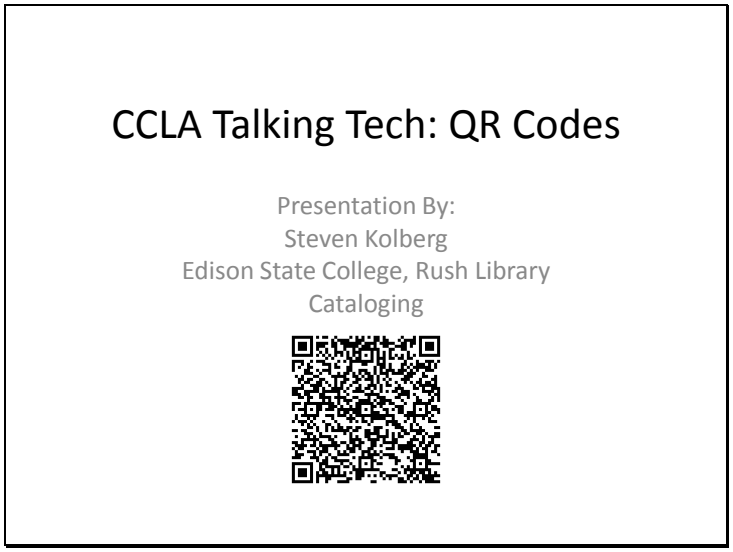
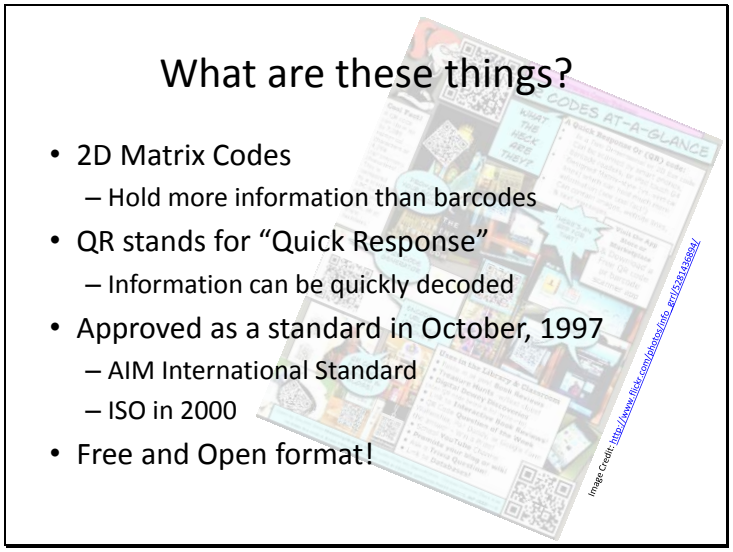
Slide 1



Thank you, Margaret! Hello everyone, again my name is Steven Kolberg and I am the Cataloger for the Edison State College Libraries. Today I will be presenting a brief overview of QR codes: what they are, their history, common uses, and possible library uses.

Slide 2



So let’s start out by looking at “what are these things?”. QR Codes are 2D matrix codes. Simply a matrix refers to the square or block shape of the code itself. More defined it is a “rectangular array of elements set out in rows and columns.” Because of its block design it can hold exponentially more information than a standard barcode.

The meaning of the “QR” in QR Code is “Quick Response”. These small codes are able to be quickly decoded or read by smartphone applications or other dedicated devices.

To give some history about the QR Code standard; it was approved as an AIM or Automatic Identification Manufacturers Standard in October of 1997 and then a JIS or Japanese Industrial Standard in January of 1999. Eventually in June of 2000 it was approved by the International Organization for Standardization or ISO. These codes have been around for quite some time.

The last and most important point is these codes are open source. This means the way these codes are made is publically available, there are many free generators available online to create these codes.

Slide 3

Matrix

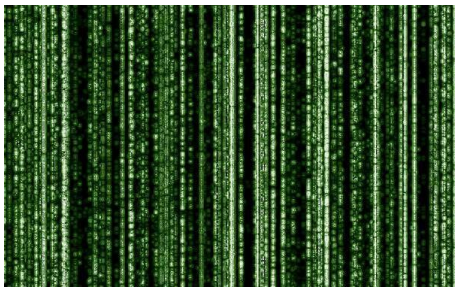


Image Credit: http://www.artelista.com/en/artwork/1337715294764546-fondowallpaperquotdigitalmatrixquot.html

Remember these are matrix codes [next slide…]

Slide 4

Not Bar

Image Credit: http://jmason.org/albums/2006-02-Venue-Markree/tn/bar_4.jpg.index.html

Not bar codes.

Slide 5

Traditional Barcode vs. QR Code

- Can hold up to 20 Alphanumeric characters Max.
- Data is stored in single direction bars.
- Numbers, letters, some special characters can be encoded.
- Not easily scaled.

- Can hold up to 4,296 Alphanumeric characters Max.
- Data is stored in 2 directions.
- Links, text, contact information, calendar events can be encoded.
- Can be scaled easily.

Now lets compare the Traditional Barcode against the QR Code.

- The traditional barcode can usually only hold up to 20 alphanumeric characters. There are stacked barcodes available that hold more information though but require special readers. The QR Code on the other hand can hold up to 4,296 alphanumeric characters at max and even more if the characters are just numbers.
- As illustrated by the pictures below, barcodes only store information in a single direction and are only read horizontally. There is much wasted space to extend the individual bars so it can be easily read. As for the QR Code, data is stored in 2 directions [or dimensions], which utilizes space more efficiently to hold more data or information.
- Barcodes usually can only hold pure data that is not interpreted by the reader. They only produce letters, numbers and some special characters. With QR Codes though, information is encoded to be interpreted by the reader application to open a link, display text, save contact information, set calendar events, and many other actions.
- The last point mentioned on this slide is important. Barcodes can not be easily enlarged or reduced without possibly losing information and readability. For example readable barcodes are not easily printed on an inkjet printer unless it is rather large. The QR Code can be either small or large and be read the same way. The way to determine size is the distance from the person scanning the code. For example, if the code is on a billboard it should be rather large or if it is on a business card it should just fit the card.

Slide 6

How do you use them?

- Dedicated QR Code Scanners
- Smart Phone Applications
  - BeeTag
  - i-nigma
  - QuickMark
  - ScanLife
- Webcam Applications
  - QuickMark
  - ZBar
- Web-Based Decoders [Readers]
  - http://miniqr.com/reader.php
  - http://zxing.org/w/decode.jspx

Image Credit: http://www.flickr.com/photos/cocreatr/2211459923/

Now that we've covered the technical facts, let's get to the stuff you really want to know about QRs. "How do you use them?" The most common way would be through your smartphone or fairly recent cell phone that has a built-in camera. There are many freely available reader programs which can be downloaded and installed to the phone to decode these codes. I have listed some of the most common programs for each type listed.

There are other programs to read the QR Codes with a webcam or upload an image of a QR code from a website to be decoded. In a business application there are dedicated scanners, much like barcode scanners, to read these codes.

Slide 7

Common Functions

- Calendar Events
- Contact Information
  - Emails
  - Vcards
- Easily Transmit URLs
  - Business/Realty Listings
  - Maps
  - Social Media Profiles
  - YouTube
- Free-Formed Text Massages
- Quickly Acquire Geo-Location Information
- Send SMS Messages [A.K.A. Txt]

Image Credit: http://www.zazzle.com/qr_business_card-240672155243038700

As I started to mention earlier in the presentation these codes can be used for more than just simple text or number data. Since these codes are easily read by a cell or smartphone's camera the actions that are triggered by these codes simplify entry of data into the phone [or online]. Since most phones have a very tiny QWERTY keyboard; entering a long web address or contact information of a person can be cumbersome. Some other ways QR Codes can be used:

- Placing a QR Code on a poster with a calendar event on programmed into it to set a phone reminder of a Library Program or Concert.
- Having a QR Code on a business card with the same textual information on it. Scanning this code the user can place your contact information into their phone or be able to email you on their smartphone or just dial the main number listed.
- Free-formed messages can also be made into a code to present static information about an item. Such as a name of a statue or art piece.

[next slide…]

Slide 8

Common Functions

- Calendar Events
- Contact Information
  - Emails
  - Vcards
- Easily Transmit URLs
  - Business/Realty Listings
  - Maps
  - Social Media Profiles
  - YouTube
- Free-Formed Text Massages
- Quickly Acquire Geo-Location Information
- Send SMS Messages [A.K.A. Txt]

Another great use is programming a URL into the QR and placing it on a poster. Just as a notice though there should be a disclaimer. Once the reader application notices the QR is a URL it will take the user online to that website and there may be a data charge to the user if they are not paying for internet on their phone. Also, if you are placing up a URL the website the user is being directed to should be mobile-friendly or else it may take a while to load that webpage.

As an example the image to the right is from a program Google started called Google Places. In this program businesses are able to get a window sticker from Google with a QR Code on it which contains a link to that business' place page on Google maps. This page provides the user with consumer ratings, business hours, menu items if its a restaurant, and other relevant information about that business.

Slide 9

Who uses these things?

- Originated in Japan and eventually spread to Europe and Middle East.
  - Originally used for tracking parts in manufacturing.
  - Later used for mass marketing.
- Just now starting to pick up speed in the US.
  - Used in art advertising.

Image Credit: http://en.wikipedia.org/wiki/File:QR_Wikitude.jpg

So who really uses these things?

These codes were developed in Japan to make the tracking and identification of parts in the manufacturing process more efficient. Later these codes started to go up on billboards, on shirts, stickers, and anything else that could be printed on for marketing and to transmit personal contact information. Eventually after its popularity in Japan the Middle Eastern and European countries started utilizing these codes for the same uses in business and marketing.

These codes are now starting to pick up in the United States for advertising, which will be explained more in depth in a later slide. But first let's look at some ways these codes can be used in libraries.

Slide 10

I am not going to play the actual YouTube video due to time constraints but please note the name to search on YouTube later. In this video it uses similar square code to identify the call number of the item and see if the item is shelved properly. This just demonstrates some of the more technical but practical applications that these can be potentially used for.

At Edison we have recently made a mobile-friendly version of our Libraries Homepage. This is something I have been trying to get posted for quite awhile since LINCCWeb produced a mobile catalog. I am excited it is finally posted live and we have a QR Code on our regular homepage that will take the user to our mobile library website.

Aside from just linking users to webpages of interest or to highlight webpages that may not be easily accessible or known about many University Libraries are using QR Codes inside of their OPACs to quickly give the user a text note of an items holding information:

- Possibly displaying the title and author of the work
- The call number and floor to find the item
- Along with the items' availability.

The advantage to this is once a QR Code is decoded by the reader application the information is stored in a history file. So once the patron scans many items from their online search of the catalog they can go to their scanned history and head to the stacks to retrieve their item.

Slide 11

Advertising

- Promote New/Existing/ Unknown Websites
  - Business cards
  - Handouts
  - Newspaper ads
  - Persistent links
  - Phone books
  - Posters
  - Shirts
- Can be in fun colors too!

Image Credit: http://www.flickr.com/photos/mpm2006/5333302839/

These simple codes can be placed on virtually anything and be useful. I have seen them in commercials that instruct the viewer to pause their DVR and scan the code to be taken to the website of that company. They have been placed on the front cover of the yellow pages to take the person to dexknows mobile. They are used for reality listings.
[next slide…]

Slide 12

Advertising

- Promote New/Existing/ Unknown Websites
  - Business cards
  - Handouts
  - Newspaper ads
  - Persistent links
  - Phone books
  - Posters
  - Shirts
- Can be in fun colors too!

Image Credit: http://www.flickr.com/photos/gwire/1311545877/

They are also used on lillboards and posters to take people to certain websites or specific information. They are printed on shirts to give out a message or contact information. [next slide…]

Slide 13

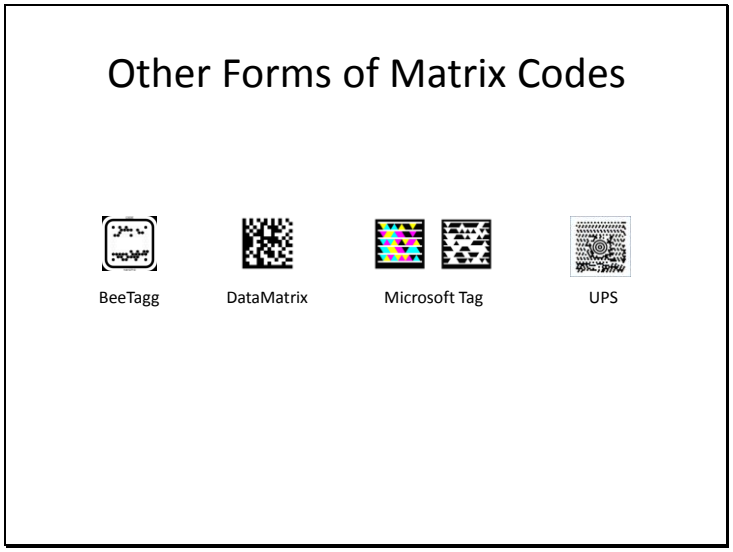
Advertising

- Promote New/Existing/ Unknown Websites
  - Business cards
  - Handouts
  - Newspaper ads
  - Persistent links
  - Phone books
  - Posters
  - Shirts
- Can be in fun colors too!

Image Credit: http://adverlab.blogspot.com/2007/02/uses-for-qr-codes.html

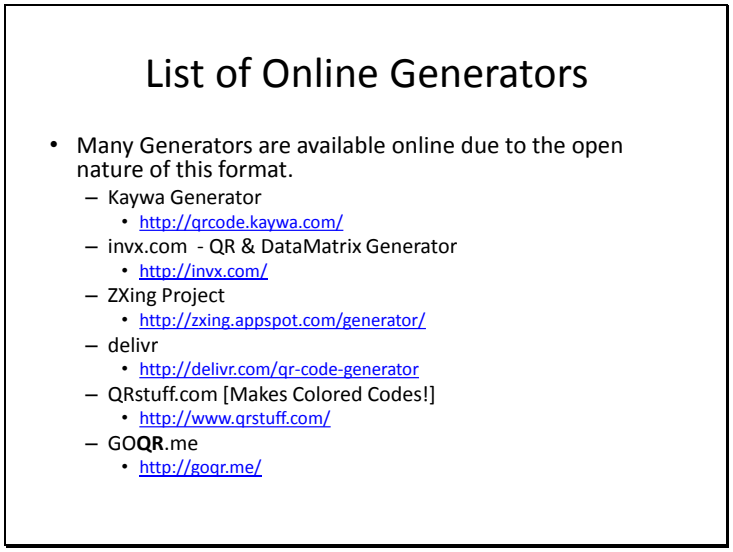
But what I like best are the colors that can be used. This example has some really excellent QR Codes on it with images embedded in them. These are still readable and can take users to content quickly.

Slide 14



I have listed some other types of proprietary matrix codes that are also available out there. They have similar uses but some require signing up to create codes. The BeeTagg and Microsoft Tag are like that. As we can see USP has created their own matrix code to help them identify parcels they deliver. The DataMatrix codes you may notice on pill bottles, form letters from insurance companies, and some food products.

Slide 15



Here is a simple list of free QR Code generators available on the web. To find more just go to Google and search “free QR Cdode Generators”. I used Kaywa to produce the codes used in this presentation on the Library Applications slide and for my contact information QR on the beginning slide.

Slide 16

References

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I hope that my presentation was helpful in learning about what these codes are and how they are used. I am sure that you will now see these codes everywhere. I am hoping to have this presentation posted because every image is a clickable link. Thank you everyone!