2011

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Howard, D., & Wiebrands, C. (2011, February). Culture Shock: Librarians' Response to Web Scale Search. Paper presented at the 2011 ALIA Information Online Conference, Australian Library and Information Association, Sydney, N.S.W.

Culture Shock: Librarians' Response to Web Scale Search

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ABSTRACT

In common with many other academic libraries, search tools such as the library catalogue, link resolver and federated search are utilised at Edith Cowan University Library to enable access to its collections and subscribed resources. It could be argued that these tools reflect methods of organising information from an earlier, pre-Internet era, and as such, they "make sense" to librarians. However, these tools are not simple to use or navigate, particularly when compared to Google, which, studies show, tends to be the first search tool of choice for many students and academic staff.

Recognising that easier methods of accessing and discovering library resources are essential, ECU Library implemented the Serials Solution web scale discovery tool Summon at the beginning of 2010. This paper describes the rollout of Summon and the subsequent impact on ECU Library and its users, with a specific focus on its impact on ECU's librarians and the information literacy programmes provided to library users.

As librarians we faced several challenges when taking on Summon. A philosophical shift was required in the way we thought about finding and teaching others to find information. Much of our energy was expended in adapting to this new environment. The biggest risk we faced was negative librarian experiences and views flowing through to our users. A survey was conducted of ECU librarians, to determine their experiences and expectations with the use of Summon. This paper discusses the findings of the survey and examines the issues that librarians faced in developing their understanding and enhancing their use of the tool.

Introduction

For centuries, the library catalogue has been a mainstay of the library and one of the major tools for access to any library's collections. The web-based OPAC has been widely implemented and used in most libraries, and has become an important tool for librarians and our clientele. Its limitations have however become increasingly obvious, particularly as other web-based search tools have gained in prominence and popularity among information seekers. It is the behaviour of our information seekers that should drive our services. The "desire lines", the easiest path to a destination (Bachelard, 1992), that users create in the information landscape give us clear indications of the user experience being looked for. But this desired experience sits somewhat uncomfortably within the world of the risk-averse librarian.

The well beaten dirt path leading to Google makes a mockery of the intricately crafted information superhighways librarians have created and provided for our users, with users in many cases bypassing the library and the resources it provides. "Increasingly, libraries are viewed as irrelevant to the research process, leaving them vulnerable to being cut, both financially and from the mind of the end user" (Burke, 2010). Web scale search is one such response to meeting the requirements of our users in an environment of quality resources. This paper describes the experience of librarians at Edith Cowan University Library when Summon, a web-based web scale discovery product from Serials Solutions, was implemented.

Web scale discovery

Summon from Serials Solutions is marketed as a “web-scale discovery service” providing “instant access to the breadth of authoritative content that's the hallmark of great libraries” (Serials Solutions, 2010b). A library that licenses or subscribes to the service has its catalogue holdings indexed, along with other resources from participating publishers and content providers, creating a “unified index of preharvested content” (Serials Solutions, 2010a). Summon then provides a search engine that enables users to “search the breadth of library collections – physical and digital at the article level – from a single search box.” (Serials Solutions, 2010a) It would seem that there is a bit of hype beginning to accrue to the term web scale discovery; one author suggests that it is “a possible answer to the ‘one search box to rule them all’ quest” (Wisniewski, 2010).

For a term that is increasingly being used to describe “advances” in searching, it is surprisingly difficult to find a simple definition of the term “web scale”. One definition, from OCLC (Teets, 2009), states that “web scale” is:

“A system which is Highly Available, Reliable, Transparent, High Performance, Scalable, Accessible, Secure, Usable, and Inexpensive. There are alternate phrases, some of which are true alternatives and some of which have different meanings. These include: ‘utility computing’, ‘web-scale computing’, ‘on-demand infrastructure’, ‘cloud computing’, ‘Software as a Service (SaaS)’ and ‘Platform as a Service (PaaS)’.”

Lorcan Dempsey, Vice President, OCLC Research and Chief Strategist, states that “‘Web-scale’ refers to how major web presences architect systems and services to scale as use grows. But it also seems evocative in a broader way of the general attributes of the large gravitational hubs which are such a feature of the current web (eBay, Amazon, Google, WikiPedia, ...)” (Dempsey, 2007).

From the authors’ point of view, Summon as a web scale discovery service is one that is delivered on demand to library users via the browser, with infrastructure, processing and indexing provided and maintained remotely by the vendor.

Access to information and library resources

Before the Internet became ubiquitous, “it was not easy to locate or gain access to relevant, high-quality information. If one needed to know about the annual migration patterns of dolphins in the Pacific Ocean, or about the synthesis of two chemical compounds, or about the gross national product of Luxembourg, a trip to a library was probably one’s only option” (Anderson, 2006, p.30). Library tools reflected the overwhelmingly print-based information environment in which libraries functioned. “The library as we know it was designed to meet the needs of a society whose chief information problem was one of scarcity: information was stored primarily in one format (print) and had to be found, purchased, organized, and housed carefully in central buildings in order for people to have access to it” (Anderson, 2006, p.33). The card catalogue, indexes and annotated bibliographies provided information seekers with their main entrées to information. Since the Internet’s widespread adoption, however, information accessibility has dramatically changed, at least in most parts of the Western world, with information being readily available to anyone with Internet access. Library tools too have been adapted to take advantage of convenient digital delivery, with the OPAC providing users a means to search a library’s collection.

There is a large body of literature examining OPAC development and use, with increasing recognition that many existing OPACs have not kept pace with developments in Web interfaces. It has been suggested that OPACs have been “arguably just displaying the card catalogue in a web browser” (Wood, 2009). Library resources as described and listed on an OPAC have also not been discoverable using search engines, limiting their findability for many users who have become accustomed to using Google. This is despite the fact that for

many academic libraries the majority of resources provided are in electronic formats.

For instance, most OPACs to date do not allow:

- Searching beyond known items
- Searching beyond book and journal titles – no searching for specific chapters or articles within journals
- Display results in logical groupings
- Faceted browsing
- Relevance ranking
- Connection with recommendation services, such as is available on Amazon (Engard, 2006).

In a 2009 case study of the Australian Parliamentary Library the suggestion was made that "a solution [is needed] where the OPAC does not exist as a separate entity, but as part of the whole search architecture" (Missingham, Brettell, White, & Miskin, 2009, p.43). The study recognised that the needs of library clients (in this case, parliamentarians and their staff) were not being effectively met by the existing OPAC, given that the information required is available in a wide range of resources, not all of which were catalogued and therefore accessible via the OPAC.

Research and commentary on the OPAC has focussed on its design (for example, Wells, 2007); librarians', specifically cataloguers' behaviour (Kemp, 2008); user behaviour (Yu & Young, 2004), and of course the impact of Web 2.0 (Xu, Ouyang, & Chu, 2009). Attempts to improve access to library resources have seen developments in federated search, portals, and most recently, web-scale discovery tools, such as Primo Central, and Summon.

Information literacy and the OPAC

What has the impact of library tools been on information literacy? It would not be incorrect to say that when delivering information classes to students, academic librarians have tended to focus on the tools, whether the library catalogue or OPAC, or journal databases – is this truly *information* literacy? Webber (2010) suggests that information literacy needs to focus not only on searching for information, "but also encountering, browsing, monitoring, managing and creating" information.

We spend far too much time training students to use complicated systems that many will not encounter or have access to once they have left the university. This is not information literacy but an attempt to make up for poor system design. "Library OPACs have always been difficult to use and have produced poor outcomes for users. Librarians have tended to avoid this issue by emphasizing the importance of user training and the good results that can emerge when OPACs are used correctly (e.g. by librarians)"(Sokvitne, 2006). "Yes, librarians are often (though not always) available to help, but tutoring is a far less effective and efficient solution to the problem than fixing the search interface, which is exactly what Google has done." (Anderson, 2006, p.33)

Summon implementation

In 2009 Edith Cowan University Library focused on the opportunity to re-invigorate the access tools provided to staff and students. This opportunity arose out of the demise of the Australian Academic and Research Library Network (AARLIN) consortia operation of the MetaLib (federated search) and SFX (link resolver) products. Our aims were simple. The next interface we offered our students and staff should involve next generation web scale search methods, fit the information seeking styles of our clients who craved a Google-like approach to searching and be fully hosted in recognition of our limited ability to take on

additional IT support. This search began in early 2009 with an environmental scan and assessment. It became clear very early on that few vendors had fully developed products that went beyond a traditional discovery layer at the time we conducted the assessment. Most vendors could only demonstrate screenshots of systems "in development". Serials Solutions' Summon product at this time was a fully functioning product and achieved the three key aims we had set for ourselves. In October 2009 ECU selected and signed contracts for the delivery of Summon and 360 Link to replace our federated search and link resolver products.

The setup procedure for Summon was a six week process. Technically the development of the product for ECU was straightforward and was delivered on time with minimal staffing requirements. As an existing Serials Solution customer via their 360MARC service we were already partly set up and had a good working knowledge of the Serials Solutions "Client Centre". The configuration of our e-resources was therefore already partly completed. The remaining set up involved identifying and exporting local content into the unified index and culminated in an export of the Libraries bibliographic records to Serials Solutions. Mapping rules were then established and the interface configured.

The decision was made early on to roll out Summon, now branded as Library One Search, as the primary access point for Library resources. At this time ECU was one of the first university libraries in Australia to do so. Our federated search interface would run in parallel for one year with this service being removed in November 2010. The Library catalogue and access to an A-Z list of databases (native interface) would remain accessible as links from our home page but the main access point would be given to Library One Search.

From mid-2009 ECU librarians were asked to examine and use the websites of other early adopters of Summon to begin to train themselves in its use. In December 2009 access to the completed but unreleased ECU version of Summon was given to all library staff. No formal training was offered in the use of Library One Search. The view of the project team was that a library professional would find the tool straightforward and easy to use.

A wiki was established to capture staff questions, tips and guides. This was primarily a project management tool while we developed and rolled out Library One Search. The wiki was maintained while initial issues were resolved and then its use was suspended as Library One Search was mainstreamed into the Library's offerings. A roadshow was run in which staff demonstrated the site to colleagues and exchanged ideas and questions.

Most of the implementation effort revolved around updating and adapting information literacy materials in time for semester one, 2010. It was clear that this was the most problematic part of the roll out of this new service and placed considerable strain on librarians.

Librarians' response

The success measure for any online project is not merely in the delivery of a piece of software. Success is in the delivery of planned benefits to stakeholders, something often forgotten in IT projects. A key stakeholder group for this project were librarians, and many librarians at ECU responded to Summon with a degree of concern, perhaps even trepidation, over the changes Summon would bring to the way library clients accessed resources. The evolution of librarian reactions to Summon is a useful study of a profession dealing with change. To better understand these issues we conducted two surveys of librarians at Edith Cowan University to ascertain the primary issues being faced by staff post-implementation and to measure any shift in these issues over time. Our aim was not to assess the performance of the software but to gather information on the issues being faced by information professionals.

The initial survey was conducted in February 2010 soon after implementation with the follow up run in July of the same year. The longer term aim was to compare librarian reactions to Summon with those of our users. Of a total population of 30 the surveys had a return rate of 26% and 20% respectively. The poor rate of return in itself demonstrated some interesting issues. Librarians not directly involved with information literacy felt that they could not respond to the survey instrument. Those librarians who were involved in the selection and rollout of Summon felt that they had a vested interest and chose not to respond. A large majority were apparently ambivalent to the issues and felt insufficient concern or praise to warrant the time to complete the survey. In this regard the survey respondents represented those staff with extreme views at either end of the spectrum. Though a small sample the results give a good picture of the concerns expressed by librarians when moving into a pre-indexed web scale search tool.

Survey results

Overwhelmingly the initial challenges cited by librarians are the challenges faced by anyone undergoing change. A new and innovative product and tight time lines created pressures for normally risk adverse professionals. These challenges did evolve over time and do point to key areas of change management for institutions contemplating similar rollouts. The following is a summary of main issues from the survey results.

Coverage

Lack of knowledge of what was indexed in Summon was a major concern, with librarians understandably wanting to know what journals were indexed, and wanting this information provided in terms of percentage coverage of traditional subject databases. This desire seemed greater than any previous desire to question database inner workings or to question the Holy Grail itself, Google. Librarians had been pushed significantly outside of their comfort zone with this product and this drove the desire to fully understand its nuances. Library One Search was being held up for examination to a level not seen since our last significant mind shift with federated search. Respondents cited “lack of information on resources included in the product” as the biggest challenge they faced at the outset of the implementation. This highlighted a desire to relate Summon coverage back to familiar databases.

For example, questions were raised around the percentage of titles in CINAHL or Academic One File which were covered by Summon. This data was very difficult to provide as Serials Solutions deals with publishers and not with database providers. Lists of publishers and journals were therefore easily available but comparisons of coverage back to databases were virtually nonexistent at the time. For the librarian a list of 6,800 publishers and 94,000 journals, though reassuring, does not have an easily transferable meaning to day-to-day work with students.

Our survey indicated a significant shift in the perceived advantage of “full-text searching” within Library One Search. Initially 75% of librarians viewed full text searching within Summon as an advantage. Six months later only 50% of respondents viewed the ability to locate full text items as an advantage. Lack of confidence in the coverage led to concerns that full text may not be found and students would not recognise how to move beyond Library One Search to more specialized resources.

“Lack of transparency in what sources have been searched is the biggest disadvantage.”

Simplification vs. “Dumbing Down”

Another concern was that the search functionality would be “dumbed down”. Summon, with its single search box and apparent lack of advanced search capabilities, did not appear to librarians to be sufficiently sophisticated. Some librarians argued that library clients would be disadvantaged if they did not use the native search interfaces provided by database vendors. There was doubt that Summon would be able to provide library users with adequate access to library resources. Overall these concerns reflected librarians’ desire to find information in the “right way”. For our users the “right way” is the quick, simple and effective way - something that does not always sit comfortably with librarians as a profession. Library One Search is a direct response to the information rich / time poor environment our users confront. It is designed with this end user in mind and this is something that librarians, although they recognise users’ desire for simplicity, still find frustrating. Ironically this same simplification was viewed as having advantages for our users. The simplicity of the search interface, comprehensive search results and ability to narrow via facets were viewed as key areas of advantage for our users.

“Overall much simpler and more user-friendly than MetaQuest [federated search]”

Librarians overall were positive on the general advantages of the Summon approach to information discovery from an average user perspective. A common theme in the feedback received from librarians was that it was a proactive response to Google’s domination in student academic life.

“Library One Search is similar to Google so is familiar to students and more closely matches the way they search for information.”

But this tension between simplification and “dumbing down” continues to exist, especially when considering the needs of both professional and advanced users. More research will need to be conducted with these advanced users on the impact of Summon.

Trust

Overall librarians, to varying degrees, had initial trust issues related to Library One Search.

“I have no knowledge of what happens behind the scenes: which providers are in or out, why citations and data comes and goes, why there are gaps and not comprehensive coverage of given titles, I have a feeling that it is unreliable.”

Trust is a strange term to use but it most accurately reflects the concerns of ECU librarians when talking about Library One Search. Trust during large scale change is a reinforcing notion that enables individuals to proceed with their day to day business with some level of certainty. Therefore an understanding of how initial trust toward a technology is formed becomes essential when adopting a new system. Although trust is a dynamic concept that changes and develops over time, Li (2008) points out that initial trust is especially important in cases of novel technology where users must overcome perceptions of risk. When trust is lacking a period of change becomes that much more difficult to deal with. It is these issues of trust that centre around the desire to understand the inner workings of Library One Search to a greater extent than more established and trusted brand name databases. It is this failure to establish a stronger trust relationship with this service amongst our information professionals that was the biggest hurdle in the ECU implementation of Summon.

Return on Investment

Librarians clearly recognise that the library is increasingly responsible for demonstrating a good return on investment for the resources we purchase. Intuitive tools such as Library One Search can lead to significant increases in the use of resources that may have been

overlooked in the past. Early indications are that usage statistics do reflect much greater usage. A more full analysis of usage statistics and comparison with previous years' data will be conducted early in 2011 to more fully understand the impact of Library One Search on return for investment.

Information Literacy

Summon required such a large shift in the way we delivered information literacy it required considerable effort to rework existing training and support materials. The workload associated with reworking of information literacy to take into account Summon was radically underestimated at ECU. For instance, some librarians have prepared class plans complete with PowerPoint presentations using screenshots of library resources such as the catalogue and different databases. Many others had been using specific examples to demonstrate the search process and the long-standing tools and resources. With the introduction of Library One Search all the screenshots and examples had to be changed.

50% of respondents said that “Insufficient lead-in time to prepare information literacy materials” was another significant challenge. This was related to the timing of the release date of Library One Search – the service went live in January 2010, with first semester beginning late February. Concerns over re-working information literacy materials no longer existed 6 months after implementation as librarians had managed to amend their class plans adequately to meet teaching needs.

Multiple Material Types

Concerns over multiple material types being listed together have grown since February 2010. This is largely based on usability testing conducted with students. This usability testing identified issues with the way our reserve reading lists are integrated into Library One Search. Students were finding it hard to identify readings as they are described as “web resources” and not “course readings”. Corrective measures are underway to better represent course readings within Library One Search. This issue is more closely related to the way these materials are catalogued within the Library Management System at ECU. The handling of course readings within Summon can be viewed as an area needing improvement and would be an area to analyse before relying on Summon alone to manage course readings.

Australian Content

The availability of full text Australian content has always been of concern to Australian librarians. The development of Library One Search crystallised these concerns as issues related to database coverage were intensively discussed. But in itself this was not a new concern.

> *“Limited number of references from the Informit (Australian databases) included”*

Functionality

Perceptions of disadvantages around functionality have evolved as librarians discover that the Summon product is developed philosophically for average users and not for library professionals. Many of the early issues identified with functionality were a result of inexperience in the use of Library One Search, and in some degree is related to information professionals using a tool that is designed for the average user. Although this understanding of the functionality has radically improved since implementation most librarians agree with the statement that Summon is not a tool for the Library Professional. Summon is designed to return large data sets that can then be narrowed via facets. Librarians in general desired to

establish complex limited searches before initiating a search aiming for that perfect search return. This is something that Summon does not do and has lead to considerable frustration for librarians. We are yet to see how advanced Library users respond to this approach.

"I find using One Search very frustrating to use as an information professional"

The debate around Library One Search as a tool for librarians and advanced users becomes an area of challenge. Much of the criticism around Library One Search is related to a desire for complexity and advanced features.

Increased Expectations of Users

Interestingly some librarians believe that the success of Library One Search is a disadvantage in itself. The view that we are building the expectation that everything is available online in full text is often expressed. We have seen examples of students being disappointed when they find materials in Library One Search that are not in full text online. In some of the more extreme examples this included complaints from students when search results located a physical book currently on the shelf in the library in which the student was physically located. But the fact that it was not online was still viewed as a failure for Summon in the eyes of these few students.

"We are creating an expectation all stuff is available electronically"

The authors of this article would claim that this expectation has existed for some time with our users and has developed long before Library One Search was implemented. What it indicates is something that most librarians would recognise - the desire of our users to find what they want in the format they prefer and at the time of their choosing.

Change issues

Librarians did raise issues related to helping existing students deal with change. Users who have become comfortable with accessing information from current systems were more resistant to make the change to Library One Search. While those who had found our access points difficult to navigate embraced Library One Search:

"Only those patrons who have become competent with MetaQuest are reluctant to learn a whole new interface - I emphasise the positives [of Library One Search] *if that is the case."*

It is unclear if the issues ECU librarians were facing personally with this tool were impacting on the way in which these changes are communicated to our students. What is clear is that many students were able to successfully access resources who, in the past, may have bypassed the library because of our complicated systems. More research needs to be undertaken on the advanced user experience in this average user environment.

Implementing Library One Search as the Primary Search Tool

Using Library One Search as the primary interface to Library collections has been a considerable change and one that librarians are not wholly comfortable with at ECU. Access to the traditional catalogue and database interfaces is still available although not as dominantly positioned as Library One Search. Issues related to users accessing all resources via a single interface concerns many.

"Being among the first academic libraries to use the product, it was largely an unknown quantity so we were taking a fairly large risk in implementing it as our primary search tool."

ECU is committed to maintaining access points via our catalogue and native database interfaces. We are also committed to the simplification of access via Library One Search as our start off point for library users. It is too early to tell if this is a successful approach.

Is it a good search tool?

Overall librarians rated Library One Search as a very good to good search tool for our users but with considerable reservations at this point in time with regards to its professional standing with librarians.

At product launch librarians rated Library One Search as:
0% excellent 37.5% very good, 37.5% good, 25% fair and 0% poor

After 6 months of use librarians had more positive views on the performance of Library One Search. With a general shift to the left on our scale:

16.6% excellent; 16.6% very good; 50% good; 16.6% fair 0%poor

"It's very good if you know what it does and its limitations."

Conclusion

As librarians we understandably wanted details on relevancy ranking, database coverage and journal titles indexed by Summon. Every missing citation, change in indexing and variation in performance was systematically tracked down by librarians as we attempted to build our understanding of this radical new tool. Issues of trust under conditions of time constraints inevitably lead to a whole range of concerns. Libraries need to work hard to create positive first impressions of a new system and generate high levels of trust with users before they interact with a system (Li, 2008). In retrospect, we failed to do this with ECU librarians, taking for granted that they would just somehow see how useful the product was.

While ECU students and academic staff have overwhelmingly responded positively to Library One Search, this was not the case with ECU librarians; even months after the product was launched, some librarians continued to harbour misgivings about its efficacy. Better understanding of how such tools work may have meant that the levels of uncertainty and doubt about the new system could have been alleviated somewhat. Despite these difficulties, however, librarians are reinvigorating themselves and their libraries by accepting more risk and applying risk management strategies (Ogburn, 2009). New tools and new ways of approaching a task can encourage librarians to innovate and question old methods that may have outlived their usefulness in a new environment.

The implementation of Summon at ECU was a success and has delivered benefits to the vast majority of our Library users. Our survey registered a shift away from issues such as "what resources are included in the product" and a "lack of information on how the product works". These were no longer considered as major challenges as librarians worked with Library One Search on a daily basis and trust was built. Librarians have become much more focused on the integration issues related to Library One Search, focussing on how Library One Search relates to the library catalogue and database interfaces and the relevancy of generalist search tools to information professionals and advanced users. Could it have been done better? In the opinion of the authors it could have been established more efficiently and with less pain if more attention was placed in working through the radical shift in mindset required by professional staff and providing time to manage this.

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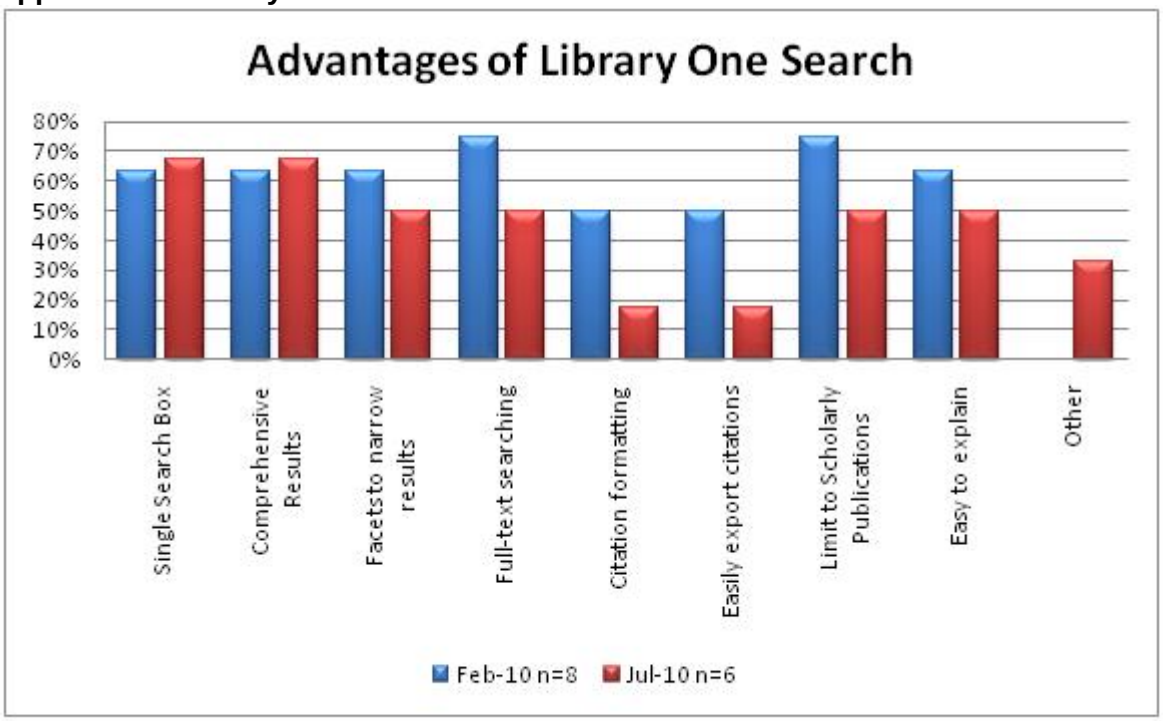
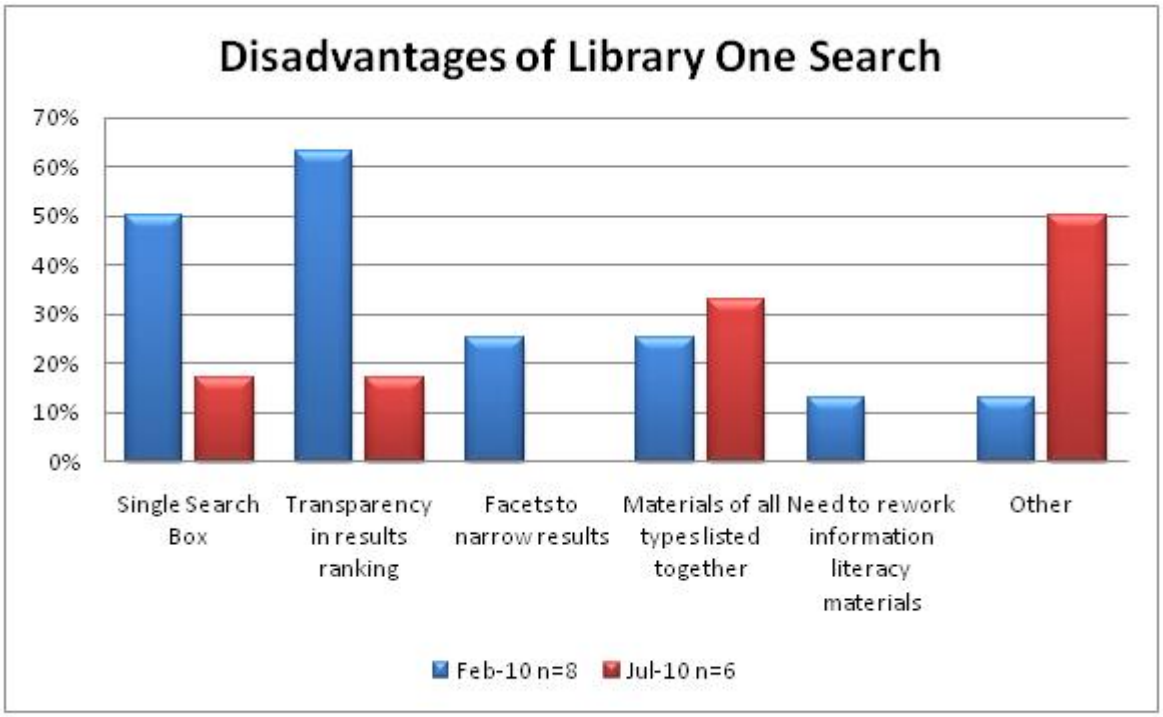
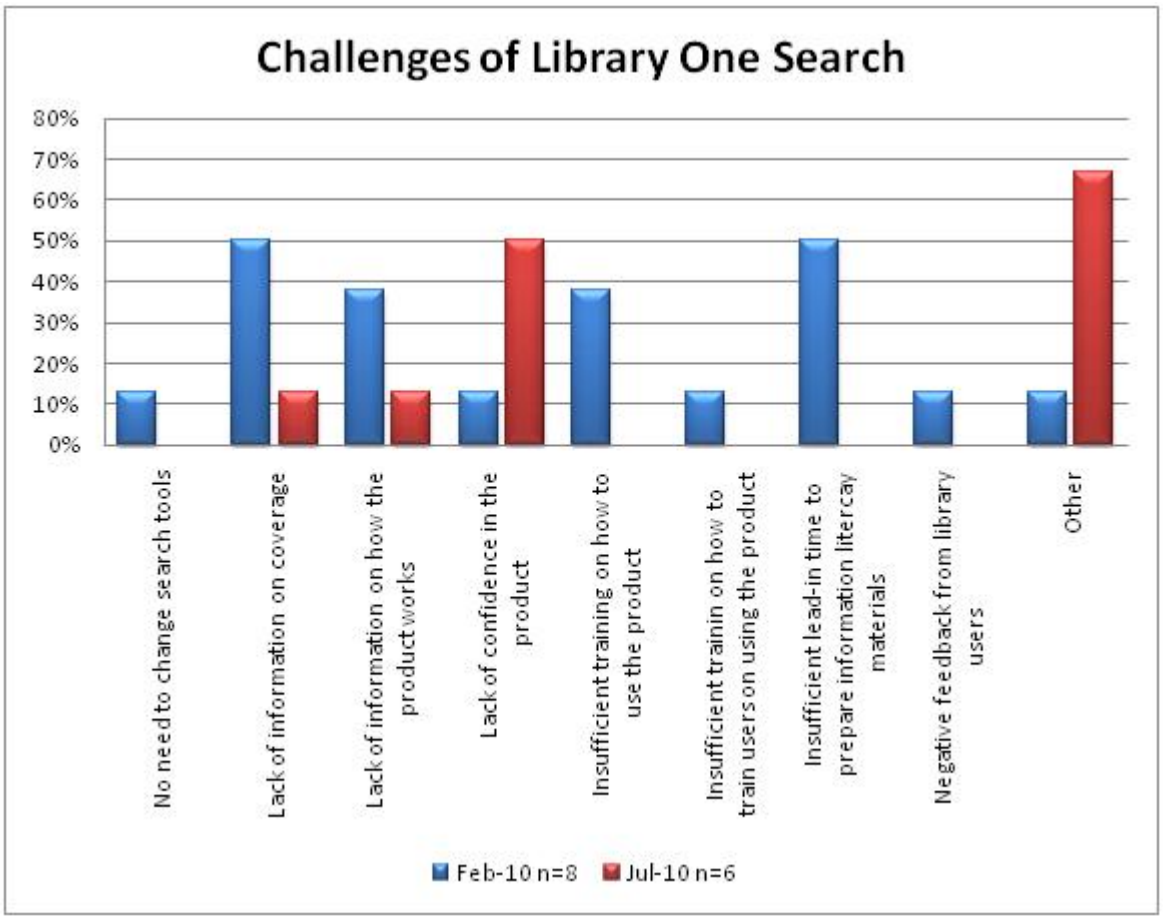
Appendix A : Survey Trends






Challenges of Library One Search
80%
70%
60%
50%
40%
30%
20%
10%
0%
No need to change search tools
Lack of information on coverage
Lack of information on how the product works
Lack of confidence in the product
Insufficient training on how to use the product
Insufficient trainin on how to train users on using the product
Insufficient lead-in time to prepare information litercay materials
Negative feedback from library users
Other
Feb-10 n=8
Jul-10 n=6