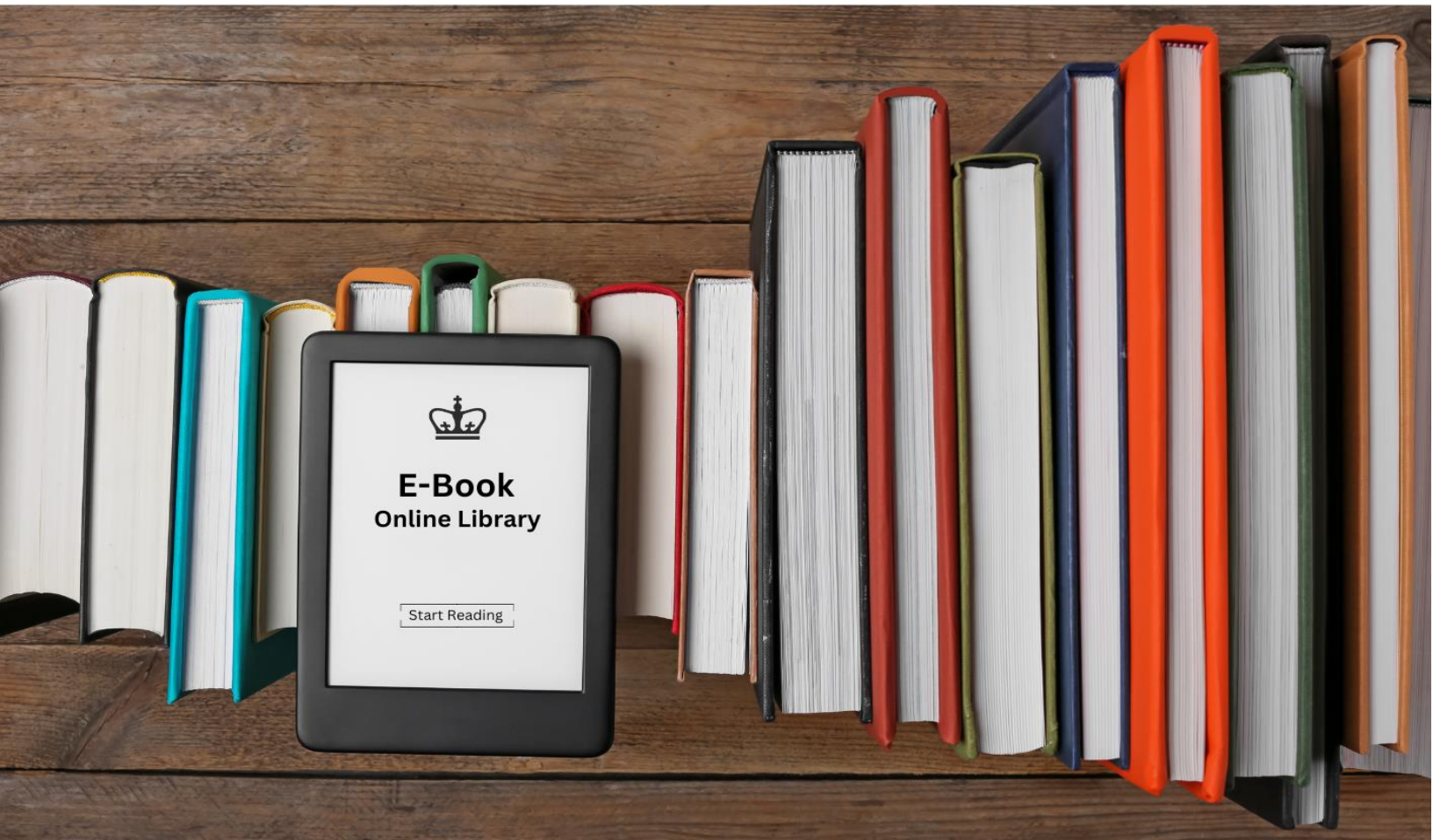
COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

Annual Report

E-BOOK PROGRAM DEVELOPMENT STUDY
COLUMBIA UNIVERSITY LIBRARIES



Executive Summary

The E-Book Program Development Study is an ambitious assessment project aimed at gathering essential data to drive the development of policies related to e-book development programs. It aligns with CUL's mission to support the development and delivery of high-quality services that facilitate research, teaching, and learning across campus and within the wider scholarly community. The results will provide a set of recommendations and policies for internal and external stakeholders as they collaborate on the development and implementation of e-book projects and programs.

The objective at the heart of the E-Book Program Development Study is to develop a strategy and vision for e-book programs and collections at CUL. Essentially, the set of recommendations that result from study findings will create a bridge between the current landscape and CUL's vision for future e-book initiatives on campus.

The primary objective of the first year was to document the e-book landscape at Columbia University and understand how current challenges fit into the larger context of collection development and management within the academic community. A second objective was to develop innovative and sustainable assessment methodologies that enable librarians to collect data and evaluate e-book holdings in a standardized fashion. The data sets collected over the past year also provide a benchmark for the future evaluation of e-book holdings and best practices.

The work completed over the past year provides a context for study results and suggests how the e-book collections align with CUL's overarching mission to support research, teaching, and learning activities across campus. This context also creates an essential framework to craft a vision for the future direction of e-book curation, collection development, and management at CUL.

More specifically, the efforts of the past year have resulted in the development of methodologies that examine how e-book resources are allocated, evaluate current subscriptions and packages, examine usage trends, and observe how patrons search and retrieve e-book content from the collection. The data that was gathered while developing these methodologies will be used to inform recommendations and policy statements regarding e-book collection development and management on campus.

The reality that the e-book landscape is constantly evolving was factored into decisions regarding the overarching assessment framework guiding this study. The research design was created so that it can be replicated regardless of how e-books evolve in the coming years. Because the design is flexible and adaptive in nature, it promotes continued assessment, evaluation, and strategic planning as a regular component of e-book programs.

Finally, the past year has proven that the E-Book Program Development Study provides CUL with opportunities to take on a leadership role within the professional community by demonstrating how assessment programs can be used to advocate for libraries' needs.

Table of Contents

Introduction

Since 2010, there has been marked growth in e-book holdings at Columbia University Libraries (CUL). Two years ago, the one-millionth e-book was added to the collection. Last year, we passed the two million mark and e-book expenditures now comprise 25% of the book budget. In response to this growth, CUL is developing a unique strategy and vision for e-book programs and initiatives across campus. It includes the planning and development of the libraries' effort at acquiring e-books and making them available to users.

The E-Book Program Development Study is an ambitious assessment project aimed at gathering essential data to drive the development of policies related to e-book development programs. It aligns with CUL's mission to support the development and delivery of high-quality services that facilitate research, teaching, and learning across campus and within the wider scholarly community. The results will provide a set of recommendations and policies for internal and external stakeholders as they collaborate on the development and implementation of e-book projects and programs.

Objective

The objective at the heart of the E-Book Program Development Study is to develop a strategy and vision for e-book programs and collections at CUL. Essentially, the set of recommendations that result from study findings will create a bridge between the current landscape and CUL's vision for future e-book initiatives on campus.

The primary objective of the first year was to document the e-book landscape at Columbia University and understand how current challenges fit into the larger context of collection development and management within the academic community.

A second objective was to develop innovative and sustainable assessment methodologies that enable librarians to collect data and evaluate e-book holdings in a standardized fashion. The data sets collected over the past year also provide a benchmark for the future evaluation of e-book holdings and best practices.

To achieve study objectives, all assessment activities were structured in accordance with four principles outlined in the CUL/IS Strategic Plan 2010-2013:

1. User-focused design;
2. Data-driven decision making;
3. Continuous assessment of results;
4. Flexible and adaptive response to user needs.
   (CUL/IS Strategic Plan 2010-2013, p. 8)

Activities

An ambitious work plan was established at the start of the E-Book Program Development Study. The goal of these activities is to build a body of knowledge that informs collection development recommendations and policies (see Table 1).

The work plan divides study activities into five categories:

- **Green Bars**: Internal review of the e-book landscape at CUL
- **Yellow Bars**: External review of the e-book landscape in the academic community and publishing industry
- **Blue Bars**: Observation of e-book workflows
- **Red Bars**: Data collection and analysis
- **Orange Bars**: Dissemination of results to internal and external stakeholders

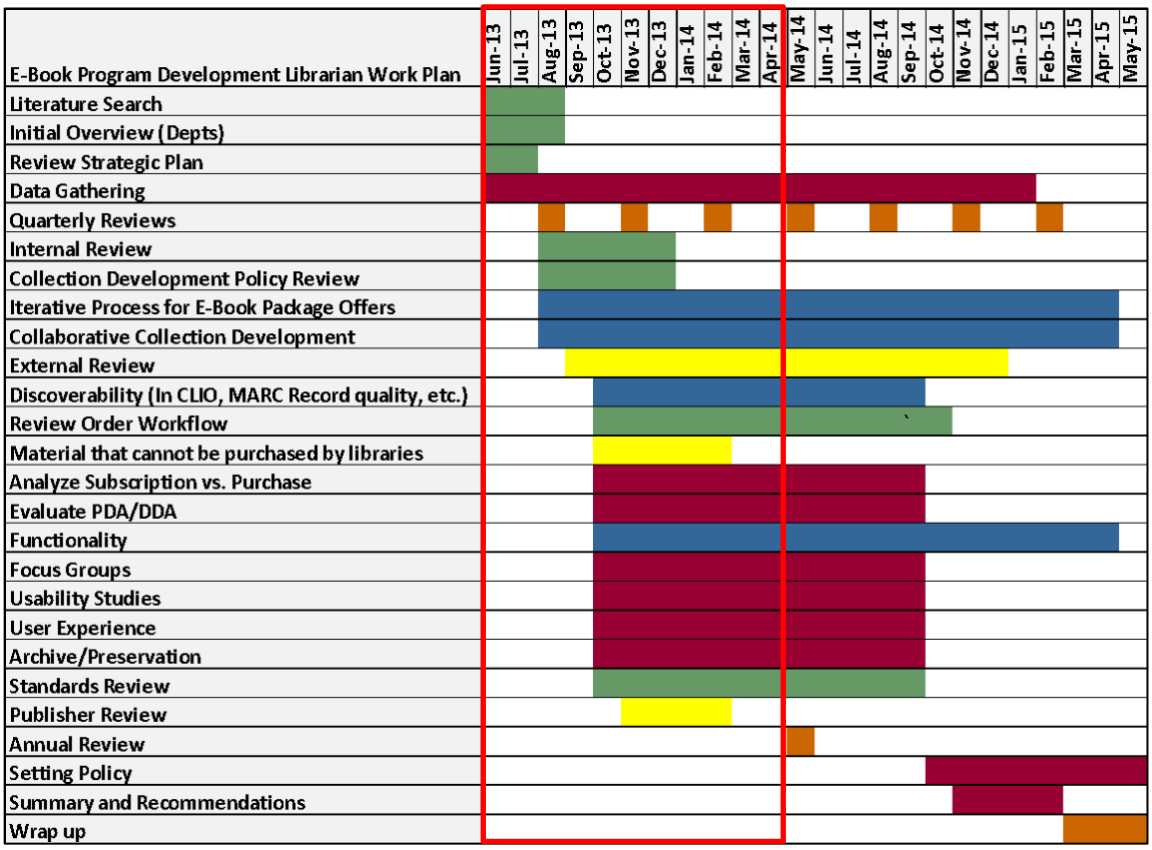


Table 1. E-Book Program Development Work Plan.

1. Internal and External Review of the E-Book Landscape

The purpose of the internal and external reviews is to document the e-book landscape at CUL and understand how the needs and challenges across campus fit into the larger context of the academic community and publishing industry.

This work provides a structure and context for the E-Book Program Development Study. It suggests how the study supports productivity at CUL by understanding how e-books are discovered, accessed, and used by stakeholders. It also points to opportunities for leadership within the professional community by identifying ways to strengthen partnerships between academic institutions and relationships with publishers. Finally, it provides opportunities for innovation by identifying trends in the creation and dissemination of electronic content, which may impact e-book workflows in the future.

The following activities were completed to document the internal e-book landscape:

1. Reviewed the CUL/IS Strategic Plan 2010-2013;

2. Reviewed all documentation made available through the Columbia University Library Assessment Program;

3. Interviewed over seventy library administrators, directors, selectors, and library staff to learn about e-book services, programs, and workflows at CUL;

4. Met with Assessment Coordinator, Nisa Bakkalbasi, throughout the year to discuss assessment protocol at CUL;

5. Reviewed all collection development policies that are currently in place in the Collection Development department and the twenty-one libraries that comprise CUL;

6. Attended departmental meetings when topics relating to e-books were included on the agenda;

7. Documented e-book challenges reported by faculty and students;

8. Joined the Electronic Resources Usability and Data Working Group (ERUDWG) to discuss data collection and assessment strategies with colleagues;

9. Toured ReCAP and discussed collection development with Zachary Lane, ReCAP Coordinator;

10. Conducted a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis of CUL (see Appendix A).

The following activities were completed to document the external e-book landscape:

1. Discussed the e-book landscape with thirty-six members of the academic community and publishing industry
    a. Eleven members of MaRLI, 2CUL, TRLN, and KU;
    b. Thirteen administrators and librarians from Cornell, NYU, NYPL, CUNY, University of North Carolina at Chapel Hill, and the University of Western Australia;
    c. Eight editors from Random House, Wiley, Harvard Business Review, Duke University Press;
    d. Seven representatives from YBP, ProQuest, EBL, Elsevier, De Gruyter;

2. Studied assessments of DDA and PDA pilot projects completed at academic libraries in North America, the United Kingdom, and Australia;

3. Collaborated with Jonas Timson, a professional intern from Waseda University, to research e-book trends in Japan;

4. Invited to participate in an E-Book Forum hosted by JSTOR that examines e-book trends and challenges observed in library and publishing environments;

5. Completed a four week course through ALA entitled *E-Books: What Librarians Need to Know Now and For the Future* (24 hours of instruction) and learned about the e-book landscape in libraries and the publishing industry;

6. Began an investigation of cloud library services and how they can support e-book programs in academic environments
    a. Coordinated presentations with 3M Cloud Library, BiblioLabs, and Ingram;
    b. Invited Terry Kirchner, Executive Director of the Westchester Library System, to discuss his experience using OverDrive;
    c. Arranged a site visit to NYPL to discuss experiences using OverDrive and 3M Cloud Library in a library environment;

7. Attended the Digital Book World Conference, BookExpo America Conference, and a Publishers Weekly Executive Round Table event to connect with publishers and collect information about e-book publishing trends;

8. Compiled a literature review that examined the e-book landscape in the academic community and publishing industry (see Appendix B).

2. Observation of E-Book Workflows

The purpose of observing e-book workflows is to determine how the e-book collection is acquired, discovered, accessed, and preserved. This work involved reading about e-book workflows and procedures developed by CERM, interviewing selectors, examining fund allocations, and determining how metadata records are acquired.

The results provided an assessment framework that informed all data collection and analysis activities. This work provides a context for study results and suggests how the e-book collections align with the Libraries' overarching mission to support research, teaching, and learning activities across campus. The data also points to areas where CUL can provide leadership in the academic community through advocacy.

The following activities were completed to observe e-book workflows.

1. Reviewed e-book acquisitions workflows and procedures developed by CERM;

2. Attended all Selectors' Group meetings to learn about e-book selection procedures;

3. Reviewed preferred business models for e-book acquisition at CUL;

4. Met with Jeff Carroll, Director of Collection Development, to discuss how funds are allocated to build e-book collections at CUL;

5. Met with Colleen Major, Head of Electronic Resources Management: Operations and Analysis, and Boaz Nadav-Manes, Director of Acquisitions and Automated Technical Services at Cornell University, to discuss e-book workflows developed by 2CUL;

6. Reviewed the 2CUL E-Books Task Force Report;

7. Reviewed workflows for e-book acquisition through MaRLI;

8. Met with Robert Rendall, Principal Serials Cataloger, to discuss how MARC records are made available to CUL and managed through Serial Solutions;

9. Examined data available through Google Analytics and COUNTER reports to understand how e-books are discovered by the user community (see Appendix D).

3. Data Collection and Analysis

The purpose of data collection and analysis is to develop data sets that inform e-book management and collection development policies. Much of this work centered on two large-scale projects: a

cost analysis of e-book subscriptions and packages (see page 10); and a text analysis of e-book search terms and retrieved titles harvested by Google Analytics and COUNTER usage reports (see page 16).

The above mentioned projects resulted in the development of innovative and sustainable methodologies that can be used across CUL to assess and evaluate e-book holdings. The reality that the e-book landscape is constantly evolving was factored into decisions regarding the development of these methodologies. Thus, they were specifically designed to be flexible and adaptive in nature in order to promote continued evaluation and strategic planning as a regular component of e-book programs at CUL.

The following activities were completed to collect and analyze data.

1. Created the research objectives and questions that guide the E-Book Program Development Study (see Appendix C);

2. Collaborated with Nisa Bakkalbasi, Assessment Coordinator, to develop an assessment methodology that combines data from Google Analytics and COUNTER reports (see Appendix D);

3. Developed a methodology to assess e-book subscriptions and packages based on cost and usage data (see page 10);

4. Developed the research tools that will be used to conduct focus group and interview sessions with faculty and students (see Appendices E and F);

5. Completed a course in human subject research through Columbia University (required by the Columbia University IRB);

6. Submitted an application to the Columbia University IRB to receive approval for focus group sessions with faculty and students;

7. Worked with Daisy Alarcon, Student Assistant, to collect, organize, and analyze data pulled from Voyager, Serial Solutions, COUNTER reports, and title lists;

8. Mapped a sample set of e-book titles to LC Classifications for subject analysis;

9. Completed a two-part course offered by Bob Scott, Digital Humanities Librarian, to learn how to analyze quantitative and qualitative data using NVivo.

4. Dissemination of Preliminary Results to Internal and External Stakeholders

The purpose of disseminating study results to stakeholders is to solicit feedback from the professional community and promote discussion about the current e-book landscape. The strengthening of relationships and collaborations between academic institutions and publishers may result in best practices that work to standardize e-book policies and workflows at CUL and within the research community as a whole.

The following activities were completed to disseminate preliminary study results to stakeholders.

1. Presented study updates at two Management Committee meetings, three Selectors' Group meetings, and five departmental meetings;

2. Created an internal e-book wiki page to provide study updates;

3. Uploaded quarterly reports and presentations to the Academic Commons, Columbia University;

4. Presented a poster entitled The Future Landscape of E-Book Programs at Columbia University Libraries at the 2013 CUL/IS Assessment Forum;

5. Presented preliminary study findings at conferences including the Library 2.013 Worldwide Virtual Conference, the 2013 Charleston Conference, and the 2014 CUNY Assessment Conference;

6. Attended seven conferences and symposiums (i.e., Digital Book World, Ithaka Conference, Library 2.013 Worldwide Virtual Conference, Charleston Conference, ACRL/NY Symposium, BookExpo America, Publishers Weekly Executive Round Table) to connect with professionals and learn about e-book trends;

7. Submitted a paper proposal with Nisa Bakkalbasi for the ACRL 2015 conference;

8. Currently working on three paper proposals for the 2014 Charleston Conference.

Preliminary Results

1. Cost Analysis Project

Analysis of E-Book Subscriptions (EO Fund) and E-Book Purchases (EB Fund)

The goal of the project is to collect quantitative data that will inform e-book collection development policies in regards to fund allocation, preferred business models, and acquisition methods.

After discussions with Jeff Carroll, Director of Collection Development, and Colleen Major, Head of Electronic Resources Management, it was determined that e-books are most often purchased on the EO or EB fund codes. For this study, data collection was limited to titles, packages or subscriptions that had fund activity during the 2013 fiscal year (FY2013).

To collect financial data for all e-book purchases, a Voyager query was run for all library funds ending in EO (subscriptions) or EB (firm orders). After running the cumulative query, a base list was created for each of the following categories: subscriptions (EO), package purchases (EB packages) and individual purchases (EB firm orders).

Spending for each of the three categories was totaled, and calculations were made to identify the top 70% (bulk) and bottom 30% (tail) of purchases within each budget. Statistical analysis was conducted to determine the total, average, median, high, and low costs of each category (see Tables 2, 3, 4, 5, 6, and 7).

EO Fund (Subscriptions)	# of Titles	Amount
Entire EO Budget	**97**	**$475,810.02**
Bulk (~71%) of Budget	18	$337,608.12
Tail (~29%) of Budget	79	$138,201.90

Table 2. Budget breakdown of the EO fund (e-book subscriptions) in FY2013.

EO Fund (Subscriptions)	
Total EO Cost	**$475,810.02**
Number of subscriptions	97
Average Cost	$4,905.26
Median	$2,261.22
High	$57,005.85
Low	$138.44

Table 3. Statistical analysis of the EO fund (e-book subscriptions) in FY2013.

EB Fund (Packages) Overview	# of Titles	Amount
Entire EB Budget	**736**	**$1,100,342.03**
EB Fund (Packages)	**35**	**$1,002,031.98**
Bulk (~68%) of Package Budget	6	$739,833.62
Tail (~32%) of Package Budget	29	$262,198.36

Table 4. Budget breakdown of the EB fund (e-book packages) in FY2013.

EB Fund (Packages)	
Total EB Cost	**$1,100,342.03**
Package Cost	**$1,002,031.98**
% of Total EB Cost	91.07%
Number of packages	35
Average Cost	$28,629.49
Median	$8,033.53
High	$218,891.59
Low	$1,200.00

Table 5. Statistical analysis of the EB fund (e-book packages) in FY2013.

EB Fund (Purchases) Overview	# of Titles	Amount
Entire EB Budget	**736**	**$1,100,342.03**
EB Fund (Purchases)	**701**	**$98,310.05**
Bulk (~70%) of Purchase Budget	195	$57,248.45
Tail (~30%) of Purchase Budget	506	$41,061.60

Table 6. Budget breakdown of the EB fund (e-book purchases) in FY2013.

EB Fund (Purchases)	
Total EB Cost	**$1,100,342.03**
Purchase Cost	**$98,310.05**
% of Total EB Cost	8.93%
Number of purchases	701
Average Cost	$140.24
Median	$99.00
High	$1,949.00
Low	$9.99

Table 7. Statistical analysis of the EB fund (e-book purchases) in FY2013.

To conduct usage analysis, the top six subscriptions and packages (ranked by cost) were selected and corresponding title lists were pulled from CERM. At the same time, the corresponding BR2 COUNTER report was pulled from the vendor/publisher website. Then, data was filtered to remove titles published prior to 2013.

We discovered that in several cases, multiple collections from the same vendor (e.g. Wiley and Elsevier) are purchased as separate items on the EO or EB (packages) fund codes. However, there is no apparent way to filter COUNTER reports by collection. At this point, we considered analyzing the data by vendor/publisher instead of by collection, but decided that this method would skew results because of the discrepancies in cost, size, and use. Instead, we filtered the data for a second time by matching the 2013 title lists with COUNTER report data. Based on these results, we calculated the number of titles loaned, number of loans, percentage of titles without use after purchase, the average cost of an e-book, and cost per use.

Below are the results of the EO (e-book subscriptions) analysis. Please note that because COUNTER data was not available from Books24x7, the analysis was conducted separately.

Top EO Subscriptions	Price	% of Total Cost
Books24x7	$57,005.85	11.98%
Ebrary	$54,788.40	11.51%
Knovel scientific and engineer	$47,381.00	9.96%
Wiley 2013 Protocols	32,798.40	6.89%
Safari books online	$21,280.00	4.47%
Wiley Current Protocols	$16,071.33	3.38%

Table 8. Cost breakdown of the top six e-book subscriptions in FY2013.

	Ebrary	Safari Books Online	Wiley Current Protocols
2013 Cost	$54,788.40	$21,280.00	$16,071.33
No. of titles	89,529	6,631	116
No. of sections viewed	33,834	2,185	85
No. of loans	2,581,195	119,725	21,899
% of titles without use after purchase	62.21%	67.05%	26.72%
Average cost of e-book	$0.61	$3.21	$138.55
Cost per use	$0.21	$0.18	$0.73

Table 9. Results of the cost and usage analysis for e-book subscriptions based on BR2 COUNTER data.

	Books 24x7
2013 Cost	$57,005.85
No. of titles	14,339
No. of titles loaned	1,649
No. of sessions	6,219
No. of pages viewed	45,523
% of titles without use after purchase	88.50%
Average cost of e-book	$3.98
Cost per session	$9.17
Cost per page view	$1.25
Cost per title view	$34.57

Table 10. Results of the cost and usage analysis for Books24x7.

Below are the results of the EB (e-book packages) analysis.

Top EB Packages	Price	% of Total Cost
Elsevier major reference works, ebook backfiles and legacy collections	$218,891.59	21.84%
Springer 2013 frontlist e-book package	$216,888.00	21.64%
Cambridge e-book 2013 frontlist	$114,950.00	11.47%
Wiley E-books frontlist 2013	$66,907.63	6.68%
Elsevier e-books: Chemical engineering pre-2007	$62,515.00	6.24%
Elsevier 2013 eBook Frontlist	$59,681.40	5.96%

Table 11. Cost breakdown of the top six e-book packages in FY2013.

	Elsevier 2013 Ebook Frontlist	Elsevier Chemical Engineering pre-2007	Elsevier Major Reference Works, ebook backfiles	Springer 2013 Frontlist	Cambridge 2013 Frontlist	Wiley 2013 Frontlist
2013 Cost	$59,681.40	$62,515.00	$113,377.81	$216,888.00	$114,950.00	$66,907.63
No. of titles	704	446	408	5,988	1,553	1,945
No. of titles loaned	153	79	111	4,509	294	686
No. of loans	2,937	486	2,143	119,085	8,620	11,360
% of titles without use after purchase	78.27%	82.29%	72.79%	24.70%	81.07%	64.73%
Average cost of e-book (cost/titles)	$84.77	$140.17	$277.88	$36.22	$74.02	$34.40
Cost per use (cost/use)	$20.32	$123.63	$52.91	$1.82	$13.34	$5.89

Table 12. Results of the cost and usage analysis for e-book packages based on BR2 COUNTER data.

Evaluation of the Books24x7 Subscription

After analyzing the cost and usage data of the top e-book subscriptions (see Tables 9 and 10), it was determined that the cost per use of Books24x7 content was high ($9.17 per session) compared to Ebrary ($0.21 per use), Safari Books Online ($0.18 per use), and Wiley Protocols ($0.73 per use).

NOTE: At the time of this assessment, usage data available from Books24x7 was not COUNTER compliant, whereas BR2 COUNTER reports (e-book usage is calculated according to chapters

viewed) were available from Ebrary, Safari, and Wiley. As a result, it is difficult to draw direct comparisons between the four subscriptions. However, after calculating the cost per session, cost per page view, and cost per title view, Books24x7 remained costly across the board.

When the results were presented to the Selectors' Group, the consensus was that CUL should consider canceling the Books24x7 subscription. At this time, all data was sent to the Electronic Resources Usage and Data Working Group (ERUDWG) for further analysis.

ERUDWG conducted an evaluation of Books24x7 based on the following criteria: evaluation of content, overlap analysis, and interface analysis. The results indicated that Books24x7 contained a large number of outdated technical manuals (96% published before 2011) and a high number of titles that are available to CUL users through other platforms (e.g. Safari, Ebrary). Amanda Bielskas, Head of Collection Development for the Science and Engineering Library, identified 394 high use titles (more than 20 page views) in the Books24x7 data set. She discovered that 196 titles (49.75%) are available through other platforms at CUL. Then, she searched GOBI for the remaining198 high use titles and discovered that the vast majority are available for individual purchase. Based on this analysis, it was determined that Books24x7 does not contain a significant amount of unique content.

To evaluate the Books24x7 platform, ERUDWG relied on a platform evaluation that had been conducted by the Electronic Resource Interface Working Group (LERIWG) in 2013. Again, the findings indicated that Books24x7 offered outdated technical content as well as incomplete multi volume sets.

Based on the body of evidence, the decision was made to cancel CUL's subscription to Books24x7. This resulted in a cost savings of over $59,000 in the FY2015 budget.

One unexpected outcome of the project was the opportunity to speak with Books24x7 and discuss study findings. The company requested feedback from CUL regarding how to improve the platform, and were provided with findings from the LERIWG interface report. Currently, Books24x7 is working on an offer to provide CUL with a subscription to frontlist material only.

While the Books24x7 project resulted in cost savings for the library, it also proved to be an interesting case study that captures different aspects of e-book workflows at CUL, how responsibilities are delegated across departments, and ultimately, what types of data must be compiled to make collection level decisions. See Appendix H for a write up of workflow findings.

Evaluation of the Wiley Frontlist

Through the analysis of EB packages, we found that a large percentage of resources are directed towards frontlists. When we identified the top six packages (ranked by cost), we discovered that four were frontlist packages from Elsevier, Springer, Cambridge, and Wiley (see Table 11 and 12). At first glance, the cost per use was high (averaging at $36). A closer look at the data revealed that

many frontlist titles were not available to CUL users until the end of the year (largely due to publication dates). It seemed that evaluating the cost per use of 2013 frontlist titles based on 2013 COUNTER usage reports did not accurately reflect their value.

In order to develop a method to evaluate the cost per use of e-book frontlists, the 2011 Wiley frontlist was selected for evaluation. Usage data was pulled from BR2 COUNTER reports ranging in date from January 2011 to April 2014. Then, we experimented with a method to observe how usage and cost change over time. See Table 13 for the results.

Wiley 2011 Frontlist	2011	2012	2013	2014	Total
Cost	$69,300.00				
No. of titles	1,091				
No. of titles loaned	365	824	566	203	942 [number of titles that circulated at least once]
No. of loans	5,822	28,855	11,430	2,463	48,570
% of titles without use each year	723 (66.27%)	264 (24.20%)	522 (47.85%)	885 (81.11%)	Average: 503 (46.10%) Note: The average was calculated based on the 2011-2013 data
% of titles without use after purchase					149 (13.66%)
Average cost of e-book (cost/titles)	$63.52				
Cost per use (cost/use)	$11.90	$1.99	$1.50	$1.43	

Table 13. 2011 Wiley frontlist assessment based on cost and usage data.

The results show that cost per use of the 2011 Wiley frontlist dropped significantly in 2012 (the year after purchase) and continued to decrease in subsequent years.

It was expected that the number of loans would also increase over time, but the results indicate a different trend. Between 2011 and 2012, loans increased by more than 80%. In the following year, the number of loans dropped by more than 50%. After considering collection content and usage trends, it seems that there are two possible explanations: 1) the titles were included in course reading lists and/or course reserves, and 2) users downloaded Wiley titles in 2012 when they became available through CUL. During this analysis, an attempt was made to identify all 2011 Wiley titles that were included in course reserves over the past three years. However, the time involved to extract this data is not conducive to the time frame for the E-Book Program Development Study. The topic has been flagged for a future study.

After the 2011 Wiley frontlist analysis was complete, Krystie Klahn, Collection Assessment and Analysis Librarian, used the same methodology to conduct a cost and usage analysis of the CRCnetBASE database. The scope of data collection was limited to 2011 - 2013. Again, she discovered similar usage trends – usage peaked in 2012 and dropped the following year.

Based on the results of the cost analysis, Krystie determined that the across the CRCnetBASE database, cost per download was comparable to findings from the 2011 Wiley frontlist (both were under $1.85). However, when she looked at the eleven individual collections that CUL subscribes to through CRCnetBASE, Krystie discovered that three collections had high overlap rates (more than 60% of titles are available through other subscriptions) and a high cost per download (average of $8.94). Based on these findings, the next steps are to monitor usage over the next year and

consider cancellation. In addition, data will be presented to a sales representative as a negotiation point for future subscription renewals.

2. Correlation between Search and Discovery: Text Analysis Project

Over the past year, a collaboration with Nisa Bakkalbasi, Assessment Coordinator, resulted in the development of a new and innovative means to gather information about e-book use across disciplines. The method relies on a qualitative analysis of e-book search terms harvested by Google Analytics and e-book titles from COUNTER e-book usage reports.

The aim of this study is to better understand how scholarly e-books are used in various disciplines in teaching, learning, and scholarly pursuits through readily available data. This study seeks to gather data to drive the creation of best practices and policies to support the delivery of e-book collections and programs that facilitate research, teaching, and learning across campus and within the wider scholarly community.

Before discussing the methodology in detail, it is worth mentioning that our initial thought was to create a survey to gather information about e-book use across disciplines. However, two key factors influenced our assessment strategy and motivated us to tap into existing data sources rather than developing a survey instrument. First, during our initial consultations, it became apparent that using a low-overhead data collection technique that would allow us to systematically collect information over time would be most appropriate for this project. Due to our interest in continuously monitoring our user base in an ever-changing e-book landscape, reliance on readily available, continuous, and accurate data was an important factor in creating an effective and sustainable assessment plan.

Second, as survey participation rates have declined, survey research has experienced significant challenges that impact its use in library assessment plans. The quality of the data begins to deteriorate when potential respondents do not make the effort to submit a completed survey or leave the survey incomplete. Based on the low response rates from a recent survey, and in an attempt to avoid survey fatigue, we investigated alternative approaches of data collection.

The study method utilizes data from two sources: readers' e-book search terms harvested by Google Analytics; and requested e-book titles provided by the COUNTER e-book usage reports. The data sets present CUL with an accurate, continuous, and objective picture of e-book use. The data was analyzed using NVivo to examine popular scholarly e-book topics and the correlation between search and delivery.

	Search terms			Requested title words		
Rank	Word	Length	Count	Word	Length	Count
1	*history*	7	526	edition	7	3284
2	*theory*	6	378	volume	6	2306
3	*social*	6	368	*history*	7	1949
4	introduction	12	359	*theory*	6	1777
5	*new*	3	358	*new*	3	1730
6	*analysis*	8	326	*american*	8	1689
7	*american*	8	309	*analysis*	8	1651
8	*handbook*	8	303	advances	8	1577
9	human	5	281	systems	7	1558
10	*research*	8	281	culture	7	1552
11	*health*	6	265	studies	7	1532
12	*world*	5	227	*world*	5	1510
13	*modern*	6	223	*guide*	5	1502
14	*guide*	5	219	*social*	6	1479
15	law	3	211	*handbook*	8	1468
16	medicine	8	207	applications	12	1412
17	*management*	10	198	*politics*	8	1367
18	rights	6	193	*science*	7	1365
19	war	3	191	*modern*	6	1230
20	*development*	11	188	*research*	8	1198
21	art	3	186	*development*	11	1196
22	*science*	7	183	international	13	1196
23	*politics*	8	181	*management*	10	1126
24	design	6	176	*health*	6	1107
25	political	9	172	global	6	1034

Table 14. Most frequently repeated search and requested title words.

The most frequently repeated search word was “history,” which was entered 526 times into the search field to search for e-books. It was followed by the word “theory” (entered 378 times). The most frequently requested e-book title word was “edition” (repeated 3,284 times), followed by the word “volume” (repeated 2,306 times). In the preliminary analysis, we refrained from adding words such as "edition," "volume," and “2nd" to a stop list, as we determined they might shed a special light on what was being searched and delivered in some instances.

Table 14 lists the top 25 most frequently repeated search words and requested title words. We found an overlap of 60% (15 words) in both lists, indicating a correlation between search and delivery of e-books. The words that are present in both lists are reported in italics.

When we evaluated the word clouds, which are graphic representations of word frequencies for the e-book search terms and requested titles, a similar trend emerged (Figure 1). Words like "history," "edition," "volume," "introduction," and "theory" are situated at the center of the clouds, meaning that they have the highest frequency.

The prominence of "history" in both lists was an interesting reflection on the kinds of works being used, as were the terms "handbook," "guide," and "manual." The high frequency of these words leads us to believe that users were searching for broad topics, reference works, or other collections of instructions, all of which are intended to provide ready reference.

Figure 1. Word cloud for requested e-book titles.

To analyze our finding in greater depth, we turned to open-ended comments collected through the 2013 LibQUAL+ service quality assessment survey. Comments relating to the e-book collection indicated that many users access e-books to read course materials. Both undergraduate and masters-level students expressed an interest in greater access to course readings in electronic format.

The ability to analyze word frequencies allows us to dig deeper and think about the many usage patterns that we wouldn't otherwise observe. Next, we plan to dig deeper into the text data by running *exact match* and *stemmed word* queries for those titles with 50 or more uses included in large platforms such as Springer, Ebrary, and EBSCO. We will carry out formal statistical analysis to investigate the rank correlation and measure the relationship between search terms and e-book titles to assess the significance of the relationship between them. For further details about this project, please see the preliminary results in Appendix D.

3. Literature Review Findings

The purpose of the literature review is to establish a theoretical and methodological foundation for the E-Book Program Development Study. It also contextualizes the results of the study within the existing tradition of scholarship in the library and publishing professions. Finally, it demonstrates how study results fill established research gaps.

The first notable finding was that an institution's ability to clearly define what is meant by the term "e-book" is linked with the general acceptance of the format by the user community. It also provides a benchmark for user expectations, policy guidelines, and general discussions of e-books as research, teaching, and learning tools (Staiger, 2012).

The second finding was that e-books have different management needs than print monographs or e-journals. The issues surrounding them are more complex, publishers and vendors supply them in different ways, and users access them for different purposes (Morris, 2008). It is essential for libraries to understand the general e-book landscape and how their institution fits into that context to properly inform workflows and collection management practices (Beisler & Kurt, 2012).

The third finding was that collaborative e-book management models will continue to grow in importance, particularly when negotiating costs and licensing agreements, working with vendor generated MARC records, and discussing preservation models (Stachokas, 2012). While many consortiums are composed of academic libraries, they should also look for opportunities to extend membership to publishers and vendors. These added perspectives may create new opportunities for innovation and ultimately, arrive at solutions to communal discovery, access, and preservation challenges (Beisler & Kurt, 2012).

The fourth finding was that a number of external forces in the e-book landscape could have an impact on the way academics create and disseminate information over the coming years. For instance, the rapid growth of self-publishing is likely to provide new options in terms of how libraries acquire e-books. In some cases, libraries have already cut out the middleman and maintain their own e-book servers (Feldman, Russell & Wolven, 2013). Also, the open access movement will promote wider access to information and play a small role in keeping overall costs down for materials supplied by for-profit vendors (Stachokas, 2012).

To view the full results of the literature review, please see the Appendix B.

Next Steps

1. Conduct student focus groups and faculty interviews through the summer and fall of 2014

2. Use the results of the cost analysis and text analysis project to segway into an examination of e-book metadata and preservation issues

    a. Based on the data set pulled for the text analysis project, we have an idea of the types of searches and fields that are most important for e-book discovery. What does this mean for e-book MARC records? How can we use this information to develop recommendations and/or strategies to manage metadata from publishers, vendors, Serial Solutions, etc.

    b. How do we approach e-book preservation with the knowledge that there is overlap in packages/subscriptions? What preservation strategies are required for materials that are used for teaching and learning as opposed to research activities? What materials will have enduring value for the research community and what do we need to provide continued access?

3. Continue to reach out to the academic community and publishing industry to solicit feedback, learn about e-book trends, and gather information to make final recommendations at CUL

4. Examine the body of data collected and create collection development recommendations, policies, and best practices

Conclusion

The work completed over the past year provides a context for study results and suggests how the e-book collections align with CUL's overarching mission to support research, teaching, and learning activities across campus. This context also creates an essential framework to craft a vision for the future direction of e-book curation, collection development, and management at CUL.

More specifically, the efforts of the past year have resulted in the development of innovative and sustainable methodologies that examine how e-book resources are allocated, evaluate current subscriptions and packages, examine usage trends, and observe how patrons search and retrieve e-book content from the collection. The data that was gathered while developing these methodologies will be used to inform recommendations and policy statements regarding e-book collection development and management on campus.

The reality that the e-book landscape is constantly evolving was factored into decisions regarding the overarching assessment framework guiding this study. The research design was created so that it can be replicated regardless of how e-books evolve in the coming years. Because the design is flexible and adaptive in nature, it promotes continued assessment, evaluation, and strategic planning as a regular component of e-book programs.

Finally, the past year has proven that the E-Book Program Development Study provides CUL with opportunities to take on a leadership role within the professional community by demonstrating how assessment programs can be used to advocate for libraries' needs.

Appendix A: SWOT Analysis

Strengths:

- CUL is progressive and innovative
- Strong international reputation as a research library and academic institution
- Authority/leadership in the academic community and professional associations
- CUL has the resources and drive to collect deeply (e.g. purchasing back files from major academic publishers)
- Prioritizes users' needs and is driven to provide highly accessible and usable e-book collections
- Strong collaborative relationships with partner institutions and consortiums
- Location in New York provides opportunities to develop relationships with large publishers located in the city
- Faculty have international reputations and are leaders in their respective fields
- Columbia is focused on graduate studies, and students produce high quality research through thesis and dissertation projects

Weaknesses:

- There isn't a standardized definition of the term "e-book" across campus which leads to confusion in terms of expectations and functionality
- There isn't an e-books workflow that specifically addresses their complex management needs and challenges
- Terms of licensing agreements are not in a location that is easily discoverable
- There is not a clear understanding of how/why CUL patrons use e-books for research, teaching, and learning purposes
- A large amount of staff time is spent tracking down content in e-book collections (e.g. broken URLs, items pulled from databases by vendors) instead of evaluating the content
- Not enough staff/time/budget to find solutions to vendor generated metadata problems, e-book workflow issues, etc.

Opportunities:

- Free social media initiatives make it possible to create metadata based on "the wisdom of the crowd" (e.g. crowdsourcing)
- Consortiums and collaborative relationships are viewed as the most effective means to negotiate license agreements, prices, fix MARC records
- Industry trends are moving towards open access and self-publishing
- E-books are gaining a reputation as a new and innovative research and reference tool, not just digital versions of print monographs
- New technologies are being developed to work around DRM issues
- The Portico preservation strategy is viewed as a viable model, but has not been tested in a practical setting

Threats:

- Publishers are anxious to change licensing models because of piracy concerns
- Online book lending initiatives (e.g. Amazon Lending Program) may change how patrons interact with libraries
- The e-book landscape evolves so rapidly that it is difficult to predict what the challenges will be in a year from now
- The e-book market is focused on consumer needs, and reasons regarding how/why e-books are used in academic environments are largely undocumented
- There isn't a national strategy regarding preservation for e-books
- Libraries have no legal rights to preserve e-book content because of clauses in licensing agreements

The objective of the SWOT analysis is to examine the e-book landscape at CUL in order to identify internal and external forces that will help or hinder the implementation of e-book strategies and policies. It is based on information collected from interviews with thirty-six CUL librarians, a reading of the CUL/IS Strategic Plan 2010-2013, and a literature review that examined e-book trends in the academic community and publishing industry.

Strength/Opportunity:

- CUL can use its authority, reputation, and leadership to define and brand e-books in a way that standardizes expectations for users and eliminates frustration and confusion because of existing ambiguity.
- Based on the current e-book landscape, collaborative collection development is becoming essential in order to negotiate costs and licenses. CUL can use its authority, reputation, and relationships within the academic community to develop policies and workflows that promote and standardize collaborative collection development.
- CUL can use its professional network to develop collaborative relationships with publishers and vendors. These relationships may lead to opportunities for discussion, observation, or development of new methods for the creation and dissemination of electronic textbooks and scholarly materials.

Weakness/Opportunity:

- Social media environments could provide CUL with opportunities to increase e-book discovery rates through innovative metadata initiatives (e.g. crowdsourcing initiatives).
- New technologies could promote greater accessibility to e-book content by allowing users to work around DRM restrictions and select formats that are compatible with a variety of e-readers. For instance, the program Calibre (http://calibre-ebook.com) supports all major e-book formats and converts files so that they are compatible with any device.

Strength/Threat:

- There isn't a national strategy that works to preserve e-book collections. CUL can use the E-book Program Development Study to examine the Portico preservation model and determine if/how it can be applied to e-book collections.
- Within the research community, there is a general lack of understanding about how and why e-books are used for academic purposes. The E-Book Program Development Study will provide quantitative and qualitative data sets, results from focus groups and usability studies, and in depth analysis to fill the existing research gap.

Weakness/Threat:

- The current e-book market caters to consumer needs, not needs of the academic community. This may create challenges in terms of negotiating licenses, obtaining high quality metadata, obtaining legal rights to preserve e-books, etc.
- Amazon is launching its own e-book lending program. How will this initiative (and similar programs that follow) influence relationships between CUL and the user community?
- Libraries do not own the bulk of their e-book collections. If companies like EBSCO and ProQuest cease to exist, what will happen to content housed in these platforms? How would loss of access affect libraries' capital and long-term reputation in the academic community?

Appendix B: Literature Review

The purpose of this literature review is to establish a theoretical and methodological foundation for the e-book program development assessment. The research examined contextualizes the results of the assessment within the existing tradition of scholarship in the library and publishing professions. It also demonstrates how assessment results fill established research gaps.

Part 1. The Definition of an Electronic Book (E-Book)

In studies conducted by Levine-Clark (2006), Hernon (2007), and Shelburne (2009) findings indicate that there is no clear definition of the term *e-book*, and a small but significant percentage of sample groups were not sure what an e-book was (Staiger, 2012). For instance, Levine-Clark posed several open-ended questions to respondents, and many "confused e-book with e-journal or e-reserve" (Staiger, 2012, p. 356). Hernon also found that students do not distinguish between types of sources, but are only concerned with whether a source is available in print or electronic formats (Hernon et al., 2007). Staiger (2012) stated that this "lack of knowledge has implications for the quality of users' engagement with the contents of e-books" (p. 356). However, the ability to clearly define what an e-book means at a given institution is linked with the general acceptance of the format by the user community.

The Oxford Companion to the Book provides a definition of the term *e-book* that has been adopted by a number of academic institutions. It defines the tool as a book-length publication in digital form, consisting of text, images, or both, and produced on, published through, and readable on computers or other electronic devices (Gardiner & Musto, 2010, p. 164). Also, it can exist in born digital form without a print equivalent (Gardiner & Musto, 2010).

Part 2. E-Book Life Cycle Management

In the past decade, the development of technologies like e-book readers, mobile devices, and tablets has created a demand for content in a variety of formats. This demand has led to significant growth in the number of e-books purchased by academic libraries. However, e-books are a research, teaching, and learning tool that have different management needs than print monographs or e-journals. Currently, libraries are struggling with "how to manage and provide access to all of these new resources that do not fit neatly into any pre-existing workflow" (Beisler & Kurt, 2012, p. 96).

In many cases, e-book challenges extend beyond libraries' jurisdictions. For instance, the "multitude of different e-book readers, formats, access platforms, and licenses makes it difficult for libraries to establish set procedures for acquiring and managing e-books" (Beisler & Kurt, 2012, p. 96). Also, there are vast inconsistencies within the e-book publishing industry that place limits on how libraries are able to provide access (Beisler & Kurt, 2012). Due to these complexities, it is essential for librarians to understand the general e-book landscape, and how

their institution fits into that context, in order to properly inform workflows and collection management policies at a given institution.

In an article published in *Against the Grain*, Carolyn Morris states that the first step to creating usable workflows is to acknowledge that e-books are vastly different from print counterparts. The issues surrounding them are more complex, publishers and vendors supply them in a different way, and it is unwise to minimize the differences simply to preserve existing workflows (Morris, 2008). As new formats emerge, libraries must adjust policies and procedures to reflect changes (Beisler & Kurt, 2012). For instance, e-book workflows can be informed by print book models but ultimately, "differences in format require a new stream for processing, and this requires the library to create new procedures for handling e-books, from evaluation to activation and most stops in between" (Morris & Sibert, 2011, p. 110).

Developing a new workflow from the ground up is a daunting process and to date, there has been little published about e-book workflows, strategies, or procedures. Based on this research gap, it is difficult to determine what work has taken place at various academic libraries, and whether or not experimentation has been successful. In the absence of an "agreed-upon overarching framework of the processes associated with the management of e-books in academic libraries, it is difficult to compare and contrast the findings from studies or develop clear guidelines for practice" (Vasileiou, Rowley & Hartley, 2012, p. 283).

To address this research gap, the University of Nevada, Reno Libraries created a cross-departmental task force and built an e-book workflow. Their goal was to create an efficient and effective workflow that provided users with seamless service (Beisler & Kurt, 2012). It included the point of inquire, acquisition, access, and disposition. The decision was made to build a workflow from the ground up in order to tackle traditional departmental divisions. Findings indicated that communication between departments was the largest obstacle that affected success rates of e-book workflows. However, they also discovered that developing a workflow became an opportunity for "departments and individuals to work closely together toward a common and worthy goal" (Beisler & Kurt, 2012, p. 109). The success of the project was due to cross-departmental collaboration and the ability to adapt tools on hand to the needs of the e-book workflow. For instance, the task force used SharePoint and the libraries' electronic resource management ILS module (Innovative Interfaces Inc.'s ERM module) to promote communication at each phase of the workflow (Beisler & Kurt, 2012). The results indicated that workflows are necessary to inform libraries about e-book models that are user-centric and most suited to the needs of a user community (Beisler & Kurt, 2012).

2.1. Selection and Acquisition

The selection of e-books is a complicated process that is driven by institutional requirements for the acquisition of e-books. To learn more about this process, Soules (2009) conducted an Ebrary librarians' survey examining factors that informed e-book purchases. The findings revealed that

integration with other resources, download capability, the ability to support multiple file types, integration with a content management system or the institutional repository, and PDF formats ranked as important in e-book acquisitions (Soules, 2009).

Other researchers have stated that because of the complicated e-book landscape, identifying factors that contribute to informed e-book purchases is not enough. Blummer and Kenton (2012) recommend that libraries select a team of individuals to direct all e-book acquisitions, purchase processes, and initiatives. This model was put into place at the University of Worcester, and their e-book project group is composed of subject librarians, collections specialists, the electronic resources librarian, and library assistants (Blummer & Kenton, 2012).

A similar committee was established at the Indira Ghandi National Open University and is tasked with creating operating guidelines, principles, and potential strategies (Tripathi & Jeevan, 2008). The group also negotiates trial access for teachers and researchers as a means to evaluate prospective titles, makes decisions regarding subscription models, examines the long-term relevance of the content, and evaluates selected vendors (Tripathi & Jeevan, 2008).

At the University of Dublin, a small working group investigated e-book purchases and worked with academic units in the selection process. Main criteria for selection included ease of use, off-site access, multiple simultaneous users, and print and/or download options. In addition, the group invited prospective vendors to the Library to view demonstrations of platforms and evaluate their overall value to the institution (Blummer & Kenton, 2012).

Based on the results of a literature review of collection management practices from 2005-2012, Blummer and Kenton (2012) developed guidelines for the acquisitions of e-books in academic institutions. Their nine recommendations are as follows:

- Identify e-book acquisition staff;
- Partner with academic departments and especially distance education faculty in selecting titles;
- Provide a trial access to evaluate platforms;
- Consider the value of e-reference titles;
- Highlight currency in e-book packages;
- Focus on platform features such as ease of use and availability of specific features including the index, highlighting text, viewing large images, pasting, printing, and a variety of downloading options;
- Recognize the need for access models that allow simultaneous access with multiple users;
- Create a spreadsheet to differentiate among packages in the evaluation process;
- Understand licensing terms. (p. 76)

2.2 Print and Electronic Formats

The Library Journal's e-book survey reported a 93 percent increase in e-book collections among academic libraries since 2012. The survey also found that libraries anticipate e-book spending to comprise 20 percent of their budgets within five years (Blummer & Kenton, 2012). However, there are divided opinions on the subject of print versus e-book formats. Currently, many academic libraries hold the opinion that e-books and e-textbooks should coexist with print textbooks rather than replace them (Armstrong & Lonsdale, 2009). In many cases, the e-version is still viewed as a supplement to print copies. (Armstrong & Lonsdale, 2009).

Print and electronic texts are two different tools used for different reasons, and MIT suggests that libraries should collect content in both formats whenever possible. However, prior to purchasing an electronic version, there should be confirmation that it contains the same content available in print editions (MIT, 2012). The E-Book Strategic Plan Task Force at Yale University Library also encourages the acquisition of monographs in both print and electronic formats. This is because print books fulfill the need to collect, organize, and preserve knowledge while e-books support research, teaching, and learning initiatives (Yale University Library, 2013, p. 7).

A study by JISC (2012) found that e-books are not currently replacing the demand for print books despite the fact that e-journals have replaced back copies of printed journals (JISC, 2012). Another study conducted by the E-Books Strategic Plan Task Force at Yale University Library (2013) found instances that the adoption of e-books across library systems is uneven. This is often related to the fact that print versions are usually issued several months to a year before electronic versions. In many cases, the library already has the print books and so is reluctant to duplicate the purchase (Yale University Library, 2013). Because of uneven adoption rates and the unique needs of user communities, a survey by Ashcroft (2011) indicated that "49 percent of respondents indicated that usage statistics are the most important driver in e-book purchasing decisions" (Ashcroft, 2011, p. 401).

After conducting a number of focus groups, the JISC National E-books Observatory Project found that in many cases, the printed book is still the preferred format. This preference was linked to the physicality of printed books, a belief that printed books facilitate greater concentration, a belief that it is easier to scan a printed book, and the expectation that a printed page is easier to annotate, highlight, and make notes from (JISC, 2012). The study concluded that in most cases, "these reasons arise as a result of people thinking that using e-books is about making a choice *not* to use a printed book" (JISC, 2012, p. 44).

However, it is important to note that usage trends and beliefs linked to e-books vary across disciplines. In the sciences, electronic materials are heavily used because of the convenience and speed of locating information. However, users do not often use materials that are more than three years old. In a case like this, librarians can create a customized e-book plan to best suit users' needs

(Schell, 2011). For instance, librarians could create subject based e-book lists updated annually to highlight current content (Schell, 2011).

Across the academic community, and even within the publishing industry, there is the general belief that print formats and e-books are not in an either-or competition. The two formats "already coexist with each answering to different purposes and learning style" (Staiger, 2012, p. 360). However, there is a constant increase in the number of born digital books and journals being published. Since these items do not have a print equivalent, libraries may not always have the option of selecting a format (JISC, 2012).

2.3 Purchases versus Subscription Licenses

When examining the issues of purchase versus subscription, there is no clear cut preference across the library profession. Both are seen to have advantages and disadvantages, and the decision to purchase or subscribe to content often comes down to institutional needs. However, there is widespread agreement that decisions come down to stipulations in licensing agreements such as ensuring there are provisions for multiple access (preferably unlimited) and flexibility (Armstrong & Lonsdale, 2009).

The most important factor to take into account during any contract negotiation is users' needs. It is important to keep the e-book priorities of students and faculty at the heart of licensing decisions (Blummer & Kenton, 2012). For instance, at the University of Liverpool Library, e-books are purchased directly from the publisher to avoid restrictive content and excessive digital rights management issues **(**Blummer & Kenton, 2012).

One of the largest issues facing academic libraries is that it is difficult to determine which titles or packages were purchased and which are accessed through subscriptions. This lack of information creates significant challenges when librarians and staff try to determine how collections can be used. There need to be systems that allow for easy consultation and dissemination of licensing terms to ensure compliance and also understand how library resources can be used or shared (Armstrong & Lonsdale, 2009).

2.4 Bundles versus Title-by-Title Purchases

In 2009, High Wire Press conducted a survey of 138 academic libraries to examine preferences between bundle or title-by-title purchases. The findings indicated that while many prefer to select books on a title-by-title basis, the reality is that bundles offer better pricing models, save time in selection, acquisition, and processing, and offer titles that are not sold on an individual basis (Newman, 2009). Other studies have found that the cost-per-use rate for individually-selected titles is seventeen times higher than for titles purchased through aggregate packages (Staiger, 2012).

Although bundles are more attractive in terms of cost, librarians find that it is difficult to determine what titles are available in each package and to acquire appropriate metadata records (Blummer &

Kenton, 2012). Because of the complexities involved, some academic institutions believe that e-book selection should be done by committees rather than individual selectors. For instance, at Yale University Library, e-book purchases are done using a tier system that dictates how decisions are made. In this system, the Director of Collection Development, the Assistant Director of Collection Development, the Collection Steering Committee (CSC), and the eBook Working Group organize the purchase of e-book content into the following three tiers:

1. Tier One: e-book packages that are negotiated and purchased with central funds;
2. Tier Two: e-book packages that are negotiated and coordinated centrally, but are funded through cross unit cost sharing;
3. Tier Three: e-book content that is purchased by individual selectors. (Yale University Library, 2013, p. 8)

This structure eliminates much of the confusion that occurs when individual selectors negotiate or select e-book packages on their own (Yale University Library, 2013). Also, it allows Yale University Library subject specialists to "negotiate directly with publishers for bits and pieces of package deals that could be purchased collectively with less effort and deeper discounting than an individual selector can achieve" (Yale University Library, 2013, p. 8). Essentially, the tier system allows the Library to leverage its collective buying power to "secure advantageous pricing, a more strategic and predictable internal workflow, and the reduction of duplication across electronic platforms" (Yale University Library, 2013, p. 9). Collective purchasing of e-books also allows librarians at Yale to document their approval or disapproval of certain products in the market place (Yale University Library, 2013).

At the end of the day, the acquisition of packages and individual titles should be done in accordance with users' needs. The MIT Statement of Scholarly E-Book Principles reflects this sentiment and states that "pricing models [should] allow institutions to purchase packages tailored to the needs of their local communities, allow for the selection of individual titles, and that do not require minimum purchases" (MIT, 2012, p. 1).

2.5 Metadata Records

Across the board, academic libraries agree that high-quality catalogue records provide the most effective means of discovery and access. In many cases, e-book metadata records are supplied by vendors. Findings from the JISC National E-books Observatory Project indicate that there are two central concerns from libraries in regards to vendor generated metadata. The first is the poor quality of MARC records, and the second is inappropriate ISBNs (Armstrong & Lonsdale, 2009). A study by Mincic-Obradovic (2009) found the other challenges include missing URLs and not indicating how an e-book differs from its print counterpart (Mincic-Obradovic, 2009).

At Yale University Library, the E-Book Strategic Plan Task Force surveyed Cornell University, Duke University, Princeton University, Stanford University, and the University of Michigan to identify key metadata challenges. Findings indicated that obtaining a perfect MARC record is

difficult. There is also differences of opinion regarding whether e-books should have MARC records equivalent in detail to their print counterparts, or whether a poor record is better than no record at all (Yale University Library, 2013).

One solution that has been presented within the academic community is to add a MARC 856 field to an equivalent print record (Blummer & Kenton, 2012). However, due to the growth of e-book holdings at most libraries, it is strongly recommended that a separate record is created for each e-book (Blummer & Kenton, 2012). For example, at the University of Worcester's Information and Learning Services, each e-book title is catalogued individually to improve user access to their e-book and e-textbook materials (Blummer & Kenton, 2012). Also, the University of Surrey Library creates separate records for e-books in an effort to recognize the resource as an independent [tool]…with different functionality than print formats (Blummer & Kenton, 2012).

At the J.N. Desmarais Library of Laurentian University, a study was done to assess the importance of metadata records in discovery and access. Findings indicated that creating a metadata record for each e-book increased usage rates, particularly among grad students and faculty (Lamothe, 2013). In some cases, a metadata record doubled usage rates. However, the amount of time required to catalogue e-books presented challenges, and was largely related to the number of e-books purchased at one time, as well as the availability of preexisting MARC records (Lamothe, 2013). For instance, e-books purchased individually could be immediately catalogued, but cataloguing bundled titles could take anywhere from one week to six months (Lamothe, 2013).

A partnership between the University of Illinois at Chicago's University Library and the Center for Library Initiatives (CLI) developed a consortial review process aimed to improve MARC records provided by Ingram for their Springer e-book collection (Marin and Mundle, 2010). The group identified three central challenges including access issues, load issues, and record quality issues (Marin and Mundle, 2010). To remedy these problems, the group used MarcEdit, an "open source MARC batch editing tool that permits manipulation of the data to promote the identification and correction of record errors" (Blummer & Kenton, 2012, p. 80). The results of the study indicated that joint efforts from the consortial review and the vendor remained the most productive way to generate usable bibliographic records (Marin and Mundle, 2010).

Based on the results of a literature review of collection management practices from 2005-2012, Blummer and Kenton (2012) developed nine best practices for cataloging e-books.

1. Catalog records in library's integrated library system to improve findability;
2. Create separate catalog records for e-book titles, rather than adding MARC 856 field to print record;
3. Use full MARC format and add URLs for e-book access;
4. Consider the popularity of vendor-supplied records;
5. Recognize the need to edit vendor records to ensure that they meet local cataloging standards;

6. Consider the capability of the ILS for bulk importing, indexing, and deleting;
7. Identify the tools available for editing vendor e-book records to support collection analysis and searching in next-generation library systems as well as discovery tools;
8. Encourage vendors adopt the e-monograph guidelines issued by the PCC Provider Neutral E-Monograph Record Task Force for vendor-supplied records;
9. Weigh the cost of upgrading vendor records rather than creating original records for e-books.

   (Blummer & Kenton, 2012, p. 82)

2.6 Library Catalogue and Resources

In 2009, a focus group report by Christ Armstrong and Ray Lonsdale stated that "there is a bewildering variety of e-content, and proliferation of ways to get to it. Users don't know how to get what they want. Libraries face a big challenge in providing clear access routes to e-content" (Armstrong & Lonsdale, 2009, 28). Their findings indicated that most students locate e-books through the OPAC, so it is useful for e-book collections to be integrated into the catalogue. This way, students can locate books and e-books on a single interface (Armstrong & Lonsdale, 2009). In addition, "adding respective links to the e-books within the catalogue will ensure that, once a specific e-book has been discovered, a learner can select the link and gain immediate access to the e-book within the collection" (Armstrong & Lonsdale, 2009, p. 39).

Studies by Newman (2009), Nariani (2009), and Staiger (2012) indicate that the most common way users discover e-books is through the library catalog. For instance, Newman observed that the "traditional sources of book discovery continue to be important for e-books as well" (2009. p. 5). Essentially, users discover e-books through the library catalog and Internet searches. Nariani also found that catalogued e-books were used more often than those that had been promoted by email. Staiger reported that "the library catalog was by a wide margin the primary place where every category of respondents came upon e-books. In the case of respondents from the humanities or social sciences, well over 50 percent learned of e-books either from the library catalog or homepage" (2012, p. 356).

Librarians at the J.N. Desmarais Library of Laurentian University conducted a quantitative and systematic study of online e-book usage and discovered that in addition to the library catalogue, students accessed e-book collections from links off the Library's website (Lamothe, 2013). The findings indicate that "library websites are critical e-book access points, and for the majority of undergrads, the primary e-book discovery tool" (Lamothe, 2013, para. 3).

While the library is an obvious source for increasing students' awareness of e-book collections, findings from a literature review conducted by Blummer and Kenton (2012) stated that "faculty [are] a valuable but underused source for increasing students' awareness of e-books in library collections" (p. 88). The ability of faculty and librarians to integrate e-books into the curriculum impact usage rates in a positive way. Armstrong and Lonsdale (2009) also discovered that one of

the most significant ways that faculty can promote these resources is by providing links to relevant sections of e-book collections from an instructional platform (Armstrong & Lonsdale, 2009).

Promotion should not stop with linking to e-books from instructional platforms. There also needs to be standardized instruction that teaches students how to use e-book collections. Blummer and Kenton (2012) found that over 65 percent of students who use libraries' e-books recall learning about them in library instructional sessions (p. 90). Findings from a literature review by Ashcroft (2011) also suggest that librarians play an important role in raising awareness of e-book holdings. In the first place, users "need to know that their library provides e-books, then [they must know] how to find them" (p. 399).

At the end of the day, "awareness is largely dependent on local circumstances, most prominently but not exclusively such as the degree to which e-books have been promoted at a given institution" (Staiger, 2012, p. 356). Libraries should develop innovative and creative strategies to market e-book collections to targeted user groups. For instance, at the University College of Dublin, librarians email academics usage statistics as well as new e-book titles (Blummer and Kenton, 2012). In addition, Ashcroft (2011) discovered that promotional methods include "social networking applications, subject specific bookmarks advertising e-books, putting stickers on hard copy to advertise electronic availability, and placing dummy e-books on the shelf as a prompt" (p. 400).

Based on the results of a literature review, Blummer and Kenton (2012) developed a number of strategies to promote e-books to targeted user groups. Their eight suggestions are as follows:

1. Market e-books on the library's website through listings with databases, LibGuides, and on subject pages: host an e-book forum; provide a definition of e-book; highlight new purchases and freely available collections;
2. Include e-books in the library's OPAC and have a limit function to search e-books;
3. Involve faculty in e-book promotional efforts;
4. Support faculty's use of e-books in teaching, especially for distance education;
5. Provide instruction in using e-books, such as navigating platforms accessing features;
6. Send target e-mails to specific user groups;
7. Utilize social networking tools such as Facebook and blogs;
8. Make e-book marketing ongoing with a formal strategy. (Blummer and Kenton, 2012, p. 91)

2.7 Usage Trends in Academic Environments

Determining how e-books are used for academic purposes is a complex issue. It is not enough to understand who uses these resources and how they are used; librarians must also consider why e-books are or are not used. Unfortunately, the latter has not been widely researched or discussed in the professional community.

Over the past several years, a number of studies were conducted to determine the benefits and challenges users associated with e-book collections. Results from Beisler and Kurt (2012), Ashcroft (2011), Armstrong and Lonsdale (2009), and the ARL SPEC Kit 313 (year) all suggest that the main benefits include twenty-four hour access to materials, remote access, and the ability of multiple users to use one resource at the same time. Again, the challenges listed in all four studies are similar and signify complex problems that are often linked to the policies and practices of publishers and vendors. They include Digital Rights Management (DRM), platform design, and file format compatibility with various e-readers.

In terms of user groups, doctoral students typically exhibit the strongest relationship with e-book usage (Lamothe, 2013). As one graduate student explained, "the advantage of e-books is immediate access to chapters in edited research volumes. Unlike journal articles, these chapters are rarely available as PDFs from publishers or in databases" (Staiger, 2012, p. 359). Within the undergraduate population, e-book usage is low; however, overall faculty demonstrated the weakest relationship with e-book usage (Lamothe, 2013). Staiger (2012) described faculty's usage of e-books as task oriented – they search for quick information or use it to find a print version for extended research (2012).

A literature review by Staiger (2012) compared the results of two dozen studies regarding e-book usage by members of the academic community. Findings suggested that "academic users typically search e-books for discrete bits of information, a behavior summed up by the formula 'use rather than read'" (p. 355). In general, members of the academic community do not immerse themselves in e-books for extended periods of time to examine entire arguments. Instead, they view e-books as "convenient sources from which to extract information for their scholarly endeavors" (p. 357). Essentially, e-books provide a means for power browsing. They allow users to preview a book without leaving their work stations, and then locate the print copy if the information is relevant to their studies (p. 358). A literature review by Ashcroft (2011) uncovered similar trends. Statistics showed that on average, "53.5 percent of students and 58.6 teachers dipped in and out of several chapters, whereas very low percentages read the whole book – 5.5 percent of students and 7.1 percent of teachers" (p. 401).

To understand how e-books are used, the University of Liverpool Library partnered with Springer and conducted a series of online surveys and focus groups. Results indicated that there was an 88 percent increase in the number of e-book chapters downloaded between June 2009 and July 2010 (Bucknell, 2010). The study went on to compare e-book usage with e-journal article usage and found that the use of Springer e-journals increased significantly between 2008 and 2009, and suggests that having access to e-books on the same platform as e-journals does have an inflationary effect on the usage of e-journals (Bucknell, 2010). The figures also show that the number of unused e-book titles diminished each year, with older titles continuing to attract significant usage (Bucknell, 2010).

It is important to note that evidence suggests academic users expect the same functionality from e-books that they experience with e-journals. For instance, they want to download PDFs and expect that an e-book allows for multiple users simultaneously. When faculty or students cannot access an e-book because the limit on users is reached, they become frustrated and are often unaware of licensing limits (Ashcroft, 2011). Although there are obvious limits to the number of print books a library would purchase, it seems that "because multiple ease of access to the Internet, limits to accessing e-books are not recognized" (Ashcroft, 2011, p. 402).

To help user communities navigate the complex e-book landscape, librarians (particularly those who work in reference departments) should become familiar with a variety of e-readers and tablets (Buckley & Johnson, 2013). In addition, providing clearly written guides on downloading processes and functionality are invaluable to students, faculty, and library staff (Buckley & Johnson, 2013).

2.8 Functionality

As digital technologies continue to provide a wide variety of options in terms of information access, particularly in the commercial market, patrons expect to find e-books in academic libraries that support research, teaching, and learning activities. In general, users expect to view e-books on a variety of hardware platforms including workstations, laptops, dedicated readers, and mobile phones (Ashcroft, 2011). Today, "users want to be able to access the same e-books but at their convenience on a variety of devices" (Ashcroft, 2011, p. 401).

The fact remains that it is difficult for libraries to lend e-books. This is due to the fact that none of the publishers or vendors involved are working together to find solutions (Bradford, 2013). At this time, "the e-reader makers, library lending software developers, and the publishers are all working at odds" (Bradford, 2013, para. 4). One of the major challenges facing libraries is that the e-book market has not reached maturity, and there are "many formats competing for prime time, including Adobe PDF, Microsoft Reader, eReader, Mobipicket Reader, EPUB, Kindle, and iPad" (pcmag.com, n.d., para. 3). Currently, library users prefer e-books in PDF format, but this may change as technology continues to evolve (Newman, 2009). In all likelihood, e-books would have to be "compatible with a gamut of devices, in other words rendered independent of particular platforms, before they would present libraries with a feasible channel for provisioning materials" (Staiger, 2012, p. 363).

Currently, many library users are not confident that e-books provide desired features required for research, teaching, and learning. For instance, navigating between sections or chapters is perceived as awkward when compared with maneuvering through a print book (Staiger, 2012). Also, features such as printing, copying, or saving e-book sections are ranked by users as more important than searchability (Staiger, 2012). Undergraduate and graduate students also look for indexes, a table of contents, and the full text search tool available in e-books (Blummer and Kenton, 2012). Also,

the ability to highlight and annotate texts or follow links to other sources were of value (Blummer and Kenton, 2012).

In most cases, "users expect the same kind of liquidity that they have come to largely enjoy with articles from e-journals: the ability to download them on whatever device they choose and print as much as they want" (Staiger, 2012, 359). When they encounter obstacles in these areas, they are frustrated. The vast majority of these challenges are not inherent to e-books themselves. Rather, they are the result of restrictions imposed by publishers and vendors (Staiger, 2012). This situation leaves libraries between a rock and a hard place as they address concerns from users without having the ability to remedy the situation.

During the 2008/9 academic year, Penn State University Libraries partnered with Sony Electronics to study the utility of e-books in research library collections. In particular, they investigated "the effect of reading devices on teaching, learning, and reading; the utility of such reading devices for individuals needing adaptive technologies; and how licensed and locally created digital content could be repurposed for use on portable reading devices" (Behler, 2011, p. 89). Results indicated that users want portability, E-Ink grayscale technology, and uni-function devices that do not distract from the process of reading (Behler, 2011). Criticisms of e-books included slow refresh time when turning pages and a lack of features such as annotation and highlighting capabilities (Behler, 2011). Many users also indicated that it is important for them to use content in any way they want or need to (Behler, 2011).

At the University of Nevada, Reno, librarians connected with users by providing resources in requested formats, and also offered users (including library staff) the chance to experiment with different e-readers (Beisler & Kurt, 2012). A cross-departmental team designed an "E-reader Bar" and invited patrons to try a variety of devices loaded with e-book content (Beisler & Kurt, 2012). Feedback indicated that "staff had benefited from having the chance to try different e-book readers and it made sense to give users the same opportunity" (Beisler & Kurt, 2012, p. 109).

At the University of North Carolina (UNC) Libraries, a number of recommendations have been developed to accommodate tablets, e-readers, smartphones and other mobile devices. First, they select e-books in ePub, XHTML, and other XML-based formats over PDF because "the former are reflowable files developed for digital publishing that can adapt their presentation to the output device and therefore typically easily download to and accurately display on a wide range of mobile devices" (University of North Carolina Libraries, 2012, p. 2-3). In contrast, PDF files "are not easily reflowable, do not adapt well to various sized displays and mobile devices, and therefore are difficult if not impossible to view on small screens that come with some e-readers and smartphones" (University of North Carolina Libraries, 2012, p. 2-3). In cases where only PDF files are available, UNC recommends text-based Adobe PDF formats because they allow for "easy highlighting (copy and paste), keyword searching, improved downloading, and better support for disability access" (University of North Carolina Libraries, 2012, p. 2-3).

It is important to note that companies are creating new technologies to combat the current access issues libraries face due to restrictions enforced by publishers and vendors. 3M, the company that invented Cloud E-Book lending systems for smartphones and tablets, has developed its own reader for libraries. It is "designed specifically for libraries to lend out to patrons with its easy system. Book lovers can choose the e-books they'd like to read, then get the 3M Reader from the librarian, scan their barcode, and be done" (Bradford, 2013, para. 11). The only hitch is that most libraries currently use Overdrive and have not adopted 3M's system (Bradford, 2013).

2.9 Preservation

The introduction of e-book formats to library collections has caused dilemmas in terms of preservation and stewardship. For instance, the National Digital Stewardship Alliance is working to "identify content at risk of loss, develop and adopt digital preservation standards, share tools and services, support innovation of practice and research, and promote national outreach for digital preservation" (Billington, 2013, p. 71). While there are issues including software and hardware obsolescence and storage space, one of the central issues is the fact that libraries may not have the legal rights to preserve e-books. Essentially, licensing agreements provide temporary access to e-book collections and do not allow libraries to own a copy of each individual file. As Yale University Library stated,

> Traditionally, the Library would procure a print book in support of activities of members of the university and then preserve that book for future users. We could do this because we owned the book, owned the device used to store the book (the bookshelf) and employed staff to ensure the maintenance of the book for future use. Now, when the Library procures an electronic book in support of such activity there is no mechanism for the Library to preserve that eBook for future users (Yale University Library, 2013, p. 5-6).

Because libraries rent instead of own e-books, they can be recalled at any time by publishers. Also Digital Rights Management (DRM) restrictions often prevent libraries from downloading or printing copies of e-books for archival purposes (Yale University Library, 2013). Currently, the only way in which libraries could preserve e-books is if "publishers were prepared to sell the Library digital eBook files with which the Library could do whatever it wanted. In the current market, publishers are not prepared to sell digital eBook files with no strings attached" (Yale University Library, 2013, p. 6).

In terms of libraries themselves, even if publishers were prepared to sell e-books, the majority do not have adequate infrastructure to house them. At this time, most do not have a "robust information technology infrastructure (institutional repository) in which to store eBook files, [or] have a plan in place to migrate eBook files (or any other kind of digital files) from the current generation technology platform to the next" (Yale University Library, 2013, p. 6).

In regards to preservation concerns, Cornell University, Duke University, Princeton University, Stanford University, and the University of Michigan face similar challenges. When surveyed by Yale University Library, they stated that preservation is addressed "in their license negotiations with vendors" (Yale University Library, 2013, p. 15). In addition, they rely on third party systems like Portico and LOCKSS, as well as local repositories such as the Stanford Digital Repository (Yale University Library, 2013). The institutions stated that they are comfortable with the lack of e-book preservation in cases where there is a print edition in the collection. However, there are growing concerns surrounding dynamic e-book content that has no print equivalent (Yale University Library, 2013).

In reality, there is no e-book solution that "simultaneously meets both the 'current use' and 'future use' requirements" (Yale University Library, 2013, p. 7). In some cases, it may make economic sense for libraries to purchase an electronic format without thinking about long-term access (Yale University Library, 2013). In other cases, it may be appropriate to purchase titles regardless of current user demand in the hopes of preserving the content (Yale University Library, 2013).

2.10 Evaluation of Management Practices

In order to properly evaluate a workflow, it is essential to ensure that information is communicated and gathered from all departments and staff involved in the process. Buckley and Johnson (2013) recommend storing all documentation for the workflow in a shared location and revising it as needed. The keys to success include planning, communication, storing backups, and revisiting workflows to identify areas that require adjustment (Buckley & Johnson, 2013).

Also, it is essential to review and fully understand how users access and discover electronic resources. At the end of the day, e-book collections are meant to support research, teaching, and learning activities at academic institutions. The results of a literature review by Staiger (2012) indicated that "libraries, publishers, and content aggregators should be more responsive to how students gather and use information to complete classroom assignments (p. 361). Having a working understanding of how users interact with e-books provides insight into how existing initiatives meet information needs. At the University of Nevada, Reno, an evaluation of the e-book workflow revealed that there should be a higher focus on discover and user experience (Beisler & Kurt, 2012). In response, "a number of existing staff have been shifted over to a new department called Design and Discovery. This department came from a need to make discovery of resources and the online user experience a priority at the UNR Libraries" (Beisler & Kurt, 2012).

Finally, in order to properly assess usage trends, libraries need accurate and usable statistics from publishers and vendors in order to assess e-book collections. The JISC National E-books Observatory Project found that statistics provided by publishers and aggregators vary in quality. In many cases,

> it is difficult for librarians to collect meaningful statistics from collections and want publishers and aggregators to send this data to them. Librarians want more time to

> reflect on the process of collection management and often have no time to collect meaningful statistics. In addition, qualitative studies should supplement quantitative analysis to provide deeper understanding into the way collections are discovered and used (Armstrong & Lonsdale, 2009 page v).

E-book providers need to adopt "a standard metric for reporting data on searches, viewings, and downloads, so that libraries can have a clearer sense of how the resources in which they are investing their funds are being used to facilitate comparisons among different e-book packages" (Staiger, 2012, p. 361). The review of accurate statistics helps publishers and vendors test assumptions about what librarians and users want and need from e-books (Newman, 2009).

Part 3: Collaborative E-Book Management Models

The current e-book landscape is complex and in a state of constant flux. Libraries face challenges negotiating costs and licensing agreements, working with vendor generated MARC records, and discussing preservation models. In the current environment, many academic libraries form consortiums to pool resources and find solutions to pressing issues.

A study by Stachokas (2012) found that the "greatest focuses on consortia in 2009 were renegotiating licenses for electronic resources and budget management" (p. 144). There is a general acknowledgement in the library community that

> sharing e-books through consortial arrangements can be a highly cost-effective way to introduce them to a collection. Since the management of the contract and invoicing are typically handled by the lead faculty in the consortium, the burden of training local staff with new skill sets is reduced. Often, the downloading of MARC records to the OPAC is handled centrally as well, further relieving consortium members of added work. In addition to the obvious benefits of competitive pricing through consortia, group selection of title-by-title e-books can create a divers and rich collection. (Stachokas, 2012, p. 144)

In the future, consortia will continue to grow in importance because of their ability to set up advantageous terms with vendors, provide training in the area of electronic resource management, and take on professional advocacy roles (Stachokas, 2012). However, libraries should not limit membership to other academic libraries, but should also look for opportunities to include publishers and vendors (Stachokas, 2012). E-book management is a complex problem and solutions will depend on collaboration from all members of the equation. In many cases, "librarians feel unconsulted and believe that it is necessary for publishers and aggregators to work more closely with them" (Beisler & Kurt, 2012, p. 98). The perspective that librarians, publishers, and vendors bring to the table may create new solutions to communal discovery, access, and preservation challenges.

An example of effective collaborative working relationships is evident in the Triangle Research Library Network Consortium (TRLN), which is composed of Duke University, North Carolina Central University, North Carolina State University, and the University of North Carolina at Chapel Hill. The central mission is to "marshal the financial, human, and information resources of their research libraries through cooperative efforts in order to create a rich and unparalleled knowledge environment that furthers the universities' teaching, research, and service missions" (Triangle Research Libraries Network, 2013, para. 1). The goal is to move TRLN libraries and partner publishers to a decidedly electronic environment for materials that improve support for instruction and research (Triangle Research Libraries Network, 2013). This goal is achieved by working with "innovative and flexible publishers to expand library collections cooperation fromprint to e-books within a win-win context" (TRLN, 2013, p. 1).

Part 4: Future Trends

Currently, the e-book landscape does not have universal standards that promote discovery and accessibility. E-book library lending is an alienating process; there needs to be a streamlined process for every device and publishers need to understand the technical side of e-book lending to alleviate anxieties (Bradford, 2013). One of the reasons this is not happening is because publishers are "driven by a fear of piracy, just as the music industry was and the movie/TV industry is now" (Bradford, 2013, para. 24). At BookExpo America 2013, American Library Association President Maureen Sullivan said that the e-book dilemma is a "classic example of disruptive innovation. It causes a lot of misunderstanding, it brings fears to light. When we experience disruptive innovation, it's much more effective to think not 'either/or' but 'and'" (Bradford, 2013, para. 26).

Greco and Osman (2013) also describe e-books and e-readers as a disruptive technology. While margins are higher on a digital book than a print book, publishers also believe that every e-book purchased is a print book that was not purchased (2013). "While some analysts argue that e-books do not greatly affect print unit sales, our research indicates the opposite. Between 2008 and 2015, [we] project that education textbooks will decline by 69.7 percent" (Greco & Osman, 2013, p. 456).

However, there are others who argue that the availability of e-books in libraries can benefit publishers by adding a free marketing and promotional component. For instance, there is "evidence that during periods of technological, social and economic change, people use libraries more. With many bricks-and-mortar bookstores closing, publishers need new ways to 'showroom' their titles" (Feldman, Russell & Wolven, 2013, p. 18). Library readers are also heavy book buyers. One service that libraries could offer is in "connecting readers with authors. Libraries might offer to provide access to a publisher's entire catalog…as a way of connecting readers with additional offerings which they may buy or request the library to purchase" (Feldman, Russell & Wolven, 2013, p. 18). Also, libraries offer readers advisory, a service that "stimulate interest in books through…recommendations. By expanding this service to the e-realm, libraries will strengthen

their role of connecting readers with authors and books they might otherwise miss" (Feldman, Russell & Wolven, 2013, p. 18).

There are other forces acting on the e-book landscape that will have an impact on creation and sales over the coming years. For instance, "the open access movement will not replace for-profit vendors, but it will help to ensure wider access to information and play at least a small role in keeping overall costs down" (Stachokas, 2012, p. 145). The rapid growth of self-publishing is also likely to provide new options in the way that libraries acquire books. As Feldman, Russell, and Wolven (2013) reported,

> a small group of libraries have already cut out the middle man…and maintain their own e-book servers. The rapid growth of self-publishing is bound to have some impact on library collections. The perception that self-publishing is merely a vanity press under a different name is quickly eroding. New reader opportunities already are being developed by innovative entrepreneurs. By next year, we may be talking about the demise of the e-book – it having been replaced by some more-advanced technology that savvy readers will come to expect. Reading and technological advances associated with digital reading will move ahead at a breakneck pace. (Feldman, Russell & Wolven, 2013, p. 6)

An example of a revolutionary reading experience was launched in December 2012 by the New York Times. The project is entitled *Snowfall: The Avalanche at Tunnel Creek* and is described as a "beautiful reading experience through the use of a clean layout, interactive maps, inlaid videos and graphics that move as you scroll. The result is an online reading experience like no other" (Gardner, 2012, para. 2). Brantley (2013) stated that through this project, the New York Times has essentially reset the bar for interactive online narratives.

In addition, there are a number of trends on the horizon that may influence how patrons interact with libraries. For instance, last year Amazon launched its Kindle Lending Library, available to those customers who own a Kindle and have an Amazon Prime membership. The program allows Kindle owners to "choose from more than 350,000 books to borrow for free with no due dates, including over 100 current and former New York Times best sellers and all seven Harry Potter books" (Amazon, 2013, para. 1). It is yet to be determined whether or not these developments make libraries more or less attractive to publishers and patrons.

While many believe that print books will not disappear in the coming decades, the growth of digital products will have a profound influence on the market and create a set of winners and losers (Greco & Osman, 2013). For instance, those at an advantage include publishers producing high-profit e-books, authors and agents who share in heighted royalties because their books are only available in digital form, retailers of e-books, and stockholders of publishing firms who own high-impact titles (Greco & Osman, 2013). The individuals at a significant disadvantage in the e-book market

include shipping and transportation companies who ship books to distribution warehouses, distributors handling shipments and returns, surety bond companies writing policies for books imported to the United States, and companies in developing nations who print books sent to the United States (Greco & Osman, 2013).

Appendix C: Research Objectives and Questions

The objective of this study is to document and assess the e-book landscape at Columbia University Libraries a) internally, b) within the context of the academic community and c) within the context of the e-book publishing industry. The data collected will be used to develop recommendations that support the Libraries' effort at acquiring e-books and making them available to patrons. The objective will be achieved by examining existing Collection Development policies and procedures, observing how the e-book collection is used by stakeholders, and determining whether usage aligns with current collection goals.

The following five research questions guide the assessment:

1. **How is the e-book collection defined and described at Columbia University Libraries?**
    a. Which items fall under e-book Collection Development policies at CUL?
    b. How many items are in the e-book collection?
    c. What e-book packages does CUL purchase/subscribe to?
    d. What materials in the e-book collection cannot be purchased by libraries? (e.g. free e-books, born digital content, government documents, etc.)
        i. What criteria must free/born digital items meet in order to be acquired, discovered and accessed at CUL?

2. **What are the existing e-book policies, procedures and workflows at Columbia University Libraries?**
    a. What are the existing e-book collection development policies and procedures?
        i. What are the current e-book collection development goals?
        ii. How are funds allocated to build e-book collections?
        iii. How does information related to collection development, management, policies and/or procedures flow between stakeholders (including the Collection Development department)? Who is responsible for communicating/disseminating information to stakeholders?
    b. What policies and procedures are currently in place for selectors?
    c. What policies and procedures are currently in place for acquisitions?
        i. How are procedures different for frontlists and backlists?
    d. What policies and procedures are currently in place for the creation and distribution of MARC records?
        i. Who creates and/or supplies records for e-books at CUL?
            1. Do procedures differ for e-book packages, titles and born digital items?
        ii. What level of quality do we need to insist on?
    e. What policies and procedures are in place for long-term access/preservation?
    f. When/how are titles and/or packages weeded from the e-book collection?

g. When/how are e-book policies and procedures evaluated? What is the evaluation procedure?

3. How are e-books discovered by patrons at Columbia University?

a. How do patrons learn about e-book collections and services at Columbia? (e.g., CLIO, university writing programs, course reading lists, etc.)
b. What are the top five e-book discovery tools? Where does CLIO rank in this list?
c. What is needed for discovery?

4. How are e-books accessed and used by patrons at Columbia University?

a. What are the top ten e-book packages in terms of use? Why?
    i. Where are CUL's e-book funds directed? Are resources directed towards titles and/or packages that are widely used? (Relates to question 2a).
b. How do e-book usage rates compare across disciplines? Why?
c. How do e-book usage rates compare between undergraduates, graduates, PhD candidates, and faculty? Why?
d. Where do patrons access e-books? (e.g., library, home, public transportation)
e. What are patrons' expectations regarding e-book access?
f. What are patrons' expectations regarding e-book functionality?
g. When do patrons use print books and/or e-books for research activities? Why?
h. When do patrons use print books and/or e-books for teaching activities? Why?
i. When do patrons use print books and/or e-books for learning activities? Why?
j. Is there a correlation between print and e-book usage rates?
k. When are e-books used as course reserves materials?
l. When are e-books requested through ILL?
m. What devices are used to access e-books? (e.g. library computer, personal laptop, e-reader, mobile device)
    i. How do e-books function on different devices?

5. What are the existing policies and workflows related to consortial e-book collection development?

a. What e-book related consortia does CUL belong to?
    i. What is the business model/workflow for e-books purchased through consortia?
    ii. What are the advantages, disadvantages, and limitations of these partnerships?
b. What are examples of other e-book consortia that exist within the academic community?
    i. What are the business models/workflows?

ii. What are the advantages, disadvantages, and limitations of these partnerships?
iii. Are there policies or procedures that can be applied at CUL?
iv. Are there areas where CUL can provide leadership in terms of consortial e-book collection development?

6. **What e-book trends within the academic community and/or publishing industry could impact Columbia University Libraries' e-book collection development practices in the future?**
    a. What non-academic e-book services are being implemented at peer institutions? (e.g., Overdrive at Cornell)
        i. How could these services impact the user experience?
    b. What trends impact scholarly communication?
        i. Open access
        ii. MOOCs
        iii. Self-publishing
        iv. Library as publisher
        v. Makerspaces and digital scholarship
            1. How could these trends impact the user experience?
    c. What trends impact data collection/assessment methods?
        i. Big data

Appendix D: Text Analysis Paper

Scholarly E-Book Use across Disciplines: Content Analysis of Usage Reports and Search Terms

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Abstract

Data collected through COUNTER usage statistics and the LibQUAL+ service quality assessment survey tell us that faculty, graduate students, and undergraduates value access to the growing e-book collection at Columbia University Libraries (CUL). While the aggregate results indicate that e-book use continues to increase, usage rates are not uniform across disciplines. Anecdotal evidence suggests that while e-book use has grown in the sciences and social sciences, scholars in the arts and humanities rely heavily on print books. Given the highly diverse research needs of the university community, CUL is keen to understand scholarly e-book usage in various disciplines.

In this study, we sought an innovative research method to understand e-book usage. This method utilizes data from two sources: readers' e-book search terms harvested by Google Analytics; and requested e-book titles provided by the COUNTER e-book usage reports. The data was analyzed using NVivo, a qualitative analysis software, to examine popular scholarly e-book topics and the correlation between search and delivery.

Introduction

Over the past decade, electronic books (e-books) have become increasingly popular in the academic community. In response to this demand, Columbia University Libraries (CUL) provides access to over two million e-books that support research, teaching, and learning activities across campus and within the wider scholarly community. As the collection continues to grow, CUL is developing a unique strategy and vision for e-book programs and initiatives. To achieve this goal, the Collection Development Department launched the E-Book Program Development Study in 2013. This ambitious assessment project centers on the collection of essential data to drive the development of policies related to e-book acquisition, discovery, and access.

During the same year, data collected through COUNTER usage statistics and the LibQUAL+ service quality assessment survey indicated that faculty, graduate students, and undergraduates value access to the growing e-book collection at CUL. While the aggregate results indicate that e-book use continues to increase, usage rates are not uniform across disciplines. Anecdotal evidence suggests that while e-book use has grown in the sciences and social sciences, scholars in the arts

and humanities rely heavily on print books. Given the highly diverse research needs of the university community, we wanted to understand scholarly e-book usage in various disciplines.

The aim of this study is to better understand how scholarly e-books are used in various disciplines in teaching, learning, and scholarly pursuits through readily available data. This study seeks to gather data to drive the creation of best practices and policies to support the delivery of e-book collections and programs that facilitate research, teaching, and learning across campus and within the wider scholarly community.

Literature Review

Determining how e-books are used for scholarly purposes is a complex issue. The e-book landscape is evolving at a rapid pace and a wide range of factors, including business models, e-book formats, and platform functionality, impact how library clients discover and access e-books for research, teaching, and learning activities. It is more important than ever for librarians to understand when, how, and why clients use e-books in order to design services that meet existing needs.

Over the past several years, a number of studies were conducted to determine how e-book use differs across scholarly disciplines. Littman and Connaway (2004), Christianson (2006), Bailey (2006), and Kimball, Ives, and Jackson (2010) examined e-book use according to subject and all suggest that the highest usage rates were typically found in computers, technology, business, and the sciences. The lowest usage rates were most often discovered in the humanities and arts. This finding was consistent across academic institutions of various sizes, funding structure, and missions. Staiger (2012) discovered a trend that suggests a relationship between the currency of an e-book and its relevance to researchers, particularly in fields like business, computer science and technology. He attributed this finding to the fact that researchers in these disciplines have an acute need for current information.

A study by Levine-Clark (2007) suggests that there is no correlation between the awareness of e-book collections within disciplines and e-book usage rates. At the University of Denver, Levine-Clark conducted a survey that measured knowledge and usage of e-books in the humanities. In total, 2,067 faculty, students, incoming students, and alumni responded. The results indicated that 74.4 percent of humanists were aware of e-book collections available through the university. In all other disciplines, awareness ranged from 49 to 69 percent. However, humanists use e-books less often than scholars in other disciplines.

A number of studies have been conducted to understand how e-books are used for research, teaching, and learning activities. Shelburne (2009) conducted a large scale survey to learn about e-book usage patterns at the University of Illinois. In total, 1,547 responses were received. The results indicated that 78 percent of e-book use was intended for research purposes, 56 percent for study, 2 percent for teaching, and 2 percent for other purposes.

Levine-Clark (2007) found that library users typically "use rather than read" e-books. Typically, the format is viewed as a convenient source that provides quick reference for scholarly endeavors. Results from a survey of 2,067 faculty, students, incoming students, and alumni indicated that 56 percent of respondents use e-books to read a chapter or article within a book, and 36 percent typically read a single entry or several pages.

Noorhidawati and Gibb (2008) and Berg, Hoffman, and Dawson (2010) suggest that e-books are primarily used for quick reference, limited reading, and citation checks as opposed to extended reading and research. In other cases, e-books serve as a convenient means to preview a text; students and faculty members peruse the e-version to gain a sense of the information, biases, or arguments presented in a scholarly monograph. If it is useful for their research purpose, a print version is often requested for extended reading.

A literature review by Staiger (2012) compared the results of two dozen studies regarding e-book usage by members of the academic community. Findings suggested that "academic users typically search e-books for discrete bits of information, a behavior summed up by the formula 'use rather than read'" (p. 355). In general, members of the academic community do not immerse themselves in e-books for extended periods of time to examine entire arguments. Instead, they view e-books as "convenient sources from which to extract information for their scholarly endeavors" (p. 357). Essentially, e-books provide a means for power browsing. They allow users to preview a book without leaving their work stations, and then locate the print copy if the information is relevant to their studies (p. 358). A literature review by Ashcroft (2011) uncovered similar trends. Statistics showed that on average, "53.5 percent of students and 58.6 percent of teachers dipped in and out of several chapters, whereas very low percentages read the whole book – 5.5 percent of students and 7.1 percent of teachers" (p. 401).

E-book Collection at CUL

CUL is one of the top five academic research library systems in North America and serves a community of over 3,750 faculty members and 26,000 full-time students at the Morningside Campus and Medical Center. The collections are housed across 21 campus libraries and include over 12 million volumes, 160,000 current journals and serials, and an extensive collection of manuscripts, rare books, microforms, maps, and audiovisual materials. In 2004, CUL began purchasing e-books in an experimental capacity. Due to the positive reception by faculty and students, the Library continued to grow e-book holdings to support research, teaching, and learning activities across campus. Currently, CUL provides access to over two million titles.

CUL offers e-books through subscriptions packages (e.g. Knovel, Ebrary, Safari) as well as individually purchased titles. The Library also licenses e-books through publishers' packages, including Cambridge University Press, Oxford University Press, Springer, and Wiley. Over the past several years, CUL has partnered with a number of academic and research institutions through consortial groups to investigate business models for shared e-book purchasing, including the

Manhattan Research Library Initiative (MaRLI), 2CUL, Knowledge Unlatched (KU) and the North East Research Libraries (NERL) Consortium.

Methodology

Before discussing the methodology in detail, it is worth mentioning that our initial thought was to create a survey to gather information about e-book use across disciplines. However, two key factors influenced our assessment strategy and motivated us to tap into existing data sources rather than developing a survey instrument. First, during our initial consultations, it became apparent that using a low-overhead data collection technique that would allow us to systematically collect information over time would be most appropriate for this project. Due to our interest in continuously monitoring our user base in an ever-changing e-book landscape, reliance on readily available, continuous, and accurate data was an important factor in creating an effective and sustainable assessment plan.

Second, as survey participation rates have declined, survey research has experienced significant challenges that impact its use in library assessment plans. Participating in a survey to provide thoughtful and reflective feedback requires time and effort from respondents. The quality of the data begins to deteriorate when potential respondents do not make the effort to submit a completed survey or leave the survey incomplete. Surveys are of little, or no use, if the response rate is low or the data is inaccurate. Based on the low response rates from a recent survey, and in an attempt to avoid survey fatigue, we investigated alternative approaches of data collection.

In this study, we sought an innovative research method to understand e-book usage. This method utilizes data from two sources: readers' e-book search terms harvested by Google Analytics; and requested e-book titles provided by the COUNTER e-book usage reports. The data sets present CUL with an accurate, continuous, and objective picture of e-book use.

The study covers the period from January 1, 2013 through December 31, 2013. It is worth noting that CLIO became the default discovery tool for the library at the beginning of June 2013. Thus, searches tracked by Google Analytics prior to June 2013 are limited. We included eight major e-book platforms in the study (i.e. Springer, Wiley, Oxford University Press, Elsevier, EBSCO, Ebrary, Cambridge University Press, and Safari Books Online) to ensure e-books were included from all three major disciplines, namely humanities, social sciences, and sciences.

For the indicated time period, we exported all search terms limited by format to e-books from our Google Analytics account. After data clean-up and formatting, requested e-book titles from COUNTER reports and e-book search terms from our Google Analytics account were loaded into the qualitative analysis software, NVivo to identify frequently used words and explore recurring patterns. Then, we performed text analysis to generate word frequency tables and word clouds for each of the frequency sets to graphically display how each of the collections, at least in terms of the titles used, covers a different sector of the e-book platform universe.

Findings and Discussion

The most frequently repeated search word was “history,” which was entered 526 times into the search field to search for e-books. It was followed by the word “theory” (entered 378 times). The most frequently requested e-book title word was “edition” (repeated 3,284 times), followed by the word “volume” (repeated 2,306 times). In the preliminary analysis, we refrained from adding words such as "edition," "volume," and “2nd" to a stop list, as we determined they might shed a special light on what was being searched and delivered in some instances.

Table 14 lists the top 25 most frequently repeated search words and requested title words. We found an overlap of 60% (15 words) in both lists, indicating a correlation between search and delivery of e-books. The words that are present in both lists are reported in italics (see Table 1).

Table 14. Most frequently repeated search and requested title words

	Search terms			**Requested title words**		
Rank	Word	Length	Count	Word	Length	Count
1	*history*	7	526	edition	7	3284
2	*theory*	6	378	volume	6	2306
3	*social*	6	368	*history*	7	1949
4	introduction	12	359	*theory*	6	1777
5	*new*	3	358	*new*	3	1730
6	*analysis*	8	326	*american*	8	1689
7	*american*	8	309	*analysis*	8	1651
8	*handbook*	8	303	advances	8	1577
9	human	5	281	systems	7	1558
10	*research*	8	281	culture	7	1552
11	*health*	6	265	studies	7	1532
12	*world*	5	227	*world*	5	1510
13	*modern*	6	223	*guide*	5	1502
14	*guide*	5	219	*social*	6	1479
15	law	3	211	*handbook*	8	1468
16	medicine	8	207	applications	12	1412
17	*management*	10	198	*politics*	8	1367
18	rights	6	193	*science*	7	1365
19	war	3	191	*modern*	6	1230
20	*development*	11	188	*research*	8	1198
21	art	3	186	*development*	11	1196
22	*science*	7	183	international	13	1196
23	*politics*	8	181	*management*	10	1126

24	design	6	176	*health*	6	1107
25	political	9	172	global	6	1034

The expected role of a book title is to provide a compact summary of the book and help the reader identify typical content of the book. The prominence of "history" in both lists was an interesting reflection on the kinds of works being used, as were the terms "handbook," "guide," and "manual." The high frequency of these words leads us to believe that users were searching for broad topics, reference works, or other collections of instructions, all of which are intended to provide ready reference. These results mirror a number of findings mentioned in the literature review, namely by Levine-Clark (2007), Shelburne (2009) and Staiger (2012), who suggest that e-books are used to read chapters or articles for study purposes.

When we evaluated the word clouds, which are graphic representations of word frequencies for the e-book search terms and requested titles, a similar trend emerged (see Figures 1, 2, 3, and 4). For instance, Figures 1 and 2 show the frequencies of all requested e-book titles and search terms. Words like "history," "edition," "volume," "introduction," and "theory" are situated at the center of the clouds, meaning that they have the highest frequency.

Next, we examined the word clouds generated for each of the major platforms included in the study. For the purpose of this paper, we explored the preliminary results for the Ebrary platform (see Figure 3) and the Springer platform (see Figure 4). Again the results pointed towards broad topics that could be used for reference purposes. For instance, the most frequently repeated title words for the Ebrary platform are "volume" and "history," and the most frequently repeated title words for Springer are "systems," and "theory."

Figure 1. Word cloud for requested e-book titles from all collections.

Figure 2. Word cloud for search terms harvested by Google Analytics.

Figure 3: Word cloud for requested e-book titles from the Ebrary collection.

Figure 4. Word cloud requested e-book titles from the Springer collection.

To analyze our findings in greater depth, we turned to open-ended comments collected through the 2013 LibQUAL+ service quality assessment survey. Comments relating to the e-book collection indicated that many users access e-books to read course materials. Both undergraduate and masters-level students expressed an interest in greater access to course readings in electronic format. For instance, an undergraduate computer science major said that "all of the Core texts should be available from the library digitally!" Another undergraduate studying public affairs wrote, "please provide more copies of course textbooks or enable electronic copies." A doctoral student in the social sciences said that e-books available as PDF files are most convenient because "I want to be able to flip through the whole book without having to log back in." These comments are consistent with our findings that the e-book collection is widely used across major disciplines to support instruction and learning.

Conclusions

Running search terms and requested title words through a text analysis tool reveals new ideas and concepts relating to e-book use, and reaffirms certain findings that we discovered through the LibQUAL+ service quality survey. The preliminary text analysis of search terms and requested title words was useful in gaining insight into the nature of e-book use across disciplines, including broad topic (e.g. history), academic level of use (e.g. introductory), and genre/type (e.g. reference).

It is challenging to deduce reader intent from word frequencies, as text data remain widely open for interpretation. However, responses to open-ended questions from the most recent LibQUAL+ survey are consistent with our findings that e-book collections are widely used across all major disciplines to support instruction and learning. User sentiments from the LibQUAL+ survey mirror a number of findings mentioned in the literature review, namely by Levine-Clark (2007) and Shelburne (2009), who suggest that e-books are used primarily to read chapters or articles for study purposes.

The ability to analyze word frequencies allows us to dig deeper and think about the many usage patterns that we wouldn't otherwise observe. While relying on a text analysis tool for these sorts of conclusions feels a bit nebulous, future work could clarify and extend present findings. Next, we plan to dig deeper into the text data by running *exact match* and *stemmed word* queries for those titles with 50 or more uses included in large platforms such as Springer, Ebrary, and EBSCO. Our preliminary analysis convinced us that words like "edition," "volume," and "2d" should be added to the stop list. They appear high in some e-book collections, and not at all in others, which may point to differences in the way databases formulate their titles as opposed to differences in the content of e-book collections. We will carry out formal statistical analysis to investigate the rank correlation and measure the relationship between search terms and e-book titles to assess the significance of the relationship between them.

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Appendix E: Focus Group/Interview Questions

1. Tell us about your experiences using e-books.

2. Thinking about the past academic year, how often have you used e-books? Possible follow-up question: What are some of the advantages/disadvantages of using e-books?

3. When you use e-books, electronic articles, etc., what technologies or devices do you most often use? (e.g. PC, e-reader, smart phone, etc.)

4. When you want to use e-books for academic purposes, where do you search for/locate e-books? (e.g. through CLIO, Google, Amazon)

5. When you're using an e-book for academic work, what are three features that are most important to you? (e.g. ability to download chapters/entire book, copy and paste text, take notes, highlight)

6. Thinking about the past academic year, have you used an e-book from the university library? Tell us about your experience.

7. Is there anything that Columbia University Libraries can do to improve e-book services or collections?

8. Have we missed anything?

Appendix F: Focus Group Questionnaire

Q1. Do you own any of the following items?

	Yes, I currently have one.	No, but I plan to purchase one within 12 months.	No, and I don't plan to purchase one within the next 12 months.
Android phone			
BlackBerry			
iPhone			
Other smart phone			
iPad			
Tablet (e.g. Nexus)			
Kindle			
Kobo			
Nook			
iOS			
Sony Reader			
Other e-reader			
Laptop computer			
Desktop computer			

Q2. Thinking about the past academic year, what materials have you used for academic work?

	Print format	Electronic format	Audio or video format	Not used
Books				
Reference Sources				
Journals/Serials				
Dissertations				

Q3. Thinking about the past year, where did you search for e-books whether it was for academic or personal purposes?

	Several times a day 1	Once a day 2	A few times a week 3	Less often 4	Don't use 5
Columbia Library Catalog					
Search engine					
Google Book Search					
E-book platform					
Database					
Publisher website					
Repository					
Public library					

Q4. Thinking of the past year, how many e-books appeared on your course reading lists?

- None
- 1 – 5
- 6 – 10
- 11 – 15
- 16 or more

Q5. What types of e-books would you like Columbia University Libraries to offer?

- Academic/peer reviewed titles
- Non-fiction titles
- Fiction titles
- Best sellers
- Other (please specify)

Thank you for participating in the E-Book Focus Group. Your feedback is very much appreciated.

Appendix G: Books24x7 Workflow Layout

- How will this data be shared within the ERUDWG committee?
- How will it be shared with librarians/staff at CUL?
- Where will it be stored?
- What departments are involved/where is data coming from? Which parts of the workflow does this project involve?

1. Collection development department

- Finance/Subscription Management
- Final decision (renew or cancel)
- Recommendation required:
    1. How to evaluate subscriptions in order to decide if renewal or cancellation is most appropriate?
    2. Criteria subscriptions must meet
    3. How to solicit feedback (i.e. selectors, CERM, ERUDWG)?
    4. How to share updates/information with internal stakeholders?
    5. Timeline for making decisions (e.g. Books24x7 requires a commitment for renewal 90 days before subscription ends)
        a. Should all subscriptions be put on the same end date so we can evaluate them at one time?

2. Selectors (Amanda)

- Is it better to pull data from Serial Solutions, Gobi, WorldCat?
    - Gobi: Used to determine where to buy e-access, pricing, cost
    - Serial Solutions: Which platforms are titles hosted on? May provide more e-options that Gobi.
        - Challenge: Serial Solutions does not provide pricing or costs. They might also list packages we don't have.
    - WorldCat: Search title by isbn. Lists all of the e-providers.
        - Challenge: Does this provide pricing, cost?
        - See sample record in Appendix
- Recommendation required: When should selectors use Gobi, Serial Solutions, WorldCat? Is information stable? What is the policy/procedure?

3. Acquisitions (CERM)

- Recommendation required: How does CERM share the information/data they have collected about subscriptions? (e.g. Books24x7 report done by LERWG. Having this information on hand will prevent replication.

- Should we create a form to submit a request for information 4 months before subscription ends?
- Should we create a database for Collection Development/CERM to store all documentation that could be used for research, etc.

4. **Serial Solutions**

- Recommendation required: Who is the liaison for Serial Solutions? How do they share the information they gather from S.S.? When in the workflow should S.S. be contacted? What are they responsible for?

5. **MARC records**

- Is this tied to Serial Solutions?
    - From Colleen: We load the records locally though LITO, not through Serials Solutions. We still track the packages as part of our ERM. The two packages that have title lists in SerSol are Books24x7 EngineeringPro Collection (3301 titles) and Books24x7 IT Pro Collection (11,423). You can download the Serials Solutions lists directly from the ERM. This title list should be similar to what we load into CLIO but if you want to be 100% accurate on your project you would need to request a CLIO report. We don't keep titles lists on the CERM wiki for items that are loaded through LITO.
- Recommendation: How do we know where our records come from?
    - Create spreadsheet. Who is responsible for updating it?
- Is the cataloging department involved? Do they need to be consulted?

6. **Rob, Waldo rep (talk to Amanda for details)**

- Recommendation: Who is a liaison for reps? How do they share the information they gather from reps? When in the workflow should reps be contacted? What are they responsible for?

Workflow Recommendation: Who is the central hub in this process? Who coordinates the efforts, ensures information is circulating, responsible for sending updates to all internal stakeholders?

Appendix H: E-Book Management Lifecycle Workflow

After meeting with thirty-six librarians at CUL and affiliated libraries, it is clear that the general e-book challenges and needs across campus are very similar. The majority expressed a need for strategies and policies in the areas of selection and acquisition, discovery, access, and preservation. There is also a strong interest in how e-books will be acquired, maintained, and preserved through collaborations with partner institutions. Finally, there is a keen interest in up-and-coming methods of e-book creation and dissemination, including the growing popularity of self-publishing and open access, and how these trends will impact e-book collection development and management practices within the academic community.

Based on these findings, the following model is being proposed for the E-Book Program Development Study.

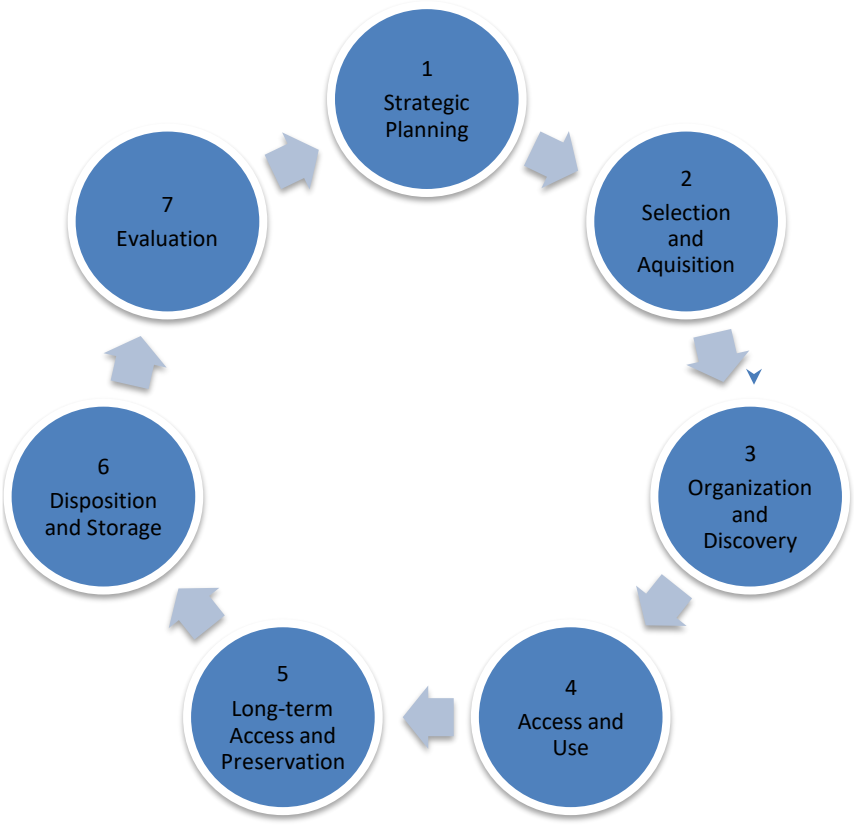
1. Develop a set of recommendations and strategies for an e-book life cycle management workflow at CUL that is designed specifically to account for the unique strengths and challenges presented by the format. The workflow will support efficient communication between departments at CUL and address e-book management needs from selection to disposition.

2. Examine how the e-book life cycle management workflow provides opportunities to build collections in collaboration with partner institutions, vendors, and publishers. Also, consider how the workflow can be adapted to standardize and strengthen collection development and management practices within consortiums.

3. Establish a workflow that facilitates regular evaluation and planning so that strategies can be updated and revised as the e-book landscape evolves. This work will include a regular scan of the external e-book landscape (publishers, technologies, etc.) in order to pinpoint trends that impact the academic community.

Future Trends:

Identify trends in the external environment that impact collection development and management practices at CUL and within the academic community.



Collaboration:

Identify opportunities to strengthen and standardize collection development and management practices within the academic community.

Table 15. Proposed model for an e-book life cycle management workflow at CUL

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