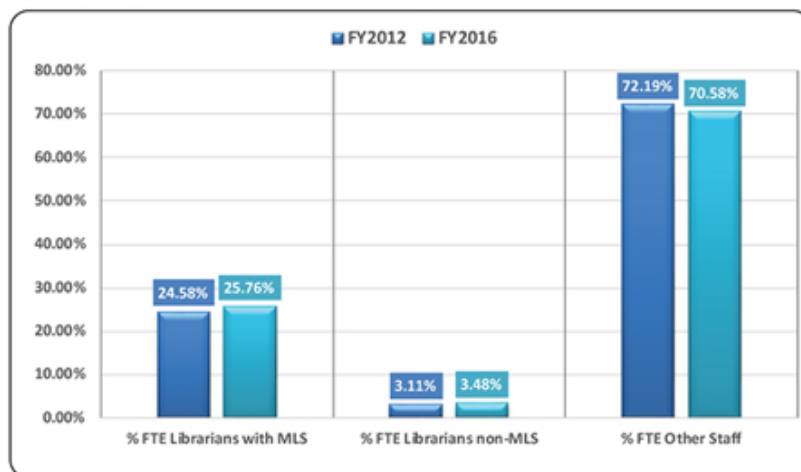
**Figure 13. Percentage Change Programs, Hours Open and Staff Per Capita, Continuously Responding Libraries (N=429)**



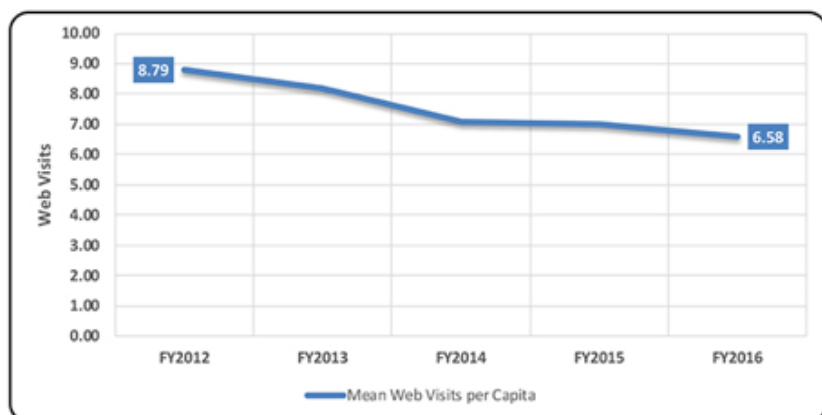
**Figure 14. Staff and Staff Expenditure Per Capita, Continuously Responding Libraries (N=427)**



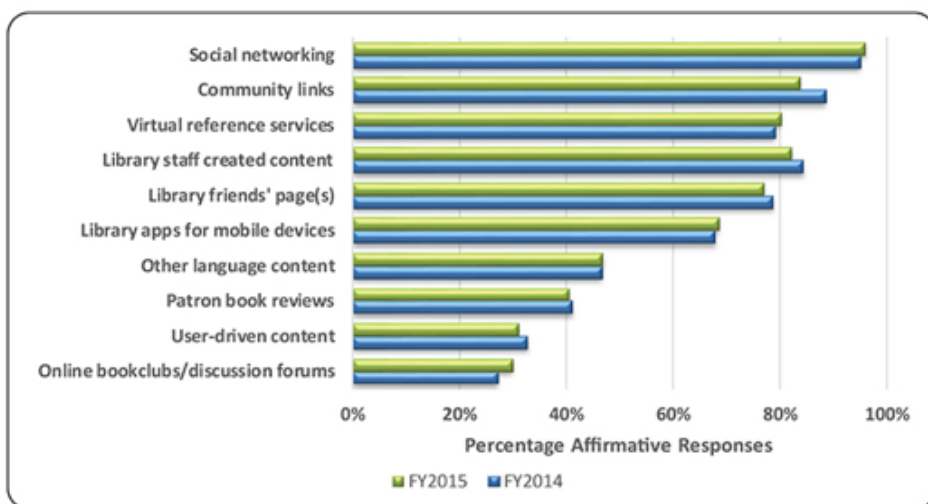
**Figure 15. Mean Percentage Composition of Staff (MLS, Non-MLS and Other) Continuously Responding Libraries (N=427)**



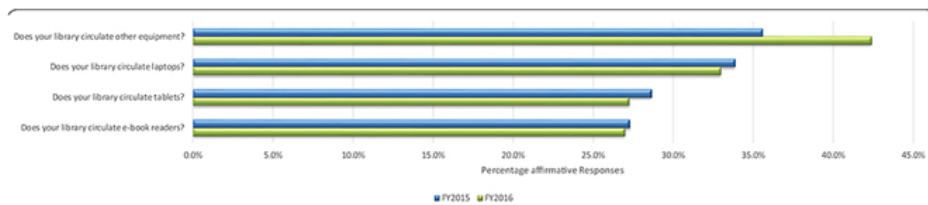
**Figure 16. Web Visits Per Capita, Continuously Responding Libraries (N=357)**



**Figure 17. Selected Website Features Provided, Continuously Responding Libraries (N ≤ 363)**



**Figure 18. Circulation of Electronic Equipment, Continuously Responding Libraries (N=371)**



**Table 4. Five-Year Trend Mean Population of Legal Service Area—Continuously Responding Libraries (N=428)**

Mean Pop. Legal Service Area	FY2012	Percent Change	FY2013	Percent Change	FY2014	Percent Change	FY2015	Percent Change	FY2016	Five-Year Growth
<100,000 (N=221)	38,292.57	-1.7%	37,654.46	0.4%	37,793.09	0.1%	37,832.58	0.2%	37,909.24	-0.3%
100,000-499,999 (N=144)	225,657.78	-0.2%	225,284.39	-0.7%	223,706.50	0.0%	223,602.22	0.4%	224,490.70	-0.1%
500,000 or more (N=63)	1,042,471.60	1.2%	1,054,871.48	-0.6%	1,048,185.97	0.4%	1,052,474.86	1.3%	1,066,257.46	0.6%
All Libraries	242,104.09	0.9%	244,259.58	1.0%	246,708.72	1.0%	249,252.03	1.1%	252,053.32	1.0%

mostly due to the increase in population over the same period (1.0 percent). Since FY2012, staff expenditure per capita

increased at a rate of 1.99 percent with the largest increase (2.3 percent) in FY2016. Staff expenditure are increasing faster than

the number of staff. The increase reflects changes in the composition of staff and/or costs per person and/or hours per staff member. **Figure 15** compares FY2012 with FY2016 results for the average percentage of MLS, Non-MLS and other staff for the continuously responding libraries. In the last five years, the average percentage of MLS librarians has increased at a rate of 0.71 percent. The average percentage of Non-MLS librarians has increased faster (3.50 percent), offset by declines in other staff (-1.30 percent) which are likely lower on a per capita basis (due to the increase in population over the same period).

## TECHNOLOGY

Web visits (see **Figure 16**) continue to decline (-5.8 percent in FY2016). This may be attributed to several factors that complicate the process of tracking virtual visits. This includes factors such as: almost 70 percent of continuously responding libraries report having library apps for mobile devices and over 95 percent use social networking (see **Figure 17**). Since native apps are distinct from the website, it is likely these users are using an app rather than visiting the library website for the service/materials they need. Similarly, social network pages can be accessed without first visiting or possibly ever visiting the library website, so these web visits may not be counted—or worse—may be double or triple counted as they navigate across and between distinct web properties (e.g., ILS, Facebook, YouTube, Pinterest, Linked-In, Twitter, online databases, third party e-media services, etc.).

The percentage of libraries that indicate they have community links (83.2 percent) and library staff content (80.7 percent) decreased again in FY2016, but 5.0% over 80 percent of continuously responding libraries still provide such content (see **Figure 17**). Fewer libraries reported that they support patron books reviews (37.5 percent) and online book clubs/discussion forums (26.3 percent). More libraries affirmed that they offer social networking (96.4 percent), virtual reference services (81.8 percent), content in languages other than English (47.6 percent), and user driven content (32.4 percent). Better integration of library content (website, ILS, ...) with major search engines, providing/promoting a mix of curated content on the website and other efforts should help drive traffic and possibly slow and/or reverse the downward trend in website visits.

The percentage of libraries that circulate

laptops (33.0 percent), tablets (27.2 percent) and e-readers (27.0 percent) decreased in FY2016 (see Figure 18). This appears to coincide with the growth in ownership of web enabled devices (smartphones, laptops and tablets) reported by Pew Research in mid-2015 (see appendix).<sup>4</sup> More libraries affirmed that they circulate other equipment (42.4 percent), an increase of 6.8 percent from FY2015.

## POPULATION

In the analysis of the data, many key ratios are based on the population of legal service area—i.e., trends on a per capita basis. Among the continuously reporting libraries (N=428), Table 4 shows that changes in populations served should be included in any analysis of the results. As such, our analysis of the data includes such comparisons using per capita results.

## PLDS SURVEY SUMMARY FY2016

Table 5 summarizes usage data captured during the 2017 PLDS survey (FY2016 data). Overall more libraries reported all the measures listed in Table 5; however, fewer libraries reported each component of circulation: print, CD/DVD, and other. As well, fewer libraries reported annual renewals in FY2016. Although fewer libraries reported these components of circulation, more libraries reported electronic circulation compared to FY2015. ■

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**Table 5. Descriptive Statistics for the 2017 PLDS Participating Public Libraries (FY2016)—All Libraries (N=3,226)**

Summary Table	No. of Reporting Libraries	Total	Minimum	Maximum	Mean	Median
Population of legal service area	3226	225,230,380	61	4,137,076	69,817	10,525
Registrations	2841	114,145,663	7	3,045,443	40,178	6,283
Holdings	2551	686,826,089	1	15,890,923	269,238	124,304
Total annual circulation	2817	1,619,985,483	23	31,910,577	575,075	73,616
Print circulation	1156	771,590,645	115	16,917,921	667,466	107,394
CD/DVD circulation	1109	340,566,114	6	9,236,650	307,093	42,000
Other circulation	1040	147,820,780	1	8,880,842	142,135	11,473
Electronic circulation	2516	184,889,815	1	8,640,543	73,486	4,944
Annual renewals	936	304,295,337	1	9,149,263	325,102	75,919
In-library use of materials	1290	133,750,731	1	14,676,247	103,683	10,185
Reference transactions	2584	167,368,143	1	9,141,000	64,771	6,236
Library visits	2714	904,371,301	45	18,232,347	333,225	62,036
Programs attendance	2746	71,159,962	3	1,713,362	25,914	5,476
Number of programs	2677	3,142,249	1	91,281	1,174	311
Interlibrary loan to other libraries	2578	36,221,566	1	855,560	14,050	2,877
Interlibrary loan from other libraries	2587	39,481,427	1	2,525,952	15,261	2,546

## Appendix—Pew Research: Technology Device Ownership: 2015\*

### Smartphones, Tablets Grew in Recent Years; Other Devices Declined or Stayed Flat

% of U.S. adults who own the following devices



Source: Pew Research Center survey conducted March 17-April 12, 2015. Smartphone data based on Pew Research survey conducted June 10-July 12, 2015. Trend data are from previous Pew Research surveys.

PEW RESEARCH CENTER

\* Pew Research Center: Internet, Science & Tech. 2017. Libraries 2016 | Pew Research Center. [ONLINE] Available at: <http://www.pewinternet.org/2016/09/09/libraries-2016/>. [Accessed 5 September 2017].


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# Taking Care of Business

## » Why Libraries Should Incorporate Listening into their Social Media Goals

BY MARIA ATILANO

### PURPOSE

This article summarizes the importance of practicing social listening and online engagement on behalf of one's library. While the literature shows that libraries, both public and academic, often strategize their social media goals to include listening, a concerted effort should be made by all libraries with an online presence to take an active role in engagement. By including social listening in one's social media plan, goals and objectives, a library can anticipate a higher rate of engagement and meaningful interactions with their patrons.

### LITERATURE REVIEW

Social media is used by libraries of all types and sizes. Libraries often share content relating to library news and current events regarding events and collections; in other words, outreach and promotion (King, 2015). Other uses that libraries employ for social media include assessment, reference services, education, and collection building (Mon, 2015).

Social listening is defined by Stewart and Arnold (2016) as actively "observing, interpreting, and responding" to digital conversations. Sometimes referred to as "lurking," "stalking" and other pejorative terms, listening via social media allows for businesses to "forge a closer relationship with customers, gain information about products, and enhance public personae" (Crawford, 2009). Fournier, Quelch and Rietveld (2016) describe listening as a way for "marketers to economically and regularly peer inside people's lives as they are being lived, without introducing biases through direct interaction" (p.2).

Social media is seen as an easy and



Figure 1: Example of a positive and friendly interaction with a student on Twitter

cost-effective way for libraries to demonstrate their value (Gaha & Hall, 2015). Ned Potter (2015) noted librarians should take advantage of informal social media tools such as Twitter because "you can boost your reputation, you can reach new audiences, you can engage existing customers and you can really show some personality" (p.167). Especially for academic libraries, social media can be seen as a new and trending way to interact with students while also introducing information literacy concepts (Palmer, 2014). With the advent of networking groups and pages, libraries have also come to see social media as an interactive, community-driven tool, as opposed to just a way to broadcast information to users (Young & Rossmann, 2015). As one participant noted in a 2014 survey, users "don't get on social media to listen to you, they get on social media to be heard" (Smeaton & Davis, 2014, p.229).

### PRACTICAL IMPLICATIONS

Businesses large and small can participate in social listening, and libraries are no different. Listening can be seen as a powerful customer relation tool: what are people say-

ing about our brand and our products, and how can we engage with them so they will come back for more? Furthermore, what are people saying about us when they think we can't hear them?

Libraries often forget that they are a business, and that they too have products to "sell." Their brand is their core mission: their goals are to serve the public, teach information literacy concepts, create a community of lifelong readers and tech users, develop enticing events/workshops/programs, and more. The products that libraries offer are the wealth of physical and online materials accessed from catalogs, databases, and discovery tools. Therefore, even if money does not exchange hands, libraries still exist for and profit from their patrons. Patrons are library customers, and it is time that we treated them as such. Social listening is one way to accomplish this, via cultivating online comments and conversations.

Social media pages, groups and accounts are often treated as online message boards. Libraries create content and then post the same message to their website, their newsletters, and their various accounts on Facebook, Twitter, Instagram, etc. While this message may be a worthwhile one - a catchy phrase and enticing photo to highlight a library's collections, resources, databases, etc. - when sent off into the ether, it becomes nothing more than noise. Library staff members wait with bated breath to see if their patrons interact with the message. Do they like it, share it, and comment on it? If patrons do one of the scripted responses, library staff can rejoice! If not, staff can cut their losses and move on to the next message.

The main issue with focusing on curated content is that we as social media administrators expect too much. First, we expect

that the majority of our patrons see most posts, tweets, and photos that we upload to social media. While this may have been true in the early years of social media, due to strangling algorithms and the sheer amount of accounts the average person follows, this is not the case (King, 2015). We also expect our patrons to care; not only are they dying to learn about the new database we have acquired for them, but they also want to like and share the news with their friends! Rather than asking a patron to settle for a post or tweet that the library decides is important, libraries should instead focus on what the patron says and thinks.

In the online world, libraries are competing with dozens, if not hundreds of other organizations and groups that are followed by a single user. When multiplied by hundreds or thousands of users that may follow a library account, it's easy to see how we may fall to the bottom of the pile. How is a library supposed to compete with Apple, the New York Times, or a recent meme on Facebook or Twitter? One post on social media is a flash in the pan, and forgotten quickly. In order to meet perceived demands, library social media administrators tend to focus on content creation and curation in sheer numbers: five posts a day to Facebook, three tweets per day, etc. By making a goal of the number of times libraries throw out a lifeline, we are looking at the wrong information. Libraries need to follow the path already set by businesses that care for and cultivate personal, online relationships with their patrons.

At the University of North Florida's Thomas G. Carpenter Library in Jacksonville, Florida, social listening has become a hallmark of its social media policy. For the first five years of the Carpenter Library's presence on social media (2009-2014), content creation was king. Expressed goals were only dedicated to writing and posting original, informational, and thought-provoking posts on Facebook and Twitter that would hopefully be liked and shared by the library's followers. Once it became clear that the li-

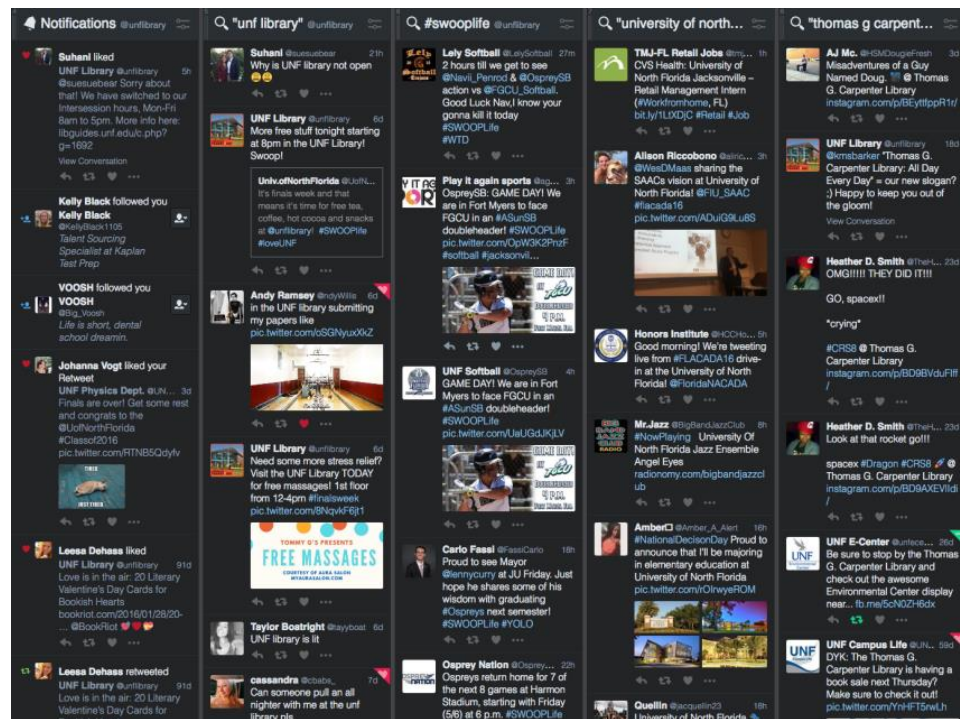


Figure 2: A view of the @unflibrary and how it listens on TweetDeck

brary's social media accounts were receiving fewer interactions, it was decided to take a proactive rather than passive approach to engagement.

As of 2016, the Carpenter Library's three fundamental goals for social media include:

1. Increase awareness of our organization and the services, events, spaces, and resources we offer
2. Listen to, communicate with, and engage online users in order to foster norms of reciprocity and trust while also building a sense of community
3. Simply and effectively use tools and media to connect with our constituents, including students, staff, and the community at large

The three goals can be summed up by a quote from Harry Glazer (2012), "[b]e interesting...be interested" (p.20). To expand on that, while the #1 goal in the Carpenter Library's social media policy is to create and post engaging content to Facebook, Twitter,

etc., the #2 goal is to actually engage with patrons (namely students). By listening, the Carpenter Library aims to create opportunities for interactions, troubleshooting, and goodwill, while also building a sense of community between the library and its patrons. This community is fostered by library staff who actively seek out patrons, whether affiliated with the University or not, who mention or feature the Library on social media. Once these instances have been discovered, a connection is created and encouraged with that patron by replying to, liking, and/or sharing their content from the Library's social media account.

The Carpenter Library, which goes by @unflibrary for its social media accounts, made the switch away from concentrating on original content in 2013. Its social media plan for 2016/17 breaks down the content to be 50% original, 40% listening, and 10% shared from other sources. Almost half of staff time is spent on actively monitoring social media channels and

» **In the online world, libraries are competing with dozens, if not hundreds of other organizations and groups that are followed by a single user. When multiplied by hundreds or thousands of users that may follow a library account, it's easy to see how we may fall to the bottom of the pile.**



Figure 3: A student compliments the library on Instagram for its selection of reading materials

responding to comments and questions on Facebook and Twitter.

While the majority of the Carpenter Library's listening is focused on Twitter, a largely open and searchable network, the Carpenter Library also listens on Facebook and Instagram. In order to track patron comments about the library's services, resources, events, and much more, library staff began monitoring specific keywords and hashtags, as well as the Library and its University as locations. Common keywords and hashtags are used by various individuals and groups on social media. By simply researching which keywords and hashtags were most likely to mention the library, the Carpenter Library built a list of listening practices.

Deciding on keywords and hashtags for which to listen came down to research and getting a feel of our audience. Because the majority of those we wished to reach and interact with were students, we began by following words and phrases that were created for and by our student population. Examples of keywords and hashtags include:

- "UNF Library"
- "Thomas G. Carpenter Library"

- "Carpenter Library"
- #loveUNF
- #SWOOLife

It is important in these examples to stress that keywords, hashtags, and geotags will change based on location and also on the type of library that is doing the listening. While the Carpenter Library is academic, listening can be done by any library type or size. Organizations who create and publicize their own hashtags as part of campaigns can follow these to gauge interest, but listening is far more effective when organic keywords and phrases are discovered and monitored. This can lead to some interesting discoveries; for example, Carpenter Library staff discovered that students were referring to the Library by nicknames such as "Tommy G's" and "Tom's House" simply by finding mentions of this on Twitter. These nicknames have since been added to the list of terms to listen for on social media.

The Carpenter Library's social media team consists of one full time faculty member, one full time staff member, several faculty backups, and two-to-three student

assistants. The full time faculty and staff members are responsible for listening and the majority of original content creation, whereas the student assistants also aid with the creation of content. Listening takes an estimated 30 minutes a day; luckily, much of it can be automated with the use of tools.

There are several free tools available that make listening quick and easy for social media administrators. The Carpenter Library utilizes the following:

- **TweetDeck:** a Twitter dashboard application that updates automatically and allows users to create feeds that follow hashtags, keywords, users and more
- **HootSuite:** a social media manager that links with many platforms. Multiple accounts and team members can be added, but the free version limits these
- **Feedly:** an RSS feed aggregator that can be organized and shared. Some social media platforms, like Instagram and Twitter, can easily be transferred into feeds
- **TagBoard:** follow hashtags across platforms (Facebook, Twitter and Instagram, for example) and create shareable "boards" similar to Pinterest

Because of its social listening practices, meaningful conversations have taken place between library staff and patrons, especially on Twitter. These conversations cover a wide range and can fall anywhere between positive and negative, as well as between scholarly and pure fun. One week students can be seen on Twitter complaining about the temperature in the library building, or about the state of the second floor women's restroom. The next week, a member of the community can be witnessed tweeting her thanks to the library's Special Collections and Archives department for their generous assistance on her research. The week after that, a faculty member will post a picturesque photo of his view from the third floor reading room while he works on his next publication.

By listening, library staff has immediate access to patron concerns and compliments.

Both types of comments are valuable,

» **It is important in these examples to stress that keywords, hashtags, and geotags will change based on location and also on the type of library that is doing the listening.**

Social Media Comments				
Date	Comment	Reply (from Library account)	Facebook or Twitter	Link
11/20/2014	@unflibrary right before exams? This timing is terrible	"FYI there will be no construction during finals week. We're trying to get in as much work as we can, as quickly as possible!"	Twitter	<a href="#">Link</a>
11/24/2014	UNF, you couldn't have picked a better time to renovate the library. 🙄	"Sorry for the inconvenience. We're trying our best to make the Library a better place with as little disruption as possible."	Twitter	<a href="#">Link</a>
12/2/2014	I do not understand why UNF thought it would be a good idea to fix the shelves in the library the last week of classes. #distractions	Sorry for the distraction! We're trying to get the shelves cleared as fast as possible to make way for our new Library Commons :)	Twitter	<a href="#">Link</a>
12/2/2014	UNF logic: oh yeah it's the end of the semester. That means finals. Ya know what's a good idea? Let's redo the library & pressure wash it. 🙄	Sorry for the disruption! We're doing our best to make the Library a better place as quickly and quietly as possible.	Twitter	<a href="#">Link</a>
12/2/2014	So happy UNF waited until finals week to do library renovations :)	Sorry for the timing! The #unflibrarycommons will be a long process, not just the week before finals. Things will improve soon!	Twitter	<a href="#">Link</a>
12/2/2014	UNF: "lets renovate the library the week before finals" Couldn't wait till winter break?	I'm afraid it couldn't - that's when the major construction starts in the Library. New paint, new carpet, new furniture, and more!	Twitter	<a href="#">Link</a>
12/3/2014	So glad UNF decided finals week was the best week to renovate the library @unfprobs	@unfprobs Sorry for the inconvenience! We're working as hard as we can to finish things up before finals week starts, promise.	Twitter	<a href="#">Link</a>
12/4/2014	Yes let's pressure wash the library windowed the last few days before finals while students are trying to study good thinking UNF	So sorry for the inconvenience. We hope they'll be done soon!	Twitter	<a href="#">Link</a>

Figure 4: Student comments collected from social media during finals week construction

depending on the situation, and can lead to further avenues for engagement. If a patron voices a concern or question, a library staff member will see it and respond accordingly. Seeing these mentions about the library is only half the battle: the next step is engagement. Whether the tweet is positive or negative, library staff should take into account the practice of interaction. Response times vary from a few minutes, to a day - depending on the hour or day on which the comment was made. The actual response time is less important than the quality of the response.

The Carpenter Library makes a habit of not only recognizing and responding to negative comments on social media; positive comments can lead to similarly meaningful interactions with patrons. If a patron posts a photo and comments that highlight a favorite library book, or a comfy spot on the third floor to study, the library's account responds by liking/favoriting and thanking the patron for their kind words and beautiful photo. Oftentimes the patron responds in kind by thanking the library, sharing the library's post, and then following the library's account. In many cases, the patron was probably not aware that the Carpenter Library was active on social media, but once the avenue of conversation has been opened, they are more likely to interact with us online.

Listening not only creates ample oppor-

tunities for worthwhile interactions, but it also has the opportunity to provide libraries with valuable statistical data. For example, the Carpenter Library used listening in fall 2014 to gauge reactions from students regarding the construction of its Library Commons. While several patrons took to social media to voice their excitement over the project, which completely renovated the library's first and second floors, more than 80% of the comments were negative due to construction taking place the week before final exams. Students were understandably upset, and voiced their disdain to their friends and followers on Facebook and Twitter. These comments were individually recognized and replied to; excuses and apologies were made on behalf of library staff, and many students appreciated the effort. Other than these individual interactions, each post and tweet was collected into a spreadsheet and presented to library administration, as an example of student negative reactions.

## VALUE

As a result of its new social media policies, the number of engagements and interactions with UNF students and members of the community have almost doubled in the last two years.

Students and staff recognize it for the reliable, friendly, and helpful online communi-

ty, and many other UNF-affiliated accounts have followed suit to actively engage online.

Social listening is the solution to both passive posting and inactive followers. By actively seeking out interactions, libraries can become the active party in a conversation. The onus is therefore taken from the patron, who can now enjoy a friendly and helpful connection built upon his or her own terms. ■

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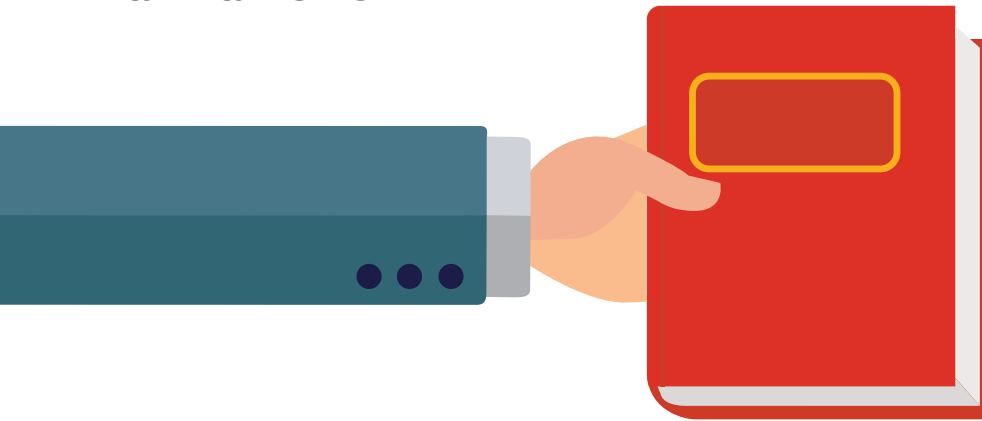
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# User-Centered Provisioning of Interlibrary Loan

» a Framework



on ILL between academic libraries, though its recommendations are generalizable to public, medical, and other libraries.

## HISTORICAL DEVELOPMENT

ILL has a long history as a library service but for most of that history, it was a niche service provided to only a select group of library users, most often faculty members and perhaps graduate students. ILL was difficult, time consuming, and required a great deal of staff effort. Simply identifying an owning library was a challenge before the introduction of shared computerized cata-

BY KURT MUNSON

## INTRODUCTION

Interlibrary loan (ILL) provides library users with a critical tool to acquire resources they need for their information consumption and evaluation activities whether research, teaching, learning, or something else. The 129% increase in ILL volume between 1991 and 2015 in the Association of Research Libraries (ARL) statistics clearly shows that ILL has grown from a niche service to an expected one (ARL, 2016). Yet, our library processes for providing this service have not kept pace with technological development. Thus, the provision of ILL is less effective than it could be because it is predicated upon library processes and systems rather than on most effectively meeting users' needs. This article explores the development of ILL as a service, suggests areas in need of improvement, provides a framework for redesigning this service in a user-centered way, and finally outlines efforts to create such a user-centered ILL to meet those needs.

Interlibrary loan holds a unique place within the suite of services libraries provide. ILL is entirely user initiated and driven by demonstrated user need. It provides a mechanism for users to acquire materials

they have discovered and determined to be worthy of additional investigation but for which local copy is not available. ILL expands the resources available to users to that which can be delivered, not just the contents of the local collection.

The modern research library offers a range of services under the 'Resource Sharing' umbrella, including consortial sharing of returnables, interlibrary loan of returnables and non-returnables, and local document delivery operations. The ILL process discussed in this article is restricted to ILL as a brokered process whereby a library requests and arranges the loan of a physical item for use by an affiliated user. ILL practitioners refer to this process as traditional ILL of returnables, as the item will be returned to the owning library. Scans or reproductions of articles or portions of a work provided from a local collection or by another library fall outside this article's scope because the workflows for sourcing and providing those items are quite different. This article primarily concentrates



logs. Citations needed careful verification to ensure accuracy, particularly for items created prior to the introduction of the International Standard Book Number (ISBN) system in 1968. Identifying holdings and ownership represented huge challenges. While tools like the Pre-1956 Union Catalog existed, these were out of date as soon as they were printed. Requests were made via mailed paper request forms. The library that owned the item would likely know nothing of the requesting library so the trusted relationships we take for granted had not yet developed. A library might send an item or it might not. An owning library might respond in the negative or it might not. It was at best an arduous process analogous to weaving cloth and sewing garments by hand rather than purchasing ready-made off the rack clothing.

The creation of the OCLC cooperative in 1967, specifically its shared index of items, provided the opportunity to vastly improve

» **For the library user, ILL is just one of many tools to acquire materials and the user's interest is accessing the materials, not how the library chooses to source the requested item.**

ILL processes and workflows. The OCLC database, eventually to be known as WorldCat, contained one record for a work and libraries that could indicate who owned a copy of that item. It was now possible to identify ownership easily. Moreover, this identification could be done in one place with simultaneous citation verification. OCLC introduced the first of its interlibrary loan subsystems in 1979 (Goldner, Birch, 2012, p. 5) because there were now enough item records and holding records in the shared OCLC index to support ILL processing. Over time, additional axillary ILL services for library staff were introduced by OCLC. For example, a library can provide contact information, address information, and explain what it will and will not lend with any associated costs for these services in the ILL policies directory. The OCLC ILL Fee Management (IFM) system provides an automated billing system as part of the transaction process. ILL became markedly easier to do, or at least portions of the process did.

The development of WorldCat and other union catalogs made the process of identifying owning libraries and placing requests much easier but these were closed systems with limited functionality. These systems did one thing: placed a request. Yet, ILL is a multi-part process consisting of many disparate steps that library staff perform. Files of request forms require maintenance. Users need to be contacted when items arrive or need to be returned. Circulating necessitates tracking over time. Physical items require packing and shipping. Invoices require payment.

For the library user, ILL is just one of many tools to acquire materials and the user's interest is accessing the materials, not how the library chooses to source the requested item. Users once filled out a paper form which staff keyed into the request system. Then the user patiently waited until they received a phone call or postcard alerting them that the item had arrived.

To be sure, verification and ordering had become easier but the process still involved many handoffs between different systems with minimal communication.

Easier ordering allowed ILL request volumes to increase markedly (Goldner, Birch, 2012, p. 5). ILL management systems were developed to automate the management and tracking of requests over their lifespan in addition to handling communication with users and to circulate the items. ILLiad is the most common ILL management system used today in academic libraries. Both owning libraries and requesting libraries came to rely upon these systems to manage requests over their lifespan. Request databases replaced file folders. Data could be pushed from one system into another. Routine tasks, such as sending overdue notices, could be automated. ILL had become a standard mainstream expected service rather than the niche one.

Improved staff processing was not the only driver for increased volume. OpenURL and other outgrowths of user-facing databases and the ubiquity of the internet made discovery easier (Musser, 2016, p. 646). The easy transfer of metadata via OpenURL increased request volume because users could request items by pressing a button instead of filling out a paper form. The request went into the request database for staff processing. Nonetheless, the improvements ILL management systems provided remained rooted in ILL's traditional union catalog-based requesting workflows. They focused on making library staff processes to provide items more easily rather than user workflows or needs. Issues with the approach and workflows described above are explored below.

#### **PROBLEMS WITH OUR CURRENT APPROACH**

A number of issues limit ILL service's usability which in turn limits its effectiveness for both users and library staff. To be sure, ILL services are valued by users and play an integral part in the suite of services libraries

provide to source materials for users, but it can be improved upon by reconceptualizing the process whereby it is provided. Libraries can rethink how the individual parts of the process, be they software or workflow, are put together. Areas for reconceptualization fall into five broad categories, and these are discussed below.

First, existing systems are based on identifying libraries that own a requested item. But for the purposes of ILL, ownership is only the first step in the process. An on-shelf loanable copy must be located because only items that fit these criteria can fill the user's need. WorldCat can tell us who owns an item but what we need is a library that can loan the item. Owning libraries, or lenders as ILL practitioners call them, still need to perform a search of their local catalog to determine if the item is on shelf and loanable. This involves a time-consuming antiquated manual workflow that fails to take advantage of tools such as Z39.50 for automated catalog lookup. Workflows have not kept up with technological advancements.

Consortial borrowing systems, such as Relais D2D or VDX, where a group of libraries share a discovery layer that displays availability, mitigate the issue described above but these systems also have a serious shortcoming: they force users to execute the same search in multiple discovery layers to find an available copy. Users, having identified an item, cannot simply submit a request and have the library source it for them. Rather, libraries expect users to navigate across disparate interfaces with unique request processes to request an item. Thus discovery and delivery become a fractured process for users as libraries push the work of finding a loanable copy onto their users.

Second, identifying owning libraries remains tied to the searching of union catalogs because metadata is not recycled efficiently. A user searches their local library's discovery tool and finds that an item



they want is checked out so they fill out an ILL request form populated with metadata from their local discovery tool. Library staff, or preferably automated systems, then re-execute a similar search using that same metadata against a larger database to identify potential lending libraries and the request is ported into a different system. Since the metadata populating the local discovery tool likely came from WorldCat in the first place and that metadata will be used to search against WorldCat again, said metadata should be trusted rather than assuming that the citation needs verification by library staff. This is again an antiquated workflow rooted in past practices.

Third, ILL is very much predicated on the terms imposed by the owning library. While the OCLC policies directory provides library staff with information about terms of use for borrowed items, the lack of consistent agreed-upon standards for loan periods between libraries creates a situation ripe for confusion on the part of users. Again, this harks back to an era where ILL was rare, difficult, and unique rather than the current situation where ILL is a standard service. Too much emphasis is placed on unique locally defined rules rather than on setting broadly agreed-upon standards or considering users' needs for materials.

Fourth, the process uses siloed systems with weak integrations and poor interoperability. Discovery happens in one system. Requests are managed in a separate ILL management system which ties to an external ordering system for sourcing items. When the item arrives at the borrowing library, these respective systems must be updated but then the item needs to be handled as a circulation likely in a separate system again or in a system separate from the one that

manages the user's loans for locally owned materials. Yes, the systems can communicate between each other but this process is staff intensive and lacking in automation. Crosswalks, bridges, and information exchange protocols are not employed fully or efficiently.

Finally and most importantly, providing ILL services is predicated on library processes or library tools rather than user processes or needs. Users must learn and jump between disparate systems, often with jarring handoffs, to acquire materials. Depending on how the item is sourced by the library for the user, they need to find the system where the library has chosen to process that request. Communication is scant. It comes from different systems and mostly consists of silence until a pick up notification is sent. This confusing process is followed by inconsistent rules surrounding use based on the lending library's terms of use. Usability studies have demonstrated how this confuses users (Foran, 2015, p. 6). Presented with multiple, often contradictory delivery options, and unclear explanations of the differences between them, users tend to place requests in each system in the hopes that one will work. Not only is this poor customer service, but it also increases staff workloads and costs for the library with duplicated work. Why? Because libraries define ILL success as having acquired a copy for the user. The user's needs—required turnaround time, format, amount of time they will need the item or even its relative importance to them for intended use of it—are secondary, when even considered. Libraries need to gain a better understanding of how ILL fits into the user's activities and how they can more effectively support those activities. ILL needs to be borrower-centered not lender-centered.

In many ways the issues outlined above are a natural outcome of a service's evolution over time and the result of a fairly stable ecosystem that expanded gradually over time. The foundational systems which undergird the service were able to absorb the increased request volume and processes simply continued without redesign or rethinking. Yet the environment in which the service exists is evolving rapidly and the time for a radical rethinking of the technology used to support the service workflows and metrics for success is here.

## RECOMMENDATIONS FOR DEVELOPING AN ALTERNATIVE FRAMEWORK

At the International ILLiad Conference in March 2016, Katie Birch of OCLC announced that OCLC intended to “move ILLiad to the cloud”. Far more than any other change in ILL processing or systems, including the introduction of Worldshare ILL, this announcement shook the foundations of academic library ILL in the United States. We were presented the opportunity to reimagine how we provide ILL services. We began to ask the question “what should the ILL workflows be?” How could we make them more user-centered rather than continuing the historic workflows mandated by vendor-supplied platforms? Concurrently and partially in response to this announcement the Big Ten Academic Alliance (BTAA), previously known as the Center for Institutional Cooperation (CIC), embarked on a project to explore, redefine, document, and share a user-centered discovery to delivery process. The project's goal was to describe an easy-to-understand user experience that shielded

## » To start, the library tools that support the users' processes must be based upon their workflows rather than the processes library systems staff use to manage that work.

them from the disparate library staff systems and provided a more linear discovery to resource delivery process. Usability studies confirmed library staff members' impression that the process was confusing and disjointed to users (Big, 2016, pp. 19-22; Big, 2017b, pp. 19-21). Cooperatively with Ivies Plus Libraries and the Greater Western Library Association (GWLA), we defined base requirements and system functionalities for a new user centered vision of ILL. A one page summary document entitled "Next Generation Discovery to Delivery: A Vision" was released in February of 2017. Staff from BTAA libraries, including the author of this article, wrote two reports entitled "A Vision for Next Generation Resource Delivery" and "Next Generation Resource Delivery: Management System and UX Functional Requirements". These works, in part, inform the three broad recommendations outlined below, described as: user process, technological, and cultural.

To start, the library tools that support the users' processes must be based upon their workflows rather than the processes library systems staff use to manage that work. Where in the past a user interface was tacked onto a library staff system, this should no longer be the case. Users deserve a simple universal request mechanism, a "get it" button (Foran, 2015, p. 5) that connects to a smart fulfillment system (Big, 2017b, p. 9). Requests should display in a single dashboard-like interface that allows users to manage all their library interactions in one place (Big, 2017b, p. 9). No longer should users be expected to hunt across disparate library system interfaces to locate their request for that specific item. Achieving this requires that we rethink how we, library staff, present library systems to users. Since the primary local discovery layer is the user's primary entry point into the library and the place where they manage their library interactions, this interface needs to be the place where we display all request information to them. Thus, vendors who provide discovery layer tools must make them open and capable of incorporating data from external sources so we can provide users

a unified display. They should be shielded from systems libraries use to perform their work of fulfilling requests. Users need items and which library staff process is invoked is immaterial to them. Getting the item is paramount. This notion must inform how libraries design, combine, and present their backroom systems to our customers.

Second, delivery of an available on-shelf loanable copy to the user who needs it and made the effort to ask for it is what matters, not identifying owning libraries. ILL loans are simply more complicated circulations. Discovery tools should be separated from discovery options as these two do not need to be interconnected. The metadata from discovery is all that is needed to initiate delivery. Request should be managed via a lightweight system specifically designed around the efficient and timely fulfillment of that user's request with user satisfaction serving as the primary metric for defining success. The BTAA reports named this new idea "Resource Delivery Management System" (RDMS) (Big, 2017b, p. 12). Working off a list of potential partner libraries maintained and defined in the RDMS, a simple Z39.50 search using that recycled metadata should identify a potential lending partner and when a loanable copy is found, a request should be placed via NCIP with routing and courier tracking/shipping information included in the RDMS's request record. Circulations of ILL items should occur in the local Library Services Platform (LSP) so users can managed all loans regardless of how they are sourced in one place.

The ideas above, in many ways, represent a somewhat radical break from past processes or practices. They decouple sourcing of materials from a shared index. Instead, they are based on library-defined partnerships and the identification of a loanable copy at a partner. Moreover, this approach promotes interoperability across different systems as the request is not tied to any legacy or monolithic system. Multiple micro-systems each play a part to complete a multistep process. Finally, it limits the functional scope of the RDMS to just

the management of delivery, avoiding the current problem of (often subpar) duplication of functionality across systems. While no such system as described above exists, potential development is under exploration by vendors.

The ideas outlined above further move us from the current siloed systems to one where integrations are central and key and where the best, most appropriate system, manages or provides the required information (Big, 2017a, p. 1). Thus, the local LSP handles all aspects of notification, circulation, and fines or blocks. Viewing this as a process consisting of many parts also allows us to reimagine it so that we can incorporate other previously excluded information such as shipping status derived from the UPS or FedEx APIs. Additional communications to users about the status of their request should be included too. Companies provide these updates on orders and shipping as a matter of course so libraries can also. Users reasonably expect them. Authoritative sources, rather than poorly duplicated ones, should be called upon to provide information as needed. Local address information sourced from that campus identity management system, for example. This system consists of many parts communicating with each other via protocols using APIs when needed. Binding their collective parts together with each assigned a specific task provides a new framework for the workaday provisioning of ILL services.

Technology is easy to change. Culture is more difficult, particularly entrenched library policies. These policies' efficacy at guiding user behavior and promoting shared stewardship of materials is almost never tested. Yet, users and library staff are both equally engaged in the management of loaned items. Libraries need to embrace the early slogan of the Rethinking Resources Sharing Initiative, "throw down your policies and embrace your collections" and libraries need to manage this sharing efficiently in a data-driven way.

It is important to remember that users need materials to complete their work.

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The use of materials by users is predicated upon their need, associated timeline, and perceived value of the item. As the Big Ten Academic Alliance has stressed, “All that matters is format, time to delivery, loan period, and costs to the patron, if any” (Big, 2016, p. 9). These items have value to the user. They put effort into acquiring them. ILL is entirely user-driven unlike many other library processes. Arbitrary loan periods as set by any owning lending library may and in fact do come into conflict with users’ needs (Foran, 2015, p. 4). Libraries can resolve these conflicts easily by moving to standardized loan periods for ILL. Standards should replace the boutique exceptionality encouraged by the OCLC policies directory.

Stated differently, the emphasis needs to shift from lender-imposed restrictions to borrowing libraries having the ability to communicate standard policies. For example, the BTAA shared twelve week loan period, when complemented by the equivalent Northwestern University local loan period, coupled with user blocks and assessment of replacement cost fines after thirty days provide a consistent user experience that, in turn, encourages the timely return of items. For example, only 29 of 29,137 total ILL loans were lost by Northwestern University users in 2016. This example demonstrates how consistent policies promote compliance. Why? Because they are both easy to understand and failure to comply with communicated expectations has direct consequences, specifically the loss of library privileges. Further, research done by the Ivies Plus Libraries demonstrates that almost all items are returned to the owning library after the user has completed their use of said item. Only 70 items of roughly 750,000 over three years were truly lost by patrons or never returned. This data clearly demonstrates the need to rethink policies across libraries and reconsider shared assumptions. In other words, the emphasis needs to be on understanding user behavior based on their needs and developing effective ways to affect their behavior to achieve

agreed upon reasonable outcomes.

Libraries must also shift from their historic lender-centric ILL system to one where an ILL user receives an item and national standards provide them a consistent easy-to-understand experience. This would promote an environment where borrowing libraries can more effectively manage their users. Appropriate effective tools, tested by data, are needed. Ineffective tools need to be discarded, like overdue notices via email from the lending library to the ILL borrowing staff. These will never affect user behavior. Making the process easier for users to understand in terms of policy is critical. The introduction of standardized loan periods, replacement costs, and the like across libraries would simplify the management of ILL for both users and library staff. It would also greatly assist in achieving compliance and reducing (often pointless) staff work.

Rather than starting with the question of which library system can perform a specific job, we need to rethink this process and backfill the appropriate system, library or other, from the starting point: the initial discovery and request by the user. The BTAA phrased this as smart fulfillment. Smart fulfillment is a linear path for users to follow where effective automated handoffs between library systems source and manage requests from or in the most appropriate place.

## CONCLUSION

ILL has grown from a niche service to an expected standard one, growing 129% between 1991 and 2015 in ARL libraries (ARL, 2016). Yet workflows and system integrations have not evolved as much as they should have in response to this growth. A confluence of announcements and work to redefine processes now presents libraries with a unique opportunity to rethink ILL, transition from legacy practices, and to unify the fractured discovery to delivery process we present to our users. If we integrate library systems and systems that support library systems differently, and effectively leverage each system’s strength, we can

create an easy-to-use service that meets demonstrated user needs. We can provide a service that provides smart fulfillment of requests and improves both the user and staff experience. This should be our goal. ■

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# Things That Squeak and Make You Feel Bad

## » Building Scalable User Experience Programs for Space Assessment

BY REBECCA KUGLITSCH AND JULIANN COUTURE

**D**eveloping a user experience space assessment program can seem overwhelming, especially without a dedicated user experience librarian or department, but does not have to be. In this piece, we explore how to scale and sequence small UX projects, communicate UX practices and results to stakeholders, and build support in order to develop an intentional but still manageable space assessment program. Our approach takes advantage of our institutional context—a large academic library system with several branch locations, allowing us to pilot projects at different scales. We were able to coordinate across a complex multi-site system, as well as in branch libraries with a staffing model analogous to libraries at smaller institutions. This gives us confidence that our methods can be applied at libraries of different sizes. As subject librarians who served as co-coordinators of a UX team on a voluntary basis, we also confronted the question of how we could attend to user needs while staying on top of our regular workload. Haphazard experimentation is unsatisfying and wasteful, particularly when there is limited time, so we sought to develop a process we could implement that applied approachable, purposeful UX space assessments while building trust and buy-in with colleagues, administrators, and users.

The essential thrust of our approach is to perform small, carefully selected projects that can be accomplished with very little pre-existing support, and to communicate methods, results and goals with stakeholders in order to develop trust and buy-in across the organization. Building that trust



sets the stage for better collaboration with peers and an increased likelihood of support from upper management, improving the chances that libraries will be able to act on gathered data in a meaningful way. Building trust with and engaging peers is essential to making changes to services and spaces. Building trust with upper management can help secure access to the financial and social resources needed to make larger changes. In this article, we will discuss how to establish a process of small interventions and create buy-in from colleagues and administration in order to meet more significant needs. By combining several low-effort techniques, libraries can begin to integrate a consistent approach to assessing and improving the UX of their physical

spaces even with minimal institutional support. Those efforts can lay a foundation for better understanding and acceptance of UX work generally within the library, as well as making improvements to library spaces that matter to users.

### LITERATURE REVIEW

In the past two decades, a theme of using 'ethnographish' methods to study library users with an emphasis on creating welcoming physical and digital environments has emerged in library literature (Lanclos & Asher, 2016). In some instances, this emphasis came from a new library dean or director (Kim Wu & Lanclos, 2011) wanting to create library spaces that meet the needs of the user, while other initiatives stem

from a desire to understand changes in undergraduate student study behavior and the connection to library spaces and services (Foster & Gibbons, 2007). One example is the anthropologist-led Undergraduate Research Project at the University of Rochester, which applied ethnographic approaches to the study of user behavior. This piece brought these methods into wider awareness while demonstrating the importance of understanding local contexts and giving librarians new tools to assess user experience (Foster & Gibbons, 2007). Ten years later, a follow up to the project revisited portions of the original study and incorporated new areas of focus, demonstrating the iterative nature of user experience work and the importance of examining user behavior over time (Foster, 2013). MacDonald's (2017) surveys and interviews with UX librarians articulate the benefits of emphasizing UX work, including a greater "big picture view" of library spaces and services, improved outreach to community members, and greater empathy and responsiveness to the user. Throughout this body of literature there is a growing recognition that library user experience is central to libraries' missions—not a distraction from or an accessory to them. This literature, which positions user experience as foundational to libraries, grounds our approach to developing an accessible model for integrating user experience in library practice.

Large scale library renovations often serve as a driving force for conducting user experience and space assessment projects, but this can also frame user engagement as limited to distinct projects, rather than an integrated, regular process. Collaborative design methods (Somerville & Collins, 2008) increase interactions with users and reshape librarians' perspectives on the library throughout the redesign process. Although the focus remains on renovation and redesign projects, Somerville and Collins note that this process initiates interactive relationships between users and the library, setting the stage for the development of integrated UX. Participatory action research allows libraries to understand the needs of hard-to-access user groups, identify new ways of using the library, and avoid the influence of unproven preconceptions and past precedents in redesigns (Brown-Sica, Sobel, & Rogers, 2010; Somerville & Brown-Sica, 2011). Having seen the benefits of space UX for redesign, the next step is to integrate user experience and



engagement in day to day assessment of services and spaces.

Although the results of these approaches indicate the benefits of engaging with users through the space analysis and design process, a range of barriers and challenges prevent libraries from pursuing this type of assessment consistently. Indeed, even in one-off space redesign efforts, where one might expect attention to UX, implementation of such projects is lacking. In a recent report on academic library renovations, librarians and architects said they valued understanding user needs, but only 31 percent of the sample acted on that statement and formally collected user data to plan and assess UX; even those assessments tended to be traditional metrics like gate counts (Head, 2016). Subjects identified "logistics, time, energy, expertise, and resources required to do evaluation," as barriers to even one-off UX assessment (Head, 2016). Barriers exist in implementing extended UX assessment as well. MacDonald (2017) indicates that even with a dedicated UX position, consistent challenges remained, including navigating library culture, securing trust and support from administrators and colleagues, resource limitations such as lack of time and money, challenges with scale and scope of work, and lack of staff expertise. Clearly, there is a need to develop a space UX approach that takes these constraints into account.

A team-based approach offers one way to address some of the challenges and barriers to UX work laid out by Head (2016) and MacDonald (2017). Many case studies describe ongoing project teams for website usability testing that demonstrate a level of success in gathering staff across the organization to build a level of expertise in usability assessment (Godfrey, 2015; Kavanagh Webb, Rhodes, Cook, Andresen, & Russell, 2016; Nichols, Bobal, & McEvoy, 2009). Godfrey (2015) suggests the team model could be transferred to space UX.

Other cases describe the creation of project teams to examine user experience in specific library spaces (Khoo, Rozaklis, Hall, & Kusunoki, 2016; Kim Wu & Lanclos, 2011). These examples highlight the importance of engaging users when reimagining spaces outside the context of a large-scale renovation but remain limited in scope and do not address how to sustain an ongoing space assessment program.

In addition to staffing models, establishing organizational buy-in with peers and administration is another factor libraries must consider when developing UX programs. UX work, whether in creating a group or acting on findings, challenges organizational decision making processes and requires buy-in on multiple organizational levels (Godfrey, 2015; Kavanagh Webb et al., 2016; Kim Wu & Lanclos, 2011; Nichols et al., 2009). Working with colleagues to build buy-in and develop empathy for users creates conditions where UX projects can move forward with library-wide support (or at least understanding). Godfrey's web usability model of training, buy-in and demonstrating impact can be applied to UX for library space and services, and is especially useful for creating buy-in with colleagues (2015). In an academic library with limited staff and resources, Westbury (2016) carried out meaningful small-scale projects that altered administrator assumptions, increased empathy with users and led to increased support for UX and space improvements. There are good models for building buy-in with colleagues, but few models specifically outline building buy-in with library administration. In our paper we suggest ways to formally develop both types of buy-in.

Many of these strands of buy-in, staffing, and challenges to UX are synthesized in MacDonald's description of a potential maturation model for UX in organizations. In this model, UX moves from an unrecognized need to being fully institutionalized, where "non-UX staff members are making UX decisions, and iteration and improvement are baked into the culture" (2017, p. 209). But though MacDonald describes what this might look like, the model offers no explicit road map for moving forward in the maturation process. Our approach is inspired by this model and by Gullikson & Meyer (2016), who describe an example of integrating UX into regular practice. Their process of "gathering space use data as soon as possible rather than waiting

for a perfect methodology” is one that can be used to begin to build useful iterative UX programs, and one that grounds our proposed method to locally develop a UX program (2016, p. 22).

### INSTITUTIONAL DESCRIPTION & OVERVIEW OF UXWG

At the University of Colorado Boulder, we have the resources of a large doctoral university with five library locations across campus. Norlin library is a sprawling, freestanding library covering the social sciences, humanities, life sciences, and chemistry, and houses most of the library system’s centralized services and staff. There are four branch library locations situated in academic buildings with programs the libraries support: Business; Earth Sciences and Map; Music; and Engineering, Mathematics, and Physics. This gave us a way to examine UX—and particularly related communication issues—within a large, complex organization. Each branch library is staffed with between 1.5–3 faculty librarians, and 3–5 staff members. Although the branches have the support of the larger library system, this setting allowed us to approximate how UX techniques might work in smaller libraries. We approached our project using these different contexts to draw conclusions relevant to both larger systems as well as smaller libraries.

The University Libraries system recognizes the need for UX work, but does not have dedicated staffing. When our library system underwent a reorganization in 2012, a user experience position was proposed, but ultimately not pursued due to library priorities, confusion about where such a position might fit into the new organizational structure, and limited staffing levels. We face challenges—organizational culture, people, and money—that are similar to those seen in other organizations (MacDonald, 2017). In the reorganization, a working group model was developed to address gaps, particularly those that cut across departments. Librarian advocacy led to the recognition of UX as one of those gaps, and resulted in the creation of the User Experience Working Group (UXWG)—again, a common solution to the need for UX (Godfrey, 2015; Kavanagh Webb et al., 2016; Nichols et al., 2009). The group is comprised of faculty and staff from across library departments. Membership is based on interest and many members have limited to no previous experience in UX work. Two volunteer co-coordinators manage the group. Like membership, leadership

**Table 1. Approaches, advantages, limitations, and time investments**

APPROACH	ADVANTAGES	LIMITATIONS
Easel feedback	<ul style="list-style-type: none"> <li>• Brief time commitment</li> <li>• Quick turnaround between posting and actionable information</li> <li>• Can gather information from wide range of users</li> <li>• A useful first or second step</li> </ul>	<ul style="list-style-type: none"> <li>• Feedback can be altered by other participants</li> <li>• No demographic information</li> <li>• Only users of physical space are reached</li> </ul>
Comment Box	<ul style="list-style-type: none"> <li>• Informal</li> <li>• Minimal time commitment</li> <li>• Maintains awareness of emerging issues in library as a whole</li> <li>• A useful first or second step</li> </ul>	<ul style="list-style-type: none"> <li>• Feedback is spotty and ad hoc</li> <li>• Little demographic information</li> <li>• Little opportunity to ask for clarification</li> <li>• Only feedback from current users of physical spaces is accessible</li> </ul>
Reply Cards	<ul style="list-style-type: none"> <li>• Can target specific areas within a library</li> <li>• Provides detailed information about current space use</li> <li>• Time commitment is relatively manageable</li> <li>• Can serve as a bridge to more time-intensive methods</li> </ul>	<ul style="list-style-type: none"> <li>• Little opportunity to ask for clarification</li> <li>• Only feedback from current users of physical spaces is accessible</li> <li>• Little opportunity for in-depth reflection</li> </ul>
Intensive in-person methods: semi-structured interviews, charrettes, journey mapping	<ul style="list-style-type: none"> <li>• Opportunity for deep exploration and user reflection</li> <li>• Opportunity to clarify or collaboratively solve issues identified in previous feedback</li> <li>• Can address particular user communities (faculty, undergraduates, graduate students...)</li> </ul>	<ul style="list-style-type: none"> <li>• Hard to cover feedback from low-staff times</li> <li>• Captures feedback only from active users willing to talk to strangers</li> <li>• Time intensive</li> </ul>

of the group is based on interest, and responsibilities are in addition to the leadership’s primary job responsibilities, meaning that UX projects have had to be balanced with a pre-existing workload. Similar to the formation of such teams in other libraries, (Godfrey, 2015; Kavanagh Webb et al., 2016) the group’s original focus centered on testing of the library website, but has expanded since to include UX of physical spaces. With the launch of a new website, the group continued the work of conducting usability tests for iterative improvement of the site, but was able to shift some of its focus to examining library spaces.

One of the common barriers to UX identified by MacDonald (2017) is lack of skills and training in UX, so in order to enhance team skills, and to increase institutional understanding of UX, members and co-coordinators sought out webinars, trainings, and readings to bolster our skills in assessing UX

of spaces. The aim of these development offerings was to build our shared knowledge to a point where we could begin to perform simple UX space explorations. We made sure training opportunities were open to all library staff, not just the UX team, because we wanted to increase awareness and understanding of UX work across the institution. Since membership rotates, we hoped that widespread training would encourage library staff to join the working group. Like many libraries, development funds were limited, so we searched for low-cost ways to build our skills: webinars, a reading group around Amanda Etches and Aaron Schmidt’s book, *Useful, Usable, Desirable*, and asking those with areas of expertise to share via in-house trainings. We encouraged a learn by doing approach, mutually supporting each other and openly discussing successes and challenges when implementing new methods. These efforts positioned us to

## » In addition to being low-cost and building a foundation of small victories, these techniques also provide essential perspective. Library staff know the library, its daily rhythms and many of its barriers well

begin exploring new-to-us space UX approaches, and fostered interest in UX across the library. We began to see non-members who attended the reading group and webinars undertake their own UX projects, and advocate for projects impacting the larger organization. For example after the training, when plans for a significant redesign in the research area in Norlin were revealed, we saw increased acceptance of the final plans as backed by UX methods than we did two years prior when website redesign plans were presented as backed by UX methods. Colleagues were primed to understand that user needs were valid and reasonable, and that the plans were not just generated from a single person's vision or whim.

### DEVELOPING OUR APPROACH TO SMALL-SCALE ASSESSMENT

Our two-pronged approach stages a series of scaffolded UX explorations while concurrently developing a trust building process with peers and administration and a communication protocol. By focusing on developing trust and communication at the same time as developing the small-scale assessment, this approach sets up a climate where UX can permeate the institution more broadly to make it more feasible to enact changes based on collected data. Staging small-scale UX studies makes it possible to quickly build a basic foundation and learn what questions to ask in more involved investigations.

#### Build an Understanding of Users

In order to build a space UX program from the ground up, we recommend starting with easy, non-invasive explorations to build a knowledge base that serves as a foundation for designing productive larger-scale explorations. It also provides opportunities for small wins that encourage users and librarians alike. In particular, we recommend beginning by employing methods of collecting feedback with a low barrier to entry such as easel questions, comment boxes, and reply cards (Table 1). Written feedback can generally be collected passively with low investment by both librarians and users, making it an excellent option for beginning

space UX projects. These initial methods identify barriers, assumptions, and misperceptions about user experience that warrant deeper investigation using more time intensive methods, and consequently help formulate a longer term UX plan and better questions for use in later, more involved stages (see Table 1). They identify a range of immediate, smaller problems, allowing low effort, high impact UX fixes to be put into place after early rounds of assessment, and then reassessed for success and adjusted as needed, increasing trust, engagement with and interest in UX.

In addition to being low-cost and building a foundation of small victories, these techniques also provide essential perspective. Library staff know the library, its daily rhythms and many of its barriers well. But this familiarity can blind us to user needs and experiences. For example, in Norlin Library there was a perception that two high-traffic, heavily used areas were used only for short periods of time, perhaps between classes, and projects for improvement were prioritized based on that assumption. But initial user experience research—gathering easel feedback, observations and reply cards—proved that wrong with minimal investment of time and money, allowing us to prioritize projects and focus later user experience investigations in ways that matched actual rather than assumed user need. Although we realized how important it was to check our assumptions only as we developed our process, we recommend explicit attention be paid to identifying assumptions around spaces at the beginning of investigating them, and continually revisiting those assumptions. Consider bringing together library staff closely affiliated with the space in question, and collaboratively describing perceived use of spaces, issues, and needs. There are a range of ways to carry out this process; we suggest having people contribute to collaborative documents or having staff members write their perceived user concerns on post it notes and then collaboratively group them into themes. We recommend the user experience team use the resulting document to identify shared assumptions, and test them explicitly.

To begin exploring user experience and testing assumptions, we recommend starting with comment boxes and easel prompts used in tandem, as both are low-cost, unobtrusive methods. Either option could be employed as the initial data gathering tool and then fuel the establishment of the other, depending on the context. Selecting a method to start with depends on library size, available materials, library layout and traffic flow. For example, in the Engineering, Mathematics, and Physics Library, the space was small and traffic flow allowed nearly all users to be funneled past a comment box with free-response cards, quickly collecting enough comments to identify common concerns. We then used what we heard in the comment box to develop more focused, solutions-based questions to ask on easel prompts, such as: “Where would you like more power strips?” “When would you like to attend workshops?” “Would you prefer chair style a or style b?” When working in a more sprawling environment with a wider variety of users, it is more useful to flip the order of the approaches to begin with a more attention-grabbing method. To accomplish this, we set up two easels in a large, heavily used space with the prompt “I wish my library knew that...”. This prompt was chosen for its open-endedness and ability to be interpreted in many ways. The prompt was left up for three weeks and a clean prompt was put up when the previous sheet became too overcrowded with responses; a whiteboard could be used as well. The benefit of this prompt was that our users told us about many ways they use and interact with the library including comments regarding outlets, furniture, lighting, helpful staff, and even the emotions they experience when using and studying in the library.

Ultimately, we recommend using the two methods to build a foundation of UX knowledge and monitor the situation on an ongoing basis. Which to begin with depends on local context, but the two productively reinforce each other. A comment box serves to maintain awareness of continuing and newly developing concerns, and easel prompts can be used to address the resul-

tant specific questions and assess changes made in response to comments. Both methods are low cost, take little user and investigator time, and do not significantly intrude on the spaces around them, making them a relatively easy sell to others and an ideal place to begin integrated UX efforts.

Some challenges identified using low-barrier methods are easily solved, and we recommend identifying and addressing such challenges immediately. Quick, attainable change is satisfying for staff and students, and builds momentum and appetite for further change. In the Engineering, Mathematics, and Physics Library, for example, administrative involvement was not required and no one's role was threatened by purchasing a dozen more power strips and scattering them throughout the branch library, solving some of the power access issues users reported. Of course, the feasibility of these solutions varies: in Engineering, Mathematics, and Physics, this worked well because the space was small and desks and tables are close to walls. In a larger space like Norlin, this quick fix was unavailable since power strips were a hazard in floor plugs, but it shifted thinking about furniture purchasing in the longer term. Wherever possible, establishing a positive feedback cycle like this bolsters integrated UX.

Some changes involve more significant investments, and a well-grounded argument for that investment makes success more likely. A still easy but more in-depth next step method is reply cards. These are cards with a series of questions exploring how people use a particular space in the library, distributed in the library for a set period of time at seats in areas of interest (see example in fig. 1). Distribution varied slightly depending on the type of the library, staffing levels, and the information we were gathering. In the Engineering, Mathematics & Physics Library, we wanted to know about the space experience of the whole library, we had a smaller body of users who we know resent interruption, and had no incentives to encourage responses. Over the course of a mid-semester week, we placed cards throughout the entire library, collecting them at the end of each day and replenishing in the morning with blank cards. In Norlin library, there was more focused interest in four zones of a particular section of the library, a substantial body of users, and access to student workers and incentives. This allowed us to hand out and collect reply cards individually and encourage

participation with the chance to win a gift card. We identified two days in the middle of a semester where we expected moderate use in Norlin library and in a two-hour time frame on both days distributed and collected replay cards. Handing cards out yields more demographic and spatial information, but both options yield useful information.

### **Reply card template**

Help us improve the library spaces. Tell us a bit about how and why you use this space:

- Why did you choose this seat today?
- What are you here to do?
- How long have you been using this space today?
- What is the last time you used this area?
- If you could not use this space right now, where would you go?

In order to construct the reply card questions and identify spaces to investigate with them, we used the information gathered from the easel prompts. For example, we learned from easel and comment boxes feedback that users in numerous locations found our wooden chairs painful for long use, and in the branch, unremittingly squeaky. Consequently, we decided to investigate how people used the space, and particularly how long they used it, with reply cards. From this, we learned that our assumptions of how the spaces were used were incorrect; rather than using the space briefly between classes, students indicated that they typically spent long periods of time studying in the space, and could find few alternative spaces. These results from the reply cards coupled with observations of the space made clear that users spend lengthy amounts of time studying in the Norlin research area and in the branch libraries, which changed our priorities and provided us with justification for phasing out the uncomfortable wooden chairs as a key change. In the branch, this led to replacement of chairs on the main level, and has influenced purchasing decisions and priorities in the Norlin library.

### **DIGGING DEEPER**

After building buy-in and identifying assumptions and new questions by exploring with low-barrier methods, we recommend moving on to more time consuming but richer in-person methods, such as focus groups and semi-structured interviews. Other methods to consider at this stage might include mapping diaries or cognitive

mapping (Asher & Miller, 2011), journey mapping (Marquez, Downey, & Clement, 2015) or design charrettes (Somerville & Brown-Sica, 2011). Small focus groups of fewer than five people at a time proved to be a useful approach in our context: still feasible for a small, busy team to complete, but providing opportunity for deep exploration. For example, we held focus groups looking more closely at the concerns we discovered earlier from easel prompts and comment box responses. These focus groups followed a semi-structured interview process, and were a combination of spontaneous and pre-scheduled. This mixture reduced the time team members needed to spend scheduling, and also allowed for flexibility to meet users' preferences. For example, in the Engineering, Mathematics & Physics Library we that found users with very busy school schedules could more easily be convinced to attend an impromptu session in an onsite study room with snacks, than to book a 30-minute focus group with a monetary incentive ahead of time. We asked questions like:

- How do you use the library? What could make that use better?
- What do you like about the library?
- What improvements would you make?
- Do you feel welcome at the library?
- Who else do you think is using this library? [elicit who is using this] Who do you think this library is designed for? (in other words, do you feel like this library is for you)
- How does the noise level work for you?
- What technology needs do you have in the library?

Exact questions should be tailored to the library in question of course but a mix of specific and open-ended questions will ensure coverage of both what librarians know they want to know while leaving room to explore the unanticipated needs of students. Again, results helped us set priorities and justify changes. Although we already knew that squeaky chairs were annoying, these interviews helped frame that the chairs contributed to an unwelcoming environment, a deeper nuance and powerful argument we would have overlooked if we had not followed our earlier UX information collection with in-person work.

Each semi-structured focus group interview was conducted with the caveat that students were welcome to think creatively and propose grand schemes regardless of

their likely viability. This is important to emphasize regardless of the investigation method used because wild and unattainable “solutions” sometimes lead back to very real problems. For example, one set of students in a branch library requested a several-story rock climbing wall leading to a study area that could only be used by senior majors in the area the library served. This was obviously not feasible. But, it gave us insight into a real problem: that students in the subject areas served by the library sometimes felt sidelined by users dominating the space not because of the subject areas served but because of the library’s proximity to a large lecture hall. While we could not build a climber’s paradise, we asked follow-up questions to identify other, more attainable ways of creating intellectual community at the library. In this case, the library implemented a geology photo contest. This dream big approach allowed students to indicate frustrations and problems they might not otherwise have articulated, whether from a concern about seeming mean or a lack of awareness that their frustrations are valid and addressable. It is important to be explicit about this dynamic with other library stakeholders because a common fear we heard from colleagues was of students asking for impossible things. Translating the wish into the problem they wanted to see solved led to a viable solution addressed the concern.

In some cases, we could jump start this translation process by directly asking students to help solve problems we had identified in earlier steps of the process. This provided us with further creative solutions, such as the geology field trip photo contest that students suggested to create community in the Earth Sciences & Map Library. It also meant that the identified solutions sounded appealing to at least some students, and helped build confidence among the students that we sought to act on act on their feedback. By telling users that we heard their feedback, and wanted assistance in developing solutions, we were able to convey our seriousness in working with them to build a more usable library.

One issue to watch out for in this stage is ensuring appropriate representation from stakeholders. What this looks like depends of course on the project and space, and it is important to consider which stakeholders the library needs to see represented for each individual project: is it important to balance graduate, undergraduate, and faculty needs? the needs of a particular

**Table 2. Question for librarians to assess user experience in a non-library space.**

GROUP ASSESSING...	QUESTIONS
Spaces	How did being in the space make you feel? What was your first impression?
	Describe your experience waiting in line, or for your coffee?
	Describe your experience finding or asking for what you wanted. (Could be seating, a menu item, a tool like the microwave, supplies)
	What is your ultimate impression of the space? What was your experience as you left the space?
Services	How did interacting with the staff make you feel? What was your first impression?
	How long did the experience take? Did the duration of your visit meet your expectations for customer service? Why or why not?
	Describe your experience finding or asking for what you wanted.
	What is your ultimate impression of the services? What was your experience as you left?
Web	Think back to your last time on the coffee shop website. How did interacting with the site make you feel? What was your first impression?
	Describe your experience finding what you wanted (example: hours, gift certificates, menus).
	What is your ultimate impression of the site?
	Does the site match your experience of the cafe? Why or why not? Does this matter?

discipline? Many of the low-barrier “foundation” methods we suggest cannot identify representation, so it is particularly key to thoughtfully seek out representative stakeholder groups in the more intensive investigations, as we attempted to do in our focus groups. Too often, library space user samples mainly consist of undergraduates (Head, 2016), which can lead to neglecting the needs of graduate students and faculty, and can make it easy for staff to dismiss UX studies as unrepresentative. But here again, we agree with Gullikson and Meyer’s assessment that some information is more important than none of the most perfect information (2016).

Combining multiple methods in each stage is also important. When feedback from multiple locations was consistent, it strengthened our arguments for confronting particularly knotty challenges that might otherwise fall lower on the list of priorities because of their difficulty. For example, we consistently heard requests for more or better-placed outlets from all avenues of investigation. This not only led to piloting a new electrical system in Norlin library, but also contributed to discussions at the campus level about electrical access in the libraries. While the majority of the studies we discuss were undertaken as part of UXWG, projects done by others and standing assess-

ments such as LibQual often reinforced the feedback we collected. Seeking out and correlating our findings with other work helped build institutional trust in our findings.

### BUILDING BUY-IN

While the assessment approaches we recommend can easily be incorporated into individual practice, and performed without significant organizational commitment, working with others across the library including peers and administration is ultimately necessary to spread the approach across the institution and ensure there are resources to pursue the changes identified. Whether the context is a large system with many branches or a small library with a handful of spaces, buy-in from others is often key to ensuring that attention to UX is widespread and can eventually be developed further. Buy-in in this case involves building an institutional recognition that user experience and empathy matter, that user experience methods have validity, and building trust between advocates of user experience and library staff and administration with less familiarity.

### WITH COLLEAGUES

We advocate for a participatory training approach as a method to address some of these challenges with colleagues. We devel-

» **We advocate for a participatory training approach as a method to address some of these challenges with colleagues. We developed a workshop designed not only to build empathy, but to increase knowledge around user experience and shift the impression colleagues had of the working group.**

oped a workshop designed not only to build empathy, but to increase knowledge around user experience and shift the impression colleagues had of the working group. The centerpiece of the workshop was a participatory session in which library faculty and staff served as participants in user experience testing of the coffee shop that leases a part of the Norlin library. In general, library workers had positive and frequent relationships with the coffee shop; everyone had opinions about it, but no one had an investment in it as a personal project. This helped achieve several aims. First, it helped make clear that user experience feedback was not necessarily the rantings of the disgruntled, by putting the participants in a situation where they assessed a space they both were fond of and could improve. It made it clear that user experience mattered in spaces, as well as on the web. It also was a way for librarians to take the position of users and understand how a space could in fact be improved by users. All of this helped attendees develop empathy with users, at the same time as it increased their knowledge of space UX techniques.

We started by breaking the attendees into three groups: spaces, website, and services—aspects that mapped nicely to the work of the library and provided a bridge from familiar aspects of UX (website) to the less familiar (space and service). Using the questions in **Table 2**, the groups identified numerous issues that echoed concerns shared by library users. In the spaces group, participants identified dirty microwaves and unsuitable furniture, which corresponded to feedback UXWG gathered around cleanliness and unwelcoming furniture in the library. The website group identified challenges finding basic information such as hours of the coffee shop. The services group identified that they had had pleasant interactions with individual staff, but that crowd control systems could be improved. It helped all of us recognize things that we felt were easy in the library—because they

were part of our everyday life—might not actually be so for users. By situating library faculty & staff as users, this activity helped participants to begin thinking of themselves as people whose work impacted users, and made clear that “just learn how to do it right” is not a viable solution to user experience problems. The workshop ended with a brief presentation about UX principles and best practices while integrating themes from the session with projects undertaken by the working group.

In our context, and we suspect in many others, one of most important foundations to spreading user experience is making it clear that studying user feedback is not punitive. We aimed to make it clear that we were not the user experience police, that we were not trying to ‘catch’ anyone. By framing UX in a context where the participants were trying to improve a place they had affection for, we were able to shift the assumption that UX is primarily negative criticism. For our group, this punitive perception was a key consideration. First, as an interest based group, rather than an expertise based group, we cannot simply rely on claims to positional authority, but instead need to educate ourselves at the same time as we educate stakeholders. Additionally, the libraries had just completed a lengthy web redesign, in which many requests and preferences were necessarily denied. The UXWG had been heavily involved in user testing iterations of the design, and consequently had picked up something of a reputation as the kind of group that existed to say no. Our workshop helped counter this narrative, position ourselves as a resource, increase general knowledge around user experience, and raise awareness of the role of the library’s UXWG in physical spaces. To identify when and how best to hold a similar workshop, it is important to examine institutional context. We selected a meeting that was open to all faculty and staff, was well-established, and had recently sent out a call for more content-rich agendas. At other institutions, a similar workshop could

be delivered in analogous meetings, during a professional development series or day, or simply as a one-off.

Structuring a feedback loop for UX changes is another essential component of building trust and communication with colleagues, as well as of iterative UX design. It can be discouraging for UXWG as well as other faculty and staff involved when changes do not work out as intended. To mitigate this, baking in the idea of iteration and feedback loops from the beginning is helpful. When the process of change includes pre-planned tweaking and iterating, it feels less like a failure when things do not work as intended, because it is part of the process rather than an untoward outcome. For example, when we planned to make a change at Engineering, Mathematics, and Physics, we would plan, after implementation, to ask users what worked well, what they would change, and if they noticed the changes we made based on their feedback? In one instance, a large screen originally purchased for a conference room was repurposed to test out the idea of a “pop-up theater” which would allow for streaming of live events or be used for student presentations. After a few semesters of testing out this initiative, the project never took off so the staff of that location came together to discuss what was working and what was not, what kind of needs students had identified, and how the project should move forward. After testing a few tweaks, the initiative was dismantled and the screen repurposed into a display center highlighting library activities, which had been identified as a need. Rather than failing to build a popup theater, the built-in iteration reframed the process as finding the best way to meet student needs with a piece of technology. This experience made it easier later to introduce a room reservation system users had requested as a pilot because we had established a group willingness to use criticism productively and make changes as needed.

» **Tying user experience to strategic planning is perhaps an obvious suggestion, but it can be easy to overlook or to do overly subtly. Library administrators are often barraged with needs, requests and problems; clearly calling out a link to established priorities makes it easier to say yes.**

#### WITH ADMINISTRATION

As well as building trust with colleagues, it is also essential to build buy-in upwards. While the participatory method was also useful in building buy-in with administration, library administration has different priorities than colleagues. In order to further build buy-in upward, we identified several strategies:

- To clearly align user experience with the libraries' strategic plan,
- To start with low-cost, high-impact projects,
- And to apply UX to approach known problems with innovative solutions.

Tying user experience to strategic planning is perhaps an obvious suggestion, but it can be easy to overlook or to do overly subtly. Library administrators are often barraged with needs, requests and problems; clearly calling out a link to established priorities makes it easier to say yes. The key is to attend to what language the administration is using. Is it a university strategic plan? An internal library strategic plan? An overall zeitgeist? In our case, the libraries had recently completed a new strategic plan, which called out student success and improved reputation as explicit goals, which were easily aligned with UX space projects. Bringing our requests for support to administration couched in the language of these goals made it clear that we understood their priorities, and made it easier for the administration to see how our goals fit with their vision.

Another tactic we took in building trust with the administration was to start addressing small projects based on UX feedback that made relatively modest demands on library resources, presenting resultant successes, and building to making larger requests. By gradually accruing evidence of particular issues over time, and by piling up small successes, library management can begin to trust that UX projects are impactful and worthwhile. Starting with a big ask and little proof requires management to make a leap of faith, but starting with lots of proof

and small asks makes it easier to move forward. Such an approach also mirrors the iterative nature of good UX, preventing us from sinking large amounts of resources into projects that still need modifications, or might be just right for a particular scenario, but not ready for generalization. Gullikson and Meyer's case study suggests that ready access to UX information can be used to inform and be prepared for new phases of or surprise renovations (2016); in our experience, we have been able to respond more confidently to sudden availability of funds of the kind that arise at the end of a fiscal year or when another project falls through.

Finally, we found that presenting solutions to identified issues was a useful way of highlighting the positive impact of smaller iterative UX. For example, it was well-known that quiet versus conversational zones were a consistent bone of contention across the libraries, with students confronting each other or perhaps worse, feeling silently more and more frustrated and unable to complete their work. One solution students asked for at a branch library was 'permission signs'; rather than wanting signs that told them to be quiet, students wanted signs that explicitly permitted them to be louder where it was acceptable and suggested quietness where it was not. The suggested approach was positive, nonpunitive, and probably something we would not have thought of without student feedback encouraging that reframing. Rather than requesting management fix the problem of loudness, we were able to present a solution and ask for assistance with creating a series of signs establishing expectations.

There are, however, some remaining areas of challenge to keep an eye out for in any organization. One is the challenge of identifying the unwritten roles of peers and administrators, and taking them into account when developing chains of communication. In our case, we assumed that it was sufficient if the associate dean in charge of the positions that relate to space communicated necessary actions to those staff. How-

ever, both to make the staff feel integrated into the process and to avoid confusion, we realized we needed to loop in staff such as the facilities manager earlier in the process. We had begun a project in a branch library, which the facilities manager supported but did not extensively work in, not realizing that the discarded branch furniture would immediately be distributed in the main library. Instead of communicating at an end point, we needed to communicate from the beginning of any project, because the written facilities manager role differed from the performed role. In any situation where new work partnerships are formed, it is important to look for moments where written and performed roles might diverge. For libraries with multiple locations, this is especially important because although locations might operate with great autonomy, there is often a ripple effect that might reach beyond what a casual assessment predicts.

In an organization of any size without a single individual assigned to space management, identifying and making a consistent plan for space priorities is an important challenge. We found we were examining spaces in isolation, and sometimes ad hoc based on who requests assistance or takes an interest. While we have made some improvements to our process, with no one person looking at the whole picture of library spaces and prioritizing projects in a programmatic way, our UX work will remain somewhat fragmentary. However, this is an area where we feel that imperfect UX is better than no UX—we will continue to assess what we can (Gullikson & Meyer, 2016). For libraries with a person or team in charge of the big picture of spaces, it is important for UX researchers to tap into that expertise and join forces.

Finally, it is important to realize that trust building works both ways, and, when possible, call out when administration may not be consistent. We found policies were occasionally inconsistent: for example, one branch library was allowed to purchase a comment box, where another's purchase request was

denied. Developing an approach to cope with this is useful. In our experience, and in most functional organizations, this inconsistency is more a matter of lack of understanding, so being prepared to explain clearly and patiently why particular support is needed, and give the benefit of the doubt without giving too much ground, is important.

## WITH USERS

As well as being important to administration, small solutions and communicating those solutions are important to building trust with users. Providing UX input, even with low-effort methods, demands users' time and effort, so it is important to make it clear that we value that time and effort by clearly communicating how their input is used. What have we changed, what are we working on, what is, hopefully temporarily, currently insoluble? For example, results from the reply cards coupled with observations of the space made clear that users spend lengthy amounts of time studying in the research area and students requested more quiet space during finals, since the commons were too loud at that time. This request has led to additional investigations into extending library hours, as well as exploring extending the commons space itself to encompass a quiet area: but it also served as justification for opening a library classroom during the last few weeks of the semester and during finals as an additional space for quiet study. Providing an immediate response (like opening a classroom) while slowly amassing enough evidence to take longer-term action builds trust with our users that the feedback they give us is valued and applied.

## CONCLUSION

By combining several low-effort techniques, librarians can begin to integrate a consistent approach to UX even with minimal institutional support. Indeed, this approach can be used to build institutional support and begin to move towards a more mature integration of UX into libraries, building organizational trust both between colleagues, with administration and with our users. Doing so positions libraries as active participants in the maturing field of UX, preparing the ground perhaps for more established collaborations and positions.

The past few years of building up a user experience program at our institution and developing organizational buy-in has resulted in some positive changes. We find

that colleagues across the organization now ask if there are reports or data from user experience projects that can assist in decision making. Recently, a Web Governance Group was created to oversee consistent, iterative improvements of the library web presence. This group is comprised of five representatives from across the libraries. One spot is designated for a UXWG representative. While this is a step in the right direction, this seat is the only one not aligned with any one person's job duties. So, while we have made great strides in getting UX work to be a part of our library workflows, we still face barriers in that it is no one person's job to coordinate the many projects and determine a long-term vision. However, we believe that the gradual increase in the group's presence and visibility are helping to engrain UX into the libraries and prepare for an eventual more centrally managed UX approach. ■

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