

Next Generation Catalog Design for an International Law Firm

by

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Abstract

This paper addresses the historical and current trends of library catalogs with a focus on law firm libraries. It attempts to provide some guidance for law librarians looking to choose their next library catalog by delving into the practice of cataloging, library classification systems, and information seeking needs and behaviors of law firm library users. Library workers located in the United States employed by an international law firm were surveyed to determine their needs and wants regarding an integrated library system and to determine the strengths and weaknesses of their past and current catalogs. Through better understanding of the search behavior of this population, international deployment of the chosen personalized integrated library system may be successful.

Acknowledgements

I would like to thank my mother, Deborah and my sister, Monique, for believing in me when I didn't believe in myself. My love and gratitude for you both cannot be measured.

“Impossible is not a fact. It's an opinion. Impossible is not a declaration. It's a dare. Impossible is potential. Impossible is temporary. Impossible is nothing.”

-Muhammad Ali

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Chapter 1: Introduction

In the early days of library cataloging, the dearth of items available made the process simple. As library collections sought to enhance and compliment disciplines of study, numerous cataloging schemes were created. Law library classification has been problematic since its inception due to “general cataloguing rules, practices, and subject lists are at times inadequate, incomplete, and conflicting” (Nwosu, Tuyo, & NgoziAniche, 2014). The purpose of this project is to couple best practices in library catalog design along with information needs of law library users. The catalog of a library is its most important feature. It serves as an inventory of the library and allows users to find, identify, select and obtain information needed by using various accent points such as title, author, subject and other available metadata about its contents. As such, it is imperative that a library catalog take into consideration the needs of library users in addition to the metadata it contains.

While there are a bevy of classification schemes and schools of thought available, the historical section of this paper focuses on those which would not be out of place in a library catalog that caters to the lawyers and staff of an international law firm. There is a lack of research regarding legal information seeking behavior and a scant number of usage and perception of digital library focused studies (Makri, Blandford, & Cox, 2006) so I focused on the studies that did exist about perception of law library catalog users and established information about library catalog trends and usage.

The explosion of the internet caused a new type of library catalog to be born, as users were changing the way they searched and received information. Integration of inter and intra library holdings combined with information found on the World Wide Web allowed for a new

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era of integrated library systems with user-friendly features that assist users with cataloging, teaching, borrowing, reporting, statistics and access to various electronic resources including (but not limited to e-books and e-journals. “Information availability with the Internet and the flourishing of silos of digital library collections through the 1990s and 2000s...challenged the early expectations of OPACs” (Barton, 2012, p. 84).

Tuhumwire and Okello-Obura (2010) claim “Many practicing lawyers fail to articulate cases and provide proper back up to their clients in the courts of laws which compels one to ask whether it is lack of competence or lack of reliable legal information” (p. 383). Given this situation, the design of the catalog of the law library is especially salient. Meyer summarizes (2014), “attorneys still use books to conduct research, book usage occurs much more than most people think, and law schools need to teach both online and print-based research” (p. 420) . Research skills are just as necessary for lawyers as oral communication and analytical and logical reasoning. If one does not have knowledge of law and legal procedures, demonstrable research skills are relevant to helping the lawyer to refine that skillset. This paper explores the use of standard catalog schemes coupled with personalization in the setting of an international law firm. Do research skills or library catalog customization determine the quality search results? This paper will explore user skillsets versus interaction design of a customized library catalog. I will research the perceived research skillsets of law library staff with various experience along with preferred third generation library catalog features, and will determine if skills or technology is the driving force for successful catalog research.

Law librarians assist with the acquiring, processing and cataloging of new library materials in addition to managing existing collections, and aiding (and sometimes educating) lawyers with finding information for legal proceedings. They facilitate with research and education and are often tasked with knowledge management and innovation initiatives at their firms. Law librarians often have educational backgrounds as varied as the law firms they work for, but they typically have at least a Masters in Library Science and a Juris Doctorate, although the latter may not be required. When cataloging, the librarian uses skills obtained in library

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school in conjunction with the individual practices set forth by their chosen library classification scheme and other criteria determined by the organization. “Classification of law materials has...been known to present special problems for both the legal profession as well as librarianship and for which general cataloguing rules, practices, and subject lists are at times inadequate, incomplete and conflicting” (Nwosu, Tuyo, & NgoziAniche, 2014, p. 47)

Chapter 2: Review of Literature

To gain an understanding of the history of library catalogs and trends among law libraries, this review is based on researching relevant literature which analyzes several topics: library catalogs, information literacy, information seeking and retrieval, types of searching and law firm libraries and legal research. Theses, dissertations, articles, reports and user studies contributed to the creation of this literature review, designed to inform the reader on the history, principles and theories that contributed to this thesis. The literature review is substantive but not exhaustive.

Standards

Libraries have used some sort of categorization since the beginning of time. Design issues coupled with lack of knowledge of information services often deter patrons from using library catalogs. As libraries tend to have a wide variety of materials available for use, cataloging standards are imperative to the profession. The uniformity they create saves time (and ultimately money). They allow for the curation and sharing of metadata. They make it easier to define what is owned by the library, therefore assisting other institutions in the creation and cultivation of their offerings. According to Coyle

Standards create efficiencies both for libraries and for the vendors who serve them. They make it possible for all libraries to be customers for the same library system design. They also make it possible for libraries to share data. In libraries, standards are also about interoperability, not only for the exchange of data but also the ease with which library users can move from one library to another without having to learn entirely new skills in bibliographic research (Coyle, Libraries and Standards).

As libraries continue to evolve beyond “place”, they should have information repositories that enable users to have all possible information deposits at their fingertips.

Library Catalogs-Yesterday, Today and the Future

An important element in the design of classification schemes is determining the sequence in which to order classes within an array, be it the array of main classes that forms the structural backbone

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of a classification or arrays located further down in the classificatory hierarchy (Dousa, *Evolutionary Order in the Classification Theories of C. A. Cutter & E. C. Richardson: Its Nature and Limits.*, 2011).

Libraries have always kept records of their contents. From the first recorded catalog written on the walls of the library of Edfu in Upper Egypt to the merging of library contents with the internet, they have constantly attempted to keep an inventory of their wares. “The recording of collections on clay, paper and later, electronic media...has always been a valuable tool for creating a permanent memory and map of the collection” (Fons, 2016, p. 15). Although library classifications had already been developed and used in the United States and Europe in the 17th and 18th centuries, it is only in the 19th century that library classifications gained space and notoriety to the point of achieving more solid work dynamics and dialogues with other areas (Sales, 2018, p. 351). During this time classification schemes by Melville Dewey and Charles Cutter were introduced to the masses, proving to be the most influential cataloging hierarchies before or since.

Expansive Classification System

For over a century, original catalogs were based on the dictionary catalog, attributed to Charles Cutter, which “display[ed] all its entries and its cross-references in one continuous alphabetical sequence” (Miksa, 2012, p. 8), and is the definitive model of catalog standards. The dictionary catalog created the basis of the Anglo-American Cataloguing Rules (AACR2) until the concept of RDA (Resource Description and Access), introduced in 2010.

Even though it has now been replaced as a catalogue display device, its role as a basis for describing informational objects and in determining, formulating, and rationalizing entries has continued both in the form of rule sets covering description and author and title entry and in the form of subject headings derived from subject heading lists (Miksa, 2012, p. 12)

His seminal publication *Rules for a Printed Dictionary Catalog*, published between 1891 and 1893, declared three principles:

1. To enable a person to find a book of which either
(A) the author

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(B) the title

(C) the subject is known.

2. To show what the library has

(D) by a given author

(E) on a given subject

(F) in each kind of literature

3. To assist in the choice of a book

(G) as to its edition (bibliographically)

(H) as to its character (literary or topical).

Cutter based his Classification System on evolutionary order, influenced in large part by the works of English philosopher Herbert Spencer who developed *his* schema in answer to that defined by August Comte (Dousa, 2009, p. 78). The example you see in Table 1 (Dousa, 2009) show the similarities:

Table 1: Sequence of Main Classes in Comte’s and Spencer’s Classifications of the Sciences

Comte I (1830)	Comte II (1854)	Spencer (1864)
Mathematics [1]	Natural Philosophy	Abstract Science
Astronomy [2]	Cosmology	Logic
Physics [3]	Mathematics [1]	Mathematics [1]
Chemistry [4]	Astronomy [2]	Abstract-Concrete Science
Physiology [5]	Physics [3]	Mechanics [3-4]
Social Physics [6]	Chemistry [4]	Physics [3]
	Biology [5]	Concrete Science
	Social Philosophy [6]	Astronomy [2]
		Geology
		Biology [5]
		Psychology
		Sociology [6]

This table represents highly simplified versions of Comte’s and Spencer’s classifications of science, derived from Richardson 1901, 134 & 142. Two versions of Comte’s classification are given: the first derives from his *System of Positive Philosophy* (1830) and the second, from his *Positive Polity* (1854). The numbers after certain classes map the classes in Comte’s original classification to his later classification and that of Spencer. For full expositions of Comte I and Spencer and a discussion of the underlying principles, see Comte 1988, 35–67; Spencer 1878, 63–112.

Though he died before he could finish his “Expansive Classification System,” the work Cutter completed permeated through libraries far and wide once socioeconomic constraints to education were relaxed, allowing his conceptualizations to be utilized by the masses.

Even though it has now been replaced as a catalogue display device, its role as a basis for describing informational objects and in determining, formulating, and rationalizing entries has continued both in the form of rule sets covering description and author and title entry and in the form of subject headings derived from subject heading lists. (Miksa, 2012, p. 8)

Although Cutter’s work continues to inform current cataloging methods, it is not without reproach. Borgman (as cited by Barton & Mak, 2012, p.95) states that “Cutter’s objects do not rely on

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any empirical data on actual user behavior but rather assume that users approach the catalogue knowing at least one of three possible access points: title, author, or subject”. It assumes the user knows a bit about the subject and relies heavily on the assistance of an information professional or familiarity with the catalog organizational design if said knowledge is lacking. Dousa expresses “One source of difficulty...was a tendency to use the principle to characterize sequences of classes that were not, strictly speaking, evolutionary in nature” (p. 87). Problematic as this may be, this has certainly not impeded the advent of the technique.

Dewey Decimal Classification

Melvil Dewey created The Dewey Decimal Classification (DDC), better known as the Dewey Decimal System in 1873. First published in 1876, his is the most widely adopted classification system in the world, being used in more than 140 countries. It is also used for other purposes, such as being a browsing mechanism for resources on the World Wide Web. To cite Majumder and Sarma:
The reasons for its world-wide popularity can be attributed to its cordial virtues viz. universality and hospitality for new subjects, a simple and expandable notation, good mnemonic features, a permanent machinery for its revision and updating, availability in full and abridged editions and last but not least an outstanding relative index. (Majumder & Sarma, 2007)

The system is based on ten main classes that are then broken down by divisions and orders. The simplicity of the organizational system allows it to be adapted in any language and modified as times and the general basis of knowledge change. According to the Online Computer Library Center (OCLC) which owns all copyright rights in the Dewey Decimal Classification:

The DDC is built on sound principles that make it ideal as a general knowledge organization tool: meaningful notation in universally recognized Arabic numerals, well-defined categories, well-developed hierarchies, and a rich network of relationships among topics. In the DDC, basic classes are organized by disciplines or fields of study. At the broadest level, the DDC is divided into ten main classes, which together cover the entire world of knowledge. Each main class is further divided into ten divisions, and each division into ten sections (not all the numbers for the divisions and sections have been used) (OCLC, 2019).

The following table shows a partial example of the three division classes of the DDC:

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Table 2: Law Classification in the Dewey Decimal System

Main Classes	Hundred Division	Thousand Division
300 Social Sciences	300 Social Sciences 310 Statistics 320 Political Science 330 Economics 340 Law 350 Public Administration & military science 360 Social Problems & social services 370 Education 380 Commerce, communications, & transportation 390 Customs, etiquette & folklore	340 Law 341 Law of nations 342 Constitutional & administrative law 343 Military, defense, public property, public finance, tax, trade, industrial law 344 Labor, social service, education, cultural law 345 Criminal law 346 Private law 347 Procedure & courts 348 Laws, regulations, cases 349 Laws of specific jurisdictions, areas, socioeconomic regions, regional intergovernmental organizations

As Panzer points out “A common criticism of the DDC is that topics are scattered across the classification because subjects can appear multiple times if they play a role in several disciplines...while Dewey remains a discipline-based, a phenomenon-based approach can seem more intuitive because it tries to reflect what a thing is in the world” (Panzer, 2013, p. 25). The Dewey Decimal System also

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proves problematic regarding race and religion—and it is not alone in that regard. Being based on Christian ideals, the “the devisors of all standard classification systems were from western parts of the world, except Ranganathan who was from India but was not a Muslim (Idrees, 2012, p. 112).

“Recommendations for classification of Islamic materials has been submitted numerous times, but have never been officially added.

Library of Congress Classification System

James Hanson and Charles Martel created The Library of Congress Classification (LCC) System under the direction of Herbert Putnam in 1901 with influence from Charles Cutter. The original collection of the Library of Congress, populated by books from the private library of Thomas Jefferson, was burned down by British soldiers during the war of 1812, creating a need for a modern update of the initial classification system. This new system borrowed from the Dewey Decimal System and the Putnam Classification System.

Used by most American research and academic institutions in the United States, the LCC divides subjects into broad categories, with subclasses that are then parsed out into divisions. It contains 21 main classes contained in 42 volumes. The following table from the Library of Congress website shows an example of the initial class and subsequent classification of Class P-Language and Literature from the Library of Congress Classification. The following table shows how Sanskrit would be classified by the LCC:

Table 3: Library of Congress Classification Example

Class P	Subclass PK	Division PK401-976
Language and Literature	Indo-Iranian languages and literatures	Sanskrit

(Library of Congress Classification, n.d.)

Even though LCC is the standard of academic libraries, it is problematic for several reasons most notably its “Anglo-American, patriarchal, white middle class view” (Hume, 2015). The system has issues with nontraditional subjects such as transgenderism or the classification of Islamic knowledge.

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“The reason behind this problem is that the standard library classification systems do not provide sufficient place, proper enumeration, and sufficient expansion for resources” (Idrees, 2012, p. 112). In addition, “a single classification number cannot truly describe all the topics covered by multidisciplinary works” (Julien, 2012, p. 150). Class K, the Law class, remains the last schedule published for the LCC, with the last schedule being published in 2004 (Religious Law, or KB). The following image shows a partial classification scheme of legal materials in the Library of Congress Classification System:

Table 4: Partial Classification of Legal Materials in Library of Congress Classification (Class K)

Subclass	Classification Number	
K		Law (General)
KD		Law of the United Kingdom
KDK		Law of Ireland
KDZ		Law of the Americas
KE		Law of Canada
KF		Law of the United States
	165	Uniform State Laws
	240-247	Legal Research
	350-374	History
	410-418	Conflict of Laws
	501-553	Domestic Relations. Family Law
	560-720	Property
	566-698	Real Property. Land Law
	701-720	Personal Property
	726-745	Trusts and Trustees
	746-750	Estate Planning
	753-780	Succession upon Death
	801-1241	Contracts
	1146-1238	Insurance
	1246-1327	Torts

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(A Guide to the Arthur W. Diamond Law Library at Columbia Law School, 2016)

Hicks Classification System

The Hicks Classification System is used for early original primary source material such as statutes and reports in American and British law. Introduced to the public in 1932 by one of the founding fathers of law librarianship, Frederick C. Hicks, it is the classification system used in Yale Law Library, along with some other law libraries. It came about because the Library of Congress classification schedule for Law was not complete when Yale wanted to categorize their holdings. Per Hicks himself he created two divisions: Anglo-American Law and Foreign Law. Anglo-American Law was then broken into two groups: those relating to the law of the United States and British Isles which were divided into twenty classes of varying similarity while overseas British jurisdictions were divided into two groups, the Dominions and the Colonies. He divided Foreign Law into periodicals and treatises with other rules for Latin American countries.

Hicks (1932) believed the purpose of library classification is “to enable readers and staff easily to find (a) specific books known to be in the library; and (b) group books together for convenient consultation”.

Figure 1: Hicks Classification Scheme Example:

The following are examples of call-numbers:

France)
14) means French session laws, 1908
1908)

France)
46) means a treatise on French law by Capitant, edition of 1921
C17)
1921)

For divisions of Anglo-American law, such as S (Statutes), which would naturally be sub-divided by political divisions, the scheme calls for using (1) two arbitrary numbers, 10 (United States) and 12 (British Isles), (2) abbreviations for the names of the states, and (3) the applicable decimal numbers (subdivisions for states) referred to above when discussing Foreign law. For example,

France)
14) means French session laws, 1908
1908)

Likewise
S10)
NY14) means Statutes, United States, New York, Session laws, 1908
1908)

S12)
E14) means Statutes, British Isles, England, Session laws, 1908
1908)

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(Hicks F. , 1932)

The Third Generation Catalog

Technological advances have brought about the modernization of the library catalog from changes in its physicality to standards of organization. Automation enabled “mainframe-based systems with significant processing power and data storage capabilities” (Fons, 2016, p. 17) and palpable catalogs have been replaced with Online Public Access Catalogs (OPACs), each customized to their individual library system due to the advent of the World Wide Web. Now, it is commonplace for library repositories to hold inventory of books and electronic resources as well as provide news, assist the user with completing various tasks and be a general one-stop shop for the needs of the community:

Because of digital library developments and increasing acquisition of resources in digital format, libraries now create records in different metadata standards and use different content standards other than MARC and AACR, especially because they must capture information, such as technical and administrative metadata for description of print format resources” (Han, 2012, p. 163).

This ‘third generation catalog’ as named by Charles Hildreth called for “enhanced user-system dialog, automatic correction of search-term spelling and format errors, automatic search aids, enriched subject metadata in the catalog to improve search results and the integration of periodical indexes in the catalog” (Owen & Michalak, 2015, p. 8). As such, patrons are increasingly expecting the front page of the library catalog to show all the services available to the user. These enhancements are often referred to as a “discovery layer”, which Trapido (2016) defines as:

New catalog interfaces, decoupled from the integrated library system and offering enhanced functionality, such as faceted navigation, relevance-ranked results, as well as the ability to incorporate content from institutional repositories and digital libraries (p. 10).

She also acknowledges the popularity of using Google as a search engine, noting it has trickled down into user experience design:

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Users expect a robust and fault-tolerant search system with a rich suite of search-assistance features, such as index-based alternative spelling suggestions, result screens displaying keywords in context, and query auto-completion mechanisms (p. 22) .

To simplify searching, library catalogs increasingly feature an interface design where the user enters a single search term (keyword) against a centralized index, much like Google's search box.

The features of next-generation catalogues, including faceted navigation and relevancy-ranked search results, are designed to make the search process more user friendly and more in line with user expectations honed by the World Wide Web, in addition to making the larger search scope of centralized access more navigable (Barton, 2012, p. 84).

Contrary to popular assumption of ease, those results often require additional work on behalf of the user. As Nelson & Turney (2015) highlight, Google's one-stop search box does not lend itself well to research due to the lack of the use of filters and/or facets to widen or narrow a query. "For the information that libraries seek to make discoverable, it is often their extratextual characteristics that are every bit as important as the content itself" (p. 78).

Information Gathering

Relevance ranking and keyword searching have become de facto methods of searching in numerous library catalogs. Novice users are not adept at Boolean searching and the phenomena of "Do You Mean" options suggesting alternative terms have become par for the course.

Keyword searching and metadata enable the most basic users to quickly become their own search experts, reaching out to the information professionals employed by their organization on an as-needed basis.

The two principal paradigms in information seeking are browsing and searching (Yeh, 2011, p. 364). Whether a user is browsing or searching hinges on their approach. Browsing suggests that the patron is simply gathering unspecified information to complete their query while searching denotes a more exact inspection of documents. According to Jansen and Rieh (2010), there are seventeen theoretical constructs of information searching and information retrieval:

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Figure 2: Theoretical Constructs of Information Searching and Information Retrieval

TABLE 1. Theoretical constructs of information searching and information retrieval.

		Intellectual perspective		
		Primarily information searching	Cross-cutting/domain spanning	Primarily information retrieval
Theoretical Orientation	Information	<ul style="list-style-type: none"> • Multiple definitions of information • Hierarchical relationship of information • Perceived benefits of information 	<ul style="list-style-type: none"> • Relevance 	<ul style="list-style-type: none"> • Information representation • Information ranking • Document similarity
	People	<ul style="list-style-type: none"> • Principle of Least Effort • Searching as an iterative process 	<ul style="list-style-type: none"> • Uncertainty principle • Interaction 	<ul style="list-style-type: none"> • Information provision
	Technology	<ul style="list-style-type: none"> • Preference of channel 	<ul style="list-style-type: none"> • Information obtainability 	<ul style="list-style-type: none"> • Query • Neutrality of technology • Memex vision

(Jansen & Rieh, 2010, p. 1522)

Library users generally have an idea of what they are searching for but they often need the assistance of the catalog to locate the item in question. The layout of the library catalog can help or hinder that search, specifically its filters and facets. According to Avi Rappaport (2018),

Search filtering is reducing a search result by removing result items that don't match certain criteria while search faceting is a specific type of filter: the system displaying relevant metadata sets about results items and allowing users to choose among them.

Antelman et.al (2006) states that while users prefer a “visual overview of what is available in the library” that displaying the classification scheme via the user interface is problematic because users generally do not understand classification schemes and taxonomy.

Law Firm Libraries: Information Seeking Needs & Behaviors

While the scope of law firm libraries usually depends on the practice areas and size of the institution, they typically have several information professionals to assist attorneys with tasks such as research and analyzation of requests and documents, providing training to partners on new and existing technologies, and the acquisition and classification of library materials.

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Meyer (2014) asserts “It is simply not enough for one to know the practice of law, but a successful attorney is one that also knows how to research the law” (p. 420). There is an increasing lack of information literacy amongst recent law school graduates. Outside of the law school setting, legal research takes place primarily online from an attorney’s personal office and lawyers professional searching habits do not mimic the skills they were taught in school (Margolis & Murray, 2012). Additionally, although Tuhumwire & Okello-Obura found the need for information is greatly influenced by the age and the experience of the lawyer (2016), studies have shown recent graduates and summer clerks are not efficient or cost-effective users of LexisNexis and Westlaw (Makri et al. as cited in Howland & Lewis, 1990). Das & Jahab show us that only 14% of law students sought information to keep up-to-date and a dominant amount of them used online resources to fulfill information needs (Das & Jadab, 2017)

Microform and books can still be found in academic law, public law and private law libraries in addition to a collection of online legal research outlets such as Westlaw, Bloomberg and Lexis. When researching, the end user doesn’t compartmentalize the sources used by type:

Indeed, most participants did not clearly distinguish between different kinds of digital resource, viewing the electronic library catalog, abstracting services, digital libraries and Internet search engines as variants on a theme. (Blandford, et al., 2007)

While there is no difference in the information that is accessed by the user, there is a perceived connotation between users who prefer electronic resources instead of traditional books as declared by Danner (2003): ” Many observers connect law students’ preference for electronic research to what they see as a decline in new lawyers’ skills in legal research and analysis” (p. 184). Makri, Blandford and Cox (2006) discovered that difficulty in finding resources in digital libraries came from lack of knowledge about the digital library system as opposed to poor info-seeking skills and that users generally stayed with one source for their searches.

There has long been an identified gap in the legal research abilities of newly graduated attorneys and their more seasoned counterparts. Valentine’s 2010 study (as cited in Meyer, 2014) showed “New

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attorneys frequently lack basic knowledge of how to use legal resources, yet this knowledge is the link between legal research and legal analysis”. Zavelina and Vassilieva (2014) tell us

“Various groups of users (e.g., researchers, educators, and enthusiasts) may use digital libraries differently because of their varying information needs; moreover, users’ information-searching strategies may differ in the large-scale digital libraries that function in distinct domains, or subject areas” (p. 84).

They also tell us the information-seeking behaviors change as practitioner moves from novice to expert. Their study determined that for new attorneys, “information was put together without regards to a conception of the solution “while seasoned litigators “contextualize [their] task in a value-added conception of information (p. 108).

A cohesive catalog may help them compensate for their research shortcomings, but is being an effective researcher a good substitute for lack of expertise? There is no clear answer.

Chapter 3: Methodology

Methods

Information professionals have long used a bevy of different research methods to study the impact a library catalog has on its users. Work for the project discussed in this paper consisted of multiple components including a needs assessment of the catalog, a quantitative survey completed from Survey Monkey, a literature review and individual interviews with catalog users at the law firm, and finally, implementation of a new library catalog. In the process of selecting a new library catalog interface, I worked with end-users through all phases of the project to ensure that I was familiar with the needs of the community, many of whom use the system in unique ways. My process consisted of first creating a project plan, a needs assessment, and in-depth interviews across various library departments.

Participants

The law firm selected for this study has 41 locations across the globe, in 11 countries, with lawyers admitted to practice in more than 75 jurisdictions. All respondents for this study were located across the United States. Anyone located in the Knowledge Solutions division of the library firm was encouraged to participate in this study. Potential contributors were librarians, business staff and lawyers so there was a pool of about 60 participants. All potential participants were contacted via repeated email requests to the entire department.

Time

As referenced earlier in the paper, this project was two years in the making before the actual implementation of the new catalog was started. The needs assessment was done during that time frame, and included various vendor demos of a bevy of library catalogs. Items are added, deleted, and changed in the catalog every day.

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Purpose

The purpose of this study was to determine if the new catalog was user friendly and to determine what characteristics were found to be ideal for an integrated library system in an international law firm setting amongst information professionals. The firm wanted to build a collection of any kind of content--books, images, e-journals, videos and other media by having the ability to integrate the new library system with any internal and external information repositories, including third-party databases and portals, making it easier for users to find critical knowledge no matter where it originated from. While the idea of changing the library catalog had been discussed for many year, it was not started until two years prior to this research study. I received official endorsement and consent from the IRB about the survey. I also received consent from the Library Director of the law firm.

Determining what design features of a library catalog would make users confident in their research results was the objective of this project. This will assist other law libraries in figuring out what they need in an information repository.

Research Limitations

The size of the survey participants was small--11 participants. A bigger sample would heighten the fidelity of the research. Research focused on library staff, not lawyers. While some library staff have their Juris Doctorate in addition to their Masters of Library Science, the average survey taker was not educated in the practice of law or law research skills.

Since the survey size was so small, I had to reach out and do in-depth interviews with some catalog users. I found five participants who were willing to speak with me.

Project Plan

A project plan is a formal guide that details what steps are needed to complete a project. For this activity, there were two project plans used: one to determine what software I would choose to purchase, and another created in conjunction with the software company to implement the new library catalog.

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Needs Assessment

The needs of the library catalog were comprised by asking the reference and acquisitions departments what they were looking for regarding a new integrated library system and collection management software. Between multiple surveys and interviews I determined a checklist of necessities for the desired catalog. The needs assessment (Appendix A) gave due consideration duties and workflow of the users as well as strengths and weaknesses of the (then) existing catalog. The needs assessment covered the operations components of acquisitions, the catalog, client management, serials, reporting capabilities and the online public access catalog.

Switching to a new Integrated Library System

Six different integrated library systems were demoed to the library implementation team after the needs assessment was completed. Of those six, one fit the criteria they were looking for and the software was procured. A test site was setup for users to experiment with for over a year. After modifications requested by the firm, the vendor created a database and template structure. When successful import of trial data was complete, the vendor constructed maps to bring the actual library bibliographic data from the now retired integrated library system. They then created all necessary templates, search fields and hit list displays for the end users. Collaborating with the acquisitions and licensing teams, the vendor created reports that pulled various information from the library database. The OPAC was then created and next was an entire trial site using the specifications gathered along the process. After trials, feedback and successful testing the new system was rolled out into the firm using the Library of Congress Classification System and the rest of the library staff was given training. The survey questions are in relation to the new, current catalog which has been functional for two years with additions to functionality and display being updated constantly.

Survey Monkey Participants

Users were asked twelve questions regarding demographics, answer-seeking behavior and interface preference. Eleven users participated in the anonymous survey. One attended college but had not graduated, two graduated with a bachelor's degree, one did post-graduate study without a terminal

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degree and seven had completed their post-graduate degree. Five were in the age range of 25-44, four were 45-64 and one user over 65.

Participants accessed the survey by the weblink in a survey email announcement. The email advised what the survey was for (determining the wants of catalog users) and advised all answers would be private and used to make enhancements to the current catalog. There were two follow-up announcements asking for survey participation. The answers to the open-ended questions reflect opinions of actual people involved with the firm rather than random people found on the internet.

In-Depth Interviews

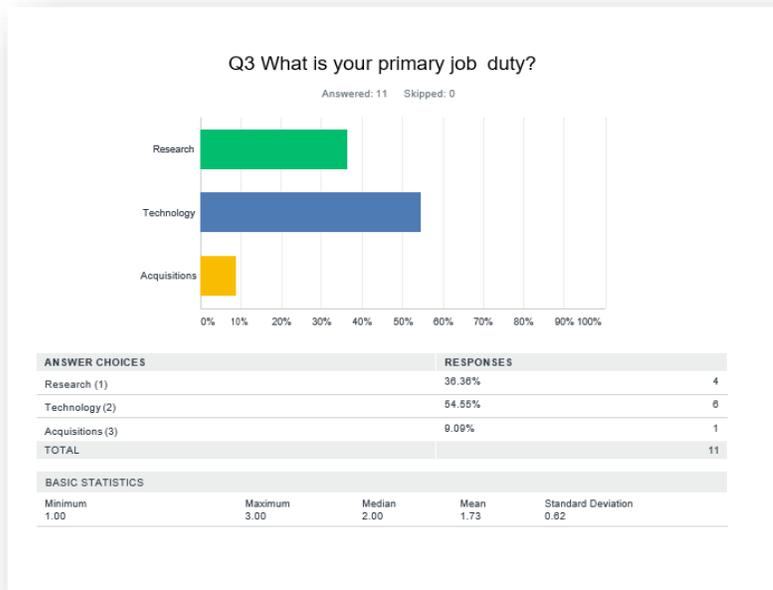
The lack of survey respondents meant I had to gather info in another way. I secured interviews with five people in the department: a cataloger, a filer, an acquisitions team member, a reference librarian with a juris doctorate and an e-resources specialist. It was easier to get relevant information from catalog users in this fashion due to the conversational nature of the interview. The occupational diversity of the interviewees allowed me to scrutinize the function and productivity of all the departments in the library.

Chapter 4: Results

The results from the survey and the interview were enlightening. I could gain insight into their behavior by watching them complete their routinely assigned tasks, and as some of them navigated new issues that arose during task completion.

In regards to the survey (Appendix B), ten of the eleven participants responded to the question in reference to their age. Five (50%) were between 25-44 years of age, four (40%) were between 45-64 years of age and one (10%) was 65 or older. In terms of academic education, seven (63.64%) of those involved in the study had a post-graduate degree. One (9.09%) had done some post-graduate studies but had not graduated, two (18.18%) had graduated with a bachelor's and 1 (9.09%) had attended college. Respondents were asked what was their primary job duty. The Technology group, defined as those who worked with systems, user services and web services had the most submissions, making up 54.55% of the survey, followed by Research (36.6%) with one Acquisitions team member chiming in (9%).

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The majority of those polled -- 7 (63.64%) -- have been at the firm for ten years or more, and with the exception of one person, everyone uses the catalog pretty frequently, with 27.27% of respondents saying they used it once a day. In order to see if the catalog performed it's most basic responsibility, users were asked if they found what they were looking for on their last visit to the catalog. Sixty-percent said yes. More than half (54.55%) of those queried use the search box for their library searches. Around a third (27.27%) go directly to the Advanced Search tab, with the minority using the Online Resources and Practice Group tabs. The respondents were asked to give their opinions (strongly agree, somewhat agree, neutral, disagree, strongly disagree) on the following five statements:

- The catalog has a clean and simple look
- I feel efficient when I use this catalog
- I get what I expect when I click on things on this catalog
- I find it simple to find relevant content when using this catalog
- I feel comfortable I am getting a complete and relevant result when I am using this catalog
- I get what I expect when I craft a search on this catalog

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While none of the questions received a “strongly disagree”, satisfaction with the current iteration of the catalog varied widely. Almost half the participants (45.45%) felt that catalog had a clean and simple look, but most respondents did not feel the catalog was efficient or simple to use (36.36% and 45.45%, respectively). The majority (36.36%) were neutral on feeling comfortable that they were getting complete and relevant results or what they expected with their catalog search.

(no label)	STRONGLY AGREE (1)	SOMEWHAT AGREE (2)	NEUTRAL (3)	DISAGREE (4)	STRONGLY DISAGREE (5)	TOTAL
This catalog has a clean and simple look.	45.45% 5	36.36% 4	0.00% 0	18.18% 2	0.00% 0	11
I feel efficient when I use this catalog.	18.18% 2	27.27% 3	18.18% 2	36.36% 4	0.00% 0	11
I get what I expect when I click on things on this catalog.	18.18% 2	36.36% 4	45.45% 5	0.00% 0	0.00% 0	11
I find it simple to find relevant content when using this catalog.	27.27% 3	27.27% 3	0.00% 0	45.45% 5	0.00% 0	11
I feel comfortable I am getting a complete and relevant result when I am using this catalog.	18.18% 2	18.18% 2	36.36% 4	27.27% 3	0.00% 0	11
I get what I expect when I craft a search on this catalog.	18.18% 2	36.36% 4	36.36% 4	9.00% 1	0.00% 0	11
BASIC STATISTICS		MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
This catalog has a clean and simple look.		1.00	4.00	2.00	1.91	1.08
I feel efficient when I use this catalog.		1.00	4.00	3.00	2.73	1.14
I get what I expect when I click on things on this catalog.		1.00	3.00	2.00	2.27	0.75
I find it simple to find relevant content when using this catalog.		1.00	4.00	2.00	2.64	1.30
I feel comfortable I am getting a complete and relevant result when I am using this catalog.		1.00	4.00	3.00	2.73	1.05
I get what I expect when I craft a search on this catalog.		1.00	4.00	2.00	2.36	0.88

Patrons tend to trust the catalog more when they can use it easily and can trust their search results. The remaining questions detail what features users liked and did not like, in addition to cosmetic and/or functional changes they would like to see implemented in the ILS. The statistics, including standard deviation for each question, is in the appendix.

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The in-depth interviews were very informative. When the participants said some of the tasks were too complicated in the new interface, it prompted review of the workflow *and* the interface which sometimes resulted in changes to either. I did notice that everyone interviewed thought of the catalog in a traditional sense, that is, a repository of physical and electronic library contents. The big reveal was in the responses to how they felt about the home page and search functions. Most users felt the home page gave just enough information for them to find what they were looking for, while the search functionality left a lot to be desired. There was no way to drill down the filter options. I determined their expectations of a library catalog coupled with their main tasks while using the catalog.

In the interview, I focused on six questions:

1. Please describe the purpose of a library catalog.
2. What tasks do you do in the library catalog?
3. How do you feel about the Home Page of the catalog?
4. How do you feel about the search functionality of the catalog?
5. What features would you like to see in a library catalog?
6. Describe your catalog research method.

Everyone stated that a library catalog was meant to be “container” of sorts that held items which were in the library. Two of the five went a step further and specifically differentiated between the physical and electronic library resources. Based on their job titles, everyone had different tasks they completed in the catalog: the cataloger was responsible for the creation of bibliographic records that contain item metadata in the physical catalog, the filer was responsible for updating those records with the most up-to-date information about those resources when they were received, the acquisitions member was responsible for the selection and purchase of materials and resources, and so on. Observation of daily tasks allowed me to see the workflow of the individuals, and make edits where necessary. This usually occurred when the employee told me a process was made more cumbersome by limitations within the new catalog.

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Everyone felt the Home Page could be better. Comments regarding search functionality ranged from “There aren’t enough ways to personalize a search” to “I can’t get to what I want within one click”. These conversations, observing their catalog research methods allowed me to define a proper taxonomy for the search field options, in addition to allowing free-text searching. In addition to standard search options like title, author, and publisher, we decided to utilize the practice/subject group names and locations as they are noted in the company directory, so users can search with familiar terms and language. The free text search option drew on the book summary (entered by the cataloger, provided by book publisher), which gave the ability to match by various keywords—giving the end user more results from which to choose. As the firm grows, we will continue to refine and expand the taxonomy as necessary.

Chapter 5: Discussion

Catalog Design

The purpose of this project was to determine the best practices of creating a library catalog for an internal law firm. Per the interview and survey responses, validity of content and improved search functionality are the most important features for a catalog end-user at this term, as those were the top two comments by users when asked about pain points and what to improve. This demonstrates a correlation with Fons' assertion that a better catalog requires better indexing, relevance ranking, "Did You Mean" features and the introduction of databases and articles (Fons, 2016, p. 18) . The original, out of the box usual search suggestions of title, author and publisher were not enough to make people comfortable with their results. We had to implement a specific, firm-based taxonomy for users to trust the outcome of their inquiries. Implementing the most popular terms in the firm will ensure ease of use for the patron. Enabling links among bibliographic information will also ensure more useful results for patrons, utilizing the keyword search functionality helps with that. Had this been taken into consideration upon the original rollout of the new catalog, patrons would have trusted it more, and used it more frequently.

Most users of the survey prefer using the Discover search box as to find their items, so it's imperative that it has the functionality to search all metadata of a record to make sure all possible library holdings are returned in the results. The data suggests that faceted searching may be ideal for this firm, so patrons can find items easier. That should be taken into consideration when working with the catalog vendor while making changes to the user interface. This builds into existing evidence that facets "help users navigate and refine search results, discover unknown material, and avoid the frustration of empty results sets, all while being powered by the controlled vocabularies and detailed metadata that librarians have built and maintained" (Hall, 2017, p. 3).

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The participants in this survey work with the catalog more than anyone else in the firm, so gathering information about their search methods was vital, especially those who are not librarians. This is the closest representation I would get to an end-user who was not a librarian and did not have a background in research. The catalog must be advanced enough for the most educated user and simple enough for an attorney fresh out of law school to obtain the same results. Another study, with participants that were strictly end-users of the library catalog may have different suggestions for improving the interface of the library catalog. Future studies would prove well to compare catalog performance for those that are not employed by the library along with those that are.

The data shows that the interface of a catalog is as important as its contents. One user would like a carousel, or a visual representation of the selected titles. Another asked for a mobile-friendly design. These are features commonly seen in third-generation public library catalogs. As noted in previous research by Barton, “the features of next-generation catalogues, including faceted navigation and relevancy-ranked search results, are designed to make the search process more user friend and more in line with user expectations honed by the World Wide Web” (Barton, 2012, p. 2). The fact that the current functionality does not include spell-check is problematic for some users, as the lack of providing alternative search terms lessens the likelihood of finding your desired items.

Implementing a new taxonomy made all the difference when it came to satisfaction of search results. These results should be accounted for when considering the personalization of a law library catalog. The outcome of the project met my expectations. There was a lot of pushback when the new library catalog was implemented, but when the users were given an option to provide feedback and see their concerns answered, they were less resistant to change. Based on the feedback, the effectiveness of a catalog is housed in search options as opposed to the expertise of the searcher.

Results of the survey and interview cannot truly foreshadow how all end-users will utilize the catalog, or what they will think of the interface. The best way to gain employee buy-in is to include them in the design process. Since my sample size for the survey and interviews was so small, I cannot say this is a definitive study, but certainly a decent introduction to the subject.

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Law Libraries

Successful law firm libraries aim to serve two masters: to provide a comprehensive repository of legal information and to organize said information in such a way that novice and experienced law firm personnel can easily find what they are looking for. Though each law firm library is distinctive, all law librarians deal with the intersection of the back end of library catalog functionality coupled with educating people on how to use it. They are in the unique position of teaching legal research instruction and being able to implement changes that will make use of the catalog more successful.

The taxonomy of law firm libraries should be concise but robust, simple yet complex and classic yet malleable to new practice areas. A fair amount of the suggestions for catalog improvements on the survey were for better search options as well as the ability to sort materials within the practice group, which correlates with Barton's mandate that "Libraries need access systems that minimize complexity. They need true centralization of access that makes discovery and delivery of resources easier for a wide user population" (Barton, 2012, p. 84).

The data of the survey and interviews demonstrates that the goals of a library should be clear-cut when determining what items should be cataloged. Do they want to give the ability for patrons to educate themselves, or is the focus going to be the ease of item retrieval knowing this will determine what belongs on the home page of the library?

Chapter 6: Conclusion

This study aimed to identify best practices for law library catalog design. Based on quantitative and qualitative analysis of user interaction in response to library catalog functionality, it can be determined that user experience and interaction design are important items to contemplate when deciding which catalog to implement in your library. The results show that users want a clean, simple interface that they can refine as needed, with current interactive third-generation library catalog design options, such as a carousel or interactive media.

An initial project plan which laid out the necessary steps to undertake such a project was imperative to the process. The fact that the project plan had a definitive outcome but was flexible with time constraints and budget was a boon to the project. Assessing the requirements of the project with those most affected by the change was a must, as I could not operate in a silo for a change of such magnitude.

To get more user input, I should have had subgroup meetings within the library infrastructure, such as a taped round-table discussion. People feed off each other in a crowd, and I'm certain I would have received more input as they identified problems and suggested ideas in a group. In retrospect the needs assessment should have taken practicing attorneys into consideration, and I should have reached out to attorneys with varied age and experience. I'm certain this would have been a real-life illustration of the information highlighted in the literature review in reference to information gathering characteristics. I also should have reached out to law librarians and lawyers on social media for more feedback, but I was concerned that potential users would be wary due to privacy concerns in their individual firms.

Switching to the new library catalog was not without challenges, but I expected them to be less personal and more technical. Despite asking for input each step of the way, the implementation team was met with challenges from people who, despite their grievances of the old catalog system, were not keen on having to learn a new system. The most vocal feedback was primarily complaints that weren't

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captured via survey, due to lack of user participation. My study was too limited to be considered a blueprint on the process of implementing a new library catalog. If I had to do the project again I would have had the users at my law firm pick what they liked from different screenshots of the six integrated library systems that demoed. The feedback I received reiterated that the best library catalog: 1) keeps navigation simple, 2) makes searching easy and 3) has a home page that is engaging and all encompassing.

As defined by Nwosu et. al, “a law library... is an organized collection of information sources, properly housed and organized for service to meet the needs of the legal profession and the legal information needs of the legal public” (Nwosu, Tuyo, & NgoziAniche, 2014, p. 48). The findings of this research may be helpful to law librarians looking to replace their OPAC in the future. The lack of information literacy of recently graduated lawyers influences how they and their peers view their work performance. Since most legal research is done by the user via electronic resources, the OPAC should be user-friendly and efficient. Best practices in user experience design should be used with a heavy concentration on facets to ensure users the best search experience possible. To better understand the implications of this project, future studies could focus on the research habits of practicing lawyers versus research habits of paralegals and business staff in a law firm. Hopefully the information covered in this study assists librarians in the selection and implementation of their next integrated library system.

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Appendix A: Needs Assessment Chart

ILS CRITERIA	VENDOR #1	VENDOR #2	VENDOR #3	VENDOR #4	VENDOR #5	VENDOR #6
Acquisitions:						
Ability to add payment information for an invoice	√	√	√	√	√	√
Ability to attach an invoice at the invoice number level for easy accessibility	√	√	√	√		√
Ability to create a dummy bib record using an ISBN #	√	√	√	√	√	√
Ability to create a new fiscal year without a “rollover” process	√	√	√	√	√	√
Ability to create a purchase order from the catalog record or ISBN #	√	√	√	√	√	√
Ability to differentiate credit orders from purchases	√	√	√	√	√	√
Ability to track cancellation and refunds of titles	√	√	√	√	√	√
Can alerts be created for subs expiring, renewal periods, checked out and missing items?	√	√	√	√	√	√
Can retain all vendor information, including multiple account numbers	√	√	√	√	√	√
Flexible linking functionality: bib, invoice and holding records	√	√	×	√	√	√
Invoice records fairly coherent	√	√	√		√	√
Ledger/ fund hierarchy setup can mimic GTs CMS fund structure	√	√	√	√	√	√
Management of large purchase agreements: LMA & MYR	√	√	×	√	√	√

Next Generation Catalog Design

ILS CRITERIA	VENDOR #1	VENDOR #2	VENDOR #3	VENDOR #4	VENDOR #5	VENDOR #6
Catalog						
Ability to create/print processing labels via ILS catalog module	√	√	√	√	√	√
Ability to search titles in both modules	√	√	√	√	√	√
Ability to tag “missing” items in the module	√	√	√	√	√	√
Ability to track missing items in the module	√	√	√	√	√	√
Automated revision of serial pattern records		√	×	√	√	√
Clear divisions of tasks	√	√	√	√	√	√
Collection management: diverse formats: EBooks, PDFs, Print	√	√	√	√	√	√
Electronic Resource Management functionality	√	√	√	√	√	√
Federated searching	√	√	√	√	√	√
MARC Support – Catalog	√	√	√	√	√	√
Narrow search results	√	√	√	√	√	√
Notes field	√	√	√	√	√	√
One interface – two modules	√	√	√	√	√	√
Order of item records can be changed within the catalog module	√	√	√	√		√
Provides a distribution and routing list for each patron.		√	√	√	√	√
Provides remote circulation to check out materials for patrons	√	√	√	√	√	√

Next Generation Catalog Design

ILS CRITERIA	VENDOR #1	VENDOR #2	VENDOR #3	VENDOR #4	VENDOR #5	VENDOR #6
Search routing list function		√	√	√	√	√
Searchable data categories for line items	√	√	√	√	√	√
Serial pattern setups including irregular patterns		√	√	√	√	√
Serials history tab	√	√	√	√	√	√

Next Generation Catalog Design

ILS CRITERIA	VENDOR #1	VENDOR #2	VENDOR #3	VENDOR #4	VENDOR #5	VENDOR #6
Customer Service						
Ability to speak to a real person	√	√	√	√	√	√
Ability to email	√	√	√	√	√	√
Customer Service 24/7/365	√	√	√	√	√	√
Training via WebEx	√	√	√	√	√	√
Inter Library Loan/ OPAC						
Ability to access nationwide holdings for ILL purposes	√	√	√	√	√	√
Ability to track items from office to office and externally	√	√	√	√	√	√
Can the OPAC display if print items are also available online, via Lexis and Westlaw?	√	√	√	√	√	√
Fully Unicode compliant – Foreign languages	√	√	√	√	√	√
Interface of a local ILL request via email	√	√	√	√	√	√
Searchable intranet OPAC	√	√	√	√	√	√
Set timeout preference for OPAC	√	√	√	√	√	√
World Cat ILL link/ World Share	√	√	√	√	√	√
Reports						
Ability to generate claimed and missing items report	√	√	√	√	√	√

Next Generation Catalog Design

ILS CRITERIA	VENDOR #1	VENDOR #2	VENDOR #3	VENDOR #4	VENDOR #5	VENDOR #6
Ability to generate detailed reports	√	√	√	√	√	√
Reports: Excel, PDF, and Word formats	√	√	√	√	√	√

Next Generation Catalog Design

ILS CRITERIA	VENDOR #1	VENDOR #2	VENDOR #3	VENDOR #4	VENDOR #5	VENDOR #6
Systems						
Cloud/Web based	√	√	√	√	√	√
Compatibility w external systems: Chrome River, CMS, Overdrive	√	√	√	√	√	√
Compatibility w Microsoft Windows 2010	√	√	√	√	√	√
Data conversion from any system	√	√	√	√	√	√
Data tracking system	×	√	√	√	√	√
Disaster Recovery	√	√	√- differs if hosted by vendor or GT	√ SaaS option vendor will handle, cost included in package	√	√
Discovery Solution	not included in package price.	not included in the package – 3 rd party	included in the package price	included in package price	×	×
Periodic Upgrades	√	√	√	√	√	√ included in package price
SharePoint compatibility	√	√	√	√	√	√
SIP2 Compliant – Overdrive	√	√	√	√	√	×

Next Generation Catalog Design

*Please see the following pages for subscription details including a cost breakdown for each ILS system listed on the ILS Benchmark.

Vendor #1																																									
Estimated cost for ILS – License/ Subscription Details:	Proposal																																								
<p>\$77,748 covers the following: Number of users: 25</p> <ul style="list-style-type: none"> • Annual subscription – to begin the day you go live • Acquisitions (including serials and license management) • Fulfillment (including circulation, resource sharing and reserves) • Metadata Management • Administration • Link Resolution (including A-Z lists) • Knowledge Base (including authority control and record enrichment services) • Analytics (reporting) • Developers Network (including APIs and other integration mechanisms) • Electronic resource management (ERM) • <p>Implementation Services Cost \$53,625 covers:</p> <ul style="list-style-type: none"> • All one-time implementation • Training • Migration • Project Management • All other items relating to Implementation services listed in the “Implementation Methodology” document and the implementation section of the proposal. • This is a one-time cost License / Subscription Details Cost <p>Additional Services- \$28,762 (Discovery Solution product)</p> <ul style="list-style-type: none"> • Covers FTE = 2500 • Documents/Bibs = 22,000 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #003366; color: white;"> <th>Vendor #1</th> <th>1 Yr Cost</th> <th>3 Yr Cost</th> <th>5 Yr Cost</th> </tr> </thead> <tbody> <tr> <td>Annual Subscription fee</td> <td style="text-align: center;">77,748</td> <td style="text-align: center;">233,244</td> <td style="text-align: center;">388,740</td> </tr> <tr> <td>One-time Provision Fee</td> <td style="text-align: center;">10,366</td> <td style="text-align: center;">10,366</td> <td style="text-align: center;">10,366</td> </tr> <tr> <td>One-time Services</td> <td style="text-align: center;">53,625</td> <td style="text-align: center;">53,625</td> <td style="text-align: center;">53,625</td> </tr> <tr style="font-weight: bold;"> <td style="text-align: right;">Total</td> <td style="text-align: center;">141,739</td> <td style="text-align: center;">297,235</td> <td style="text-align: center;">452,731</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #003366; color: white;"> <th>Service #2</th> <th>1 Yr</th> <th>3 Yr</th> <th>5 Yr</th> </tr> </thead> <tbody> <tr> <td>Annual Subscription fee</td> <td style="text-align: center;">28,762</td> <td style="text-align: center;">86,286</td> <td style="text-align: center;">143,810</td> </tr> <tr> <td>One-time Services Fee</td> <td style="text-align: center;">7,400</td> <td style="text-align: center;">7,400</td> <td style="text-align: center;">7,400</td> </tr> <tr style="font-weight: bold;"> <td style="text-align: right;">Total</td> <td style="text-align: center;">36,162</td> <td style="text-align: center;">93,686</td> <td style="text-align: center;">151,210</td> </tr> <tr style="background-color: #ADD8E6; font-weight: bold;"> <td style="text-align: right;">Total</td> <td style="text-align: center;">177,901</td> <td style="text-align: center;">390,921</td> <td style="text-align: center;">603,941</td> </tr> </tbody> </table>	Vendor #1	1 Yr Cost	3 Yr Cost	5 Yr Cost	Annual Subscription fee	77,748	233,244	388,740	One-time Provision Fee	10,366	10,366	10,366	One-time Services	53,625	53,625	53,625	Total	141,739	297,235	452,731	Service #2	1 Yr	3 Yr	5 Yr	Annual Subscription fee	28,762	86,286	143,810	One-time Services Fee	7,400	7,400	7,400	Total	36,162	93,686	151,210	Total	177,901	390,921	603,941
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Next Generation Catalog Design

Vendor #2															
Estimated cost for ILS – License/ Subscription Details:	Proposal														
<p>Digital Cloud product suite \$ 31,500</p> <ul style="list-style-type: none"> • Remote Support Services • Up to 35 concurrent staff users • Unlimited Web OPAC Discovery users Included • 1GB of linked-media storage <p>YEAR-1 SUBSCRIPTION SUBTOTAL: \$ 28,350</p> <ul style="list-style-type: none"> • Data Conversion \$ 400 <p>1 MARC Catalog Records (20% Discount)</p> <p>Training: 1 Custom Setup \$2,000 4 hours - Custom Online Training Sessions - (20% Discount) Recorded virtual training sessions are available and free.</p> <p>System Setup: \$200</p> <ul style="list-style-type: none"> • Software configuration • Data loading • Implementation guide • Handling 	<p>SERVICES SUBTOTAL: \$ 2,600 Cloud Subscription: \$ 28,350 Professional Services: \$2,600 YEAR-1 GRAND TOTAL: \$ 30,950</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4F81BD; color: white;">Vendor #2</th> <th style="background-color: #4F81BD; color: white;">Cloud Subscription Fee in Years</th> </tr> </thead> <tbody> <tr> <td>Year - 1</td> <td style="text-align: right;">34,100</td> </tr> <tr> <td>Year - 2</td> <td style="text-align: right;">29,484</td> </tr> <tr> <td>Year - 3</td> <td style="text-align: right;">30,663</td> </tr> <tr> <td>Year - 4</td> <td style="text-align: right;">31,890</td> </tr> <tr> <td>Year - 5</td> <td style="text-align: right;">33,165</td> </tr> <tr> <td style="text-align: center;">Total</td> <td style="text-align: right;">\$129,502</td> </tr> </tbody> </table> <p>Special One-Time Discount: 10% (3,150)</p>	Vendor #2	Cloud Subscription Fee in Years	Year - 1	34,100	Year - 2	29,484	Year - 3	30,663	Year - 4	31,890	Year - 5	33,165	Total	\$129,502
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Total	\$129,502														

Next Generation Catalog Design

Vendor #3															
Estimated cost for ILS – License/ Subscription Details:	Proposal														
<ul style="list-style-type: none"> • Discovery Platform • Cataloging – Unlimited Bibliographic, MARC Holdings, Item and Authority Record File Sizes • Circulation • Acquisitions and Fund Accounting • Serials Control – Unlimited MARC Holdings and Check-in Record File Size • Electronic Resource Management (ERM) • Management Information and Report Writer – All Report Writers are provided with a site license • Database Management System and System-Wide Functionality • Project Management during Implementation Service • Software setup • Training – 12 days of on-site training services (Multiple site visits, all travel expenses included.) • Training support • Data Loading Services • Documentation – Site License access to User Manual • Software- unlimited access to a 24 hour Helpdesk, regular software enhancements 	<p>Proposal #1 – Software Only Subscription Solution</p> <ul style="list-style-type: none"> • 35 Staff Users • Unlimited Encore Users <p>Implementation Services (One-Time Cost) \$27,000</p> <ul style="list-style-type: none"> • Software Subscription (Year 1) \$20,108 • Software Subscription (Year 2) \$20,108 • Software Subscription (Year 3) \$20,108 • Software Subscription (Year 4) \$20,912 • Software Subscription (Year 5) \$21,748 <p>Proposal #2 Hosted Subscription Solution</p> <p>Implementation Services (One-Time Cost) \$27,000</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4F81BD; color: white;">Vendor #3</th> <th style="background-color: #4F81BD; color: white;">Cloud Subscription Fee in Years</th> </tr> </thead> <tbody> <tr> <td>Year - 1</td> <td style="text-align: right;">26,696</td> </tr> <tr> <td>Year - 2</td> <td style="text-align: right;">26,696</td> </tr> <tr> <td>Year - 3</td> <td style="text-align: right;">26,696</td> </tr> <tr> <td>Year - 4</td> <td style="text-align: right;">27,764</td> </tr> <tr> <td>Year - 5</td> <td style="text-align: right;">28,874</td> </tr> <tr> <td style="text-align: right;">Total</td> <td style="text-align: right;">\$136,726</td> </tr> </tbody> </table>	Vendor #3	Cloud Subscription Fee in Years	Year - 1	26,696	Year - 2	26,696	Year - 3	26,696	Year - 4	27,764	Year - 5	28,874	Total	\$136,726
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Total	\$136,726														

Next Generation Catalog Design

Vendor #4	Proposal																								
<p>Estimated cost for ILS – License/ Subscription Details:</p> <p>Annual cost - \$53,600 – based on list pricing</p> <ul style="list-style-type: none"> • 35 concurrent users • 5 year SaaS agreement • Mobile app • SIP2 • Web Services API – for federated /other integrated projects • SSL (Secure Socket Layer) <ul style="list-style-type: none"> • One time fees – Data Conversion – \$5,000 - \$12000 (Price depends on review and acceptance of data to be converted) • Project Management /Implementation Services – (3 to 6 days) - \$5280 - \$10,560 <ul style="list-style-type: none"> • Training • Webinar/8 hours - \$1600 • Onsite Training /2 days - \$3750 plus T & E <p>Increases are capped at 5% per annum, it doesn't occur all years, nor will it meet the 5%.</p>	<table border="1"> <thead> <tr> <th data-bbox="1129 407 1562 464">Vendor #4</th> <th data-bbox="1562 407 1906 464">Cloud Subscription Fee in Years</th> </tr> </thead> <tbody> <tr> <td data-bbox="1129 464 1562 505">Year - 1</td> <td data-bbox="1562 464 1906 505">82,206</td> </tr> <tr> <td data-bbox="1129 505 1562 545">Year - 2</td> <td data-bbox="1562 505 1906 545">58,046</td> </tr> <tr> <td data-bbox="1129 545 1562 586">Year - 3</td> <td data-bbox="1562 545 1906 586">58,046</td> </tr> <tr> <td data-bbox="1129 586 1562 626" style="text-align: right;">Total</td> <td data-bbox="1562 586 1906 626">\$198,298</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th data-bbox="1129 626 1562 667">Vendor #4</th> <th data-bbox="1562 626 1906 667">Cloud Subscription Fee in Years</th> </tr> </thead> <tbody> <tr> <td data-bbox="1129 667 1562 708">Year - 1</td> <td data-bbox="1562 667 1906 708">77,760</td> </tr> <tr> <td data-bbox="1129 708 1562 748">Year - 2</td> <td data-bbox="1562 708 1906 748">53,600</td> </tr> <tr> <td data-bbox="1129 748 1562 789">Year - 3</td> <td data-bbox="1562 748 1906 789">53,600</td> </tr> <tr> <td data-bbox="1129 789 1562 829">Year - 4</td> <td data-bbox="1562 789 1906 829">53,600</td> </tr> <tr> <td data-bbox="1129 829 1562 870">Year - 5</td> <td data-bbox="1562 829 1906 870">53,600</td> </tr> <tr> <td data-bbox="1129 870 1562 911" style="text-align: right;">Total</td> <td data-bbox="1562 870 1906 911">\$292,160</td> </tr> </tbody> </table>	Vendor #4	Cloud Subscription Fee in Years	Year - 1	82,206	Year - 2	58,046	Year - 3	58,046	Total	\$198,298	Vendor #4	Cloud Subscription Fee in Years	Year - 1	77,760	Year - 2	53,600	Year - 3	53,600	Year - 4	53,600	Year - 5	53,600	Total	\$292,160
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Next Generation Catalog Design

Vendor #5																									
Estimated cost for ILS – License/ Subscription Details:	Proposal																								
<p>Platform: Cloud</p> <p>Users: 35 for ILS and 25 for Ref Tracker</p> <ul style="list-style-type: none"> • Acquisitions • Catalog • Serials • OPAC • Electronic Resource Management (ERM) • Reference Tracking System <p>Term: 5 year</p> <p>Annual Fee: \$25K (5% annual increase year 2-3)</p> <p>Term: 3 year</p> <p>Annual Fee: \$29K (5% annual increase year 2-5)</p> <ul style="list-style-type: none"> • Data Conversion: \$15K (need analysis of the data) • Reference Tracking System \$15K (25 Users) – additional users - \$500 each (.05% increase subsequent years) • Virtual Training: \$300 per hour (8 hours) • Initial set up: \$5K 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #003366; color: white;"> <th style="text-align: center;">Vendor #5</th> <th style="text-align: center;">Cloud Subscription Fee in Years</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Year - 1</td> <td style="text-align: right;">57,400</td> </tr> <tr> <td style="text-align: center;">Year - 2</td> <td style="text-align: right;">26,250</td> </tr> <tr> <td style="text-align: center;">Year - 3</td> <td style="text-align: right;">27,562</td> </tr> <tr> <td style="text-align: right;">Total</td> <td style="text-align: right;">\$111,212</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #003366; color: white;"> <th style="text-align: center;">Vendor #5</th> <th style="text-align: center;">Cloud Subscription Fee in Years</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Year - 1</td> <td style="text-align: right;">57,400</td> </tr> <tr> <td style="text-align: center;">Year - 2</td> <td style="text-align: right;">26,250</td> </tr> <tr> <td style="text-align: center;">Year - 3</td> <td style="text-align: right;">27,562</td> </tr> <tr> <td style="text-align: center;">Year - 4</td> <td style="text-align: right;">28,940</td> </tr> <tr> <td style="text-align: center;">Year - 5</td> <td style="text-align: right;">30,387</td> </tr> <tr> <td style="text-align: right;">Total</td> <td style="text-align: right;">\$170,539</td> </tr> </tbody> </table>	Vendor #5	Cloud Subscription Fee in Years	Year - 1	57,400	Year - 2	26,250	Year - 3	27,562	Total	\$111,212	Vendor #5	Cloud Subscription Fee in Years	Year - 1	57,400	Year - 2	26,250	Year - 3	27,562	Year - 4	28,940	Year - 5	30,387	Total	\$170,539
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Next Generation Catalog Design

Vendor #6	Proposal																								
<p>Estimated cost for ILS – License/ Subscription Details:</p> <p>Base Module (Mandatory component with 1 staff admin) - \$349 a month</p> <ul style="list-style-type: none"> • Additional modules - \$69 month each • Acquisitions • Catalog • Client Management • Serials • OPAC <ul style="list-style-type: none"> • Additional staff admin - \$69 month each <ul style="list-style-type: none"> • Data conversion - price confirmed after receipt of sample data. • Training - \$250 per hour (2 hour segments) • Free monthly training sessions • Access to Manual – PDF format <p>SaaS Subscription (with approx. 35 staff administrators)</p> <p>Start-Up Services: est. \$15,000 to \$25,000</p> <p>Includes:</p> <ul style="list-style-type: none"> • SaaS Setup Services & Licensing • Data Conversion • Approx. 23k bibliographic records provided in MARC or XML format • Software, Reports and .Net OPAC Setup/Configuration • Training <p>Optional:</p> <ul style="list-style-type: none"> • SharePoint Integration • HR and Financial Integration • Mobile Access 	<p>Vendor #6 Software Subscription: est. \$10,000 to \$25,000 / year</p> <p>Includes:</p> <ul style="list-style-type: none"> • Core Knowledge Server (Cataloging, Queries, Reports, System Tools, 1 admin) • Modules: Acquisitions, Serials, MARC Record Interface/Z39.50, Client Management/ILL, .net OPAC • FULL MARC Interface, additional staff administrators license <p>Incentive Options:</p> <ul style="list-style-type: none"> - 3 Year Term: 5% annual subscription discount - 5 Year Term: 10% annual subscription discount <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4F81BD; color: white;">Vendor #6</th> <th style="background-color: #4F81BD; color: white;">Cloud Subscription Fee in Years</th> </tr> </thead> <tbody> <tr> <td>Year - 1</td> <td style="text-align: right;">50,000</td> </tr> <tr> <td>Year - 2</td> <td style="text-align: right;">47,500</td> </tr> <tr> <td>Year - 3</td> <td style="text-align: right;">47,500</td> </tr> <tr> <td style="text-align: right;">Total</td> <td style="text-align: right;">\$145,000</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4F81BD; color: white;">Vendor #6</th> <th style="background-color: #4F81BD; color: white;">Cloud Subscription Fee in Years</th> </tr> </thead> <tbody> <tr> <td>Year - 1</td> <td style="text-align: right;">50,000</td> </tr> <tr> <td>Year - 2</td> <td style="text-align: right;">45,000</td> </tr> <tr> <td>Year - 3</td> <td style="text-align: right;">45,000</td> </tr> <tr> <td>Year - 4</td> <td style="text-align: right;">45,000</td> </tr> <tr> <td>Year - 5</td> <td style="text-align: right;">45,000</td> </tr> <tr> <td style="text-align: right;">Total</td> <td style="text-align: right;">\$230,000</td> </tr> </tbody> </table>	Vendor #6	Cloud Subscription Fee in Years	Year - 1	50,000	Year - 2	47,500	Year - 3	47,500	Total	\$145,000	Vendor #6	Cloud Subscription Fee in Years	Year - 1	50,000	Year - 2	45,000	Year - 3	45,000	Year - 4	45,000	Year - 5	45,000	Total	\$230,000
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Total	\$145,000																								
Vendor #6	Cloud Subscription Fee in Years																								
Year - 1	50,000																								
Year - 2	45,000																								
Year - 3	45,000																								
Year - 4	45,000																								
Year - 5	45,000																								
Total	\$230,000																								

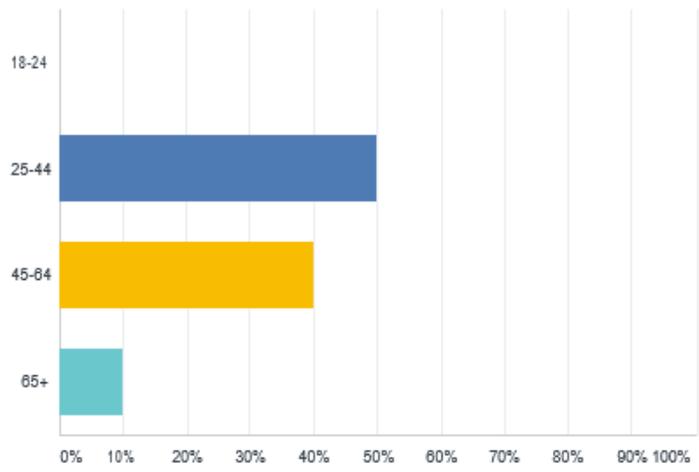
Appendix B: Survey Monkey Questions and Results

1. What is your age?
2. What is the highest level of formal education you have completed?
3. What is your primary job duty?
4. How long have you been at [the firm]?
5. How often do you use the online catalog?
6. On your last visit did you find what you were looking for?
7. When using the online catalog to perform research, where is the first place you start?
8. How would you rate the following statements in relation to the online catalog?
9. What features do you think could be improved and why?
10. What is the best feature and why?
11. What would you like to see improved on the catalog?

Next Generation Catalog Design

Q1 What is your age?

Answered: 10 Skipped: 1



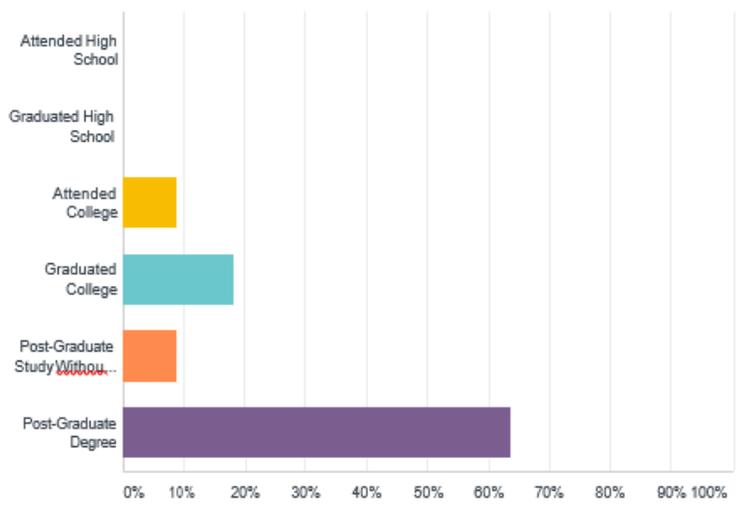
ANSWER CHOICES	RESPONSES
18-24 (1)	0.00% 0
25-44 (2)	50.00% 5
45-64 (3)	40.00% 4
65+ (4)	10.00% 1
TOTAL	10

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
2.00	4.00	2.50	2.60	0.66

Next Generation Catalog Design

Q2 What is the highest level of formal education you have completed?

Answered: 11 Skipped: 0



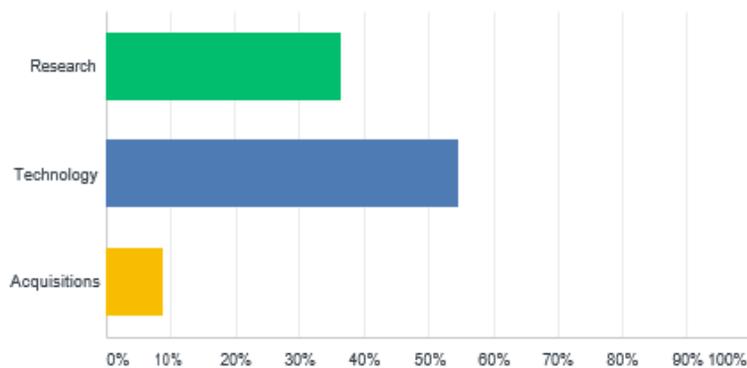
ANSWER CHOICES		RESPONSES	
Attended High School (1)		0.00%	0
Graduated High School (2)		0.00%	0
Attended College(3)		9.09%	1
Graduated College(4)		18.18%	2
Post-Graduate Study Without Degree (5)		9.09%	1
Post-Graduate Degree (6)		63.84%	7
TOTAL			11

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
3.00	6.00	6.00	5.27	1.05

Next Generation Catalog Design

Q3 What is your primary job duty?

Answered: 11 Skipped: 0



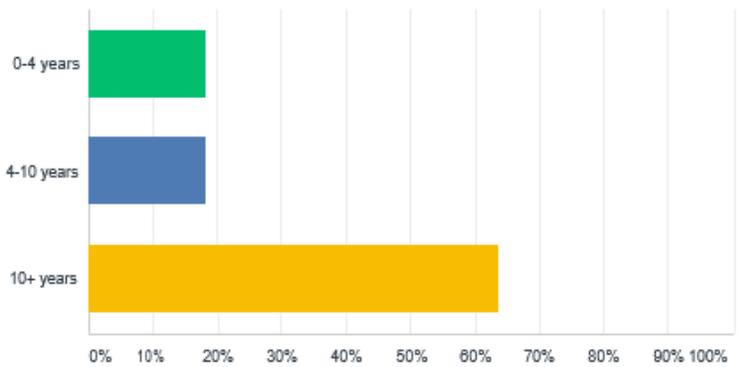
ANSWER CHOICES		RESPONSES	
Research (1)		36.36%	4
Technology (2)		54.55%	6
Acquisitions (3)		9.09%	1
TOTAL			11

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	3.00	2.00	1.73	0.62

Next Generation Catalog Design

Q4 How long have you been with the firm?

Answered: 11 Skipped: 0



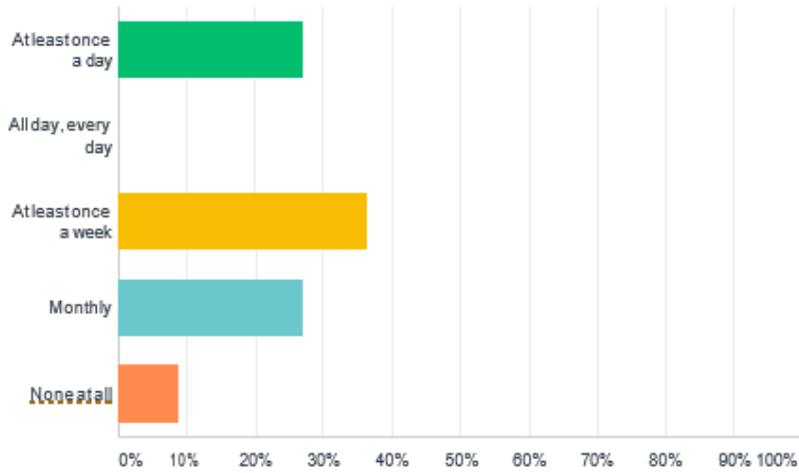
ANSWER CHOICES	RESPONSES
0-4 years (1)	18.18% 2
4-10 years (2)	18.18% 2
10+ years (3)	63.64% 7
TOTAL	11

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	3.00	3.00	2.45	0.78

Next Generation Catalog Design

Q5 How often do you use the online catalog?

Answered: 11 Skipped: 0

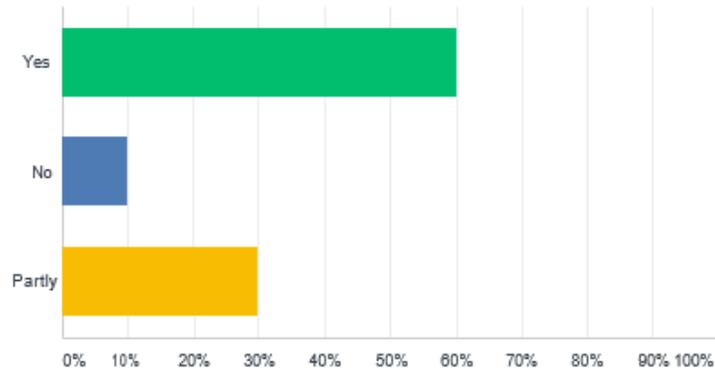


ANSWER CHOICES		RESPONSES		
At least once a day (1)		27.27%	3	
All day, every day (2)		0.00%	0	
At least once a week (3)		36.36%	4	
Monthly (4)		27.27%	3	
None at all (5)		9.09%	1	
Total Respondents: 11				
BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	5.00	3.00	2.91	1.31

Next Generation Catalog Design

Q6 On your last visit did you find what you were looking for?

Answered: 10 Skipped: 1



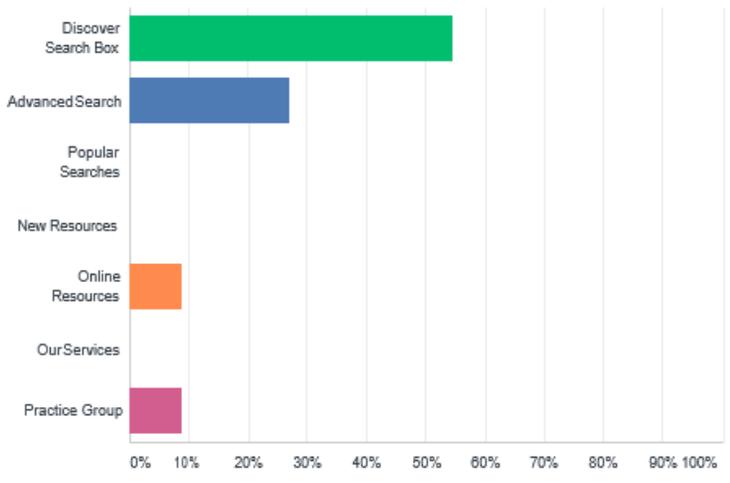
ANSWER CHOICES		RESPONSES	
Yes (1)		60.00%	6
No (2)		10.00%	1
Partly (3)		30.00%	3
TOTAL			10

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	3.00	1.00	1.70	0.90

Next Generation Catalog Design

Q7 When using the online catalog to perform research, where is the first place you start?

Answered: 11 Skipped: 0



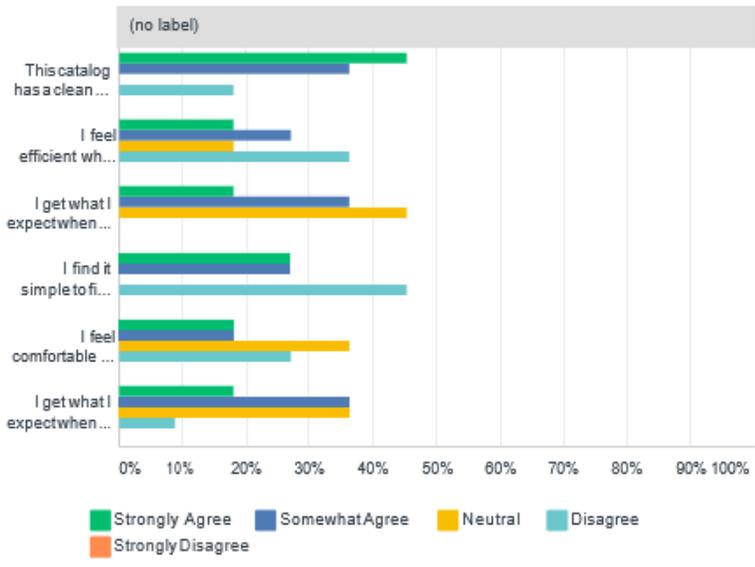
ANSWER CHOICES	RESPONSES
Discover Search Box (1)	54.55% 6
Advanced Search(2)	27.27% 3
Popular Searches(3)	0.00% 0
New Resources(4)	0.00% 0
Online Resources(5)	9.09% 1
Our Services(6)	0.00% 0
Practice Group(7)	9.09% 1
TOTAL	11

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	7.00	1.00	2.18	1.90

Next Generation Catalog Design

Q8 How would you rate the following statements in relation to the online catalog?

Answered: 11 Skipped: 0



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(no label)	STRONGLY AGREE (1)	SOMEWHAT AGREE (2)	NEUTRAL (3)	DISAGREE (4)	STRONGLY DISAGREE (5)	TOTAL	
This catalog has a clean and simple look.	45.45% 5	36.36% 4	0.00% 0	18.18% 2	0.00% 0	11	
I feel efficient when I use this catalog.	18.18% 2	27.27% 3	18.18% 2	36.36% 4	0.00% 0	11	
I get what I expect when I click on things on this catalog.	18.18% 2	36.36% 4	45.45% 5	0.00% 0	0.00% 0	11	
I find it simple to find relevant content when using this catalog.	27.27% 3	27.27% 3	0.00% 0	45.45% 5	0.00% 0	11	
I feel comfortable I am getting a complete and relevant result when I am using this catalog.	18.18% 2	18.18% 2	36.36% 4	27.27% 3	0.00% 0	11	
I get what I expect when I craft a search on this catalog.	18.18% 2	36.36% 4	36.36% 4	8.00% 1	0.00% 0	11	
BASIC STATISTICS			MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
This catalog has a clean and simple look.			1.00	4.00	2.00	1.91	1.08
I feel efficient when I use this catalog.			1.00	4.00	3.00	2.73	1.14
I get what I expect when I click on things on this catalog.			1.00	3.00	2.00	2.27	0.75
I find it simple to find relevant content when using this catalog.			1.00	4.00	2.00	2.64	1.30
I feel comfortable I am getting a complete and relevant result when I am using this catalog.			1.00	4.00	3.00	2.73	1.05
I get what I expect when I craft a search on this catalog.			1.00	4.00	2.00	2.36	0.88

Next Generation Catalog Design

Q9 What features do you think could be improved and why?

Answered: 9 Skipped: 2

#	RESPONSES
1	Could the design be mobile friendly?
2	The interface is fine, <u>it</u> is the content updating that is my primary issue.
3	Ability to sort materials in the practice group or new resources sections
4	Keyword search/search. Doesn't give you alternative titles if you don't spell it perfectly.
5	Answers above are from using the link on this page http://newintranet.gtlaw.com/gtintranet/index.php/research-center/routing/research-center/
6	Anything I can think of is more along the lines of design, not particular features.
7	Every think is cool with me.
8	More detailed information
9	Notices of updates available for titles for hard-copy materials with old publication dates

Q10 What is the best feature and why?

Answered: 9 Skipped: 2

#	RESPONSES
1	Advanced search is great and easy/intuitive to use
2	submitting requests to research
3	I don't use it enough to identify a best feature.
4	N/A
5	https://1420.sydneyplus.com/GreenbergTraurig_SE/portal.aspx Attractive layout
6	Ability to see what offices may have a particular item.
7	Cleanness, not cluttered
8	Product lookup
9	Easy searching

Next Generation Catalog Design

Q11 What would you most like to see improved on the catalog?

Answered: 9 Skipped: 2

#	RESPONSES
1	Certain actions like "Submit a Request" could be a bit more prominent - maybe larger or different color button
2	Content Accuracy and updates
3	The feedback I hear from people who use it more often is that the maintenance of the data needs to be improved so that the information displayed is accurate.
4	search function (u use this mostly)
5	What does "Popular Searches" refer to? Nothing in the dropdown. No discernable order to "New Resources" order them by year or reverse chronological. "Practice group" should have the list as the interface, not a dropdown.
6	Entries for items up-to-date; some still have links to the Lexis ebooks and some have older dates listed (i.e. 2007) but the material included a 2019 update
7	All good
8	Search feature
9	?

Q12 Aside from improved design, what changes or additional functionality would you suggest for our catalog?

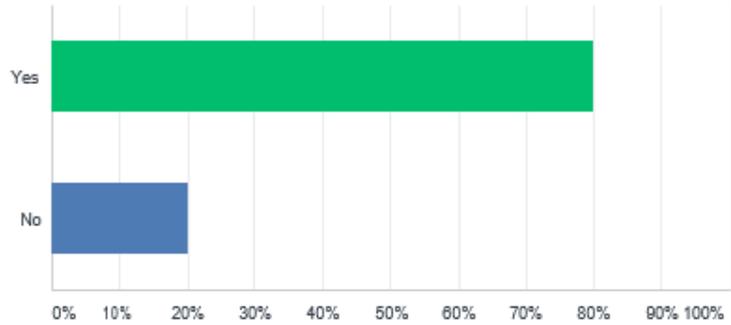
Answered: 9 Skipped: 2

#	RESPONSES
1	I don't have any additional suggestions
2	titles searched by subject being more accurate
3	I think the more opportunities to sort results to fit users' criteria, the better.
4	N/A
5	Add cover page images and links to reviews of titles.
6	Seems complicated to search by a particular office.
7	All good
8	Improved searching
9	?

Next Generation Catalog Design

Q13 Would you be interested in joining a focus group to help test usability of the catalog?

Answered: 10 Skipped: 1



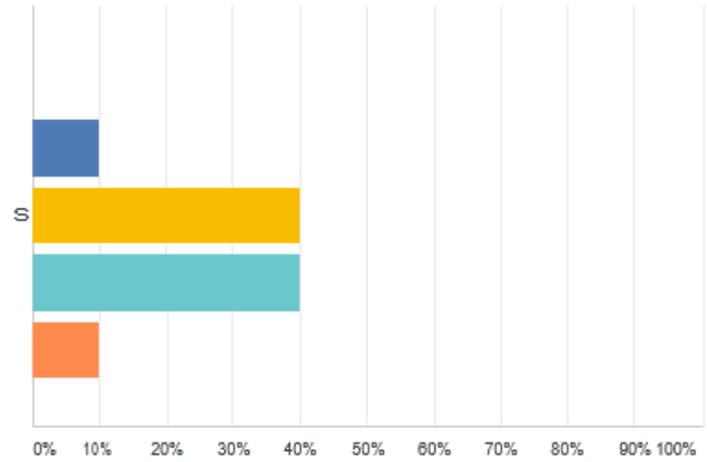
ANSWER CHOICES		RESPONSES	
Yes (1)		80.00%	8
No (2)		20.00%	2
TOTAL			10

BASIC STATISTICS				
Minimum	Maximum	Median	Mean	Standard Deviation
1.00	2.00	1.00	1.20	0.40

Next Generation Catalog Design

Q14 How would you rate the usability of the catalog on a scale of 1-5?

Answered: 10 Skipped: 1



	TERRIBLE (1)	(NO LABEL) (2)	(NO LABEL) (3)	(NO LABEL) (4)	GREAT (5)	TOTAL	WEIGHTED AVERAGE
S	0.00% 0	10.00% 1	40.00% 4	40.00% 4	10.00% 1	10	3.50

BASIC STATISTICS						
Minimum		Maximum	Median	Mean		Standard Deviation
2.00		5.00	3.50	3.50		0.81

Appendix C: In-Depth Interview Questions

1. Please describe the purpose of a library catalog.
2. What tasks do you do in the library catalog?
3. How do you feel about the Home Page of the catalog?
4. How do you feel about the search functionality of the catalog?
5. What features would you like to see in a library catalog?
6. Describe your catalog research method.

Next Generation Catalog Design