**M-Libraries: Information Use on the Move**
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Introduction

At the first international M-Libraries conference in 2007 it was clear that many libraries were keen to explore the potential of mobile library services, but none of the delegates attending reported having asked library users what sort of library services they might want to access from mobile devices, or which mobile devices they were comfortable using. When I had the opportunity to take part in the Arcadia Programme at Cambridge University Library, I opted to investigate how library users access and interact with information when they are on the move. The key questions posed to students were "Do you use mobile devices?"  "What do you use them for?" and "What would you want to access from the library?"

Method

I surveyed staff and students studying at both The Open University (OU), a distance learning institution, and Cambridge University, a collegiate institution.  The survey focussed on their use of information and more specifically, how they accessed information or used information on their mobile phones.

With only 10 weeks in which to complete the research and approaching the end of term at Cambridge I chose to use an online survey to gather data. The survey was promoted via mailing lists and library websites with the incentive of being entered in a prize draw. Only in the case of Open University students did the survey go to a selected sample of 2000 students, broadly representative of the student population. All other respondent groups were self-selecting.

Realising that the provision of library services to mobile devices is a new area, and that I didn't have any sample services to demonstrate to library users, I thought it likely that survey respondents would be confused or put off by questions directly relating to provision of such services, so I decided to focus instead on how they used their mobile phones to access and interact with information.

**Table 1: Survey response rates**

| Response rates | Cambridge University | The Open University |
|---|---|---|
| Association with the university | Proportion of respondents | |
| Undergraduate students | 49% | 46.6% |
| Postgraduate students | 25% | 10.4% |
| Associate Lecturers | - | 21.4% |
| Academic staff | 9% | 9% |
| Academic-related staff | 4% | 10.6% |
| Secretarial & Clerical/Assistant staff | 7% | 1.9% |
| **TOTAL number of respondents** | **1530** | **776** |

Results

Survey respondents were more positive about accessing information through text messages than through the mobile internet. This can be attributed to both ease of use and perceived cost of the two methods.

Over 60% of survey respondents have owned their current mobile phone for less than two years, which indicates that many of them will have fairly up-to-date devices, with functionality including basic mobile internet browsing. With such a high percentage of the academic population upgrading their phones every one to two years, it will be important for libraries offering m-library services to track trends in new functionality and new standards in mobile phone handsets. For instance, many phones released in 2009 emulate the iPhone's touch screen interface and are likely to try and compete with the improved internet browsing experience it offers.

The majority of respondents primarily use their phones to make calls, send text messages and take photographs, although they like to know that the other functionalities are potentially available. Respondents' use of different forms of media on their mobile phones was mostly limited to viewing photographs. Some used their phones to listen to music or watch videos, but very few used them to listen to podcasts or audio books and only a small number read e-books or journal articles. Some respondents commented that they prefer to use their iPod or other media player to access these other forms of media.

I discovered that although there are a variety of mobile devices available, mobile phones arguably require the most specialist development in terms of delivering appropriate presentations of information services.

**SMS Alerts/Notification**
A number of banks, transport services and other services offer SMS (Short Messaging Service) alerting services. London residents can sign up for text alerts from Transport for London to let them know the status of tube lines on their route. Roughly 32% of all respondents had signed up for SMS alerts of this nature at some point, and 34% of those still receive them. Two separate pilot studies undertaken at the Open University (Carberry 2008) and the University of Wolverhampton (Brett 2008), found that students liked receiving SMS alerts from the university, provided they were not too frequent. These studies also found that given the 160 character limit for text alerts, they have to be carefully phrased to make sure they are easily understood and do not sound too abrupt.

The enthusiasm for SMS alerts was greater at the OU than at Cambridge, but at both institutions a significant portion of respondents currently use text alerting services in some form. I found that students would be in favour of receiving text alerts from the library to let them know when reserved items are ready for collection, when books are due for renewal or are overdue. Overall 21% of all Cambridge respondents were in favour of text alerts from the library, compared to 35% of all respondents at the OU. Comments from respondents indicated that many would like to receive these notifications both by text message and email.

**SMS Reference**
The term 'SMS Reference' is used here to refer to services which allow the user to send a query by text message and receive a reply the same way. A popular example of this is Any Questions Answered (AQA 63336). When asked whether they'd ever used such a service, 27% of respondents said they had, and another 26% said they might try it now that they were aware of it. Only 4% of those who had tried it would not use such a service again. From these figures we can deduce that it may be worth piloting a service allowing users to submit queries to the helpdesk via text message. Certainly, many libraries which have implemented 'chat reference', allowing users to have a live conversation with a librarian through instant messaging, have found it to be very popular (HVASS, 2008). As with text alerting services, these enquiries could be received and dealt with by staff through an email or web-based interface, which

would reduce the amount of time taken to type a reply, compared to using a mobile phone keyboard. Other presenters at M-Libraries 2009 had piloted SMS reference services and had found them to be quite popular with their users. (Armstrong, 2009)

**Mobile OPAC**
Staff at Cambridge University Library have observed customers using their camera phones to take pictures of the catalogue results screen, rather than noting class marks on a piece of paper. Fifty percent of respondents at both universities said they take photos of signs, books, etc to save information for later reference. In addition, 55% of total respondents were in favour of being able to access the library catalogue from a mobile phone. In the short term, libraries could allow patrons to use their phones for notes and photos within the library as long as they are on silent, or in flight mode. In the long term, libraries could work with their Library Management System supplier (LMS) to create a mobile version of their library catalogue. There is already a mobile application for OCLC's WorldCat, so libraries who submit their catalogue records to WorldCat could make use of the application to pilot the service.

**Mobile Content Delivery**
Respondents were asked whether they use their mobile phones for any of the following activities.

**Table 2:** Media use on mobile phones

| Activity | Cambridge University | The Open University |
|---|---|---|
| | Percentage of respondents who never do this | |
| Read an e-book | 93.8% | 92.3% |
| Read journal article | 91.5% | 86.4% |
| Listen to podcasts or audio books | 87.5% | 78.1% |
| Listen to music | 60.0% | 56.7% |
| View photos | 37.8% | 32.3% |
| Watch videos | 69.4% | 61.5% |

These results suggest that rather than libraries putting development resource into delivering content such as eBooks and e-journals to mobile devices, it would be more cost effective to encourage content providers to do the development work. This would also address licensing issues as many subscription licences to academic e-texts prohibit downloading the content.

Some mobile phone devices, such as iPhones and Windows Mobile devices can already display eBooks. Audio files such as podcasts and audio books can easily be played on many mobile phones or portable media players. At the time of the survey however, most users were put off by the constraints of the technology, such as poor screen quality. However, comments from the respondents to this survey suggest that iPhone users are already more inclined to read eBooks on their phones. Athabasca University have developed a Digital Reading room to enable their users to access e-journals, even when the publishers do not support mobile access to their content.

**Mobile Internet**
The number of Smartphones available is increasing, but many mobile phone owners still restrict use of their phones to calling and texting. The iPhone and Android phones have caused an increase in mobile internet use in the UK, and as other mobile phone manufacturers release competitive devices this is likely to increase further. However, the key difference between these and previous web browsing mobile phones is that the iPhone and Android models can comfortably access

websites intended for larger screens. As this type of device becomes increasingly available it will no longer be necessary to develop mobile-ready websites.

According to a report from Continental Research, the perception of many people in the UK is that the mobile internet is expensive, slow and difficult to use. The report also says:
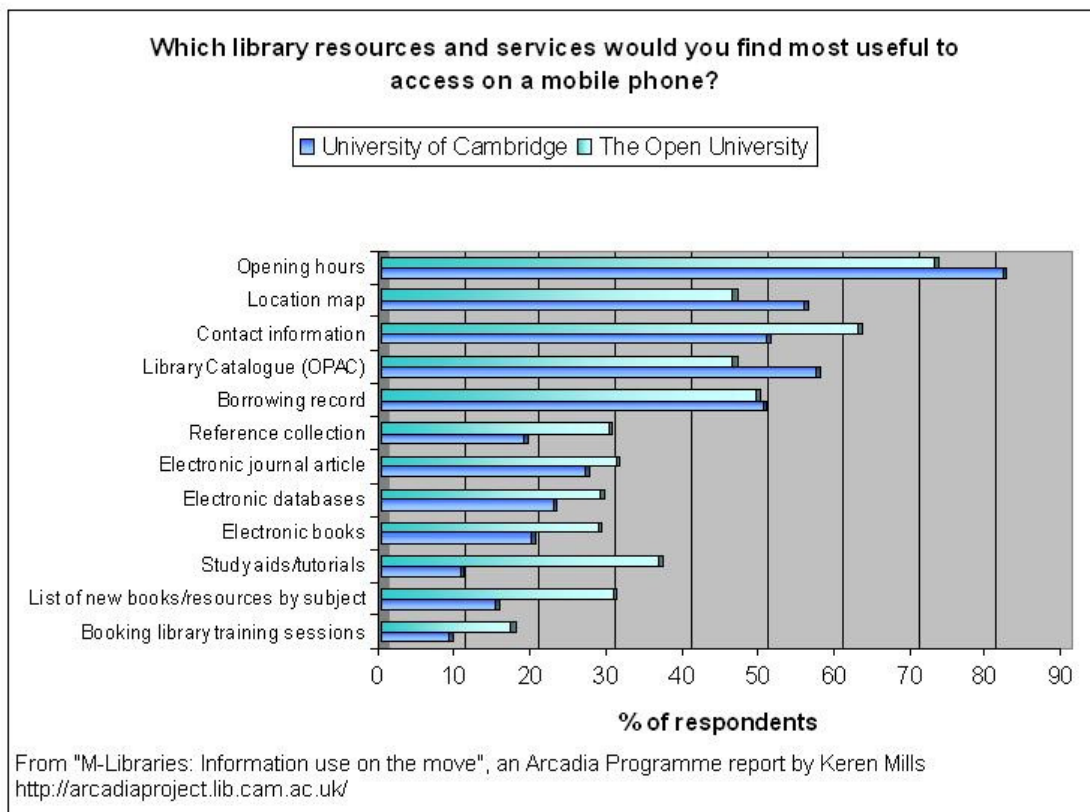
> *"Internet access has improved significantly in recent years, but the proportion that has used the service has remained stubbornly static and is unchanged over the last year, at 12% of mobile owners."*

(Continental Research 2008).

Several survey respondents commented that they might access the internet if they had access to a larger screen device such as the iPhone, and others commented that they prefer to use their laptop or netbook.

Less than 16% of Cambridge respondents used their mobile phones to access the internet more than once a week, and only 25% at the OU. While this is slightly higher than the national average at the time, one obvious inference to be drawn from this is that it is not worth libraries putting time and effort into developing dedicated mobile websites. If libraries want their sites to be mobile-friendly it would be more advisable to use either Cascading Style Sheets (CSS) or Auto-Detect and Reformat software (ADR) to facilitate their websites to enable the rearrangement of content and navigation to suit the size of the screens being viewed on. This would ensure a sustainable approach and library websites presenting content well on all sizes of screens, including the popular netbooks. Having concluded that, the survey results show that what people are most likely to look up on the move is the library's opening hours, contact information, the library's location, the OPAC and their borrowing record (see Figure 1). There may be some value in ensuring those aspects of the website are only one click from the home page.

**Figure 1: Mobile access to library services**

**Which library resources and services would you find most useful to access on a mobile phone?**

Legend: ■ University of Cambridge ■ The Open University

Categories (top to bottom):
Opening hours, Location map, Contact information, Library Catalogue (OPAC), Borrowing record, Reference collection, Electronic journal article, Electronic databases, Electronic books, Study aids/tutorials, List of new books/resources by subject, Booking library training sessions

X-axis: % of respondents (0 to 90)

From "M-Libraries: Information use on the move", an Arcadia Programme report by Keren Mills
http://arcadiaproject.lib.cam.ac.uk/

Please note that the survey question about location for Open University respondents was whether they would like mobile access to a map showing the nearest library they could use, as relatively few Open University students are able to visit the university's own library building in Milton Keynes. Their access to library resources is primarily electronic, but through the SCONUL Access scheme they are able to use other university libraries as study spaces or for borrowing books.

**Library Applications (Software) for Mobile Phones**

For some years, people have been creating applications which can be downloaded to mobile phones in addition to the software supplied with them. Examples include mapping software, games and mobile email clients. Until recently the take-up for these applications was relatively low, but iPhone users download a great many more applications than owners of other phones (ComScore 2009) and owners of Android phones are likely to follow suit.

Only 21% of respondents to this survey had downloaded applications to their phones and would do so again. With such low download rates there seems to be little value currently in providing library applications. It would be more cost effective to provide the same functionality through a website.

**Library Audio Tours**

A quarter of respondents would like access to audio tours of the libraries. Responses indicate that only 9% would download audio tours to their mobile phone, but 16% would download them to their own MP3 player and 19% would like to borrow an MP3 player preloaded with audio tours from the library counter.

Audio tours can be produced fairly quickly and inexpensively, so libraries which run inductions throughout the year or have a poor attendance rate at induction sessions

for new students, may find that tours could reduce the amount of staff time spent helping new users to orient themselves in library environments and explaining the facilities available. Audio tours could be easily provided as downloads from the library website and on devices that could be borrowed from the library counter. In the long run, they could also reduce the number of staff-guided tours which some library users find distracting. One disadvantage of some audio tours is that they often have to be followed in a set linear order. Some users may prefer more choice and flexibility and even a simple paper map and guide in addition to a location-aware mobile tour.

**Conclusions**
Mobile phones are still viewed by the majority of users as devices for making phone calls and sending text messages. Users often don't associate them with other activities such as information seeking. However, users are increasingly dependent on their mobile phones and a growing number do use them as diaries, for taking notes and for email and internet access. Indications within this study show that there is likely to be an increase in expectation from Library users that libraries will provide some services in a mobile-friendly way.

It would be beneficial to build on the work undertaken through this study and undertake further piloting to identify where development could add value e.g. allow users to respond to text alerts using single words or short phrases to act on the alert they have been sent, as in the examples given below. This would give users the opportunity to respond to an alert immediately, rather than having to remember to act on it later.

**Table 3:** Text alerts and responses

| Alert | User response | Library action |
|---|---|---|
| [Item title] is due for renewal in 1 day. Reply with 'RENEW' to keep this item or 'RENEW ALL' for all loans. | RENEW | Renews named item |
| | RENEW ALL | Renews all loans |
| The item you reserved is ready for collection. [Item title] | CANCEL | Cancels reservation as user no longer needs that item. |
| | STOP | Stops sending notifications as text messages, reverting to email. |

The functionality of mobile phones and the availability of services from network providers will continue to change, so demand from users for m-library services and choices might subsequently increase.

**Recommendations**
These recommendations are based on the combined responses from both Cambridge and the Open University and indicate that Higher Education libraries should consider the following:

- Piloting SMS alerting services - giving users the opportunity to choose whether they want notifications by text message, email or both are likely to be taken up by at least a third of library users. These alerts would include the notifications automatically generated by the Library Management System (LMS).

- Piloting a SMS reference service – if the library receives a high volume of enquiries that require brief responses, such as dictionary definitions, facts or service information from the library.

- Providing a mobile OPAC interface – potentially using a service such as AirPac or WorldCat Mobile, or working with their LMS supplier to develop a mobile version of their OPAC.

- Ensuring that the library website is "platform agnostic" and accessible and will resize to smaller screens – in order to position services to respond to increasing numbers of netbook users and mobile internet users in the future.

- Allowing mobile phone use in the library - as long as they are set to silent or to flight mode in order not to impact negatively on other individual meaning they are not receiving a signal).

To mobilize the Open University library, staff has developed a mobile friendly website (www.open.ac.uk/library) and mobile revision activities for an online information literacy tutorial, Safari (http://digilab.open.ac.uk/testarea/mobileSafari/). The Systems Development team are working to enhance the search functionality available through the mobile site (Tin & Sheikh, 2009).

## References

*Autumn 2008 mobile phone report.* 2008. Continental Research, MRC0809/24B.

comScore releases first data on iPhone users in the U.K. Abstract. 2009, no. 30/03/2009: (accessed 30/03/2009).

Armstrong, A., M. Jacobs, et al. UCLA and yale science libraries data on cyberlearning and reference services via mobile devices. In. Anonymous *Paper presented at The second international m-Libraries Conference, held on 23-24 June 2009, Vancouver*, Facet.

Brett, Paul, Dr. 2008. *Mobiles enhancing learning and support (MeLAS).* MeLAS, http://www.jisc.ac.uk/whatwedo/programmes/elearninginnovation/melas.aspx.

Carberry, Guy. 2008. *OU Texts / SMS services.* The Open University. http://kn.open.ac.uk/workspace.cfm?wpid=8516.

Hvass, A., and S. Myer. (2008) Can I help you? implementing an IM service*, The Electronic Library*, **26** (4),530-44, http://www.emeraldinsight.com/10.1108/02640470810893774.

Sconul access. 2009 03/09/2009 2009]. http://www.access.sconul.ac.uk/ (accessed 03/09/2009).

Tin, T., and H. Sheikh. (2009). A tale of two institutions: Strategic approach to support and develop mobile library services and resources. *Paper presented at The second international m-Libraries Conference, June 2009,* Vancouver.