QR CODE & ITS USE IN LIBRARIES.

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INTRODUCTION

QR Codes

QR Codes ("Quick Reference" Codes) are essentially 2-dimensional barcodes. They can contain hundreds of times more data than conventional 1-dimensional barcodes . Initially created for use in the shipping industry, they are gaining popularity for marketing to people with smart-phones. Many consumer-oriented QR codes point users to a website address, although other types of data storage are possible. Generally, users scan the QR Code with a scanning device (for example, the camera on a smart phone), and they are automatically directed to a website or the application specialized to handle the code's data. The idea is to

allow users to avoid the hassle of remembering or manually reproducing long, precise strings of data.

The QR (Quick Response) Code is a two-dimensional (2-D) matrix code that belongs to a larger set of machine-readable codes, all of which are often referred to as barcodes, regardless of whether they are made up of bars, squares or other-shaped elements. Compared with 1-D codes, 2-D codes can hold a larger amount of data in a smaller space, and compared with other 2-D codes,

HISTORY OF QR CODE

The QR code system was invented in 1994 by Denso Wave. Its purpose was to track vehicles during manufacture; it was designed to allow high-speed component scanning. Although initially used for tracking parts in vehicle manufacturing, QR codes now are used in a much broader context, including both commercial tracking applications and convenience-oriented applications aimed at mobile-phone users (termed mobile tagging). QR codes may be used to display text to the user, to add a vCard contact to the user's device, to open a Uniform Resource Identifier (URI), or to compose an e-mail or text message. Users can generate and print their own QR codes for others to scan and use by visiting one of several paid and free QR code generating sites or apps. The technology has since become one of the most-used types of two-dimensional barcode.

QR CODE READER

Android QR Code Reader / Scanner:

1. Barcode Scanner

2. I-Nigma Barcode Scanner

3. QR Droid

4. QuickMark

5. NeoReader

6. ScanLife Reader

7. Scan

iPhone QR Code Reader / Scanner:

1. QR Reader for iPhone

2. Zapper scanner

3. QR Scanner

4. Scan

5. i-Nigma 4 Scanner

6. Qrafter

7. ScanLife Reader

8. QR-Reader

9. QR Code Reader and Scanner

10. eyeconit Scanner

Blackberry QR Code Reader / Scanner:

1. QR Code Scanner Pro

2. ScanLife

Windows QR Code Reader / Scanner:

1. QuickMark QR Code Reader

2. UpCode Reader

3. I-Nigma Barcode Scanner

4. QR Code Reader

What are the advantages of a QR code over a barcode?

When debating on the issue of barcodes vs QR codes,as far as data types, barcodes are one dimensional numeric codes, and they are capable of up to 20 characters. This is simple for keeping track of inventory that leaves and enters a store, ensuring that retailers are constantly aware of what they have on hand. But, when choosing QR codes, the business owners will learn that these codes are two dimensional codes, capable of storing data horizontally and vertically. Therefore, the QR codes can hold up to 7100 characters of data, rather than the much lower number which barcodes hold. Additionally, the QR codes hold characters, numbers, symbols, text, and control codes. Due to the fact that the codes are horizontal and vertical, they store the same exact amount as the barcode can, but in only 1/10 of the space the barcode requires. So, when choosing barcodes vs QR codes, in the arena of data storage, QR codes are far greater at holding and keeping storage, and can even store text messages or website addresses.

The next issue when deciding barcodes vs QR codes is the question of data restoration. Due to several factors, both barcodes and QR codes may sometimes be damaged (dirt). When the barcodes are damaged, they are not capable or reading any data, and they cannot be used to scan. On the flip side QR codes can still be scanned. Additionally, when damaged, the QR code can still recover from 30 to 35% of the damaged data, words, or symbols,

making the QR code far superior in the capabilities or restoring data, or recovering information which has been lost or damaged for any reason.

As far as the speed, precision, and scanning position, when considering barcodes vs QR codes, many companies are again choosing QR codes as the choice option for their code types. When using barcodes, the exact position has to be perfect, otherwise they will not scan; this slows down the speed of clerks at busy stores, and in some cases, requires them to manually input the codes, if the code is extremely wet, or may be dirty due to where the product was located in the store. But, with QR codes, the individual working the counter can pretty much scan that code from anywhere, any distance, and any position. Due to the three positions and the detection patterns on the QR codes (which are located in the three corners of the code), they are going to be read no matter where they are scanned. Any reader can locate those codes, and easily detect the patterns, in order to give a proper readout of what products are being scanned. Therefore, this makes for faster scanning, and overall quicker checkout for customers waiting in line. So, when considering barcodes vs QR codes for speed and precision, QR codes are also far superior to the traditional barcodes which most retailers have chosen to use in their stores in the past.

Another factor to consider in choosing barcodes vs QR codes is the structured appended feature. With barcodes, data cannot be broken up by the reader. But, with larger QR codes, the information can be segmented, in up to 16 smaller sized squares. In turn, the QR codes allow any information to be stretched out on to an object, allowing the QR code to

be printed out on smaller, and narrower areas. This makes for ease or reading, and more flexibility by the companies who use the QR code, and deciding where to place the QR codes on any objects or products they sell.

ADVANTAGE OF QR CODES

- The design has much more flexibility.
- It can store 100+ characters and not just numbers
- Email addresses, names, details of the products etc. in small strings of characters can be saved in the QR codes.
- The QR codes have different images to be included so the chances of uniqueness is increased.
- Smartphones having camera facilities (and an app) can read the QR codes, as well as barcodes in most cases.
- The codes can be generated by any custom generator app as well and there is no need to go to GS1 US.
- Even though the QR code may be damaged, information still can be taken out of it.
- QR Codes can be scanned at any position, barcodes can not.

TYPES OF QR CODES

QR Code Model 1 & Model 2	Micro QR Code	iQR Code	SQRC	Frame QR
				

COMPARISONS BETWEEN BARCODE, QR-CODE, RFID

Attribute	Barcode	QR code	RFID
Line of Site	Required	Required	Not Required
Read Range	Several inches to feet	Several inches to feet	Passive RFID -Up to 30 feet Active RFID -Up to 100s feet
Identification	Most barcode only identify only type of item (not uniquely)	QR code can identify each item uniquely (Limited up to certain value)	It can uniquely identify each item

Read\Write	Only read	Only read	Read Write
Technology used	Optical (laser)	Optical (laser)	RF (Radio frequency)
Automation	Most barcode Scanners need humans to operate	QR scanners need humans to operate	Fixed scanners don't need human labor
Updating	Cannot be Updated	Cannot be Updated	New information can be written on old tag
Tracking	Manual tracking required	Manual tracking required	No need of tracking
Information Capacity	Very less	Less	More than QR and Barcode
Ruggedness	No	No	**Yes**
Reliability	Wrinkled and smeared tags won't work	Wrinkled tags may work 30% data recoverable	Nearly flawless read rate
Data capacity	**<20** characters with linear	up to 7,089 characters[9]	100s to 1000 characters

Orientation Dependent	Yes	**No**	**No**

USE OF QR CODES IN LIBRARY ?

Librarians and staff in large research universities, small liberal arts institutions, public libraries, and museums are experimenting and discovering useful ways to implement QR codes in both their physical and online libraries.

"Library Success: A Best Practices Wiki" has a QR Codes page and is one place where librarians and others can share and link to how their libraries are using QR codes. The wiki provides a great way to find ideas and learn from each other.

USES IN LIBRARIES

Examples of QR code uses in libraries include:

- Library exhibits that include a QR code link to songs, videos, Web sites, surveys, contests, etc. or other information that augments the exhibits.
- Codes in the library stacks/end caps or magazine/journal areas that point to online electronic holdings of print materials or related subject guides.
- Linking to library audio tours for orientations.
- Code added to print handouts for additional information on mobile friendly sites.

- QR code with text that loads the library's text message reference service and other contact information into the patron's phone.
- Art shows or permanent art in libraries with a QR code linking to the artists' Web sites.
- In catalog records to offer patrons basic info about an item, including the location and call number. Users can scan the code and head to the stacks rather than writing or printing.
- Taped to video/DVD cases, linking to mobile-friendly video trailers.
- Code placed on staff directory pages and research guides that go to mobile friendly sites for later reference.
- Code placed on audio book cases for author interviews or books for reviews.
- Code placed on study room doors connecting to room reservation forms.
- Library video tutorials—individual videos or create a QR code to a YouTube playlists of videos, which create a great mobile home screen app that can be saved for easy access, as needed.

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