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This study focuses on the usage of Facebook as a user service by academic libraries. The purpose of this research is to gain a greater understanding of the use of Facebook among academic libraries. A content analysis was conducted on a sample of 75 Facebook pages managed by academic libraries selected from Association of Research Libraries (ARL)'s 2012 list of the top 100 libraries in the United States. This study examines academic library Facebook pages in order to explore to what extent Facebook pages have been implemented by academic libraries, what type of information are shared on libraries' Facebook pages, and how successful these pages are in reaching out to users. Results of this study provide not only data to illustrate to what extent Facebook has been adopted and how it is being used, but also provide useful implications and suggestions of future use of Facebook pages.

#### Headings:

Facebook

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A CONTENT ANALYSIS OF THE USE OF FACEBOOK BY ACADEMIC  
LIBRARIES

by

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## **Introduction**

With the recent boom of information technologies in the new millennium, college students are immersed in an electronic and Internet world that offers different ways of learning and different channels to access information compared to previous generations. The ability to navigate and contribute to the digital world has become a crucial property of the information skills required by today's students. Over the past few years, librarians have struggled to offer new service models, methods, and technologies that can be adapted to improve library services. Due to the high use of social networking tools among students, many media specialists advocate using these new social web platforms to reach out to student populations (Farkas, 2007a, b; Mathews, 2006, 2007a; Milstein, 2009). Online Social Networks (OSNs), as one of the most prominent Web 2.0 technologies, reduce the need for users to come to the library and repackage materials into an environment that is more familiar to them. Therefore, most academic libraries have embraced them as a method of promoting themselves within their communities.

Among the Online Social Networks, such as MySpace, Facebook, and Delicious, Facebook has seen broad acceptance among students as a means of online communication (Stutzman, 2007, p. 3). In Facebook, users can create and update their own profile information, interact with one another, viewing others' profiles and commenting on a variety of information. In addition, Facebook Groups can be created for small group communication to share common interests and express opinions. Groups allow people to come together for a common cause, issue or activity, to express

objectives, discuss issues, post photos, and share related content. Furthermore, Facebook pages enable public figures, businesses, organizations and other entities to create an authentic and public presence on Facebook. Pages are visible to everyone on the internet by default. Each person on Facebook can connect with pages by liking or subscribing to receive their updates in News Feed and interact with them. According to statistics by Facebook.com, over one billion people like and comment on an average of 3.2 billion times on pages every day. A well-managed Facebook page can be a powerful stage of word-of-mouth marketing. Facebook is increasingly used by individuals of all ages, especially among college students. According to a study by Ellison (2007), approximately 79% to 95% of undergraduate students have Facebook accounts. If academic libraries truly want to be where students are, Facebook is a terrific venue to reach them.

Academic librarians, recognizing this trend, have increasingly turned to utilizing Facebook to interact directly with students through a site sponsored by the library. Libraries can release news such as new books and resources information, notifications of lectures, training, and conferences etc. This outreach strengthens the exchanges and feedback: students can participate in literature discussions, recommendation; library can receive feedback from users on library services. Moreover, libraries can embed the library catalog that allows students to access them without actually visiting their web site. In addition, library reference services can be embedded into the Facebook as a function called “Ask a librarian” or “Research help.”

Recent research on academic libraries has found that students have benefited from the convenience and accessibility offered by libraries’ Facebook pages. However, the use

of Facebook by academic libraries is not without controversial voices. Some librarians argue that social networking by academic librarians is an ineffective use of librarian time and effort (Sekyere, 2009). Some students perceive this outreach method as invading student space and a waste of valuable student time due to the frequent, irrelevant messages. Therefore, librarians should not too actively advocate befriending students but rather allow them to control their level of participation. In addition, libraries should keep posting interesting and useful information so that they won't be perceived by college students as email spam or a waste of time. However, there is little data showing whether Facebook has been effectively used to share information and what the level of user involvement is. Most of the existing research involving Facebook focuses on whether students accept libraries using Facebook to contact them and their feelings about it. Very few quantitative studies have been designed to analyze academic libraries' presence on Facebook comprehensively. This study is an effort to fill this gap by examining the extent to which Facebook has been adopted and how it is being used.

This study will examine the use of Facebook among academic libraries through the following research questions:

- 1) Which social media is most commonly used by academic libraries?
- 2) To what extent are Facebook pages implemented by academic libraries? In other words, how frequently do academic libraries use Facebook pages?
- 3) What types of contents are typically posted by the Facebook pages of academic libraries?
- 4) Do the posts of academic libraries share any common characteristics?

- 5) What type of posts gets the largest number of "likes" or comments? What type of posts gets the fewest feedbacks?
- 6) Why do these posts receive high/low level of feedbacks?
- 7) Are the results consistent within pages of all academic libraries?
- 8) What can be concluded as the best practice for using Facebook among academic libraries?

### **Literature Review**

The impact of Facebook on academic libraries has been discussed fairly extensively in the library literature. Early research primarily focused on introducing Facebook to academic librarians and explaining its importance. Matthews (2006) reviewed the features offered by Facebook and explored the use of a Facebook group for the Georgia Tech library as a platform for librarians to interact with students (Matthews, p.306). Matthews suggested that academic libraries could adopt online social networks to increase campus visibility and to help students understand the value of the library (p.307).

Having recognized this as a considerable opportunity, academic libraries started reaching out to college students by creating a Facebook profile, page, group, and using third party applications. A study based on 72 librarians found that libraries used Facebook mainly to market the library, push out announcements to library users, post pictures, provide chat reference, and have a presence in the social network (Hendrix et al., 2009). Libraries advertise hours, location, and web site information on the fan page. By linking to the library's web site, the Facebook page acts as a portal to the library (Farkas, 2007a). As students frequently use outside search engines for academic research, a basic

Facebook page can serve as a reminder to use the resources available at an academic library (Farkas, 2007a). Libraries also create event invitations for programs as an additional forum to promote library activities (Chu and Meulemans, 2008). Additionally, academic libraries are embedding library services within the Facebook page by using Facebook applications. Some academic libraries embed the library catalog to allow students to access the contents of the library catalog without actually visiting the library's web site (Farkas, 2007b). Some academic libraries are also embedding the "ask-a-librarian" feature within the Facebook page to provide reference services. In 2007, Mack et al found that the majority of reference questions during a semester at Penn State were submitted to a librarian through Facebook, rather than through e-mail, instant messenger, or in-person reference (Mack et al, 2007, p. 5). Research has also investigated the possibility of using Facebook to increase awareness of upcoming library events. Kwong (2007) reported on the use of Facebook and MySpace, both social media sites, to advertise upcoming library events at Indiana University South Bends Schurz Library. Kwong partially attributed the much greater success of the 2007 Schurz Library Speaker Series, in comparison with the previous year's speaker, to the awareness generated by the use of the social sites (p. 57). By 2011, the majority of libraries (90.4% of 115 ARL member libraries) have at least one Facebook page (Wan, 2011).

However, some studies have uncovered concerns among college students about the use of Facebook by academic libraries. One of the primary concerns about social networking is low usage. A study reported that from the messages sent to 1,500 undergraduate and graduate students on Facebook by an academic librarian, only 48 responded (Mathews, 2006). In another study where



Gerolimos (2011) examined user interaction of 3513 posts, among which 63.42% had neither comments nor “likes”. Another concern is that college students may be resistant to befriending the library if their personal information is visible to university officials (Sekyere, 2009). Chu and Meulemans (2008) conducted a survey of 89 students and a focus group of four students in order to understand their usage of social networks, like MySpace and Facebook. They found that student’s use of social networks for entertainment was very high, but most students expressed concern about adults, parents, and professors presence on the social networks. This reveals potential limitations for libraries using social networking tools. Even those students receptive to social networking by libraries indicated that they did not want their time wasted with frequent, irrelevant messages (Connell, 2009). Irrelevant information may detract from the academic libraries outreach attempts and be considered as intrusive as email spam.

### **Methodology:**

Research was conducted for this study using the technique of content analysis. This study examined the content of academic libraries Facebook pages and analyzed what types of information are being posted by page administrators to enhance their library programs. Earl Babbie (2009) in *The Practice of Social Research* defines content analysis as, “the study of recorded human communications, such as books, websites, paintings and laws.” Content analysis is a way to systematically observe the occurrences of words, phrases, ideas, or themes in written communications (Powell, 2004). Content analysis is an appropriate method to use to examine Facebook use by academic libraries. First, content analysis enables researchers to sift through large volumes of data in an orderly and systematic fashion Steve Stemler (2001). Another advantage of content analysis is its

unobtrusiveness. Unlike interviews, questionnaires and experiments, researchers can examine content without involving a human subject. It is therefore unlikely that the act of measuring a phenomenon will instill some change that may impact the data (Riffe, 2005, Berg, 2009). Furthermore, the content to be analyzed is determined by the researcher and therefore the result will be more consistent than other methods.

*Sample Selection:*

For this study, the population for research was defined as Facebook pages from academic libraries that were fully accredited by the Association of Research Libraries (ARL). ARL is an organization of leading research libraries in North America. To become a member, a library must meet rigorous criteria in terms of collections and services. Its member list is a roster of top academic libraries in the United States and Canada. ARL maintains a list of the 100 largest libraries in the United States by volumes held.

In the ARL's list, last updated in October 2012, 75 academic libraries and 25 public libraries are included. These 75 member libraries are chosen as the focus of this study. Only the main library of each academic library was selected. In order to identify Facebook pages of a certain library, several different search strategies were applied. The first way was to check if the academic library website provides a link to its corresponding library Facebook page. The Facebook link is represented either with an icon “f” or sometime with the tagline “Find us on Facebook”. For those libraries that might have a Facebook page but do not offer any link on its website, Google searches was used to check the existence of the page by searching the keywords including the academic

library's name and the word "Facebook". If both of the previous two methods failed to find a library Facebook page, searches on Facebook can be performed. Keywords of Facebook searching included the library's name and the geographical location of the school.

### *Data Collection*

When performing research for this study, data collection for this study was conducted from Jan 6<sup>th</sup>, 2014 to Jan 26<sup>th</sup>, 2014. Although potentially the information on Facebook pages is dynamically changing, information from a prior time period barely changes and hence data covering that time period can be considered as constant. Therefore, the data to be collected would then be information of Facebook posts during the time period January 1<sup>st</sup>, 2013 to December 31<sup>st</sup>, 2013. Data collection consisted of filling useful information into templates, taking notes, and recording associated screenshots of the academic library's Facebook page.

The first step is to conduct a checklist as shown in Appendix A. Each academic library is investigated for its use of different social media, including Facebook, Twitter, Blogs, YouTube, and Flickr. The checklist is binary-coded: if the library is using the social media, it would be marked as 1; if not, marked as 0. The second step is to find the corresponding Facebook page URL and names of the academic libraries using Facebook as shown in Appendix B. The last step is then to collect Facebook posts information of each of these libraries as shown in Appendix C.

Posts are categorized into categories according to their content. After reviewing the research samples, several common themes or properties of wall posts can be extracted

and therefore used as the standard for post categorization. The data to be collected include total number of all wall posts, number of posts of each category, and corresponding “Likes” /Comments. The term "feedback" is used to describe a post that contains either a "like" or a comment. Also, if a post includes both a comment and a "like" from the same user, only the comment is counted, while library comments or "likes" are not counted at all. A "like" placed on a comment is similar to leaving a comment, but it is mostly an indication that someone agrees with the original post.

## Results

### *Use of Social Media by Academic Libraries*

| Social Media Name | Number of Academic Libraries | Percentage out of 75 Academic Libraries |
|-------------------|------------------------------|---|
| Facebook          | 71                           | 94.67%                                  |
| Twitter           | 68                           | 90.67%                                  |
| Blogs             | 52                           | 69.33%                                  |
| Flickr            | 29                           | 38.67%                                  |
| YouTube           | 38                           | 60.67%                                  |

**Table 1:** Social Media Tools and Number of Academic Libraries that Use Them

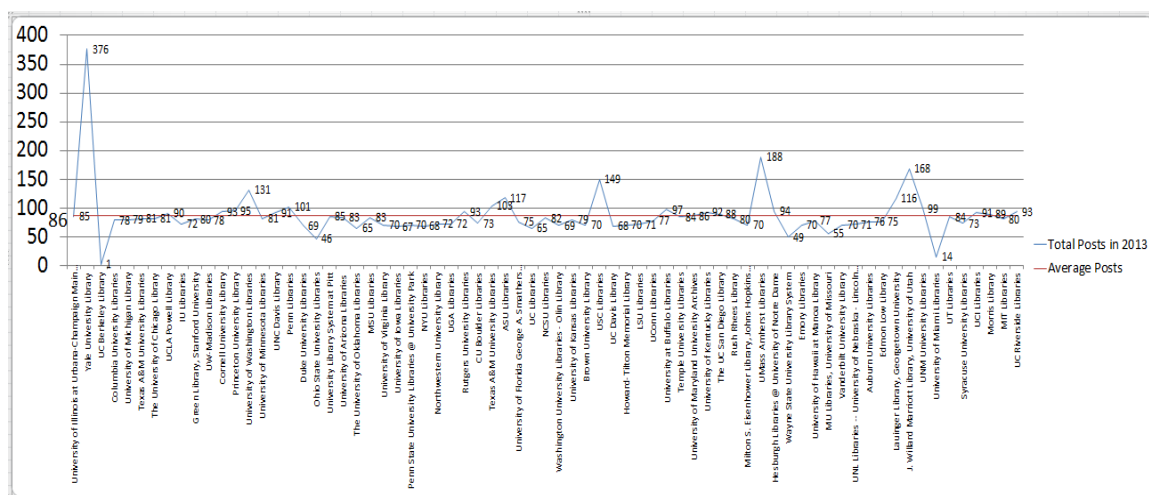
Table 1 provides data of how many academic libraries are using which social media tools. Each of the 75 academic libraries being studied uses at least one of the social media tools listed in the table. According to this table, Facebook is the most commonly used social media, with 71 out of 75 (94.67%) academic library users. Only Harvard University Library, Brigham Young University Harold B. Lee Library, University of South Carolina, and University of Alabama Libraries do not have Facebook Page. The second commonly used social media tool is Twitter, and Flickr has the fewest academic library users.

#### *Activeness of Academic Library Facebook Page*

The activeness of academic libraries' Facebook pages can be examined from the number of wall posts during the target time period of data collection. These results can be seen in Table 2 and Figure 1, which show the number of posts that the Facebook pages of the academic libraries updated within the year of 2013. The numbers of posts are divided into 17 ranges and the numbers of Facebook pages that have that many posts are recorded. According to the table, only one library updated fewer than 12 posts within one year, which means that 98.67% of the libraries have at least one post in average every month. In addition, six libraries posted more than 120 times this year. In general, within the last year the average number of total posts is 86, i.e. about 7 posts every month. This data indicates that most Facebook pages of academic libraries are updated frequently and timely. As shown in Figure 1, there is also a noticeable difference in the number of posts between different library pages. The Yale University Library Facebook Page has the greatest number of posts, which is 376, while UC Berkeley Library only has one post in this year.

**Table 2:** Number of Academic Libraries that Have Amount of Posts per Month within Different Ranges

| Total Posts | Number of Library |
|-------------|-------------------|
| 1-12        | 1                 |
| 13-24       | 1                 |
| 25-36       | 0                 |
| 37-48       | 1                 |
| 49-60       | 2                 |
| 61-72       | 19                |
| 73-84       | 22                |
| 85-96       | 14                |
| 97-108      | 4                 |
| 109-120     | 2                 |
| 121-132     | 1                 |
| 133-144     | 0                 |
| 145-156     | 1                 |
| 157-168     | 1                 |
| 169-180     | 0                 |
| 181-192     | 1                 |
| 192+        | 1                 |

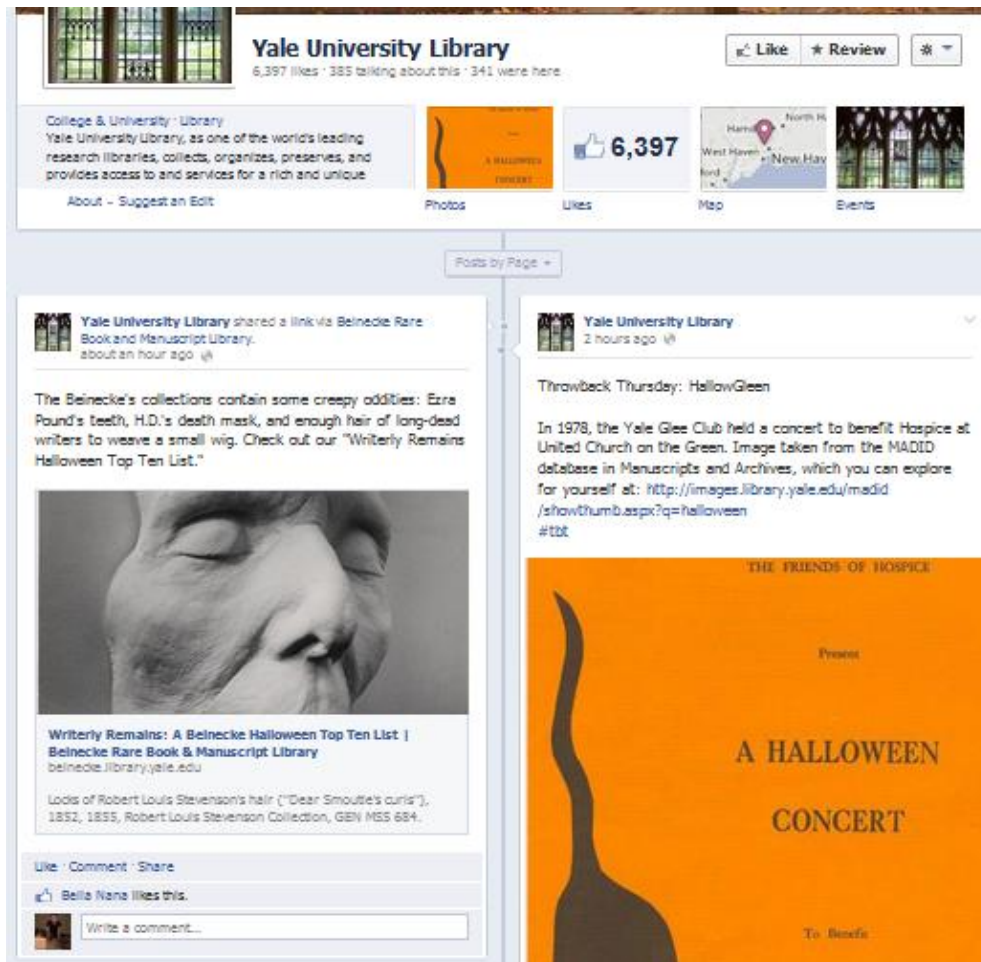


**Figure 1:** Number of Posts of Each Academic Library Pages in 2013 and the Average Number

### *Facebook Posts Content*

Although many different variations of types and numbers of posts exist among the academic libraries, several common characteristics of Facebook timeline posts were found to be present on many of the sites. An example of common timeline posts by academic library can be found in the screenshot from the Facebook page of Yale University Library as shown in Figure 2. In this screenshot, there is one post of a shared link and one post about an event.

To identify patterns and common themes of posts of the Facebook pages, the post content is compared and classified. Typical Facebook posts that are found on multiple academic library Facebook pages can be categorized into the following types: Info, Events, Collection/Resources, Photos/Videos, Chronicles/Historical Moments (awards), People (Librarians/Faculty/Volunteer), Links, Reference, Direct Interaction (Inquiry/Survey) and Others. Descriptions of these nine categories will be provided below.



**Figure 2:** Screenshot of Yale Library Facebook Page

### 1) Info

This category represents the type of posts that display information about the library, including hours of operation, facilities updates, contact details, etc. An example of such post can be seen in the following screenshot from the Lilly Library (Indiana University) Facebook page (Figure 3), which is a notice about the library's hours of operation.





**Figure 3:** An Information Post by the Lilly Library

## 2) Events

The category "Events" includes posts about library events, such as workshops, exhibitions, lectures, competitions, etc. Figure 4 provides an example of such post, which is a screenshot from the University of Chicago Library Facebook page about the event "Library Book Sale."



**Figure 4:** An Event Post by the University of Chicago Library

### 3) Collections/Resources

The "Collections/Resources" category refers to the posts related to library collections, including updates or promotions of electronic and print collections, database trials, other research resources, etc. An example of this type of post can be illustrated by the following screenshot of the Facebook page of the University Library System at Pitt of the University of Pittsburgh (Figure 5). This post is about the Open Access Week that allows people to get access to resources with little restriction.



**Figure 5:** A Collection/Resources Post by University Library System at Pitt

#### 4) Photos/Videos

This category includes posts of images and videos clip, and changes to the cover photos on the page, as exemplified by Figure 6, which is a screenshot of picture posts from the Ohio State University Library Facebook page.



**Figure 6:** A Photo Posted by the Ohio State University Library

#### 5) Chronicle/ Historical Moments

Posts about remarkable moments or history of the libraries can be included in this category, such as how and when the library was built, the story of the name of the library, the awards that the library has won, etc. Figure 7 gives an example of such post, which is a picture of the library under construction over 80 years ago.



**Figure 7:** A Historical Post by the UCLA Powell Library

#### 6) People (Librarians/Staff/Faculty/Volunteer)

Posts about people such as librarians, faculties, and volunteers can also be found on the academic library Facebook pages. This type of posts includes the introductions of these people, news about librarians, job advertisements for librarians, and their accomplishments etc. An example of such a post can be found in the following screenshot from the Columbia University Libraries Facebook page, which introduces new staff of one of the library's projects (Figure 8).



**Figure 8:** A Post about People by the Columbia University Libraries

## 7) Links

This category includes posts of links that Facebook page administrators share from other sites. Figure 9 shows an example of such a post by the Princeton University Library Facebook page.



**Figure 9:** A Link Shared by the Princeton University Library Page

#### 8) Reference

Posts that are categorized in this type are about the reference services, document delivery, research supports, etc. A post about citation by the UNC Davis Library Facebook page gives an example of this category as shown in Figure 10.



**Figure 10:** A Reference Post by the UNC Davis Library Page

## 9) Interactions

Sometimes there are academic library pages' posts that intend to inquire about people's opinions, advice, or suggestions towards the library. These posts are included in the "Direct Interaction" category. An example is given below in Figure 11, which is a post by University of Washington Libraries that asks for feedbacks about their new web site.



**Figure 11:** An Interaction Post by the University of Washington Libraries

### 10) Others

Posts that cannot be categorized into any of the previous types described above are included in the "Others" category. These are often special or non-typical posts released by a small number of libraries.

#### Data Result for Categories:

Comparison and analysis of the number of posts of each type listed above can provide information about which types of content are the most frequently posted by academic library. Table 3 illustrates the frequency of each type of post by giving the number and percentage. During the data collection period, there were a total of 6133 posts on the Facebook Pages of the 75 academic libraries being studied. According to Table 3, the most frequent type of post on the libraries' walls was Links, with a percentage of 29.20%, followed by Events (27.83%).

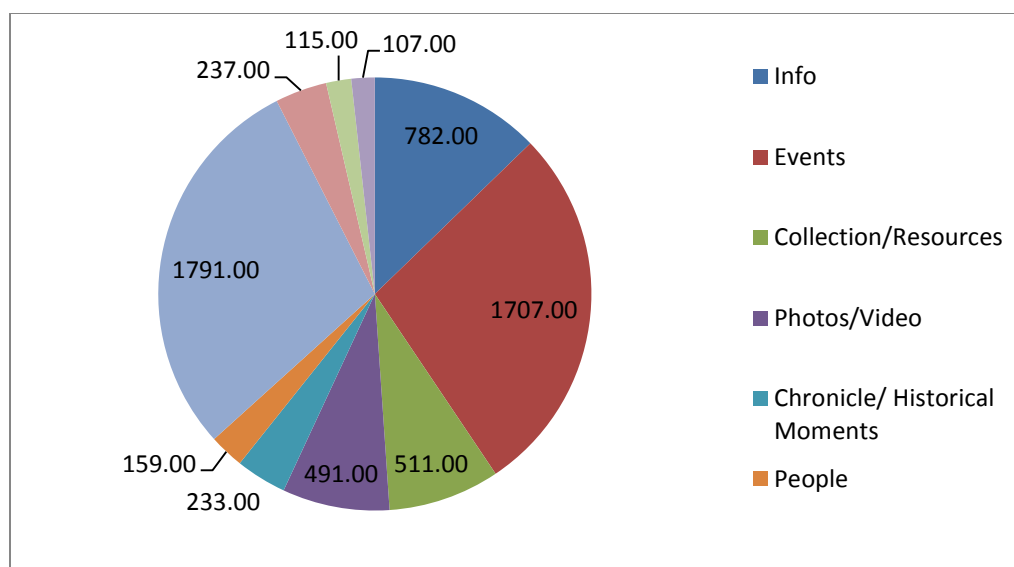
The percentage of posts of each category is calculated by the following formula.

$$\text{Percentage of Posts of Each Category} = \frac{\text{Number of Posts of Each Category}}{\text{Total Number of Posts}}$$

**Table 3:** Number of Posts of Each Category in the Year of 2013

| Category        | Info   | Events  | Collection/<br>Resources | Photos/<br>Video | Chronicle/<br>Historical<br>Moments | People | Links   | Reference | Interactions | Others | Total   |
|-----------------|--------|---------|--------------------------|------------------|-------------------------------------|--------|---------|-----------|--------------|--------|---------|
| Number of Posts | 782.00 | 1707.00 | 511.00                   | 491.00           | 233.00                              | 159.00 | 1791.00 | 237.00    | 115.00       | 107.00 | 6133.00 |
| Percentage      | 12.75% | 27.83%  | 8.33%                    | 8.01%            | 3.80%                               | 2.59%  | 29.20%  | 3.86%     | 1.88%        | 1.74%  | 100%    |





**Figure 12:** Pie Chart of Percentage of Different Types of Posts of All the 75 Academic Libraries in the Year of 2013

Another aspect that this study examined is the amount of user-generated content and user participation. Content created by users are considered via comments made on the posts while the degree of user participation is determined by the number of "likes." Number of comments and "likes" towards posts of each category provides deeper understanding of which types of posts are most likely to receive feedbacks. Table 4 gives detailed data of number of posts, likes, comments of the Facebook pages of the 75 academic libraries being studied within the year of 2013 and their relative ratios. It determines how many of the libraries' posts include "likes" or comments and how many have none. Several findings are demonstrated by Table 4 as illustrated below.

**Table 4:** Number of Posts and Feedbacks (Likes and Comments), and Relative Ratios/Percentage

| Category                                 | Info   | Events | Collection/<br>Resources | Photos/<br>Video | Chronicle/<br>Historical<br>Moments | People | Links  | Reference | Interactions | Others | Total  |
|--|--------|--------|--------------------------|------------------|-------------------------------------|--------|--------|-----------|--------------|--------|--------|
| Number of Posts                          | 782    | 1707   | 511                      | 491              | 233                                 | 159    | 1791   | 237       | 115          | 107    | 6133   |
| Number of likes                          | 2535   | 6032   | 2461                     | 7100             | 1553                                | 1439   | 3400   | 1104      | 553          | 605    | 26782  |
| Number of Comments                       | 252    | 776    | 92                       | 275              | 44                                  | 111    | 133    | 51        | 211          | 7      | 1952   |
| Number of Total<br>Feedbacks             | 2787   | 6808   | 2553                     | 7375             | 1597                                | 1550   | 3533   | 1155      | 764          | 612    | 28734  |
| Number of posts<br>without feedback      | 177    | 303    | 62                       | 18               | 4                                   | 4      | 513    | 18        | 4            | 13     | 1116   |
| Ratio of "Likes" to<br>Posts             | 3.24   | 3.53   | 4.82                     | 14.46            | 6.67                                | 9.05   | 1.90   | 4.66      | 4.81         | 5.65   | 4.37   |
| Ratio of "Comments" to<br>Posts          | 0.32   | 0.45   | 0.18                     | 0.56             | 0.19                                | 0.70   | 0.07   | 0.22      | 1.83         | 0.07   | 0.32   |
| Ratio of Comments to<br>"Likes"          | 0.10   | 0.13   | 0.04                     | 0.04             | 0.03                                | 0.08   | 0.04   | 0.05      | 0.38         | 0.01   | 0.07   |
| Percentage of posts<br>with no feedbacks | 22.63% | 17.75% | 12.13%                   | 3.67%            | 1.72%                               | 2.52%  | 28.64% | 7.59%     | 3.48%        | 12.15% | 18.20% |

Firstly, in Table 4, the ratios between "likes"/comments and posts give the average numbers of likes/comments of each post in each category. Comparison between these ratios implicates that "Photos/Videos" posts get the most "likes", following by the "People" and "Historical Moments" categories. On the other hand, the categories that get the most comments are: Interaction, People, and Photos/Videos. Types of posts that get the least feedbacks are Links, Info, and Collection/Resources. Combining both "likes" and comments, it is shown that photographs attract the most feedbacks compared to other posts. For example, on April 29, 2013, the UNC Davis Library Facebook page posted a photograph of coffee machines by the library elevators and received 12 "likes" and 3 comments. Its picture of the lounge in the library posted on July 26, 2013 also received "likes" and one comment. To the contrary, other non-photo posts usually get 1 or 2 "likes" and no comments. In general, it is documented that 18.2% of the posts examined received no feedbacks.

Table 4 also includes the ratio of comments to "likes," which is as low as 0.07. Out of the total 28734 feedbacks examined, 26782 are "likes" and only 1952 are comments. This evidence demonstrates a low level of user-generated content compared to user participation.

Table 5 illustrates the question of what type of posts receives the most/fewest feedbacks from another approach. Each of the 75 academic library Facebook pages was examined separately. The category that has the largest percentage of number of posts, in other words, what is the most common type of posts, was determined for each page. In addition, the category that receives the most "likes," the most comments, and the fewest feedbacks were also identified for each page. And last, for each category, the number of pages with this category being the most common type, receiving the most "likes", the most comments, or the fewest feedbacks, were counted and recorded in Table 5 respectively. For example, according to Table 5-a, there are 29 library Facebook pages whose Photos/Video posts receive the most "likes," while for only one page, the category that receives the most "likes" is Links. From Table 5-b, there are as many as 30 pages whose most frequently commented posts are interactions, following by Photos/Video and events, while no page has References or Others being its most frequently commented post type. Table 5-c demonstrates that out of the 75 pages examined, there are 35 pages whose least-responded posts are Links. While Tables 5-a, 5-b, and 5-c illustrate the relationship between categories and feedbacks, Table 5-d directly shows what kind of updates the library pages post most frequently. With significant difference from other categories, Links and Events are the two types that are most frequently posted by most pages.

**Table 5:** Categories and Number of Library Facebook Pages that Has Each Category as its: a) Most frequently "liked" Category, b) Most frequently commented Category, c) Least frequently responded Category, and d) Most frequently posted Category.

| Categories that receive the most "likes" | Number of facebook pages of academic libraries | Categories that receive the most comments | Number of facebook pages of academic libraries |
|--|--|---|--|
| Info                                     | 1  | Info                                      | 3  |
| Events                                   | 2  | Events                                    | 10   |
| Collection/Resources                     | 3  | Collection/Resources                      | 2  |
| Photos/Video                             | 29   | Photos/Video                              | 19   |
| Chronicle/ Historical Moment             | 7  | Chronicle/ Historical Moment              | 3  |
| People                                   | 18   | People                                    | 8  |
| Links                                    | 1  | Links                                     | 1  |
| Reference                                | 4  | Reference                                 | 0  |
| Direct Interactions                      | 3  | Direct Interactions                       | 30   |
| Others                                   | 1  | Others                                    | 0  |

Table 5-a

Table 5-b

| Categories that receive the fewest feedbacks | Number of facebook pages of academic libraries | Categories that have the largest percentage of number of posts | Number of facebook pages of academic libraries |
|--|--|--|--|
| Info   | 15   | Info   | 1  |
| Events                                       | 8  | Events   | 28   |
| Collection/Resources                         | 4  | Collection/Resources   | 1  |
| Photos/Video                                 | 5  | Photos/Video   | 0  |
| Chronicle/ Historical Moment                 | 1  | Chronicle/ Historical Moment                                   | 0  |
| People                                       | 2  | People   | 0  |
| Links  | 35   | Links  | 47   |
| Reference                                    | 0  | Reference  | 0  |
| Direct Interactions                          | 2  | Direct Interactions  | 0  |
| Others                                       | 6  | Others   | 0  |

Table 5-c

Table 5-d

## Discussion

### *Facebook vs. Other Social Media Tools*

The results of the study show that Facebook is the most commonly used social media tool by academic libraries. Among the 75 libraries examined, 71 of them use Facebook pages as a stage of information-sharing and user interaction. With advantages such as giant user group and additional features and customization options that allows librarians to modify their pages according to their needs, Facebook stands out to be the predominant social media tool used by libraries. Almost all of the pages examined in this study post more than once a month, which reflects the high frequency of Facebook use.

### *Types of Posts*

Typical posts examined can be classified into 10 categories based on their contents: Info, Events, Collection/Resources, Photos/Videos, Chronicles/Historical Moments, People (Librarians/Faculty/Volunteer), Links, Reference, Interaction and Others. "Links" occupies the largest proportion of the total number of posts, with a percentage of 30.43%, followed by Events (23.65%). Since a lot of information related to the library is accessible only from sites outside of Facebook, librarians who are in charge of managing the Facebook page need to share the links to these sites in order to provide users with useful information. Also, posting links requires little time or creativity compared to other contents, which makes it is much easier for librarians to post links. Therefore, Links is the major type of posts for most libraries as indicated by Table 4 and Table 5-c. Another common type of posts is events, which shows that the Facebook page has been highly used as a tool of informing users about the occurrence of various events.

### *User Feedbacks*

In order to examine whether Facebook has been successfully used to get user feedbacks, the level of user response and participation was studied, since using the number of "likes" and comments towards the posts can serve as an indicator. Among the categories listed above, "Interaction" posts receive the most comments and "Photos and Videos" posts receive the most "likes." In "Interaction" posts, some page administrators would solicit users' feedbacks with direct questions, such as "what do you think" and "how do you like." It is more likely for a user to provide a response to questions like these than posts in the form of plain statements like notices and announcements.

Photos and videos tend to gain a lot of attention from users since it is the most intuitive and visual way for people to get information. Most people that browse the web prefer viewing pictures and watching videos to reading. People can get information not only visually but also promptly from photos, since the time of to view a text post takes much longer than viewing photos. Videos are even more engaging, appealing to the senses of sight and sound. In addition, since on Facebook pages, photos and videos have a large preview image, rather than lines of tiny texts, they are more able to catch people's eyes. Therefore, photos receive the most "likes" among all the categories. At the same time, photos receive a relatively greater number of comments than other categories. However, these comments are mostly simple compliments like "looks nice" and "beautiful," which provide little valuable or constructive information to the librarians.

Although "Links" is a major part of all the posts, this type of posts rarely receives any response. Since viewing the content from another site requires opening a new window, people may not feel like doing so and therefore it causes the loss of people's interest towards the shared links. In addition, when users click the shared links, they will

be directed to a new page and hence the possibility that they will return to the original Facebook page to give feedback will be low. Also, some links shared by the page administrators are actually irrelevant to the library itself, which may attract less interest from users who seek information related to the library.

### *Comments vs. "Likes"*

The overall percentage of posts without any feedbacks is as low as 18.2% (as shown in table 4), which means that most posts get feedbacks. In another study Gerolimos (2011) examined the user interaction on 3513 posts on Facebook pages of academic libraries, among which 63.42% had neither comments nor "likes." This indicates a noticeable increase in user feedback and interaction. However, in fact there are limited and infrequent user-generated contents to the posts on the Facebook pages of academic libraries, evidenced by the low ratios between "likes"/comments and posts. This can be illustrated by the example shown in Figure 11 where the University of Washington Libraries asked for feedback about their new web sites on September 23, 2013. Only 4 people hit "like" towards this post and only two comments were left. This is an "Interaction" post with a question mark, which is supposed to be most likely to receive feedback. However, it still gets very few responses. According to Table 4, the average number of comments towards a post is 0.32, which shows that users rarely provide feedback to the posts. This is because a much lower level of participation is required when "liking" a post by simply pressing a button, than when posting a comment, which engages thinking and composing. However, "likes" merely show a level of interest or popularity rather than real interventional power. More useful feedbacks are provided via comments, such as suggestions, opinions, inquiry, and even complaints. However, as

previously mentioned, most comments examined in this study tend to be simple compliments with few words, especially under posts of photos.

### *Result Consistency*

The results of what types of post are the most frequently posted or that generate responses on the libraries' Facebook pages are consistent among the libraries examined, evidenced by the two approaches shown by Tables 3 and 4 and Table 5. Tables 3 and 4 address this question from a general perspective by examining the total number of different posts of all the pages, while Table 5 demonstrates the result by examining the pages separately and by finding the majority of the pages that correspond to the highest level of post frequency or amount of feedback with respect to each category. For example, Table 5-c shows that the majority of these Facebook pages post "Links" most often, which is consistent with the result in Table 3, where 29.20% of all the posts are Links. The consistency and resemblance between these two approaches show that the academic libraries use Facebook pages for sharing similar types of information. Also, the use of Facebook pages receives about the same level of user response.

### *Suggestions*

Posting more photos and videos may be a good practice for using Facebook among academic libraries, since they tend to attract more attention and feedback as demonstrated by the results shown in the tables and figures. In order to increase user feedback and hence better improvement of the libraries, librarians can post other content in the form of photos or videos. For example, a notice of a coming event can be posted with a preview picture of this event instead of merely text descriptions so that the post



would be more vivid and possibly attract more attention. Also, when seeking users' opinions, a picture of the question in bold and bright font would also increase people's attention compared to plain text post. When posting links from other sites, a brief and intriguing comment on the link can be added to trigger the users' interest and involvement.

### *Limitations*

Although this study effectively constructed a method for measuring the use of Facebook pages by academic libraries from multiple aspects, limitations still exist. This method of research cannot document other types of interaction with library Facebook pages by library users, since it is not able to access the full record of how the Facebook site had been used (or not used), such as the web traffic. The only data that can be used is known as the "wall", which is probably the most popular Facebook feature.

### **Conclusion**

Facebook has been used as a platform for interaction and a source for receiving feedback from users on library services. It is important for academic libraries to realize the current trends in their communication with users through Facebook. Therefore, the activeness, types of posts, and level of user feedbacks were examined on the Facebook pages of 75 academic libraries in this study. The results and findings explore the current use of Facebook among academic libraries in order to provide academic libraries with ideas for best practices in using Facebook to better profile themselves and communicate more effectively with their users in the future.

Areas for possible future research include the use of academic library Facebook sites from students' perspective to find out the most highly demanded type of posts and students' expectations about libraries' Facebook page.

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## Appendix

### *Appendix A: Social Media Checklist*

| <b>Name of Academic Library</b>   | <b>Facebook</b> | <b>Twitter</b> | <b>Blogs</b> | <b>Flickr</b> | <b>YouTube</b> |
|---|-----------------|----------------|--------------|---------------|----------------|
| <b>Harvard University Library</b>                                       | <b>0</b>        | <b>1</b>       | <b>0</b>     | <b>0</b>      | <b>1</b>       |
| <b>University of Illinois at Urbana–Champaign Library</b>               | <b>1</b>        | <b>1</b>       | <b>1</b>     | <b>1</b>      | <b>1</b>       |
| <b>Yale University Library</b>  | <b>1</b>        | <b>1</b>       | <b>1</b>     | <b>1</b>      | <b>0</b>       |
| <b>University of California, Berkeley Libraries</b>                     | <b>1</b>        | <b>1</b>       | <b>1</b>     | <b>1</b>      | <b>0</b>       |
| <b>Columbia University Libraries</b>                                    | <b>1</b>        | <b>1</b>       | <b>1</b>     | <b>0</b>      | <b>0</b>       |
| <b>University of Michigan Library</b>                                   | <b>1</b>        | <b>1</b>       | <b>0</b>     | <b>1</b>      | <b>1</b>       |
| <b>University of Texas Libraries</b>                                    | <b>1</b>        | <b>1</b>       | <b>1</b>     | <b>1</b>      | <b>1</b>       |
| <b>University of Chicago Library</b>                                    | <b>1</b>        | <b>0</b>       | <b>1</b>     | <b>1</b>      | <b>1</b>       |
| <b>University of California, Los Angeles Library</b>                    | <b>1</b>        | <b>1</b>       | <b>1</b>     | <b>0</b>      | <b>0</b>       |
| <b>Indiana University Libraries</b>                                     | <b>1</b>        | <b>1</b>       | <b>1</b>     | <b>1</b>      | <b>1</b>       |
| <b>Stanford University Libraries and Academic Information Resources</b> | <b>1</b>        | <b>1</b>       | <b>1</b>     | <b>0</b>      | <b>0</b>       |

|  |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|
| <b>University of Wisconsin–<br/>Madison Libraries</b>          | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>Cornell University Library</b>                              | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>Princeton University Library</b>                            | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>University of Washington<br/>Libraries</b>                  | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |
| <b>University of Minnesota<br/>Libraries</b>                   | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |
| <b>University of North Carolina<br/>at Chapel Hill Library</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>University of Pennsylvania<br/>Libraries</b>                | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>Duke University Libraries</b>                               | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>Ohio State University<br/>Libraries</b>                     | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of Pittsburgh<br/>Library System</b>             | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>University of Arizona<br/>Libraries</b>                     | <b>1</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of Oklahoma<br/>Libraries</b>                    | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>Michigan State University<br/>Libraries</b>                 | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> |

|   |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|
| <b>University of Virginia Library</b>                     | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> |
| <b>University of Iowa Libraries</b>                       | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>Pennsylvania State University Libraries</b>            | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>0</b> |
| <b>New York University Libraries</b>                      | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>Northwestern University Library</b>                    | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of Georgia Libraries</b>                    | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>Rutgers University Libraries</b>                       | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>University of Colorado at Boulder Libraries</b>        | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |
| <b>Texas A&amp;M University Libraries</b>                 | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |
| <b>Arizona State University Libraries</b>                 | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>University of Florida George A. Smathers Libraries</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>University of Cincinnati Libraries</b>                 | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>North Carolina State University Libraries</b>          | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |



|  |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|
| <b>Washington University<br/>Libraries</b>                     | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> |
| <b>University of Kansas<br/>Libraries</b>                      | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>1</b> |
| <b>Brigham Young<br/>University Harold B. Lee<br/>Library</b>  | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>Brown University Library</b>                                | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of Southern<br/>California Libraries</b>         | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |
| <b>University of California,<br/>Davis Library</b>             | <b>1</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>1</b> |
| <b>Howard-Tilton Memorial<br/>Library at Tulane University</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>Louisiana State University<br/>Libraries</b>                | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> |
| <b>University of Connecticut<br/>Libraries</b>                 | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>State University of New York<br/>at Buffalo Libraries</b>   | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> |
| <b>Temple University Libraries</b>                             | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of South Carolina<br/>Libraries</b>              | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> |

|  |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|
| <b>University of Maryland Libraries</b>              | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>University of Kentucky Libraries</b>              | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of California, San Diego Libraries</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> |
| <b>University of Rochester Libraries</b>             | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> |
| <b>Johns Hopkins University Libraries</b>            | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |
| <b>University of Massachusetts Amherst Libraries</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>University of Notre Dame Hesburgh Libraries</b>   | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>Wayne State University Libraries</b>              | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |
| <b>Emory University Libraries</b>                    | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> |
| <b>University of Hawaii at Manoa Library</b>         | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>1</b> |
| <b>University of Missouri Libraries</b>              | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of Alabama Libraries</b>               | <b>0</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>1</b> |

|   |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|
| <b>Vanderbilt University Jean<br/>and Alexander Heard Library</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of Nebraska–<br/>Lincoln Libraries</b>              | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>Auburn University Libraries</b>                                | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> |
| <b>Oklahoma State University<br/>Libraries</b>                    | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> |
| <b>Georgetown University<br/>Library</b>                          | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> |
| <b>University of Utah J. Willard<br/>Marriott Library</b>         | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> |
| <b>University of New Mexico<br/>Libraries</b>                     | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of Miami Libraries</b>                              | <b>1</b> | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b> |
| <b>University of Tennessee<br/>Libraries</b>                      | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> |
| <b>Syracuse University Library</b>                                | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>University of California,<br/>Irvine Libraries</b>             | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> |
| <b>Southern Illinois University<br/>Carbondale Morris Library</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> |
| <b>Massachusetts Institute of<br/>Technology Libraries</b>        | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> |

|  |           |           |           |           |           |
|--|-----------|-----------|-----------|-----------|-----------|
| <b>University of California,<br/>Riverside Libraries</b> | <b>1</b>  | <b>1</b>  | <b>1</b>  | <b>0</b>  | <b>1</b>  |
| <b>Sum</b>   | <b>72</b> | <b>68</b> | <b>52</b> | <b>29</b> | <b>38</b> |

*Appendix B: Sample Population*

| <b>Name of Academic Library</b>                           | <b>URL</b>  | <b>Name of Facebook Page</b>                                   |
|---|---|--|
| <b>Harvard University Library</b>                         | N/A   | N/A  |
| <b>University of Illinois at Urbana–Champaign Library</b> | <a href="https://www.facebook.com/universitylibrary">https://www.facebook.com/universitylibrary</a>   | <b>University of Illinois at Urbana-Champaign Main Library</b> |
| <b>Yale University Library</b>                            | <a href="https://www.facebook.com/yalelibrary">https://www.facebook.com/yalelibrary</a>   | <b>Yale University Library</b>                                 |
| <b>University of California, Berkeley Libraries</b>       | <a href="https://www.facebook.com/ucberkeleylibrary">https://www.facebook.com/ucberkeleylibrary</a>   | <b>UC Berkeley Library</b>                                     |
| <b>Columbia University Libraries</b>                      | <a href="https://www.facebook.com/culibraries">https://www.facebook.com/culibraries</a>   | <b>Columbia University Libraries</b>                           |
| <b>University of Michigan Library</b>                     | <a href="https://www.facebook.com/pages/University-of-Michigan-Library/110483979013559">https://www.facebook.com/pages/University-of-Michigan-Library/110483979013559</a> | <b>University of Michigan Library</b>                          |

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| <b>University of Texas Libraries</b>                                    | <a href="https://www.facebook.com/tamulibraries?ref=br_tf">https://www.facebook.com/tamulibraries?ref=br_tf</a>                       | <b>Texas A&amp;M University Libraries</b> |
| <b>University of Chicago Library</b>                                    | <a href="https://www.facebook.com/uchicagolibrary">https://www.facebook.com/uchicagolibrary</a>                                       | <b>The University of Chicago Library</b>  |
| <b>University of California, Los Angeles Library</b>                    | <a href="https://www.facebook.com/UCLA.Powell.Library">https://www.facebook.com/UCLA.Powell.Library</a>                               | <b>UCLA Powell Library</b>                |
| <b>Indiana University Libraries</b>                                     | <a href="https://www.facebook.com/pages/IU-Libraries/237699996274633">https://www.facebook.com/pages/IU-Libraries/237699996274633</a> | <b>IU Libraries</b>                       |
| <b>Stanford University Libraries and Academic Information Resources</b> | <a href="https://www.facebook.com/greenlibrary">https://www.facebook.com/greenlibrary</a>   | <b>Green Library, Stanford University</b> |
| <b>University of Wisconsin–Madison Libraries</b>                        | <a href="https://www.facebook.com/UWMadLibraries">https://www.facebook.com/UWMadLibraries</a>   | <b>UW-Madison Libraries</b>               |
| <b>Cornell University Library</b>                                       | <a href="https://www.facebook.com/cornelluniversitylibrary">https://www.facebook.com/cornelluniversitylibrary</a>                     | <b>Cornell University Library</b>         |
| <b>Princeton University Library</b>                                     | <a href="https://www.facebook.com/PULibrary">https://www.facebook.com/PULibrary</a>   | <b>Princeton University Library</b>       |
| <b>University of Washington Libraries</b>                               | <a href="https://www.facebook.com/uwlibraries">https://www.facebook.com/uwlibraries</a>   | <b>University of Washington Libraries</b> |
| <b>University of Minnesota Libraries</b>                                | <a href="https://www.facebook.com/umnlib">https://www.facebook.com/umnlib</a>   | <b>University of Minnesota Libraries</b>  |

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| <b>University of North Carolina at Chapel Hill Library</b> | <a href="https://www.facebook.com/UNCDavisLibrary">https://www.facebook.com/UNCDavisLibrary</a>   | <b>UNC Davis Library</b>                    |
| <b>University of Pennsylvania Libraries</b>                | <a href="https://www.facebook.com/PennLibraries">https://www.facebook.com/PennLibraries</a>   | <b>Penn Libraries</b>                       |
| <b>Duke University Libraries</b>                           | <a href="https://www.facebook.com/dukelibraries">https://www.facebook.com/dukelibraries</a>   | <b>Duke University Libraries</b>            |
| <b>Ohio State University Libraries</b>                     | <a href="https://www.facebook.com/pages/Ohio-State-University-Libraries/10912938850">https://www.facebook.com/pages/Ohio-State-University-Libraries/10912938850</a>       | <b>Ohio State University Libraries</b>      |
| <b>University of Pittsburgh Library System</b>             | <a href="https://www.facebook.com/pittuls">https://www.facebook.com/pittuls</a>   | <b>University Library System at Pitt</b>    |
| <b>University of Arizona Libraries</b>                     | <a href="https://www.facebook.com/uazlibraries">https://www.facebook.com/uazlibraries</a>   | <b>University of Arizona Libraries</b>      |
| <b>University of Oklahoma Libraries</b>                    | <a href="https://www.facebook.com/UniversityLibraries">https://www.facebook.com/UniversityLibraries</a>   | <b>The University of Oklahoma Libraries</b> |
| <b>Michigan State University Libraries</b>                 | <a href="https://www.facebook.com/msu.libraries">https://www.facebook.com/msu.libraries</a>   | <b>MSU Libraries</b>                        |
| <b>University of Virginia Library</b>                      | <a href="https://www.facebook.com/pages/University-of-Virginia-Library/136530559704906">https://www.facebook.com/pages/University-of-Virginia-Library/136530559704906</a> | <b>University of Virginia Library</b>       |

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| <b>University of Iowa Libraries</b>                       | <a href="https://www.facebook.com/UoflowaLibraries">https://www.facebook.com/UoflowaLibraries</a>   | <b>University of Iowa Libraries</b>                       |
| <b>Pennsylvania State University Libraries</b>            | <a href="https://www.facebook.com/psulibs">https://www.facebook.com/psulibs</a>   | <b>Penn State University Libraries @ University Park</b>  |
| <b>New York University Libraries</b>                      | <a href="https://www.facebook.com/NYULibraries">https://www.facebook.com/NYULibraries</a>   | <b>NYU Libraries</b>                                      |
| <b>Northwestern University Library</b>                    | <a href="https://www.facebook.com/NorthwesternLibrary">https://www.facebook.com/NorthwesternLibrary</a>   | <b>Northwestern University Library</b>                    |
| <b>University of Georgia Libraries</b>                    | <a href="https://www.facebook.com/ugalibraries">https://www.facebook.com/ugalibraries</a>   | <b>UGA Libraries</b>                                      |
| <b>Rutgers University Libraries</b>                       | <a href="https://www.facebook.com/pages/Rutgers-University-Libraries/175081641956">https://www.facebook.com/pages/Rutgers-University-Libraries/175081641956</a> | <b>Rutgers University Libraries</b>                       |
| <b>University of Colorado at Boulder Libraries</b>        | <a href="https://www.facebook.com/cublibraries">https://www.facebook.com/cublibraries</a>   | <b>CU Boulder Libraries</b>                               |
| <b>Texas A&amp;M University Libraries</b>                 | <a href="https://www.facebook.com/tamulibraries">https://www.facebook.com/tamulibraries</a>   | <b>Texas A&amp;M University Libraries</b>                 |
| <b>Arizona State University Libraries</b>                 | <a href="https://www.facebook.com/ASULibraries">https://www.facebook.com/ASULibraries</a>   | <b>ASU Libraries</b>                                      |
| <b>University of Florida George A. Smathers Libraries</b> | <a href="https://www.facebook.com/UFSmathersLibraries">https://www.facebook.com/UFSmathersLibraries</a>   | <b>University of Florida George A. Smathers Libraries</b> |

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| <b>University of Cincinnati Libraries</b>                  | <a href="https://www.facebook.com/uclibraries">https://www.facebook.com/uclibraries</a>   | <b>UC Libraries</b>                                   |
| <b>North Carolina State University Libraries</b>           | <a href="https://www.facebook.com/ncsulibraries">https://www.facebook.com/ncsulibraries</a>   | <b>NCSU Libraries</b>                                 |
| <b>Washington University Libraries</b>                     | <a href="https://www.facebook.com/WUSTLlibraries">https://www.facebook.com/WUSTLlibraries</a>   | <b>Washington University Libraries - Olin Library</b> |
| <b>University of Kansas Libraries</b>                      | <a href="https://www.facebook.com/KULibraries">https://www.facebook.com/KULibraries</a>   | <b>University of Kansas Libraries</b>                 |
| <b>Brigham Young University Harold B. Lee Library</b>      | N/A   | N/A   |
| <b>Brown University Library</b>                            | <a href="https://www.facebook.com/brownuniversitylibrary">https://www.facebook.com/brownuniversitylibrary</a>                                 | <b>Brown University Library</b>                       |
| <b>University of Southern California Libraries</b>         | <a href="https://www.facebook.com/USCLibraries">https://www.facebook.com/USCLibraries</a>   | <b>USC Libraries</b>                                  |
| <b>University of California, Davis Library</b>             | <a href="https://www.facebook.com/pages/UC-Davis-Library/173702685997465">https://www.facebook.com/pages/UC-Davis-Library/173702685997465</a> | <b>UC Davis Library</b>                               |
| <b>Howard-Tilton Memorial Library at Tulane University</b> | <a href="https://www.facebook.com/HowardTiltonMemorialLibrary">https://www.facebook.com/HowardTiltonMemorialLibrary</a>                       | <b>Howard-Tilton Memorial Library</b>                 |
| <b>Louisiana State University Libraries</b>                | <a href="https://www.facebook.com/LSULibraries">https://www.facebook.com/LSULibraries</a>   | <b>LSU Libraries</b>                                  |



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| <b>University of Connecticut Libraries</b>               | <a href="https://www.facebook.com/UConnLibraries">https://www.facebook.com/UConnLibraries</a>   | <b>UConn Libraries</b>  |
| <b>State University of New York at Buffalo Libraries</b> | <a href="https://www.facebook.com/ublibraries">https://www.facebook.com/ublibraries</a>   | <b>University at Buffalo Libraries</b>                        |
| <b>Temple University Libraries</b>                       | <a href="https://www.facebook.com/templelibraries">https://www.facebook.com/templelibraries</a>   | <b>Temple University Libraries</b>                            |
| <b>University of South Carolina Libraries</b>            | N/A   | N/A   |
| <b>University of Maryland Libraries</b>                  | <a href="https://www.facebook.com/UMDArchives?ref=br_tf">https://www.facebook.com/UMDArchives?ref=br_tf</a>                                 | <b>University of Maryland University Archives</b>             |
| <b>University of Kentucky Libraries</b>                  | <a href="https://www.facebook.com/uklibraries">https://www.facebook.com/uklibraries</a>   | <b>University of Kentucky Libraries</b>                       |
| <b>University of California, San Diego Libraries</b>     | <a href="https://www.facebook.com/ucsdlib">https://www.facebook.com/ucsdlib</a>   | <b>The UC San Diego Library</b>                               |
| <b>University of Rochester Libraries</b>                 | <a href="https://www.facebook.com/pages/Rush-Rhees-Library/118708092066">https://www.facebook.com/pages/Rush-Rhees-Library/118708092066</a> | <b>Rush Rhees Library</b>                                     |
| <b>Johns Hopkins University Libraries</b>                | <a href="https://www.facebook.com/mselibrary">https://www.facebook.com/mselibrary</a>   | <b>Milton S. Eisenhower Library, Johns Hopkins University</b> |
| <b>University of Massachusetts Amherst</b>               | <a href="https://www.facebook.com/umassamherstlibraries">https://www.facebook.com/umassamherstlibraries</a>                                 | <b>UMass Amherst Libraries</b>                                |

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| <b>Libraries</b>  |   |  |
| <b>University of Notre Dame Hesburgh Libraries</b>            | <a href="https://www.facebook.com/hesburghlibraries">https://www.facebook.com/hesburghlibraries</a>   | <b>Hesburgh Libraries @ University of Notre Dame</b>               |
| <b>Wayne State University Libraries</b>                       | <a href="https://www.facebook.com/waynestatelibraries">https://www.facebook.com/waynestatelibraries</a>   | <b>Wayne State University Library System</b>                       |
| <b>Emory University Libraries</b>                             | <a href="https://www.facebook.com/EmoryLibraries">https://www.facebook.com/EmoryLibraries</a>   | <b>Emory Libraries</b>   |
| <b>University of Hawaii at Manoa Library</b>                  | <a href="https://www.facebook.com/UHMLib?sk=wall">https://www.facebook.com/UHMLib?sk=wall</a>   | <b>University of Hawaii at Manoa Library</b>                       |
| <b>University of Missouri Libraries</b>                       | <a href="https://www.facebook.com/MizzouLibraries">https://www.facebook.com/MizzouLibraries</a>   | <b>MU Libraries, University of Missouri</b>                        |
| <b>University of Alabama Libraries</b>                        | N/A   | N/A  |
| <b>Vanderbilt University Jean and Alexander Heard Library</b> | <a href="https://www.facebook.com/vulibrary">https://www.facebook.com/vulibrary</a>   | <b>Vanderbilt University Library</b>                               |
| <b>University of Nebraska–Lincoln Libraries</b>               | <a href="https://www.facebook.com/pages/UNL-Libraries-University-of-Nebraska-Lincoln-">https://www.facebook.com/pages/UNL-Libraries-University-of-Nebraska-Lincoln-</a> | <b>UNL Libraries -- University of Nebraska - Lincoln Libraries</b> |

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|   | <a href="#">Libraries/87086676278</a>   |  |
| <b>Auburn University Libraries</b>                    | <a href="https://www.facebook.com/auburnlibraries">https://www.facebook.com/auburnlibraries</a>   | <b>Auburn University Libraries</b>                     |
| <b>Oklahoma State University Libraries</b>            | <a href="https://www.facebook.com/okstatelibrary?ref=search">https://www.facebook.com/okstatelibrary?ref=search</a>   | <b>Edmon Low Library</b>                               |
| <b>Georgetown University Library</b>                  | <a href="https://www.facebook.com/gulibrary">https://www.facebook.com/gulibrary</a>   | <b>Lauinger Library, Georgetown University</b>         |
| <b>University of Utah J. Willard Marriott Library</b> | <a href="https://www.facebook.com/pages/J-Willard-Marriott-Library-University-of-Utah/42623589421">https://www.facebook.com/pages/J-Willard-Marriott-Library-University-of-Utah/42623589421</a> | <b>J. Willard Marriott Library, University of Utah</b> |
| <b>University of New Mexico Libraries</b>             | <a href="https://www.facebook.com/UNMLibraries">https://www.facebook.com/UNMLibraries</a>   | <b>UNM University Libraries</b>                        |
| <b>University of Miami Libraries</b>                  | <a href="https://www.facebook.com/UMLibraries">https://www.facebook.com/UMLibraries</a>   | <b>University of Miami Libraries</b>                   |
| <b>University of Tennessee Libraries</b>              | <a href="https://www.facebook.com/utklibraries">https://www.facebook.com/utklibraries</a>   | <b>UT Libraries</b>                                    |
| <b>Syracuse University Library</b>                    | <a href="https://www.facebook.com/SyracuseULib">https://www.facebook.com/SyracuseULib</a>   | <b>Syracuse University Libraries</b>                   |
| <b>University of California, Irvine Libraries</b>     | <a href="https://www.facebook.com/UCIrvineLibraries">https://www.facebook.com/UCIrvineLibraries</a>   | <b>UCI Libraries</b>                                   |

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| <b>Southern Illinois University Carbondale Morris Library</b> | <a href="https://www.facebook.com/pages/Morris-Library/236841381171">https://www.facebook.com/pages/Morris-Library/236841381171</a> | <b>Morris Library</b>         |
| <b>Massachusetts Institute of Technology Libraries</b>        | <a href="https://www.facebook.com/mitlib?ref=ts">https://www.facebook.com/mitlib?ref=ts</a>   | <b>MIT Libraries</b>          |
| <b>University of California, Riverside Libraries</b>          | <a href="https://www.facebook.com/ucrlibraries">https://www.facebook.com/ucrlibraries</a>   | <b>UC Riverside Libraries</b> |

*Appendix C: Facebook Page Data Collection Template*

Start date: January 1<sup>st</sup>, 2013   End date: Dec 31<sup>st</sup>, 2013   (Same Time period for all libraries)

Facebook Page Name:

| Category                              | Info | Events | Collection/ Resources | Photos/ Video | Chronicle/ Historical | People | Links | Reference | Interactions | Others | Total |
|---------------------------------------|------|--------|-----------------------|---------------|-----------------------|--------|-------|-----------|--------------|--------|-------|
| Number of Posts                       |      |        |                       |               |                       |        |       |           |              |        |       |
| Number of "Likes"                     |      |        |                       |               |                       |        |       |           |              |        |       |
| Number of Comments                    |      |        |                       |               |                       |        |       |           |              |        |       |
| Number of Posts with No Feedbacks     |      |        |                       |               |                       |        |       |           |              |        |       |
| Ratio of "Likes" to Posts             |      |        |                       |               |                       |        |       |           |              |        |       |
| Ratio of Comments to Posts            |      |        |                       |               |                       |        |       |           |              |        |       |
| Percentage of Posts with No Feedbacks |      |        |                       |               |                       |        |       |           |              |        |       |

Instruction:

Definitions of the Table's Columns:

1) Column 1: Name of variables to be recorded

- 2) Info: the type of Facebook posts that contain information about hours of operation, facilities updates, contact details, etc.
- 3) Events: the type of Facebook posts that contain information about workshops, exhibits, lectures, competitions, etc.
- 4) Collections/Resources: the type of Facebook posts that are related to library collections, such as updates or promotions of electronic and print collections, database trials, other research resources, etc.
- 5) Photos/Videos: the images and videos clips that are posted on the Wall
- 6) Chronicle/Historical Moments: posts about remarkable moments or history of the libraries can be included in this category, such as how and when the library was built, the story of the name of the library, the awards that the library has won, etc.
- 7) People (Librarians/Staff/Faculty/Volunteer): the type of Facebook posts about people such as librarians, faculties, and volunteers, including the introductions of these people, news about librarians, job advertisements for librarians, and their accomplishments etc.
- 8) Links: links shared by the libraries' page administrators
- 9) Reference: the type of Facebook posts about reference services, document delivery, research supports, etc.
- 10) Interaction: the type of Facebook post that intends to inquire about people's opinions, advice, or suggestions towards the library
- 11) Others: the other types of special or non-typical posts released by small number of libraries
- 12) Total: total number of posts (sum of columns 2 through 11)

Definitions of the Table's rows:

- 1) Categories: name of types of posts
- 2) Number of Posts: total number of Facebook posts
- 3) Number of "likes:" total number of "likes" received from users
- 4) Number of Comments: total number of comments received from users
- 5) Number of Posts with No Feedbacks: total number of posts that received no comments or "likes"
- 6) Ratio of "Likes" to Posts: number of "likes" divided by number of posts, i.e. row 3 divided by row 1, representing the average number of "likes" each post received
- 7) Ratio of Comments to Posts: number of comments divided by number of posts, i.e. row 4 divided by row 1, representing the average number of comments each post received
- 8) Percentage of Posts with No Feedbacks: number of posts with no feedbacks divided by number of posts and times 100%, representing the proportion of posts with no feedbacks among all posts

This template is used for recording data of each of the academic libraries' Facebook Pages. Table 4 is the integration of the data of all the 75 pages based on this template. There are two extra rows in Table 4:

- 1) Number of Total Feedbacks: the sum of number of "likes" and comments
- 2) Ratio of Comments to "Likes:" the number of comments divided by the number of "likes," giving a comparison of the amounts of comments and "likes"

*Appendix D: Description of Search Strategy and Sources Used*

A search was conducted in Communications of the ACM, Library Literature and Information Full Text (H.W. Wilson) database for articles about “social network”, “Facebook”, and “(academic) libraries” (not necessarily contain all terms at the same time but at least two). Other databases were utilized as necessary to retrieve relevant articles located through a bibliography search of each article found during initial research. A search of the library catalog at University of North Carolina at Chapel Hill was also conducted regarding these topics. In order to gain a broader understanding of the issue, librarian blogs and library accounts in the various social networking sites were examined for effective practices. The combinations of “academic libraries” and “Facebook” and the Library Literature and Information Full Text (H.W. Wilson) database gave me the best result.