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**Challenges and Opportunities in Library and
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37. M-LIBRARY: WHEELS TO POCKET

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Abstract

With the dramatic increase in the use of smartphones, library patrons increasingly demand the ability to access library services and information anytime, anywhere via their smartphones. To cater the mobile users need library seized the opportunity to engage smartphones users through the implementation of a **QR (Quick Response Service), Mobile Web Application, Email & SMS**. This article contains a small sampling of implementations as well as a summary of what has been done to encourage student engagement with these interactive library services through their smartphones at the AIKTC Central Library.

Keywords: QR (Quick Response) Codes, Mobile Application, SMS, eMail Alert, Academic Libraries, Interactive Library Services

Introduction: Cell phones are becoming an important aspect of our lives. The comfort and convenience they provide certainly made our lives much easier than ever before. Two brilliant features found in modern cell phones are: the integration of digital cameras and the ability to access the Internet anytime and anywhere, thus, enabling us to seek information when we need it. Nowadays, the built-in digital camera found in cell phones and Internet access can be consolidated to provide a new dimension of information seeking. The benefit of such a feature in modern mobile phones can be further extended to provide effective and potential library services to a new generation students. Offering mobile services has increased the physical use of the library and improves the use of reading material using a technological reference.

1. Purpose: The paper aims to share Anjuman-I-Islam's Kalsekar Technical Campus (AIKTC) Library's experience in providing mobile library services to mobile readers through mobile devices.

2. Design & methodology: This paper describes and documents down key experiences of Library for mobile devices. As a case study, this paper presents the design considerations for the type of library services to provide to library users.

QR (Quick Response) Service: Invented in 1994 by the Toyota Motors subsidiary Denso Wave to track vehicles and parts during the manufacturing process. The QR code consists of black modules (square dots) arranged in a square grid on a white background. The information encoded may be made up of data (numeric, alphanumeric, byte / binary, Kanji) or, through supported extensions, virtually any type of data. A QR code is read by an imaging device, such as a camera, in a mobile phone and there a number of different barcode scanner applications. The majority of these are completely **FREE**, and all you have to do once you install one is to

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use your phone's camera to scan the barcode, which will then automatically load the encoded data for you. The QR code, similar to a barcode, is an example of an information matrix. However a significant difference in the two is that a barcode only holds information nicely in the horizontal direction upto 30 numeric characters and a QR can do so vertically as well.

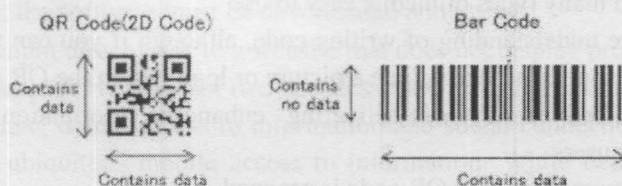


FIG.1 QR CODE & Barcode

The data encoded can include numbers, alphanumeric characters symbols, and text symbols such as kanji (Japanese language symbols) as well as control codes.

Input mode	max. characters	possible characters, default encoding
Numeric only	7,089	0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Alphanumeric	4,296	0-9, A-Z (upper-case only), space, \$, %, *, +, -, ., /, :
Binary/byte	2,953	ISO 8859-1
Kanji/kana	1,817	Shift JIS X 0208

Table 1: Maximum character storage capacity (40-L)

character refers to individual values of the input mode/data type

QR Code Generators: There are plenty of free QR code generators websites. Some websites are -

1. <http://qrcode.kaywa.com/>
2. <http://www.the-qrcode-generator.com/>
3. <http://goqr.me/>
4. <http://www.qrstuff.com/>
5. <http://www.beetagg.com/>

Reader: There are plenty of free QR code readers. Some of them are -

1. KAYWA Reader - <http://reader.kaywa.com/> -
2. i-nigma Reader - <http://www.i-nigma.mobi/>
3. BeeTagg - <http://get.beetagg.com/>
4. ScanLife Barcode Reader
5. QuickMark QR Code Reader
6. QR Droid
7. Barcode Scanner



Advantage of QR codes

- The main advantage of a QR code is its versatility. QR codes can be used for anything and everything. They are also beneficial for both customers and businesses.
- free, can embed many types of media, easy to use
- does not require understanding of writing code, although if you can write code you can change the appearance to include a picture or logo within the QR code itself
- a fun and effective way of delivering enhanced information directly and conveniently to users
- can track how many times the QR code is scanned
- **Data Restoration:**-Occasionally QR codes and bar codes become damaged or they may get dirty. Barcode reader will not be able to scan a damaged or dirty code whereas QR code can be scanned. Upto 30% of code words in a QR code can be restored depending upon amount of damage.
- **Expert in Scan Position and Speed:**-Barcode must be scanned in the correct position. But QR code can be scanned from any position. This is due to the three position detection patterns located in three corner of the code.

How Library is using QR code:

- QR Codes used in the library stacks areas that point to online WebOPAC.
- Library had created QR Codes that contain Wi-Fi network credentials (user name & password) pasted near to the library area.
- QR Codes used to direct users toward the New Arrival list.
- Library had created QR Codes that contain links of question papers & syllabus stored in the Institutional Repository of AIKTC developed by using DSpace, display near to the storage racks.
- Library has subscribed various print as well as online journals. QR Codes paste on print journals after scanning code user would be taken instantly to the same journals website where users can view past issue in full text.
- Library had subscribed all AICTE mandatory online databases of Engineering, Pharmacy and Architecture. QR Code generates to access those within the campus with the Wi-Fi login.
- QR Codes used for the web supplements given by the publishers/authors for instructors and students. Library finds out those books and generates QR code for them and past on the books.
- QR Codes used for the ebooks comes with the print edition.
- QR Codes used for the NPTEL videos pasted on the relevant book/chapter.
- One of the popular use of QR codes in the library is to add CD content to hard copy.
- QR Codes used for taking online User Feedback Surveys it's annually.



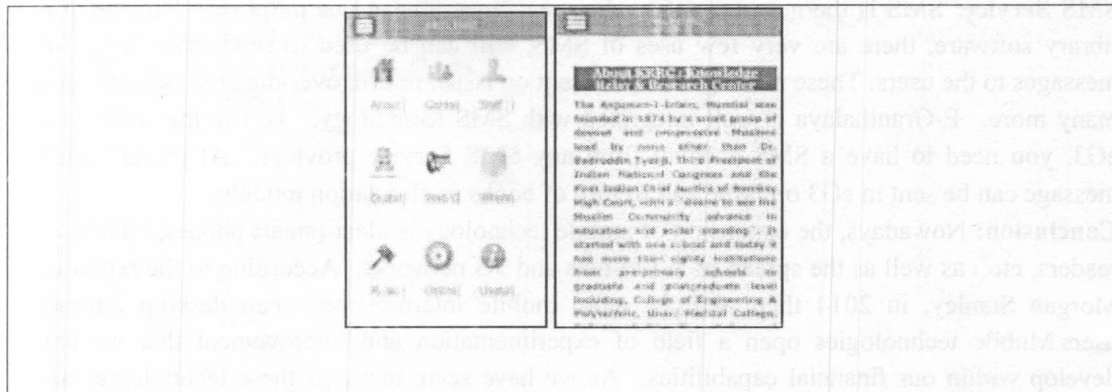
QR Code – What are Downsides

- Not everyone is aware of QR codes. As a result, not everyone who sees one will know to pull out a cell phone and take a picture of the matrix.
- Not everyone owns a camera phone, and because many cell phones do not include a QR reader, the software must be downloaded and tested.
- QR code might direct users to a website that does not display properly on a cell phone.

Library Mobile Apps: Over the last two decades students have been increasingly drawn into a world of immediate, online access to information and social connections. More recently we have seen almost ubiquitous mobile access to information. While becoming more involved with the virtual world of information, students have become less connected to physical libraries and the information provided therein, instead preferring online access. To encourage more use of the library space—and to increase student engagement with information—Library has designed and launched Android mobile application for our patrons to keep in touch with library users in order to access our most popular resources and services via their smart phone device. This application can be used by any Android smart phone. They are offering information about library, library staffs, links to Library WebOPAC & Institutional Repository, Rules & Regulations, Links to Online Databases, New Arrivals etc. all formatted for the small screen. The objectives are to explore the nature and utilization of mobile library website in the educational environment among students.

Mobile Application Builder: There are plenty of free apps maker. Some of them are –

1. <http://www.appsbar.com/>
2. <http://www.appsgeyser.com/>
3. <http://www.appyet.com/>
4. <http://www.apps-builder.com>



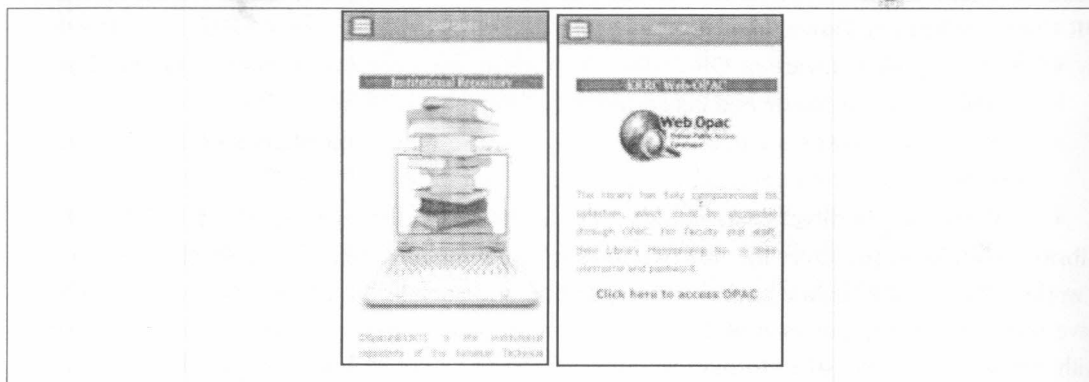


FIG.2: Screenshot of Lib. Mobile Apps

Mobile Apps – What are Downsides

- Not everyone owns Android mobiles with internet.
- Except Android mobile users (like apple iOS, Windows etc.) can used it as web application.

Email Service: In our efforts to disseminate information and to engage with a generation of mobile, social and always-connected students, Email & SMS Services have tremendous potential. Using this technology provides an opportunity to not only facilitate library tasks but also to strength connections with this generation. Library is automised using e-Granthalaya software developed by *National Informatics Centre, Department of Electronics & Information Technology, Ministry of Communications and Information Technology, Government of India*. The software is well integrated with the Email facility where many of the communications generated from the software can be sent direct to the users email account. These communications include transaction (issue & return), Approval Form, Order Form, Reminder to the Publishers, Overdue Notices, CAS/SDI list, etc.

SMS Service: SMS is the new way of sending messages for various purposes. However, in library software, there are very few uses of SMS, still can be used to send many kinds of messages to the users. These messages may be sent on issue, return, over-due, new arrivals and many more. E-Granthalaya is well integrated with SMS technology. To use the SMS with eG3, you need to have a SMS account from any SMS Service provider. At present SMS message can be sent in eG3 on Issue and Return of books in circulation module.

Conclusion: Nowadays, the expansion of mobile technology is clear (smart phones, tablets, e-readers, etc.) as well as the spread of Wi-Fi nets and 3G networks. According to the report of Morgan Stanley, in 2014 there will be more mobile internet users than desktop internet users. Mobile technologies open a field of experimentation and improvement that we can develop within our financial capabilities. As we have seen, many of these technologies are free and, in many cases, their implementation just takes time. Finally, we also need to take in to account that by using new technologies in the library, we are helping to reinforce our image of



modernity, and are thus beginning to be seen as a source of dynamic information that is evolving without losing sight of technological advances. But this new image and role will only happen if we are ready in time to meet our users' changing needs. On practical note I want to conclude this research that with the use of mobile technologies we can easily -

- to give an extra access point to library websites and services
- to improve the image of the Library: the use of this 'new' technology could be highly valued by users
- to allow our users to learn what a new service is in the Library

Findings – This study finds that the library users can be successfully motivated and engaged to use the resources through mobile services and have the potential to market library services.

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- Visit http://www.libsuccess.org/QR_Codes
<http://egranthalaya.nic.in/>