
Providing Library Information Services through WeChat: A Study of Project 985 University Libraries in China

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ABSTRACT

The application of the popular mobile social media platform WeChat in library and information services in China was examined. Thirty-two out of a total of thirty-nine university libraries of Project 985 had established official WeChat accounts by the end of 2015. The study explores the use of WeChat from six aspects, including basic profile information of an account and interactivity of WeChat public account. Through analysis of the data and comparison with the results of previous research, the study indicates that the library WeChat platforms have improved in many respects, including official account authentication and self-service through WeChat, since the beginning of WeChat application at university libraries in November 2012. Although the library WeChat accounts have become a more effective tool in general, improvements are still needed to provide maximum benefit to library users in an effort to empower users, especially younger ones.

INTRODUCTION

In the past several years “information access is increasingly shifting away from an online environment and into the mobile environment” (Li 2013, 223). According to “Technology Device Ownership 2015,” as of October 29, 2015, 45% of American adults had a tablet computer; and 68% of American adults owned a smartphone and a tablet, up from 35% in 2011. For some groups, smartphone ownership was close to a saturation point. For example, for the age groups 18–29 and 30–49, the percentages of ownership reached 86% and 83%, respectively. For people whose annual household income was \$75,000 and more, the percentage of ownership was even higher, up to 87% (Anderson 2015, 1). The same phenomenon is occurring in China. By the end of 2012, 89% of the population in China

were using a mobile phone. Two-thirds of the users owned a smartphone. By then, “China had already become the country with the most mobile phone users worldwide” (Statista 2016, n.p.).

In January 2017, the China Internet Network Information Center (CNNIC) released its *39th Report on China Internet Development Statistics*. According to this latest report, internet users in China reached a total of 731 million by the end of 2016. Within this population, the vast majority were in the age group of 10–39 years old at 73.7%, with the group aged 20–29 taking the highest percentage at 30.3%, followed by 30–39 at 23.2% and 10–19 at 20.2%. At the same time, the percentages for the age groups younger than 10 and older than 40 both increased moderately. Of all social groups, students made up the largest percentage of internet users, at 25%.

What is most significant and relevant to our study, according to the CNNIC 2017 report, are the following facts: 95.1% of internet users in China used a smartphone to access the internet by the end of 2016, which is a 5% increase from the end of 2015. In contrast, only 60.1% and 36.8% of them used desktop and laptop computers, respectively, for the same purpose, a drop from 67.6% and 38.7%, respectively, a year earlier. Now smartphone internet users in China have reached 695 million, an increase of 75.50 million from a year earlier. Of the five most commonly used apps in 2016, WeChat was number one, with 79.6% of Chinese internet users utilizing it, in contrast with the remaining four at 60.0%, 24.1%, 15.3%, and 14.4%.

In the light of all the rapid changes in cyberspace, university libraries in China have also been actively adopting mobile technology and using social media platforms in response to the changes in their users’ searching behaviors. Libraries have been seeking ways to provide information resources and services to their users through mobile devices and mobile social media. This is especially true of the key academic libraries at the Project 985 universities, which are leading this trend in China. Project 985 is a governmental program that attempts to foster and spur the development of some top Chinese universities to a world-class level. It was officially announced in 1998, with nine universities and institutes selected for its first phase. Later on, the project started its second phase and expanded its sponsorship to thirty-nine universities. It involves both central and local governments in China to provide guidance and support. The extra funding jointly raised by governments and enterprises is distributed to these key universities with the goal of promoting them to the targeted level of world-class universities in the twenty-first century (see Sogou Baike [2016] and Wikipedia [2016a] for Project 985).

Focusing on the social media platform used by WeChat in the academic libraries, we analyzed the data collected from a survey of all thirty-nine Project 985 university libraries. We compared the results with those from

previous studies done by other researchers to find out what features have been adopted by these libraries over time, and what improvements need to be made, so that academic libraries in general can use WeChat effectively and efficiently to enhance the ways in which they can serve and empower their users, especially younger and more inexperienced ones.

WECHAT AND ITS APPLICATIONS

With the rapid advancement of mobile technology and the quick growth of smartphone ownership in the world, more and more people use mobile social media to maintain social connections and to operate information exchange. Mobile social media has significantly changed interpersonal communication and information dissemination. In China, the largest internet company, Tencent, developed a mobile cross-platform instant messaging service, WeChat, in 2011 (Statista 2016; Xu et al. 2015). "It is one of the largest stand-alone messaging apps by monthly active users" (Wikipedia 2016b). By the end of 2016, there were already 889 million people, including more than 70 million outside of China, actively using WeChat. It is a 28% increase over the year before (Tencent 2017; Wikipedia 2016b). As of May 2016, more than a billion accounts had been created on WeChat (Wikipedia 2016b).

As the most popular mobile social media platform app, WeChat can be downloaded and used for free. Its "apps within an app" model tries to address every aspect of people's lives (Chan 2015). It allows the creation of personal accounts and chats with friends both individually or as a group, provides a choice of video or audio calls, and offers a space for sharing personal thoughts, pictures, and other concerns with friends, who can return their comments. WeChat also allows governments, businesses, and universities to create their public official accounts.

WeChat offers three types of official accounts, namely subscription accounts, service accounts, and enterprise accounts. Enterprise accounts are for internal use; only employees have access to these. They are used for communication needs within an organization. In addition to the usual chat features, an enterprise account lets organizations and their employees keep track of annual leave days and expenses that need to be reimbursed, and employees can ask for time off or even clock in to show they are at work (Wikipedia 2016b). Libraries mainly use subscription and service accounts to promote and provide their services. Subscription accounts offer a basic model of communication with no menus or advanced features (Jayanth 2016). Such accounts usually send new posts to their subscribers on a regular basis. Libraries use this type of account to publish their messages and announcements. Service accounts can offer businesses a wider range of options and features, such as interactive menus, mobile payments, and e-commerce, thus creating a rich user experience that is both convenient and simple to use (Jayanth 2016). These options and fea-

tures allow libraries to interact with and provide services to users, such as checking borrowing information and reserving seats. With these two types of official WeChat accounts, library “users can receive different services and information by following those accounts for reading, replying, storage, sharing, and re-tweeting” (Xu et al. 2015, 22).

Faced with the rapid growth of WeChat and its popularity, many libraries in China, especially the libraries of the Project 985 universities, created their public accounts to utilize this social media platform to distribute and provide information and library services. Some researchers investigated how top university libraries and other libraries in China use official WeChat accounts (Li 2013; Zhang, Yang, and Deng 2014; Lou 2014; Chen 2014; Wang 2014; Xu et al. 2015; Gan 2016). Most of the studies were done in 2013 and early 2014. Some of them discuss how libraries named their WeChat accounts, and what types of WeChat accounts they chose, together with their authentication; some explore WeChat features, self-service functions, and contents (Gan 2016; Xu et al. 2015; Lou 2014; Chen 2014; Wang 2014). Lou (2014) and Chen (2014) both pointed out that less than two-thirds of the Project 985 university libraries had established their public accounts by early 2014. It indicated relatively low coverage of WeChat-based library services. Most of the libraries’ accounts were subscription accounts. Among them, only a very small percentage were authenticated.

Another study reported that only 36.4% of WeChat accounts of the Project 985 university libraries were authenticated by Tencent (Xu et al. 2015). Aspects of quality used to evaluate the interaction and content delivered by these thirty-nine academic libraries revealed that most of them were using the most basic functions. Only two libraries utilized all four advanced features: that is, navigation service, self-inquiry information, self-service functions, and keyword-identified reference auto-responders (Xu et al. 2015).

Gan’s (2016) survey explored the application of WeChat in some public libraries in China and revealed the important role of WeChat in promoting library services. All the studies suggested that some improvements were needed to better enhance library services through WeChat. Since the research on academic libraries mentioned above was done before early 2014, our study, with its data collected between September 1, 2013, and December 31, 2015, will show what improvements have been made since then, and whether the WeChat platform provides users with an efficient and effective way to get information and services that they need.

RESEARCH METHODOLOGY

Choosing Subject Libraries

Libraries of thirty-nine Chinese universities included in Project 985 were chosen as the targets of our research. As these universities receive more

funding and other forms of support, their libraries represent higher standards, have more advanced equipment, and are in better condition. Usually, they are pioneers in providing information services with new technology.

Finding Library WeChat Accounts

All data on using WeChat by the libraries of all thirty-nine Project 985 universities were collected through both internet and mobile internet between September 1, 2013, and December 31, 2015. The steps taken for the data collection were as follows:

- On mobile devices, we searched WeChat for these libraries' public accounts through searching the key words "university library" and "library."
- We searched these libraries' official websites and their public microblog accounts to look for news or announcements about the launch or promotion of their WeChat accounts.
- In order to find the newly created WeChat accounts quickly, starting on September 1, 2013, we read the announcements about new WeChat public accounts on a daily basis and searched the WeChat App and the official websites and microblogs of the libraries not yet on our list on a monthly basis.
- Once a new library WeChat account was found, we became its "followers." We read daily messages on all the libraries' subscription accounts, and tracked and recorded the contents, types, and times of publication. We read daily messages on their service accounts and checked on new functions and their improvements.
- We kept statistics on how many messages were posted on each library's account, how many times they were each read by users, and how many counts of "like" they each received from September 1 to December 31 in 2015. Since Shandong University Library's service account had not posted any messages by the end of 2015, this account's data are not included in the present study.
- In order to observe the automatic and manual responses from the libraries' WeChat accounts under study, the authors interacted with these accounts by sending them inquiries on workdays in April and December 2015.
- If a library's WeChat account did not post any messages in one year and the account was not authenticated, it would not be included in this survey.

RESULTS

By the end of 2015, thirty-two of the thirty-nine Project 985 university libraries, roughly 82%, had opened their public WeChat accounts. Seven of them had both subscription accounts and service accounts that had been authenticated. The total number of WeChat accounts of those thirty-two libraries in this research is thirty-nine.

Basic Information of the Libraries' WeChat

The basic information that a library's WeChat account gives to the public is its account type, name, authenticated message, and profile photo. These are the important attractive factors to the public.

Type of libraries' accounts. As mentioned before, there are mainly two types of library WeChat accounts: subscription accounts and service accounts. A subscription account usually provides information to users. It posts one message a day to its subscribers' group. A service account mainly provides services to users. It can post five messages to its users' group each month. Which type of account the libraries choose is mainly based on account functions and the libraries' needs. The data collected in our survey show that 33.3% of the libraries in our survey chose a service account to provide information services to users, and 66.7% chose a subscription account to distribute information or news to users. Among all service accounts, 82% of them have the "customized menu." Peking University Library was the only one that did not have it.

Name of libraries' accounts. The names of the libraries' accounts, in general, should be in Chinese, unique, and easy to remember and search. The data shown in our survey indicate that 74.4% of the libraries named their accounts by using their full university names + library, including six libraries that had changed the names of their accounts from abbreviations to full names; 17.9% used the abbreviations of the universities + library; 5.1% used the English names of the universities + lib, such as buaalib (Beijing University of Aeronautics and Astronautics Library); and 2.6% used nicknames. The name of Tongji University Library's subscription account is Tongji University Library Information Services. It is the only library account with "Information Services" added.

Starting time. The WeChat public account developed by Tencent Company was launched in August, 2012. The two earliest pioneer libraries that established their public accounts were Peking University Library and Beijing University of Aeronautics and Astronautics Library. Both distributed their first message through WeChat in November, 2012. Our data show that 82.1% of Project 985 university libraries' WeChat accounts were created in 2013 and 2014. It was a period of rapid development. Only two of thirty-nine libraries used WeChat for their information services in 2012. In 2013, a total of fifteen libraries established their WeChat accounts. Seven libraries started in the first half of the year, and the other eight started in the second half of the year. In 2014, more libraries adopted WeChat as their additional channel for distributing information and providing services. Eleven libraries added their accounts in the first half of the year, and six more did so in the second half of the year. In 2015, two more accounts

were established in the first half of the year, and three additional accounts were created in the second half of the year.

Although the majority of these libraries started using WeChat as the means for providing library and information services, some libraries did not use it as actively and regularly as others or did not finalize their official account until one or two years later. For example, Northwestern Polytechnical University Library did not post its first messages until four months after its WeChat account had been established. Two libraries, Wuhan University Library and Sichuan University Library, each started with three accounts and did not confirm their final official accounts until one or two years later.

Account authentication/verification. How to show users the authentication of library accounts? In the early stage, libraries verified their WeChat accounts through their microblog accounts. Some libraries had it done through either Sina or Tencent microblog. Along with WeChat's growing influence, libraries' accounts have to be verified by Tencent WeChat. So far, all the libraries' accounts under study have gone through the verification process, although in different ways. The collected data reveal that 7.7% of them verified their accounts through their official microblog accounts; 2.6% used their official library websites to acknowledge their official WeChat accounts; four libraries, such as Peking University Library and Xiamen University Library, verified their accounts through Sina microblogs at the beginning, and then had them authenticated again by the Tencent WeChat verification system. By the end of our survey, 87.2% of the libraries used the WeChat verification system to verify their official accounts.

Profile photo. As one important factor of first impression, the profile photo of a library's account needs to be unique and recognizable. Our survey shows that 56.4% of the library accounts use their university logo or library logo; 28.2% chose the pictures of their libraries' buildings; 10.3% use the Chinese character 书, meaning "book", or a picture of a book; while the remaining 5.1% use their full or abbreviated names as profile photos.

Interactivity of Library Public Accounts

In distributing library information and providing services, a library WeChat account must pay attention to how to interact with library users. Friendly automatic replies or manual responses could give users a better experience. There are several ways to interact with users. The first and also the easiest one is automatic response to first-time users. After users subscribe to the library's account, the system sends them a welcome message. Our data show that all the libraries' accounts implemented this feature. Most welcome messages simply state "Welcome to our WeChat" or

“Thank you for your attention,” but some libraries use this opportunity to provide more information in addition to the simple welcome message. For instance, Chongqing University Library’s welcome message also provides an introductory text and the photos of the university, the library, registration number of individual account, etc. Information more than a simple welcome makes users interested in becoming followers. The University of Science and Technology of China Library is another example that uses the welcome opportunity to introduce features of its WeChat, including using WeChat to access the user’s account information and to conduct information searches such as weather forecasts and bus schedules. Shanghai Jiao Tong University Library’s WeChat sends out the message “You can send messages to me, and I can chat with you” to the users who subscribe to its account. At the same time, its Intelligent Robot is ready for answering questions. It is very attractive to new users.

The second type of interaction commonly used is an automatic reply to users’ messages. It means that WeChat will respond to users’ messages once they are received. The data indicate that 69.2% of the WeChat accounts owned by these libraries have this feature. Three of them, namely, Tsinghua University Library, Shanghai Jiao Tong University Library, and Huazhong University of Science and Technology Library, have developed intelligent robots to reply to messages sent by users. They can send messages such as “Please let me think about it for a minute,” “Could you please ask me this question a little bit later?” These replies make users feel that their requests are not being ignored. Some libraries even remind users of using preset key words to get answers.

Automatic replies based on key words is another important feature. When a user enters some key words to the library’s WeChat, the library’s account will automatically match the words with its preset words in the database, then send texts or pictures that contain the key words to the user. Among thirty-nine Project 985 university libraries, 38.5% have this feature. Libraries mainly use this feature to generate answers through their systems and to answer some frequently asked questions. It saves time and manpower. More than half of the accounts use six to eight preset key words related to, for example, announcements, seminars, seats, WiFi, consulting, and business hours.

Live interaction with users is always very helpful. Since automatic replies cannot answer all questions, especially those specific questions related to particular library services or collections, some libraries provide one-on-one consulting service through WeChat. Our data show that 15.4% of the libraries accounts adopted this method. When this service was tested on workdays in April and December 2015, only 17.9% of library public accounts had real people to reply to questions each time. Among all six accounts with this service, only the Tongji University Library service account and Wuhan University Library service account replied promptly.

The Tongji University Library Information Service account and Zhejiang University Library also responded quickly even though they did not have the live interaction feature.

Self-Service of Library WeChat

Self-service is defined as the service where any users can use self-defined menus themselves to get a service they need without providing any ID. This service mainly includes searching the Online Public Access Catalogue (OPAC) search or discovery system, reading daily news and regular messages posted by the library, finding workshop or seats, and other unique services provided by the library.

The OPAC search or discovery system is the most important service that a library's WeChat account provides to users. In our survey, 76.9% of the accounts provide this service. Peking University Library was the only account that did not have this function.

Posting daily news, regular messages, and current information is another important aspect of library service. Our data show that it mainly contains news (61.5%), business hours (23.1%), cloud reading (20.5%), a column for freshmen (12.8%), workshops and training (30.8%), and information of remaining seating (28.2%). There were four public accounts with self-menus. They also contained news and announcements, but some of them could not display; some were linked to old news. Thus, they were not included in these statistics.

Apart from common self-service, two libraries, Chongqing University Library and University of Science and Technology of China Library, used their WeChat accounts to offer extra unique services, such as booking airplane tickets and hotels, reserving rental cars, and checking school bus schedules and weather forecasts. Its function works through self-defined menus.

WeChat Public Account Bound with Library Users' Account Number

WeChat accounts that bind with library users' account numbers are the type of services limited to universities' employees and students. Service accounts and public accounts with self-defined menus can be bound with employees'/students' library accounts. After binding, many unique services can be done by users themselves. Its main functions are borrowing materials, reserving and renewing materials, and reserving seats in reading rooms, lockers, etc. This type of account can also provide some special services to users. For instance, two public accounts of Xiamen University Library's WeChat accept registration of workshops. The service account of Tongji University Library's WeChat provides mobile printouts and recommends new books. These services are very attractive to users.

Data indicate that 71.8% of the libraries' accounts provided users with

access to their own library accounts so that users can check their checkout information. Among this type of account, 41% offered users the renew option, and 15.4% have the feature that lets users reserve materials. Users can pay off fines through 20.5% of the libraries' WeChat accounts, reserve seats at 33.3%, and reserve lockers at 10.3%. User library accounts were not bound with 28.2% of the libraries' accounts. Among those unbound accounts, three subscription accounts had a self-defined menu, and the rest of them were public accounts without the menu.

Promoting of WeChat Public Accounts

Compared with microblog and other social networks, WeChat is more private. To attract users to libraries' official WeChat, libraries need to reach out to users and actively promote their accounts rather than rely on word-of-mouth recommendations by users. It would be helpful and attract users more quickly if libraries provided two-dimensional code scanning of their WeChat accounts when promoting them. From the survey, it can be seen that libraries took two main approaches to expanding their WeChat influence.

Many libraries promote their WeChat through their library official website. Our survey shows 61.5% of the libraries used their official websites to promote WeChat. Among them, 12.8% put their WeChat icon (logo) on the websites; 28.2% had two-dimensional codes displayed; 20.5% had both on the websites.

Promoting WeChat through libraries' microblog accounts is another efficient technique. Our statistics show that 69.2% of the libraries use their microblog to promote their WeChat. Among them, 15.4% only posted text messages on their microblogs; 53.8% posted both text messages and two-dimensional codes. Beijing University of Aeronautics and Astronautics Library, which was the first to start using WeChat, put the most effort into its promotion. The library posted sixteen blogs to promote its WeChat two months before the first WeChat message was sent to the public.

Message Posting and Reading on WeChat

The implementation of more features to the WeChat account is only one measure of the positive impact of WeChat on library and information services. The true value should be based on how much information provided through WeChat is received by users, how positive the users' feedback is, and how many users it can attract and retain.

From September 1 to December 31, 2015, thirty-five library accounts sent messages to users through their WeChat accounts. Four libraries that did not send out messages were all service accounts that mainly provided service through self-defined menus.

Table 1 shows the total number of messages sent by each library in our survey, how many times messages were read, and how many positive feedbacks were given, etc.

Table 1. Library WeChat Accounts: Numbers of Postings and Readings

Number	Public account	Total no. of posts	Total no. of reading times	Average reading times per post	Total no. of "Like"	Average no. of "Like"/per post	No. of posting times
1	HUST	10	9899	990	85	9	5
2	DLUT	36	33272	924	519	14	14
3	TJU	27	24545	909	400	15	22
4	PKU	46	32908	715	272	6	19
5	XMU	91	58903	647	760	8	64
6	NWPU	34	20950	616	246	7	29
7	CQU	54	33192	615	338	6	16
8	SYSU	55	32535	592	359	7	35
9	FUDAN	96	56718	591	721	8	43
10	RUC	39	22868	586	327	8	15
11	WHU	97	52168	538	848	9	53
12	NJU	74	35590	481	415	6	35
13	TONGJI subscrip- tion account	67	30340	453	386	6	27
14	SCU	49	21789	445	688	14	14
15	ECNU	88	39082	444	549	6	57
16	XJTU	40	14471	362	146	4	17
17	BUAA subscrip- tion account	3	1010	337	16	5	3
18	SDU subscrip- tion account	219	71806	328	1282	6	104
19	USTC	104	26344	253	796	8	84
20	HNU service account	42	9419	224	180	4	12
21	ZJU	261	55095	211	479	2	78
22	HNU subscrip- tion account	212	42529	201	1190	6	72
23	TSINGHUA	120	23928	199	337	3	24
24	SCUT	14	2470	176	22	2	12
25	JLU	100	17169	172	289	3	43
26	BNU	118	18807	159	326	3	66
27	TONGJI service account	238	30391	128	520	2	80
28	SJTU subscrip- tion account	70	8449	121	196	3	44
29	SEU	68	8130	120	142	2	39
30	NANKAI	37	4359	118	65	2	37
31	LZU	70	8123	116	130	2	31
32	BIT	3	268	89	5	2	3
33	HIT subscrip- tion account	38	1875	49	34	1	18
34	BUAA service account	13	487	37	12	1	2
35	OUC	1	7	7	1	1	1

continued

Table 1, *continued*

BIT=Beijing Institute of Technology Library; BNU=Beijing Normal University Library; BUAA=Beijing University of Aeronautics and Astronautics Library; CQU=Chongqing University Library; DLUT=Dalian University of Technology Library; ECNU=East China Normal University Library; FUDAN=Fudan University Library; HIT=Harbin Institute of Technology Library; HNU=Hunan University Library; HUST=Huazhong University of Science and Technology Library; JLU=Jilin University Library; LZU=Lanzhou University Library; NANKAI=Nankai University Library; NJU=Nanjing University Library; NWPU=Northwestern Polytechnical University Library; OUC=Ocean University of China; PKU=Peking University Library; RUC=Renmin University of China Libraries; SCU=Sichuan University Library; SCUT=South China University of Technology Library; SDU=Shandong University Library; SEU=Southeast University Library; SJTU=Shanghai Jiao Tong University Library; SYSU=Sun Yat-sen University Libraries; TJU=Tianjin University Library; TONGJI=Tongji University Library; TSINGHUA=Tsinghua University Library; USTC=University of Science and Technology of China; WHU=Wuhan University Library; XJTU=Xi'an Jiaotong University Library; XMU=Xiamen University Library; ZJU=Zhejiang University Library

Zhejiang University Library's WeChat posted the most messages (table 1), but the average number of times each message was read was ranked 21st out of 35, and positive feedback received for each message was ranked 26th. The messages that were each read most frequently were from Huazhong University of Science and Technology Library's WeChat. Its positive feedback for each message posted was ranked 4th, although its total number of messages posted was only ranked 32nd. Tianjin University Library's WeChat was ranked 1st in terms of most positive feedback received for each message on average. Its average frequency for each message read was ranked 3rd, and total number of messages posted was ranked 29th.

DISCUSSION AND CONCLUSION

Our survey and data collected show that WeChat provides libraries with a new platform and channel for outreach to users, information distribution, and customized services. Compared with previous studies, it can be seen that libraries have made many improvements to their WeChat accounts over the past years. But libraries are still facing these challenges: how to attract more users to utilize this new platform and how to provide services through this new channel more effectively and efficiently. Libraries need to think about and make improvements on the operation of WeChat, especially as discussed below.

Choosing the Right Type of WeChat Account According to the Libraries' Goals and Abilities

Choosing the right type(s) of WeChat accounts is the first step toward the success of operation with the libraries' accounts. It is important for the libraries to understand the advantages and disadvantages of the two types of

WeChat accounts, to decide what goals they want to achieve through their WeChat, and to know their users' needs and behavior in using WeChat. Subscription accounts allow owners to post more messages than service accounts, but messages posted through service accounts are always shown on the first page and easy to attract users' attention. Beside the factors mentioned above, libraries also need to assess their ability in technical support and manpower available for running WeChat accounts. While a service account can provide more advanced services than does a subscription account, it also requires more technical support. Libraries should make their decision based on assessment of their goals and abilities and their users' needs. The data collected by Xu et al. (2015) from November 21 to December 20, 2013, showed that ten libraries had subscription accounts and only one had a service account by the end of 2013. However, our data in this survey show that more libraries chose or switched to service accounts or subscription accounts with self-defined menus, starting from the second half of 2014. This indicates that the focus of libraries' WeChat has changed from information-centered at the early stage to service-centered at the present. While this change gives users more options and serves users' needs better, libraries need to make sure that they can provide both manpower and technical support to run WeChat accounts smoothly.

First Impression of WeChat Given to Users

The name, profile picture, and authentication of a WeChat account are some factors that affect the first impression of users. According to a 2015 survey about reading on social media WeChat by mobile phone users, 41.7% of users got to know public WeChat accounts through an online search; 22.6% of users followed certain public WeChat accounts because of the reputation of their owners (iiMedia Research Group, 2015). For example, accounts from prestigious university libraries are easier to attract attention from users. To help the public find and follow a library's WeChat account, the library should use a name that is unique, easy to find through online search, and easy to remember. Our survey found that many libraries named their WeChat accounts with universities' full names plus the word "library." It increased the degree of authority and trust of the accounts. Some libraries used nicknames (such as Chinese versions of abbreviations or acronyms) for their WeChat accounts at the beginning, such as "Hua Tu Xiao Wei" (South China University of Technology Library WeChat) and "Chong Da Wei Tu" (Chongqing University Library WeChat). Such account names are harder to find through online searches. Chongqing University Library changed its WeChat name to the library's official name recently for clearer identification. Another important factor that affects the first impression users get is the authentication. It was pointed out that if libraries' accounts are not authenticated for a long time, it will affect the credibility of the information they release and the enthusiasm of their

users about interaction (Xu et al. 2015). Some individuals registered their personal WeChat accounts with names that sound like public accounts of university libraries. Without authentication of libraries' real, official accounts, users would be confused and less likely to follow those unauthenticated accounts. To gain users' trust, libraries should authenticate their accounts when they first establish them.

User Retention through Services and Interactions with Librarians

The purpose of establishing libraries' WeChat is to serve users with a new channel and an easier way supported by advanced technology. To reach this goal, it is vital for libraries to retain the users of their WeChat accounts after they initially attract them. The 2015 survey report shows that 13.6% of users unsubscribed from the public WeChat accounts they had followed because of low quality of responses they received. Another 18.2% unsubscribed from public accounts due to lack of individualization features and service functions (iiMedia Research Group 2015). The quality of interaction between users and librarians and that of providing self-service options are two very important factors to retain library WeChat users. First, automatic responses must be carefully designed. Usually, the automatic responses are aimed at commonly asked questions and basic instructions, such as how to navigate the library's information system, where to find library assistance, and how to find answers through preselected key words. To design this feature, good selection of key words is critical. Those preselected key words should cover as many questions as possible. Answers to those questions ought to be clear and accurate so that users can get needed information and immediate guidance. In addition to automatic responses, more libraries are offering a self-defined menu in order to give users more flexibility.

Second, libraries need to have adequate personnel to take care of their WeChat accounts after they are established and to make sure all questions from users are handled in a timely manner. Many questions from users are unique and cannot be answered by the system automatically. In this situation, personalized service offered by librarians is of vital importance. Librarians will be able to give more specific and more targeted answers. Apart from automatic responses, providing in-time interaction with librarians will give users more valuable experience. However, previous research indicated that there was a problem related to response time. Some libraries did not have enough personnel to respond to inquiries in time (Xu et al. 2015). Our survey data show that only 15.4% of the libraries had library staff in charge of their accounts and provided real-person service. When this feature was tested in April and December, 2015, only two library accounts among six with such a feature responded promptly. This aspect of libraries' WeChat must be improved significantly to retain users.

Third, libraries need to control the number of messages posted through

WeChat accounts and ensure their quality. We live in an era of information explosion and receive so much information through different channels every day. Posting messages too often will cause information overload and will annoy some users. The 2015 survey report states that 40.9% of users unsubscribed from public WeChat accounts because messages were posted too frequently (iiMedia Research Group 2015). On the other hand, users would also unsubscribe from those accounts that only post few messages in a long period because of lack of information. Quality of messages is the other important aspect that requires attention from libraries. The survey report also shows that 22.7% of users canceled their subscription due to low quality of messages (iiMedia Research Group 2015). Messages posted on libraries' WeChat accounts should focus on information resources and library services. Xu et al. (2015) presented an example in which a library's WeChat account neither provided services nor responded to users' questions.

Promotion of Libraries' WeChat

Libraries' WeChat should be established as an extra channel for easy communication and outreach. To make it more effective and efficient, libraries should promote their WeChat wisely. WeChat can play an important role only when more users follow and use it. Libraries' official websites, microblogs, and even posters are good ways to promote WeChat. The statistics in the 2015 survey report demonstrate that 45.2% of libraries promoted their WeChat through official websites and microblogs (iiMedia Research Group 2015). These two promoting methods have the most powerful and long-lasting effect because users feel they are trustworthy. Other than these two methods, distributing and posting traditional fliers is also an important approach that libraries can take. Many users still appreciate the print materials they can carry with them.

Another effective means is establishing a relationship between universities' official WeChat accounts and university libraries' WeChat accounts. Tencent launched WeChat enterprise account in September 2014. Some universities of Project 985 already have this type of account. For example, East China Normal University established its enterprise account on May 20, 2015. Its library has been playing an active part in the university's enterprise account. The library provides its users with various services, such as letting them inquire about personal borrowing information and sending them reminders of materials due dates. Posting library's information and providing basic services through universities' official accounts, libraries will be able to reach more people with their information services.

In 2013, the Trend Report of International Federation of Library Associations and Institutions (IFLA) identified five high-level trends shaping the global information environment (IFLA 2016, 3). The report states that mobile devices are becoming the main medium for access to information,

content, and services. In its *Trend Report 2016 Update*, IFLA further emphasizes that “the accelerated adoption of mobile technology is changing the traditional sense of what it means to be a community” in Asia and Oceania region (IFLA 2016, 8). Libraries in the region need to take advantage of technological innovations and play a unique role in promoting information literacy, providing access to technology, and offering new digital skills in order to empower people living in this fast changing world (IFLA 2016). The IFLA statement on libraries and development also affirms that libraries around the world can empower people for their own self-development, offer access to the world’s knowledge, and provide opportunity for all.

With the improvement of libraries’ WeChat accounts discussed above, WeChat, the integrated mobile messaging app that offers so many features, can become a very powerful and important tool for all types of libraries to reach out to their users, enhance their services, and meet users’ information needs. All the data collected in reports and studies show more and more people, especially young people who are current or prospective college students, are using mobile devices to access the internet and find information they need. Utilizing the most popular mobile social media WeChat in the library and information service setting will definitely benefit both libraries and their users. Libraries are able to use WeChat public accounts to target and segment users precisely and to provide one-on-one reference service and information to the right users at the right time, based on their personalized inquiries. Since WeChat is an instant messaging platform, libraries can send out real-time messages more quickly than regular library official websites so that users can follow and know the most current information. WeChat is free to use and very simple to download. By following or adding libraries’ official WeChat accounts on their personal smartphones, library users are empowered to access library information and receive services at any place and any time by clicking on the WeChat icon.

A mobile device is much lighter and smaller than a laptop computer and can be used very conveniently. Checking library information can be done through WeChat in a minute. It makes access to library information a much easier task. So far, the East China Normal University Library’s WeChat account has already had about ten thousand followers due to its convenience and information ability. To achieve the goals IFLA posted, libraries around the world ought to collaborate with each other, learn from each other, and provide their users with new service channels empowered by new technology and entailed by new searching behaviors of their potential users. It is hoped that the experience and lessons learned through applying WeChat to the library and information service setting in China will be of benefit to the widening application of mobile social media or instant messaging apps to library and information service worldwide.

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