# QR (Quick Response) Code: Application in Library & Information Science Services

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### Outline of Sessions

#### FIRST SESSION @THEORY (A)

- QR Code Introduction
- QR Code Types
- Barcode Vs. QR Code
- QR Code Features
- QR Code Significant
- QR Code Downside
- QR Code Tools

### Outline of Sessions

#### First SESSION @ THEORY (B)

- QR Code Generator & Reader
- How do I scan them!!
- QR Code How Libraries can use
- International & National Scenario
- 7 Tips for Better QR Content

### Outline of Sessions

#### SECOND SESSION @ PRACTICAL

- How it Works @ Users
- QR Code How to generate
- QR Code S/W & Customisation
- How To Read Computer
- How To Read Smart Phones

#### THIRD SESSION

- Experience @ Khaitan & Co.
- Experience @ KRRC
- Q & A Sessions
- Feedback Sessions

#### SECOND SESSION @ PRACTICAL

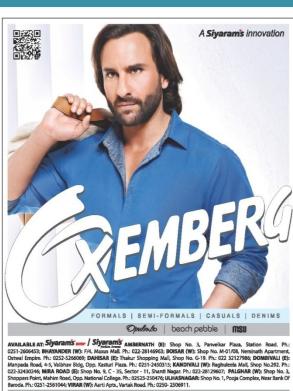
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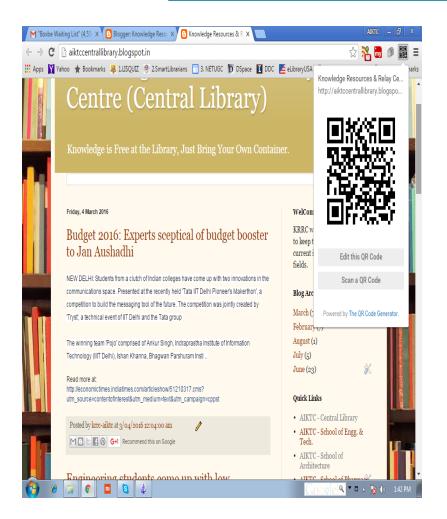


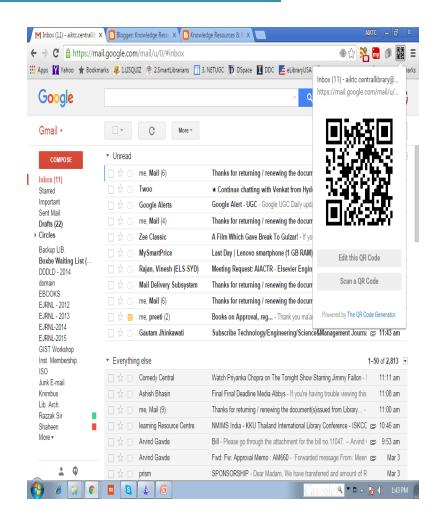












### Introduction







- Impact of ICT & Mobile Technology
- Effects of Mobile Environment & Mobile Devices
- Survey's indicates
- Expansion of Digital Resources
- Emerging Technology @ Marketing of LIS Services
- Online Discovery Tools
- Mobile Tagging





#### Introduction

- > QR stands for Quick Response code
- ➤ Invented in 1994 by the Toyota Motors subsidiary Denso Wave to track vehicles and parts during the manufacturing process
- ➤ It is a two dimensional barcode, typically seen as a white square with black geometric shapes
- ➤ It is basically a type of barcode which is readable by any camera-enabled smart phone

# **QR Code - Types**

QR Code Model 1 and Model 2	Micro QR Code	iQR Code	SQRC	Frame QR
[Feature] Model 1 is the original QR Code. The largest version of this code is 14 (73 x 73 modules), which is capable of storing up to 1,167 numerals. Model 2 is an improvement on Model 1 with the largest version being 40 (177 x 177 modules), which is capable of storing up to 7,089 numerals. Today, the term QR Code usually refers to this type.	[Feature] Only one orientation detecting pattern is required for this code, making it possible to print it in a smaller space than before. This code can be viable even if the width of its margin is 2 module-worth (QR Code requires a margin of 4 module-worth at least around it). The largest version of this code is M4 (17 x 17 modules), which can store up to 35 numerals.	[Feature] Code that can be generated with either square modules or rectangular ones. Can be printed as a turned-over code, black-and-white inversion code or dot pattern code (direct part marking). The maximum version can theoretically be 61 (422 x 422 modules), which can store about 40,000 numerals	[Feature] QR Code that has a reading restricting function. Can be used to store private information or manage a company's internal information) Its appearance is no different from the regular QR Code.	[Feature] FrameQR is a QR code with a "canvas area" that can be flexibly used. Since letters and images can be inserted inside the canvas area, FrameQR can be used for promotion, authenticity judgment, and other various uses.

# Barcode vs. QR Code

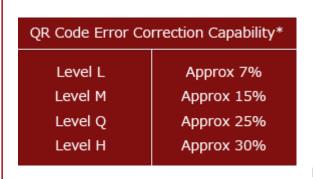
Bar Code	QR Code
It hold information in only one <b>Dimension</b> (Horizontally)	It holds information in two <b>Dimension</b> (Horizontally & Vertically)
It can hold up to 20 <b>Characters</b>	It can hold up to 7100 <b>Characters</b> , additionally it can hold numbers, symbols, text & control codes
When it got <b>Damaged</b> they are not capable for reading the data & they cannot be used to scan	On the flip side QR code stilled be scanned and still recover from 30 to 35% <b>Damaged</b> data
It require special scanners to <b>Access</b>	With smartphones or android phone it can be Access

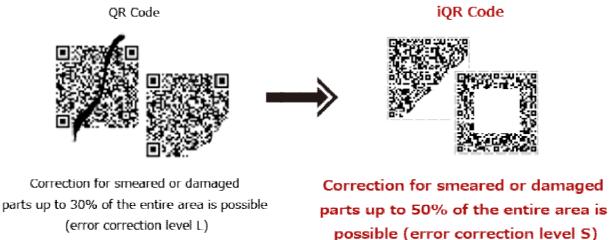
#### QR Code - Features

- ➤ The main advantage of a QR code is its <u>versatility</u>. They can be used for <u>anything</u> and <u>everything</u>.
- Free, can embed many types of media, easy to use.
- Does not require understanding of writing code.
- A <u>fun and effective</u> way of delivering enhanced information directly and conveniently to users.
- ➤ Can track how <u>many times</u> the QR code is scanned for statistical purposes.

# **OR Code - Significant**

<u>Data Restoration</u>:-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 up to 30% of code words in a QR code can be restored depending upon amount of damage.





# **OR Code - Significant**

**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 <u>three position detection patterns located in three corner</u> 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.



### QR Code - Downside

- •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.

### **QR Code - Tools**

Four things are required in order to successfully decode a QR code:

- QR code Generator
- Smartphone, Desktop (with a camera),
- QR code Scanning Software application, and
- ➤ Internet Connection (either through the phone's data plan or over a site-generated wireless network).

# QR Code - Generator & Reader

Generator (Phone)	Reader (Phone)	
<ul><li>QR Stuff</li><li>Kaywa</li></ul>	<ul> <li>ScanLife</li> <li>BeeTagg</li> <li>ReadLaser</li> <li>AT&amp;T Code Scanner</li> <li>Microsoft Tag</li> <li>i-Nigma</li> <li>Kaywa</li> </ul>	
Generator (Desktop)	Reader (Desktop)	
<ul><li>Quick Mark</li><li>Zxing Decoder</li></ul>	<ul><li> Quick Mark</li><li> Zxing Decoder</li></ul>	

# How do I Scan Them

#### First you need to download an app to your phone



Quickmark



QR Droid



Red laser



**OR** Reader



QR app



Go to your phone's marketplace and search for QR code scanner

#### QR Code - How Libs. Can Use

- QR Code Link to e-Contents
- Linking to the online surveys
- Linking to Library Contests
- On Library Stacks, Journal Areas that point to online electronic holdings
- Linking to Library Audio tour for Orientations
- Linking to Library Blog, Websites
- Linking to Digital Library
- Linking to Library Maps
- Linking to Library Wi-Fi Network etc.....

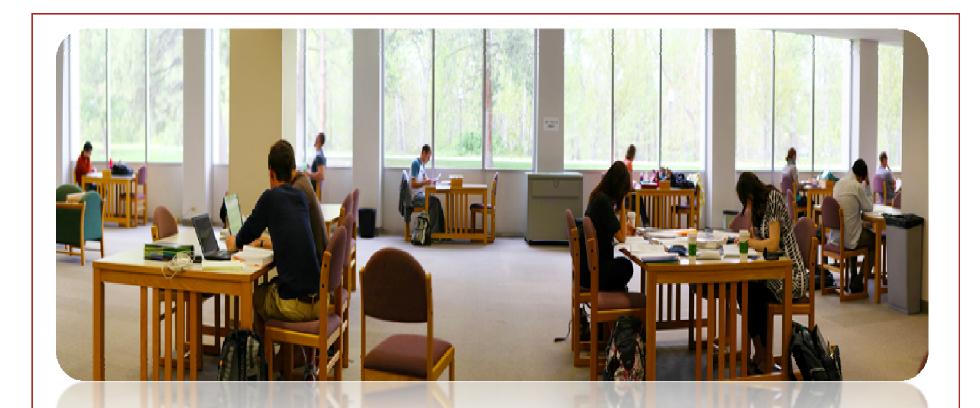
#### International & National Scenario

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. Many of the examples described here are listed on the "QR Codes" page of the "Library Success: A Best Practices Wiki".

Some of them are -



Lawrence University Seeley G. Mudd Library has created a OR code information page to help their patrons understand OR 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 <u>library audio tour</u>, for <u>Group Study Room on-the-spot reservations</u> and for event poster information.



**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 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.

### 7 Tips for Better QR Content

- Encourage Marketing and IT to Collaborate on Content
- Ask the Right Question
- Know Your Audience
- Make It Accessible
- Incorporate Live Data
- Keep It Fresh
- Track Results

# Technical Tips

- ➤ Coding systems are a science. Design of a good coding system requires an understanding of the distance and height of code placement, size of code, colour of code and as well as the exact location of the code.
- ➤ All these help make coding effective.
- The other common Indian malaise is verbosity.
- ➤ A recent code says, "Wi Fi Access". A graphic of a would have sufficed.

# **Print Tips**

There is no complex rules to make your QR codes easily scan able for rather simple capturing devices such as mobile phone cameras. The most important rules when printing QR codes on everyday materials such as e.g. business cards and letterheads summarized —

- The QR code edge length should be not less than
- 0.6in/1.5cm (when using vCards 0.8in/2cm);
- ➤ the background color should be brighter than the data pixels (no QR negative in terms of color);
- ➤ Sufficient optical margin around the QR code.

# SECOND SESSION

#### How it works @ Users



- Phone with camera & Internet access
- Download & install a QR Code reader on your phone
- Phone's camera acts like a scanner, allowing it to "read" the code
- Once scanned by your phone, the codes can provide you with contact information, text messages, contents of an ebook, mobile website etc

#### QR Code - How to Generate

- Pinpoint the information that you wish to share
- Locate a user friendly QR Code generator website
- Fill in appropriate content and information
- Test the QR Code
- Save the QR Code image on your computer
- Share your QR Code with the world

### QR Code - S/VV & Customisation

There are plenty of free QR code generators websites.

#### Some websites are:

- •KAYWA Generator <a href="http://qrcode.kaywa.com/">http://qrcode.kaywa.com/</a>
- •QR Generator <a href="https://www.the-grcode-generator.com/">https://www.the-grcode-generator.com/</a>
- •Go QR Generator <a href="http://gogr.me/">http://gogr.me/</a>
- •QR Stuff Generator <a href="http://www.grstuff.com/">http://www.grstuff.com/</a>
- •Bee Tag QR Generator <a href="http://www.beetagg.com/">http://www.beetagg.com/</a>

# Scanning of QR Code

Step 1: Launch the application on your device.

Step 2: Use the view finder on screen of device to centre the QR code inside the scanner then hold the device still until the scanner has captured the image.

Step 3: Perform the action indicated on your phone screen to discover what information the QR code contained. For example, a link to a website could appear on screen prompting you to click the link and be directed to the site of the QR code creator.

# How to Read - Desktop

- Go to Link | <a href="http://zxing.appspot.com/generator/">http://zxing.appspot.com/generator/</a>
- Contents Calendar Event, Contact Information, Email Address, Geo Location, Phone Number, SMS, Text, URL, Wifi Network
- Download the URL and QR Code
- Share the code with the users



#### How to Read - Smart Phone

- How we can Do it:
- Smartphones with Internet access
- Open Play Store Search QR Code Generator & Decoder, Select and download the same.
- QR Code Generator | YKART, Exceksior Studios
- QR Code Decoder | NeoReader, Scanlife
- Free bar code readers available for different smart phones, some of them are listed down below:
- I Phone Scan, i-nigma, Neo-Reader
- I Pad Qrafter, QR Code Scanner, Scan (may come built in)
- Blackberry ScanLife, Bee Tag, Scanner Pro

# Our Experience











#### Implementation @Khaitan & Co.



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First Library in India in Legal Domain who use QR Code:

- Library Stack
- Library Newsletter
- Online User Feedback Survey's
- SDI & CAS update service
- Try to subscribe each every journal having QR Code reference
- Link to Bound Volume Digital Library

# THIRD SESSION

# 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 library includes a wide range of text books/monographs and leading Indian and international periodicals and research journals of different branches of School of Engineering & Technology, School of Architecture & School of Pharmacy.





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 interactive service.

#### Wi-Fi Network



Library had created QR Codes that contain Wi-Fi network credentials pasted within the library. After scanning user will connect to internet connection.

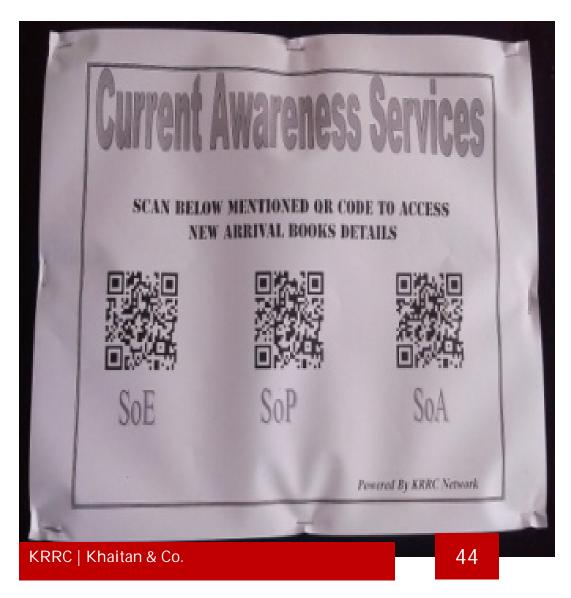
#### WebOPAC



Library uses QR Codes on end stacks to lead users to the WebOPAC. After scanning user will be redirect to WebOPAC.

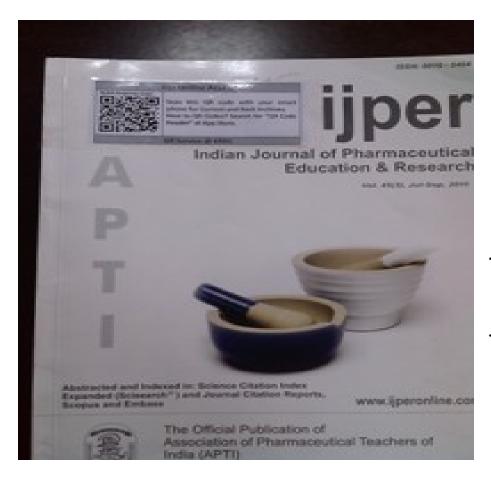


#### New Arrival



Library uses QR Codes for New Arrival list. After scanning user will be redirect to links given at the website.

#### **Articles Abstract Database**



Library had Articles Abstract Database of subscribed print journals. After scanning the QR code paste on print journals user will be redirect for achieves.

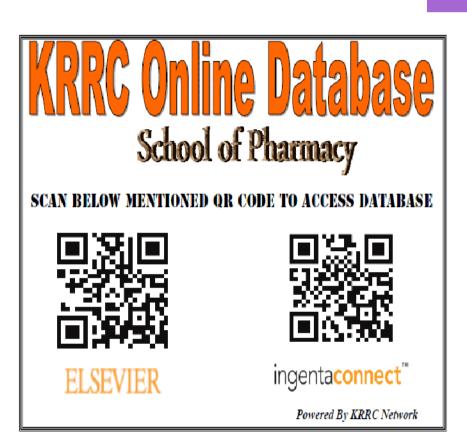
#### **Question Papers**





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 user will be redirect to the links.

#### **Online Databases**



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



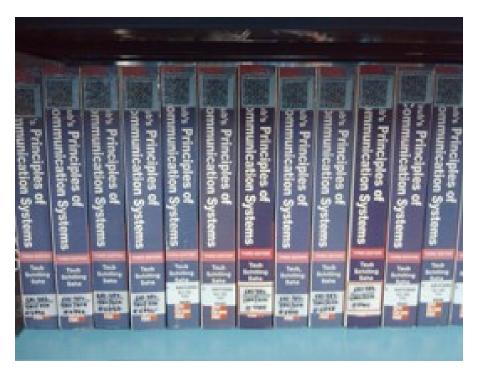








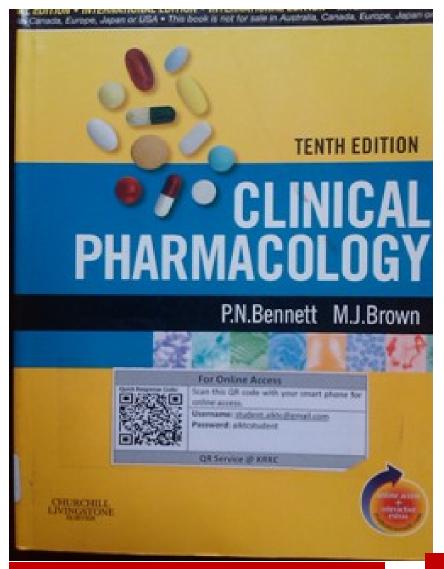
#### Web Supplements



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.

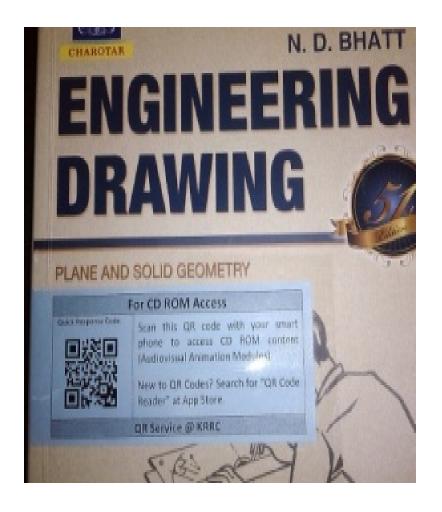
Example: Tata McGraw Hill

#### 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, 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 the books.

#### CD Library



CDs/DVDs content upload on the Institutional Repository for easy access & future preservation.

# What's New

#### Beacodes Are Like QR Codes Based

- ➤ Newly unveiled short-range communications scheme that depends only on plain old speakers and plain old microphones (In the words of its creators)
- ➤ Both can contain short messages that can be read by your mobile device. Unlike QR codes which are transmitted visually, Beacodes are sent using specially crafted sound that is inaudible to human ears, yet fully "audible" to mobile device microphones.
- ➤ Each Beacode allows for the transmission of up to 63 bytes of data per message, which is about enough for a URL or quick text message.
- ➤ In some cases they can replace BLE beacons, but unlike radio transmitters, our acoustic signals offer some special capabilities. For instance they can be embedded within an audio or video file. This includes sending messages embedded into ambient music or even broadcasting them through TV cable or satellite networks. Imagine sending coupons through your advertisement movie on a TV.

#### **Conclusion**

- ➤Over the last two decades students have been increasingly drawn into a world of immediate, <u>online access to information and social connections</u>. More recently we have seen almost <u>ubiquitous mobile access to information</u>. 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.
- ➤ QR codes offer a wide variety of useful applications for libraries, and as more and more users begin to use smart phones and other mobile devices, libraries need to find ways to reach those users.

#### **Conclusion**

- ➤In order for libraries to <u>stay relevant</u>, 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.
- ➤In our efforts to disseminate information and to engage with a generation of mobile, social and always-connected students, QR codes have tremendous potentiality. Using this technology provides an opportunity to not only facilitate library tasks but also to strength connections with this generation.



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