QR Codes

By: Ashley Molasy

Agenda

- What are QR codes and How do they Work?
- How do Organizations use them to achieve communication goals?
- Examples of industries using programs: Were they Successful? Well? Poorly?
- Q & A
- Conclusion

What are QR Codes?

- In 1994, DENSO WAVE released the QR Code.
- QR Code stands for Quick Response Code.
- Created in Japan, inventor Masahiro Hara
- Mission: To develop a code that could be read easily as well as being capable of holding a great deal of information.

What Influence QR Codes

- In the 1960s, Japan entered it high economic growth period.
- Supermarkets selling wide-range of commodities from food to clothes.
- Cashiers suffered from numbness in their wrist and carpal tunnel syndrome.
- As the use of barcode spread, there was limitations to how much information was held as well as the direction it must be scanned.

The Invention of QR Codes

- DENSO WAVE INCORPORATED was contacted and ask to create s new barcode.
- One that could hold tons of information and be able to scan and get the information quickly.
- Masahiro Hara and his team were dedicated to creating a new type of code.
- A year and a half after the development project was initiated and trial and error. The QR Code was created.
- Capable of coding 7,000 numerals with the additional capability to code Kanji characters was finally created, and is 10 times faster than other barcode.

QR Codes

- Traditional barcodes are coded one direction and are one dimension only.
- Whereas QR Code has information coded in two directions: across and up/down and is a 2D Code.
- The positioning squares allow the code to be read regardless of the angle.
- A code that consists of Kanji and Kana characters as well as alphanumeric ones.

How QR Codes Work?

Types of QR Codes

QR Code Model 1and Model 2	Micro QR Code	iQR Code	SQRC	LogoQ
				
[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] QR Code that can incorporate high-levels of design features such as illustrations, letters and logos. Since proprietary logic is used in generating this type of code, its readability is not compromised.

QR Codes

- In 2012, the QR Code won a prize in the Media for Industry category of the *Good Design Award*.

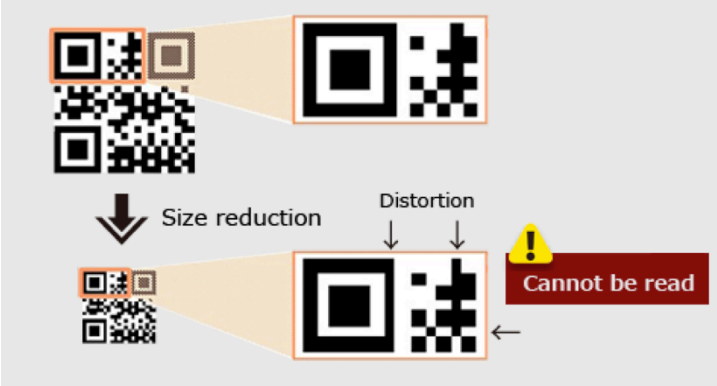
- "Its developers took the challenge of developing a variety of codes through designing, had the foresight to place its technologies in the public domain from the early stages of development and designed a system that has allowed natural uses of the code in people's daily lives."

QR Features and Benefits

- High Capacity Of Data
- Small Printout Size
- Kanji and Kana Capability
- Dirt and Damage Resistant
- Readable from any direction in 360°
- Structured Appending Feature

Reading QR Codes: Problems Encountered

- QR Code whose Modules are distorted.



- When a QR Code is enlarged or made smaller using a image processing tool, every module becomes distorted. It may look like a normal QR Code, but it may difficult or impossible to read the code.

Reading QR Codes: Problems Encountered

- QR Code with letters and pictures around it.

- If letters or pictures are placed around QR Code, the required margin cannot be secured. This kind of code is difficult or impossible to read.

Reading QR Codes: Problems Encountered

- QR Code with overlaid letters and pictures

- If you place letters or pictures on an area overlapping a QR Code, the contrast between the bright and dark areas becomes indistinct

Many ways of using QR Codes

Types of Businesses

- Manufacturing
- Warehouse
- Retail Sales
- Medical
- Services (Event)

Many ways of Using QR Codes

Types of Uses

- Traceability
- Picking
- Inventory Management
- Inspection
- Process Management
- Production Management
- Data Entry
- Dispensing
- Admission Control

Quote

“ I don’t dare specify what kind of people will use it. I just want to let a lot of people use the code, come up with the new ways of using it with them, and put these ideas into practice. This is the way, I’d like to think, that evolutionary improvements have been made to the QR Code.

- Masahiro Hara.

Conclusion

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What are QR Codes?

Created in 1994, by Denso Wave - Masahiro Hara in Japan.

QR Code stands for Quick Response Code.

QR Code consists of Kanji, Kara and alphanumeric characters.

Capable of coding 7,000 numerals and is 10 times faster to read than the barcode.

Mission: To develop a code that could be read easily as well as being capable of holding a great deal of information.

Features & Benefits

- High Capacity of Data
- Small Printout Size
- Kanji and Kana Capability
- Dirt and Damage Resistant
- Readable from any direction in 360°
- Structured Appending Feature

Access PowerPoint Seminar With QR Code

Many Ways Businesses Use QR Codes

- Traceability
- Picking
- Inventory Management
- Inspection
- Process Management
- Production Management
- Data Entry
- Dispensing
- Admission Control

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Types of Businesses Using QR Codes

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- Services (Event)

Reading QR Codes & Problems Encountered

- QR Codes can be read with the camera feature of mobile phones, smart phones, and tablets
- Reading performance is very much dependent on the camera's capability and downloading the proper program is also important.

Problems Encountered:

- Modules distorted in the QR Code.
- Letters and Pictures around QR Code.
- Overlaid Letter and Pictures on QR

" I don't dare specify what kind of people will use it. I just want to let a lot of people use the code, come up with the new ways of using it with them, and put these ideas into practice. This is the way, I'd like to think, that evolutionary improvements have been made to the QR Code.

- Masahiro Hara.

Differences Between QR Codes and Barcodes

- Traditional barcodes are coded one direction and are one dimension only.
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- The positioning squares allow the code to be read regardless of the angle.
- QR Code consists of Kanji, Kana and Alphanumeric.

Scan QR Code for Seminar Questions

Sources

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