Interactions between English-Speaking and Chinese-Speaking Users and Librarians on Social Networking Sites

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How Social Networking Tools can Help Attract Library Users

1. Background
2. Literature Review
3. Research Methodology
4. Findings & Results
5. Discussion
6. Conclusion
Background
Background

An increasing number of libraries have been adopting SNS in the recent years.

- In a 2009 survey, researchers found that only a few academic libraries adopted SNS (Xu, Ouyang, & Chu, 2009)
- Two years later, a literature review concluded that Facebook and Twitter had become popular Web 2.0 applications in libraries (Mahmood and Richardson, 2011)
Background

- Users are unenthusiastic about the use of SNSs to enhance and encourage interaction for educational purposes.  
  \textit{(Coyle & Vaughn, 2008)}

- Students tend to assume that SNSs are used mainly for communicating with friends and do not use Facebook to contact university personnel.  
  \textit{(Pempek, Yermolayeva, & Calvert, 2009)}

- Thus, they do not expect to interact with faculty through SNSs.  
  \textit{(Chu, Meulemans, & Nalani, 2008; Joinson, 2008; Lampe, Ellison, & Steinfield, 2008)}
Background

- Jacobson (2011) observed in her study that there were only a few responses from users on numerous libraries’ fan pages on Facebook, while Stuart's (2010) study found that library Twitter accounts had few followers.
Background
Limitations of Existing Researches

- Current research regarding libraries’ use of social networking tools focuses mainly on the actual application of the tools and the attitudes of librarians or users
  
  (Chu & Du, 2012)

- Many studies are restricted to one tool, either Facebook or Twitter

  (Jacobson, 2011)
Literature Review
Literature Review
SNSs and their use in libraries

- SNSs are useful marketing tools that enable users/institutions’ profiles to be visible to wider audiences.
- SNSs offer flexible privileges and access controls for user accounts, which allow different layers of user connection and networking.
- SNSs are used not just for self-presentation, but also for social networking and content sharing.

(Ellison & Boyd, 2013).
Literature Review
SNSs and their use in libraries

Different users may prefer different SNSs, depending on the technical characteristics of the SNS

Facebook enables individuals or organizations to profile for self-promotion and online socializing, with post interactions from both users and their “friends”s

(Hughes, Bowe, Batey, & Lee, 2012)

Twitter is used more for short messages for quicker information sharing and dissemination

(Kwak, Lee, Park, & Moon, 2010)
Librarians make use of SNSs to:

- Connect with their users easily and be “part of their communities”
- Promote Library Services and Events
- Connect patrons with important information sources [Twitter]
- Engage College students [Facebook]

(O'Dell, 2010; De Rosa et al. 2007; Charnigo & Barnett-Ellis, 2007; Milstein, 2009; Mack, Behler, Roberts, & Rimland, 2007)
Literature Review

SNSs and their use in libraries

There is an increased use of SNSs by libraries, however, user engagements still appears to be low.

Factors that may hinder interactions between SNS users and Libraries

- Privacy concerns of users
- Infrequency of information updates

(Chu et al., 2008; De Rosa et al., 2007)
In measuring the effectiveness of library SNSs, it is important to consider the number of people who follow the SNS page or the number of replies to an SNS post.

Ram (2011)

- Data: High level of awareness of Facebook and Twitter as SNSs, but low level of awareness of SNSs within university library
- This suggests that low user engagement might be related to the inadequate promotion of library SNSs
Literature Review
SNSs and their use in libraries

Metrics used to indicate level of user engagement and user interest in certain SNS posts:

- Counting total number of followers, individual responses or “likes” [Facebook]; or number of retweets [Twitter]
- To quantify and understand the community information sharing patterns via SNSs

(Forkosh-Baruch & Hershkovitz, 2012; Hoffman and Fodor, 2010; Jacobson, 2011; Stuart, 2010)
In online social networks, information flow can be n-ways (Xu et al., 2009), generating different types of interactions (Dalkir, 2011).

The four types of interactions:

- One-to-many *information/knowledge sharing* (Harinarayana & Raju, 2010)
- One-to-many *information dissemination* (Ram et al., 2011)
- One-to-one *communication* (Romero, 2011)
- Many-to-one *information gathering* (O'Dell, 2010)
Literature Review
SNS interaction types

**Information / Knowledge Sharing**

Librarians can create knowledge and share it with communities by utilizing their information resources and professionals 

(MacAdam, 1998)

Libraries provide organized resources through social networking platforms, thereby stimulating user participation and achieving the dynamic of effective information/knowledge sharing

(Harinarayana & Raju, 2010)
Literature Review
SNS interaction types

**Information Dissemination**

▪ The dissemination of information to users is a critical function of Web 2.0 technology. Most information disseminated through SNSs concerns events or programs in the library (Aharony, 2012; Ezeani and Igwesi, 2012)

▪ Concise text mitigates the impact of information overload, making SNSs effective means of information dissemination (Kim & Abbas, 2010).
SNS interaction types

Communication

- One of the most important areas in measuring the effectiveness of SNSs
- The low level of required self-disclosure makes users feel more comfortable when launching conversations with acquaintances (McElvain & Smyth, 2006)
- Because of their concise format and informal tones, most SNSs are likely to induce interactions between users (Romero, 2011)
SNSs are effective information-gathering tools that have been utilized in social science research to gather professional knowledge and responses from those who participate (Ahn, 2011; Poynter, 2010)

- libraries to reach out to communities and foster understanding of SNS functions in libraries through characterizing the interaction between librarians and users in SNSs (O'Dell, 2010)
Literature Review
SNS interactions in local cultural and online communications

Cultural differences affect individuals in:

- Their motivation of using SNSs
- The information they contributed to the community
- The information they shared
- The manner of communication

(Madupu & Cooley, 2010; Karl, Peluchette, & Schlaegel, 2010; Shu & Chuang, 2011; Chu & Choi, 2011)
Literature Review
SNS interactions in local cultural and online communications

SNS culture often emphasizes self-presentation and social interaction by providing tools that encourage everyone to disclose personal information and engage in social interactions such as photo tagging and commenting (Boyd & Ellison, 2007).

Extensive research has been conducted on how local cultures may influence users who are technologically proficient to adjust their behavior (Champan & Lahav, 2008; Li, 2010).
Culture affects typical social networking behaviors such as user goals, typical patterns of self-expression, and common interaction behaviors in online communities (Chapman & Lahav, 2008; Li, 2010).

These differences may further affect one’s perception of, and willingness to participate in, a virtual community (Siau, Erickson, & Nah, 2010).
Research Methodology
Research Methodology

Research Questions

RQ1:
What are the interaction types in library SNS posts?

RQ2:
What are the differences between Facebook, Twitter, and Weibo regarding user interaction in public and academic libraries?

RQ3:
What are the differences between English-speaking countries and the Greater China region concerning the types of libraries that use SNSs to interact with users?
Research Methodology

- Mixed-method approach, combining both quantitative and qualitative data to answer research questions

   (Creswell, 2003)

Study Sample: 40 academic and public libraries in English-Speaking countries and the Greater China region
Methodology

Sampling: Criteria

For academic libraries
- English-speaking countries: QS higher education top-100 ranking
- Chinese-speaking regions: QS Asian university rankings

For public libraries
- Recognized as large libraries (e.g., national libraries, state libraries or municipal libraries)
Methodology

**SNSs studied**

Facebook: > 1.15 billion active users by 2013 (Facebook, 2013)

Twitter: 500 million active users (Coyne et al., 2013)

Sina Weibo: > 300 million of China’s microblog users in February, 2012 (Zhao et al. 2013)
Methodology

Data collection

Posts from the social networking sites of the 40 libraries were captured (January-May 2011)
- including contents posted both by libraries or users

Ten posts were sampled on the first of each month and every third day thereafter (e.g. the 1st, 4th, 7th, 10th, etc.), following the strategy of systematic sampling created by Weightman and Williamson (2005).
- number of user responses to each post was registered: comments or shares (like, retweet or forward)

Total posts harvested: 1753
<table>
<thead>
<tr>
<th>Interaction Type</th>
<th>Definition</th>
<th>Information Flow</th>
<th>Subcategories with definitions for each subcategory</th>
<th>Example</th>
<th>References</th>
</tr>
</thead>
</table>
| Information/knowledge sharing | Directing users to resources such as those online, public resources, books, etc. | one-to-many       | Individual experience: Tacit knowledge sharing of personal experience  
Library in-house resources: information (and/or explicit knowledge) sharing regarding library resources  
Library online resources/free and fee-based: information (and/or explicit knowledge) sharing regarding library online resources | XXX’s “XXX” is an elaborate pop-up book about global warming.  
Take an inside tour of how we preserve the records of life during the Civil War from the XXX.  
| Information dissemination      | Up-to-date news and announcements from libraries                          | one-to-many       | Event: information dissemination about event  
Facility: information dissemination about facility  
Service: information dissemination for library service | Conference and CPD www.xxx.xxx  
There has been a power cut this afternoon affecting the XXX library.  
The second period of Library disruption due to upgrade work will take place tomorrow. | Aharoni, 2012; Cahill, 2009; Ezeani and Lawes, 2012; Kim and Abbas, 2010; Ram et al., 2011; Research Information Network, 2010 |
| Communication                  | Aimed at individuals, conversations that happen between librarians and users or among users | one-to-one         | Rapport building: communications are related to greeting, thankfulness or other emotional expressions  
Exploratory: communications initiate discussions among users by asking open-ended questions or stating critical ideas  
Informative: communications provide or suggest information useful for particular users | Congratulations to all students for getting through the examination period!  
The New XX Exhibition Gallery is off to a fantastic start receiving its 1000th visitor on Saturday. Have you been yet?  
What do you think?  
Use internal search engine on our school homepage, enter the advanced search interface. | Boyd & Ellison, 2007; Burton & Soboleva, 2011; Chen et al., 2011; Ito et al., 2008; McElvany & Smyth, 2006; Romero, 2011 |
| Information gathering          | Harvesting information from individual users (e.g., for improving library services) | many-to-one       | Questionnaire: collecting questionnaires  
It’s here! New XX trial interface. We’d love to know what you think! | Ahn, 2011; Casey & Savastunik, 2006; O’Dell, 2010; Paynter, 2010 |
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Link of the Day: The Museum of Online Museums, "covering a vast array of interests and obsessions" |
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<td>Questionnaire: collecting questionnaires</td>
<td>Tell us what you think about Library 24/7. University Library: Library 24/7 Feedback Questionnaire.</td>
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<td>Voting (Poll): collecting votes</td>
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Differences between the number of SNS subscribers

A Mann-Whitney U test indicated a significant difference between the number of SNS subscribers for public libraries in English-speaking countries and that in the Greater China region (n =17, z =2.21, p < 0.05). The number of SNS subscribers in public libraries in English-speaking countries (M rank =104, n =9) was greater than that in the Greater China region (M rank = 49, n =8).

A Mann-Whitney U test also found that public libraries in English-speaking countries had significantly different numbers of subscribers of SNS tools (n =20, z =3.23, p < 0.01) from those in academic libraries: public libraries in English-speaking countries had more SNS user subscriptions (M rank =137, n =9) than academic libraries (M rank =73, n =11).
Methodology

10 libraries participated in semi-structured interviews through telephone

- librarians shared their experiences and perceptions about the use of SNSs
- interviews were audio-taped and transcribed
- Qualitative analysis was done using NVivo 8.0
- Other quantitative analysis was done with the STATA program
Findings

https://www.youtube.com/watch?v=_Tq__HYqyew
How Librarians interact with users through SNSs

- Information Dissemination: 53.40%
- Communication: 28.20%
- Information/Knowledge Sharing: 15.40%
- Information Gathering: 2.90%
## Frequencies of interaction types on libraries’ SNSs in two regions

<table>
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<td>187 (75.1) b</td>
<td>36 (14.5)</td>
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<td>Facebook</td>
<td>124 (58.8)</td>
<td>156 (73.9)</td>
<td>38 (18)</td>
<td>15 (7.1)</td>
<td>211</td>
</tr>
<tr>
<td>Academic</td>
<td>Twitter</td>
<td>130 (45)</td>
<td>196 (67.8)</td>
<td>52 (18)</td>
<td>12 (4.2)</td>
<td></td>
<td>289</td>
</tr>
<tr>
<td></td>
<td>Facebook</td>
<td>81 (35.4)</td>
<td>173 (75.6)</td>
<td>30 (13.1)</td>
<td>16 (7)</td>
<td></td>
<td>229</td>
</tr>
<tr>
<td>Greater China</td>
<td>Public</td>
<td>Weibo</td>
<td>80 (34.3)</td>
<td>110 (47.2)</td>
<td>86 (36.9)</td>
<td>4 (1.7)</td>
<td>233</td>
</tr>
<tr>
<td></td>
<td>Facebook</td>
<td>28 (26.4)</td>
<td>74 (69.8)</td>
<td>14 (13.2)</td>
<td>4 (3.8)</td>
<td></td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Academic</td>
<td>Weibo</td>
<td>51 (22)</td>
<td>126 (54.3)</td>
<td>75 (32.3)</td>
<td>5 (2.2)</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td>Facebook</td>
<td>19 (9.3)</td>
<td>185 (90.7)</td>
<td>18 (8.8)</td>
<td>3 (1.5)</td>
<td></td>
<td>204</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>637 (28.2)</td>
<td>1207 (53.4)</td>
<td>349 (15.4)</td>
<td>65 (2.9)</td>
<td>1753</td>
</tr>
</tbody>
</table>
Mean overall responses for four interaction types grouped by region, library type, and SNS type.
Scatter plot for the average number of retweets and the average number of replies in English-speaking libraries’ Twitter and the Greater China libraries’ Weibo.
Scatter plot for the average number of “likes” and the average number of replies in English-speaking libraries’ Facebook and the Greater China libraries’ Facebook.
Discussion

HTTPS://WWW.YOUTUBE.COM/WATCH?V=G6S1KX6IX-G
What are the interaction types in library SNS posts?

- In this study, SNSs were used primarily as channels for disseminating news and announcements about things currently happening in the library.
  - This concurs with SNS usage identified by other studies (e.g., Wilkinson & Thelwall, 2012), where news and announcements predominated.
  - This is because SNSs are more technically suited to news information and enable information to spread quickly and easily to the community.
What are the interaction types in library SNS posts?

- Information/knowledge sharing interaction type was also commonly used between librarians and users in library SNSs
- Librarians facilitate knowledge sharing in communities
  (Kim & Abbas, 2010)
- Libraries play an important role in knowledge communities
  (MacAdam, 1998)
- Information/Knowledge sharing posts tend to generate the most responses compared to others.
What are the interaction types in library SNS posts?

- Librarians also used SNSs for personal communication by conducting one-to-one conversations on various topics during their workday
  - To obtain collective opinions on improving library services
  - Proportion was less than that of the two previous interaction types
- Information gathering constituted a small proportion of SNS posts from our data sets
  - Can draw user’s to and stimulate a library user’s interest in library-related activities (Solomon, 2011)
What are the interaction types in library SNS posts?

Different potential audiences in each SNS type

- Facebook: A younger demographic
- Twitter: A broader demographic which includes professions

Librarians can create selective SNS posts to reach out and recruit users.
What are the differences between Facebook, Twitter, and Weibo regarding user interactions in public and academic libraries?

For libraries in English-speaking countries

- Facebook: High number of responses in all four interaction types
  - May be due to the large number of followers
- Twitter: more replies related to information/knowledge sharing
- User engagement was limited to these two SNSs
- Librarians tend to use Facebook more than Twitter to collect polls or votes
What are the differences between Facebook, Twitter, and Weibo regarding user interactions in public and academic libraries?

- Communication interaction type generated more replies than “likes” / retweets
- One-to-one communication with its personal message enhances user engagement (Kivran-Swaine & Naaman, 2011)
- Costly when number of replies and interactions becomes too large, and/or when the conversation between librarians and users deepens.
- Libraries can adjust resource deployment according to community properties
What are the differences between Facebook, Twitter, and Weibo regarding user interactions in public and academic libraries?

- Twitter was less effective than Facebook in producing engagement.
- One-to-many conversations in Facebook allow information/knowledge sharing and dissemination posts to generate more “likes” than replies.
- Users are enabled to show emotional support and engagement to the community without much deep communication
What are the differences between English-speaking countries and the Greater China region concerning the types of libraries that use SNSs to interact with users?

- Librarians in Mainland China adopt an SNS tool called Weibo
  - Widely used on both the web interface and on mobile devices
  - Text input limit of 140 words

- Information gathering generated good user responses

- Fewer replies for information gathering in Chinese academic libraries than in public libraries
  - Use of SNS polls and questionnaires may have increased the likelihood of replies
What are the differences between English-speaking countries and the Greater China region concerning the types of libraries that use SNSs to interact with users?

- A good “buy-in” can be expected by librarians in tech-related polls
- Users of Chinese SNSs like to play computer games and share IT related solutions with other users (Chapman and Lahav, 2008)
- Less “likes” were used by users in the Greater China region than their English-speaking counterparts
- For cultural reasons, people in the Greater China region do not easily express their emotions explicitly (Tam et al., 2012)
Conclusion

- How libraries can use SNSs to engage users
- 4 types of library-user interactions
  - Limited to disseminating announcements and information
  - Can consider diverse ways to interact and engage with users.
- Cross-cultural differences in user online engagement
  - Libraries can select direct or indirect communication strategies to accommodate user engagement
Thank you!

THAT’S IT!
Interactions Between English-Speaking and Chinese-Speaking Users and Librarians on Social Networking Sites

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