Mobile Me, Mobile Library Services: CUHK's Perspectives

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Abstract

Many different kinds of researches, teaching and learning activities are taking place in The Chinese University of Hong Kong (CUHK). Traditional classroom-based teaching cannot fully cope with the rapid increasing number of staff and students not to mention their expectations. On the other hand, learning activities via WebCT and Moodle, emails, online forums and other means of Internet applications are widely adopted medium over the years but now, with the mobile technology is becoming more popular, it is expected that more and more teaching and learning activities will be shifted to mobile learning (m-learning) to solve these problems.

This paper will report the findings from a mobile library service survey jointly conducted by four academic libraries in Hong Kong and Singapore held in October 2011. The objective of this survey is to find out the potential and practical use of mobile library services among our new generation users. Three key issues will be discussed in this paper: the possession rate of mobile devices; the adoption of library services they are using or will use on their mobile devices; and the potential areas for the Library to fill in the gap between their expectations and the services provided. A word of advice will be noted for further development of mobile services by a library.

1.   Why Mobile Library Services in CUHK

The Chinese University of Hong Kong (CUHK) was established in 1963 following the amalgamation of three post-secondary colleges. The CUHK has articulated her mission "to assist in the preservation, creation, application and dissemination of knowledge by teaching, research and public service in a comprehensive range of disciplines, thereby serving the needs and enhancing the well-being of the citizens of Hong Kong, China as a whole, and the wider world community" (CUHK Mission Statement available at http://www.cuhk.edu.hk/english/aboutus/mission.html). Nowadays, Libraries in the CUHK are under central administration with a collection of 2.4 million items in print, as well as myriad online resources and serving a community of 14,000 students and 4,000 teaching, research and administrative staff (CUHK Annual Report 2010 – 2011 available at http://www.cuhk.edu.hk/iso/report/rpt2010-2011/en/staff.htm) and support research and teaching activities in the CUHK.

The CUHK is one of the major universities in Hong Kong. Many different researches, teaching and learning activities are taking place in and outside the campus. Online and face-to-face lectures are both available to cope with the needs of the courses and students. Learning

activities via WebCT and Moodle, emails, online forums and other means of Internet applications are more common. With the recent New Academic Structure for Senior Secondary Education and Higher Education (also known as the "3-3-4" academic structure) in Hong Kong education, e-learning and mobile learning (m-learning) have provoked discussions from different stakeholders over the years. Under the "3-3-4" academic structure reforms, the implementation of a three-year senior secondary academic structure commenced at Secondary 4 in September 2009 followed by four years of academic curriculum in higher education institutions. The first cohort of "3-3-4" student will begin their first year university undergraduate education in September 2012 in Hong Kong.

It is expected that the forthcoming "3-3-4" systems will have great impacts in many aspects of education in Hong Kong, the Library is one of the key partners in the CUHK to cope with the changes. Changing in structure and modes of learning and teaching activities will bring more opportunities and challenges to the University as well as the Library. The most obvious change is the library going beyond the routine functions such as checkin and checkout books. More demanding requests are anticipated to adding extra services and integrating with other systems to provide more value-added services in the Library. Under this circumstance, the CUHK Library has launched the mobile versions of the Library website (http://m.lib.cuhk.edu.hk) and the Library Catalogue (http://m.library.cuhk.edu.hk) respectively in 2011. This is the direct respond to the needs for mobile services by our library users. The mobile Library website provides the access to selected popular library services such as booking facilities and connecting to several major electronic resources.
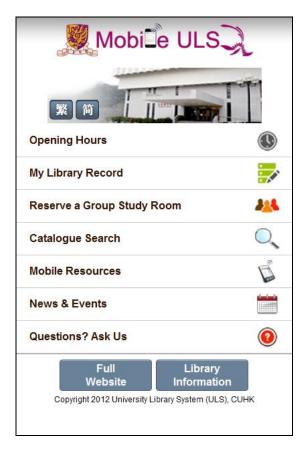

Figure 1. Screen capture of the CUHK Mobile Library website

On the other hand, the mobile Library catalogue is the software interface provides by an integrated library system vendor. It provides the basic features of Library's Web OPAC such as

searching the catalogue and allows our users to login and check their library online circulation records.

Figure 2. Screen capture of the CUHK Mobile Library Catalogue

2.   The Mobile Library Services Survey

It is a common view that most of the young generation is using digital technology in their daily life quite often and this trend continues to growth with the spread of mobile technology. The young generation is using mobile phone and tablet PCs very often and Prensky (2001 a, b) has described this shift of technology available for the young generation and depicted that our younger generation are born digital natives and behaved differently from the older folk. This situation is happening especially in the higher education sector. Recent research studies in Australia (Kennedy, Krause & Churchward, et at., 2006) and in Hong Kong (McNaught, Lam & Ho, 2009) have confirmed that the most of our students already have easy access to Internet and PCs and other digital devices. They are used to using the digital contents and features in their daily social lives.

In order to understand the use of mobile services and the gaps for the future development of mobile library services, the CUHK Library had carried out a library user survey on mobile library services. This survey was a joint survey co-organized by four university libraries in Hong Kong and Singapore. They are libraries of The Chinese University of Hong Kong (CUHK), The City University of Hong Kong (CityU), Nanyang Technological University (NTU) and The University of Hong Kong (HKU). The online survey was held in October 2011. The primary objectives of this survey are:

i. To identify the needs and preferences of students with regard to mobile library services;

ii. To recommend a suite of pertinent mobile library services for students.

In this survey, the mobile library services are referring to library online contents and resources, which can be delivered and accommodated for display in mobile devices. Four university libraries had posted the survey on the library website and also forward to the faculty for distribution. There are three sections in the survey: Section A is for the Background information such as the name of institutions and the level of studies; Section B is the main body of the survey and it is focused on the use of library services and resources. This section tries to measure the use of online library services and their perception on the library services and mobile devices; Section C is the other comments and suggestions from the users and they can provide free-text in answering this section.

As a result, a total of 505 completed responses were received from students. As shown in table 1 below, the ratio of responses is 17.3% from CUHK, 35.4% from CityU, 11.5% from NTU and 35.8% from HKU.

Institution	Respondents
Chinese University of Hong Kong, CUHK	17.3%
City University of Hong Kong, CityU	35.4%
Nanyang Technological University, NTU	11.5%
University of Hong Kong, HKU	35.8%

Table 1: Respondents (by Institution)

The proportion of female and male respondents was almost the same, 50.5% respondents were female while 49.5% respondents were male. 81% of respondents were between 16 to 25 years of old. Most respondents were undergraduate students (49.1%) and post-graduate students (18%).

The highest response rate by area of study was Science and Engineering students, a total of 188 (37.2%) science and engineering students responded to this survey.

Area of study	Respondents
Science & Engineering	37.2%
Business Administration	13.5%
Social Sciences	13.3%
Arts & Humanities	11.7%
Others	10.1%
Medicine	3.8%
Law	3.6%
Accountancy	3.6%
Education	3.4%

Table 2: Respondents (by Area of study)

3. Findings and Discussions

3.1 Library services

The survey results found out that 58.2% respondents physically visited the campus libraries at least a few times a week, in which 19.4% respondents even visited the libraries on a daily basis. This result reveals that more than half of the respondents are frequent library users. Only 4.8% respondents have never visited the libraries.

Physically visit the campus library	Respondents
Daily	19.4%
A few times a week	38.8%
Once a week	21.0%
Once a month	7.7%
A few times a year	8.3%
Never	4.8%

Table 3: Percentage of the respondents physically visits the campus library

The survey asked the respondents' awareness on which library services and facilities currently offered by the campus libraries. Over 75% respondents were aware of PC facility, online book renewal and library catalogues, which were the best known library services and facilities to the respondents.

On a contrary, the least known library services and facilities were online tutorials (25.1%), tutorial class (27.7%) and requesting help for writing a term paper (28.1%). This survey result reveals that most of the respondents focus on the facilities for their learning but may not aware the more personalized instructional services provided by the library.

Library services and facilities	Respondents
Using PC in the library	85.1%
Online renewal of item borrowed	76.0%
Online library catalogue	75.8%
Loan of DVDs and CDs	74.5%
Online journal articles or e-book database	70.9%
Group study/discussion room	68.1%
Interlibrary loan	47.9%
Online "Ask a librarian" service	32.9%
Research guide for different subject area	31.7%
Request help for writing a term paper	28.1%
Research and library tutorial class	27.7%
Online tutorials	25.1%

Table 4: Percentage of user's awareness on library facilities and services

3.2 Online resources usage

Surfing Internet is becoming an important part of learning activities for university students. The survey asked the respondents about how many hours do respondents spent online per week. The results showed that 46.8% respondents spent more than 20 hours online per week. However, 15.4% respondents only spent less than 5 hours online. In addition to number of hours spent online for all activities, 42.6% respondents spent about 26% to 50% of their online time on study-related activities.

No. of hours spent online	Respondents
Less than 5 hours	15.4%
5 to 10 hours	20.2%
11 to 20 hours	17.6%
21 to 30 hours	17.8%
31 to 40 hours	11.9%
More than 40 hours	17.1%

No. of hours spent online	Respondents
Less than or equal to 20 hours	53.2%
More than 20 hours	46.8%

Table 5: Percentage of different hours spent online

As an information hub for teaching and learning, the library websites provides different services and information to facilitate usage of library facilities. How well do the students perceive the services in the library websites? In the survey results, as shown in table 6, accessing Search for electronic books or journal articles, conducting research for an assignment or project, and library catalogue are the most frequently used service. Over 40% respondents access these services at least once a week.

Online services available at the library website	Daily	At least once a week	At least once a month	At least once a year	Never
Search for electronic books or journal articles	8.7%	30.7%	29.1%	15.0%	13.7%
Conduct research for an assignment or project	8.3%	31.7%	30.3%	15.8%	10.5%
Search library catalogue	7.7%	34.1%	31.5%	14.5%	10.3%
Access course reserves	4.6%	19.6%	30.1%	21.2%	21.0%
Look up library research/study guides and tutorials	3.8%	12.9%	18.2%	22.8%	37.2%
View your borrower record	3.2%	24.6%	38.0%	15.0%	16.6%

Table 6: Percentage of respondents access the services in the library website

On the other hand, the results in table 7 also noted that there was a high percentage of respondents never used some library services offered in the library websites, including listen to library audio tours, ask a librarian and register for library training and check RSS feed for new books and resources. This result is important to the librarians when they look into the usages they know what are the most popular library services.

The results also noted that 40% respondents have never used the online room booking for group / discussion room, while 68.1% respondents aware of the group / discussion facility in the campus libraries. The relatively low usage of this online service may be caused by the insufficient numbers of group study and discussion rooms in the library but further study is necessary to understand the usage preference and pattern by the library users for these services.

Online services available at the library website	Never use
Listen to library audio tours or podcast	59.4%
Register for library training or workshop	53.5%
Contact "Ask a Librarian" online	47.7%
Check list or RSS feeds of new books and resources	46.9%
Book a group study/discussion room	40.0%
Read library news	39.4%

Table 7: Percentage of respondents never accessed the services in the library website

3.3 Mobile library services

474 respondents have been using one or more than one mobile devices. The possession rate of mobile devices was 93.8%. Most popular mobile devices were smartphone (67.1%) and tablet (19%). 71.3% respondents often used the mobile devices for accessing the Internet. This result has re-confirmed the high procession rate of mobile devices for the young generation library users.

Type of mobile device	Percentage
Smartphone (e.g. iPhone, blackberry)	67.1%
Tablet (e.g. Samsung Tablet, iPad2, Motorola Zoom)	19.0%
Other handheld devices (e.g. iPod, iPod Touch, PDA)	9.9%
Electronic book reader (e.g. Amazon Kindle)	4.9%
Simple mobile phone without Internet function	24.1%

Table 8: Percentage of type of mobile devices owned by respondents

As shown in table 9, the users are asked if the library could provide Mobile library services, 61% respondents rated a very likely to book renewal feature, 55.2% to library catalogue, and 53.9% to viewing their own borrower's records.

However, almost 40% respondents rated unlikely or even very unlikely to use audio tours/podcasts or contact librarian online. This result reveals that library users although they adapt to mobile and internet technology and devices, they have preferences and accept some specific library services they think they are useful to their learning.

Library service available on mobile device, if available	Very likely	Likely	Unlikely	Very unlikely
Renew books	61.8%	28.7%	5.3%	2.4%
Search the library catalogue	55.2%	32.1%	7.5%	3.0%
View your own borrower details	53.9%	34.3%	6.7%	3.2%
Search for electronic books or journal articles	50.9%	36.4%	7.3%	3.6%
Do research for an assignment	36.8%	40.4%	13.9%	5.7%
Book a group study/discussion room	36.6%	45.3%	8.7%	4.4%

Access course reserves	34.1%	44.6%	12.5%	4.6%
Use research/study guides and tutorials	29.3%	43.2%	18.0%	6.3%
Check library opening hours	27.3%	51.7%	13.9%	3.6%
Check campus/library maps	25.1%	46.1%	17.6%	7.1%
Look for contact information	21.6%	51.1%	16.0%	7.1%
Read library news	20.8%	48.9%	19.8%	7.3%
Book library training sessions	19.0%	41.4%	24.6%	9.7%
Check list or RSS feeds of new books/resources by subject	18.6%	46.3%	22.6%	7.9%
Contact online "Ask a librarian"	18.0%	41.6%	26.3%	10.3%
Listen to library audio tours/podcasts	15.0%	37.4%	29.9%	13.1%

Table 9: Percentage of type of mobile library services preferred by respondents

On the other hand, Text/SMS messaging service is one of the most frequently used services in mobile devices. In table 10, it is shown that 61.6% and 56.8% respondents rated a very likely for receiving renewal/overdue and recall text/SMS notices respectively. In contrast with receiving library notifications, the least service rated very unlikely to use SMS messaging service to receive library news and contacting librarians online. This result reveals a potential popular mobile library services to the library users unless the Text/SMS messaging fee charged by the carriers can be sorted out.

TEXT/SMS service	Very likely	Likely	Unlikely	Very unlikely	Don't text
Receive renewal or overdue notices	61.6%	28.1%	5.5%	1.8%	1.8%
Receive recall notifications	56.8%	27.3%	10.1%	2.4%	1.8%
Receive a call number from the catalogue	38.4%	37.0%	15.2%	5.1%	2.6%
Receive change of opening hours details	36.6%	43.6%	10.7%	5.3%	2.2%
Receive library news	22.6%	38.0%	24.4%	10.1%	2.8%
Contact online "Ask a librarian"	19.0%	35.0%	26.1%	13.1%	3.4%

Table 10: Percentage of type of Text/SMS library services preferred by respondents

4.   Conclusion

In this survey result, it is found that the most awareness library services and facilities were PC facility (85.1%), book renewal (76%) and library catalogue (75.8%). The least known services were online tutorials (25.1%), library tutorial class/workshop (27.7%) and requesting help for writing a term paper (28.1%). Library users still regard library as facility providers. However, it is still room for other personalized services to help the users on their research and studies. However, more in-depth studies such as focus group interviews are needed to follow up with the respondents.

Almost half of respondents (46.8%) spent more than 20 hours online per week. 42.6% respondents spent about 26% to 50% of their online time on study-related activities. The possession rate of mobile devices was 93.8%. The most popular mobile devices were smartphone (67.1%) and tablet (19%). 71.3% respondents often used the mobile devices to access the Internet. It is a strong evident that most of the young generation library users adapted to the use of internet. It is important to know the library users' preference and pattern for e-learning.

Regarding services available in the library website, the most frequently used services were searching e-book and journal articles (8.7% daily, 30.7% at least once a week), conducting research for assignment (8.3% daily, 31.7% at least once a week) and searching library catalogue (7.7% very likely, 34.1% at least once a week). It reveals that the library users rely on the support of library services for locating information and all the libraries are doing well in their jobs. However, only around 50.9% of respondents rated very likely to use e-books and journal articles in their mobile devices. It revealed that the mobile devices may not suitable for viewing e-resource in such a small screen of mobile devices. In addition, the e-resource suppliers also may not provide a well-customized mobile interface for users to search and display full-text articles. On the other hand, around 47% to 59% respondents have never used library audio tour / podcast, registering for library workshop and contacting librarian online. It means the library has to understand why there is such a low usage and more promotion and user education is necessary.

The survey also revealed that the library users like mobile library services like book renewal (61.8%), searching library catalogue (55.2%), viewing borrower details (53.9%), searching e-books/journal articles (50.9%) and book a group study room (36.6%). However, most emphasis and efforts should be made by the librarians to promote the use of audio tour / podcast (13.1% unlikely and 29.9% unlikely) and ask a librarian online (10.3% very unlikely, 26.3% unlikely).

In additional to mobile application services, another potential service is the provision of pushed notification of text/SMS services. The survey shows that receiving renewal, overdue and recall notification were the mostly wanted text services by the library users. Although the cost of text service has been gone down a lot, the libraries still bear the cost of sending text message via phone service.

5. Limitations and Recommendations

This survey was available online for four university libraries in Hong Kong and Singapore in October 2011. Since all the users can access the online survey, it is difficult to assure the target audience can be reached and complete the survey.

Moreover, due to limited time and effort on conducting this survey, this online survey can only study the behavior and preference of library users on using mobile library services but cannot explain why or how they use the services in more details. Therefore it is suggested a more in-depth study such as focus group interview should be carried out to follow up the findings in this survey.

There were four participating libraries in this online survey: three of them from Hong Kong and one of them from Singapore. It is worthy to have a more comprehensive comparison between these two cities. However, since NTU is the only representing library in this survey, it is recommended to include more academic libraries in Singapore in the future survey so that a clear picture of library users' preference can be concluded from the comparative study.

It is also recommended that the library should have more comprehensive studies on the improvement of user interface design in order to attract the library users using the mobile library services. The survey results revealed that most of the library users have been using mobile devices for basic library functions such as searching catalogue, checking borrower's details and book renewal. However, the rapid development of smartphone and tablet devices allows the librarians to deliver more mobile library services to the users efficiently and effectively.

Although there are some limitations of this survey, it is worthy to note the preferences of the mobile library services and further study is needed to understand better the needs of the library users in this mobile world.

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