National Conference

on

CHANGING TRENDS IN ACADEMIC LIBRARIANSHIP IN ELECTRONIC ENVIRONMENT

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PROCEEDINGS

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Changing Trends in Academic Librarianship in Electronic Environment

QR (Quick Response) Codes Application in Academic Libraries: Case study of KRRC (Central Library)

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ABSTRACTS:

In libraries there are a number of ways to get using QR codes. Barcodes are used within libraries mainly to link items to a catalogue record. Using the traditional barcode the information contained is very limited and only by scanning the barcode (at the library counter) are you able to find further information contained within the catalogue record. If instead we started to use QR codes to label books, journals, audio/visual, offprints etc and a user wanted to see further information about that resource all they'd need to do is scan the QR code. They'd be able to find descriptive information, images, useful URLs etc all at the touch of a button on their phone.

This paper examines QR codes and how they can be composed and scan and decode by a camera. QR code is 2-dimensional barcode used for quick response service in academic libraries to a new generation students. This article contains a small sampling of current QR code implementations as well as a summary of what has been done to encourage student engagement with the library through the use of QR codes at the AIKTC (Anjuman-I-Islam's Kalsekar Technical Campus) Central Library.

Keywords: QR (Quick Response) Codes, Mobile Services, Academic Libraries, AIKTC

1. 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. A user having a camera phone equipped with the correct reader software can scan a two-dimensional (2D) barcode and decode it to launch and redirect a phone's browser to an embedded URL or to resolve text embedded in the scanned barcode.

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.

What is Q R Code?

QR (Quick Response) codes is a two dimensional barcode were 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 such as Red Laser, Barcode Scanner and QR Scanner that can read and decode data from a QR code. The majority of these are completely **FREE**, and all you have to do once you install one is to 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.
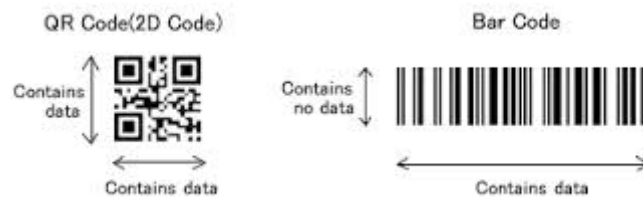

FIG.1 QR CODE & Barcode

The data encoded can include numbers, alphanumeric characters symbols, 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/datatype

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/

QR Reader

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.

- What's also greater about QR codes is that they bridge different forms of marketing streams together. For example ecommerce and mobile commerce are both used for QR codes.

- 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 for statistical purposes

- **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. 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. The reader will locate these three detection patterns and know how to correctly read the code. This feature speeds up the time needed to scan objects.

Disadvantages of QR codes

- **Lack of Awareness**: One disadvantage of QR codes and perhaps the biggest problem is the lack of familiarity of the QR code among people.
- **Expensive Smartphone and apps required:** User needs to have a smartphone in order to use one. Along with the smartphone they also need a QR code reader application. Not everyone in the world own a smart phone so QR code not available to everyone.
- **QR code not default provided:** QR code reader are not preinstalled on most phones. It is installed by user.

2. QR CODE USE IN ACADEMIC LIBRARY

In order for libraries to stay relevant, librarians must implement the technologies that users routinely employ in their daily lives. In addition to knowing about the latest developments, we must decide which are likely to be widely adopted. Today's QR codes seem very similar and Librarians are finding uses for QR codes in their libraries. Some of them are -

- *Lawrence University Seeley G. Mudd Library* has created a QR code information page to help their patrons understand QR codes, to library virtual tour, to electronic music resources, to mobile web site, to begin text messages to the interlibrary loan office, and more.
- *Boise State University's Albertsons Library* uses QR codes to link to its mobile website in its blog and main Twitter page. There is also an informative research guide about QR codes--what they are, how they are being used in Albertsons Library, tips on creating effective codes, and recommended QR code readers/scanners.
- *Brigham Young University's Harold B. Lee Library* uses QR codes for its library audio tour, for Group Study Room on-the-spot reservations (http://lib.byu.edu/sites/qrcodes/) and for event poster information download.
- *Half Hollow Hills Community Library* uses datamatrix codes on end stacks to lead patrons to subject guides on the web.
- *Bath University Library* is adding QR codes to catalog records to offer patrons basic info about an item (including location and call number).

- ***PUMBA (Pune University Department of MBA) Library*** has subscribed various management journals print as well as online. Library has paste QR code on print journals after scanning code user would be taken instantly to the same journals website were users can view past issue in full text. Pune University has its own song called 'Vidyapeeth Geet' in Marathi and it displayed with frame in front of the gate of every department of university. PUMBA Library has produced QR Code with You Tube link & paste on frame of university song. After scanning code users can see video of University song.

  Many of the examples described here are listed on the "QR Codes" page of the "Library Success: A Best Practices Wiki" (www.libsuccess.org/index.php?title=QR_Codes).

3. IMPLEMENTATION @ KRRC (CENTRAL LIBRARY)

Knowledge Resource & Relay Centre (Central Library), a very special place in the Anjuman-i-Islam's Kalsekar Technical Campus (AIKTC) campus. The KRRC is the key academic facility provided for the students, research scholars and faculty of the institute. The library includes a wide range of text books/monographs and leading Indian and international periodicals and research journals of different branches of Engineering & Technology, Architecture & Pharmaceutical Sciences. At Institute, it is a belief to facilitate production & dissemination of knowledge, information, insights & intellect in all scientific communities. KRRC library is a reflection of the institute's past and future. The Library stands as your gateway to what is known, and a unique Knowledge Centre that offers essential and specialized information resources and services to meet the growing information needs of clienteles.

With all traditional services like reprography, WebOPAC, Current Awareness Service (CAS), Selective Dissemination of Information (SDI) etc **KRRC Library** uses QR codes to enhance the library experience of the students by providing interactivity and flexibility.
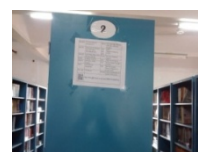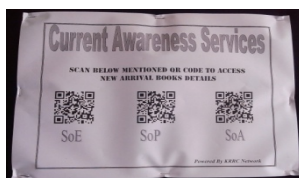
3.1. Wi-Fi Network:

Library had created QR Codes that contain Wi-Fi network credentials pasted near to the library (3rd Floor, B-wing). After scanning, smart phones will connect automatically.

3.2. WebOPAC

Library uses QR Codes on end stacks to lead users to the WebOPAC. After scanning, smart phones will connect automatically to WebOPAC.

3.3. New Arrival

Library uses QR Codes to direct users toward the New Arrival list. After scanning, smart phones will connect automatically to links given at the website.
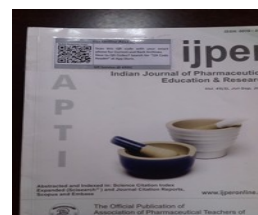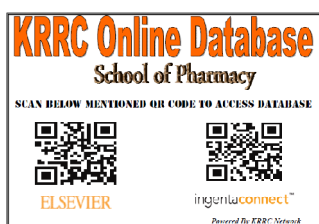
3.4. Question Papers:

Library had created QR Codes that contain links of question papers stored in the Institutional Repository of AIKTC developed by using DSpace, pasted on the racks of Question Papers. After scanning, smart phones will connect automatically (Intranet Only).

3.5. Print Journals

Library has subscribed various print as well as online journals. Library has paste QR code on print journals after scanning code user would be taken instantly to the same journals website were users can view past issue in full text.
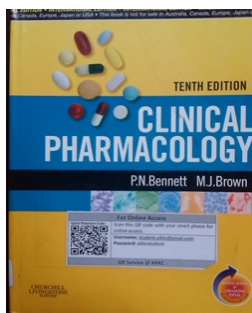

3.6. Online Databases

Library had subscribed all AICTE mandatory online databases of Engineering, Pharmacy and Architecture. QR Code generate to access those within the campus with the Wi-Fi login.

3.7. Web Supplements:

Most of the publishers provides the web supplements for instructors and students. Library finds out those books and generates QR code for them and past on the books.
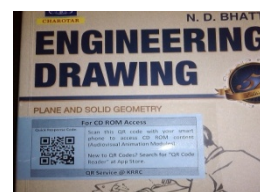
3.8. Elsevier (Student Consult)

STUDENT CONSULT titles are the core textbooks you need — combined with the technology you expect! When you purchase a title with STUDENT CONSULT, a unique pin code unlocks the full text online, so you can start building your own online library. Library generates the QR codes and paste with the username and password.

3.9. CD ROM Access

One of the popular use for QR codes in the library is to add CD content to hard copy.

4. CONCLUSION

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 ▢ KRRC had started the QR service.

In our efforts to disseminate information and to engage with a generation of mobile, social and always-connected students, QR codes have tremendous potential. Using this technology provides an opportunity to not only facilitate library tasks but also to strength connections with this generation.

QR code are powerful because they are software. A software approach is portable, work on any device and work with any data.

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10. Visit http://www.libsuccess.org/QR_Codes