

QR CODE PRIMER

QR Code is a kind of 2D symbology developed by Denso Wave (a division of Denso Corporation at the time) and released in 1994. Its primary aim was to be a symbol that is easily interpreted by scanner equipment and a way of encoding more information than a traditional one-dimensional bar code. The "QR" is derived from "Quick Response", as the creator intended the code to allow its contents to be decoded at high speed. QR Codes are common in Japan, where they are currently the most popular type of two dimensional codes. Moreover, most current Japanese mobile phones can read this code with their camera .

QR Code (2D Code) contains information in both the vertical and horizontal directions, whereas a bar code contains data in one direction only. QR Code holds a considerably greater volume of information than a bar code:

- Traditional bar codes can store up to 20 digits,
- QR Code is capable of handling several dozen to several hundred times more information including; numeric and alphabetic characters, Kanji, Kana, Hiragana, symbols, binary, and control codes. Up to 7,089 characters can be encoded in one symbol.



QR Code is open in the sense that the specification of QR Code is disclosed and that the patent right owned by Denso Wave is not exercised. QR Code is standardized; meaning that QR Code has been accepted internationally, ensuring its widespread acceptance not only in Japan but also in the rest of the world.

Data can be translated into a QR code by any QR generator, many of which are available free on the web. Users simply enter the data to be translated, and the generator produces the code, which can then be displayed electronically or in printed format. Decoding the



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information can be done with any mobile camera phone that has a QR reader. Many of the new generation Smartphones have a QR reader already installed. There are also readers that are free downloads. Click here (www.tenzing-im.com/qr.html) for a free reader created by our partners at Tenzing Interactive Marketing. Another reader can be found at www.beetag.com. Once the software is loaded, a user points the cell phone camera toward the code and scans it. The software interprets the code, and the cell phone will either display the text or ask for permission to launch a browser to display the specified web page.

Graphical illustration of the process



MOBILE TAGGING USING QR CODE

The vision behind mobile tagging (connecting a code, like QR, to information through a mobile device) is the notion of an absolute convergence between information media of all types. Mobile tagging connects static information carriers, like an ad in a magazine, with the Internet and encourages interactive behaviour with user. There are so many possible applications for QR Code and similar tagging programs; government, tourism, advertising and targeted marketing - packaging, supply chain management, brand management and brand protection, logistics, track & trace, anti-counterfeit or smuggling, id & passports, transport & ticketing, parking, disability, CRM, cross media campaigns, m-ticketing, m-payments, e.learning, ... Anyone with a Smartphone can scan and read QR codes with the click of a camera, and anyone with access to a computer can generate QR codes themselves. By scanning the codes, you can access images, websites and text. By creating the codes, you can produce your own messages.

Blogger Dana Oshiro <http://mashable.com/2009/01/07/qr-codes/> identified several possible uses ranging from personal to environmentally conscious paperless transactions.



THE FUTURE IS NOW

Over the past 10 years mobile phones have changed the way that we live and work. What is the nature of this change? On the one hand, it's a change in personal freedom. The mobile phone seems to give us more power as individuals to do what we want and be who we want to be. Many people consider mobile phones as extensions of themselves. This is shown by the wide variety of mobile phones available and the myriad ways of transforming each phone into a truly personal device. These days it's more likely that you'll forget your keys than your mobile phone when you leave home in the morning. As technology advances, mobile phones are able to be used to extend the reach of the person and delegate many functions that would previously have been more time consuming or would have to be carried out in person. As individuals, we expect to be able to do things whenever we want to and mobile phones are core devices enabling this expectation to be fulfilled. This means that there is a fundamental shift in our perception of space and time - of what is possible where and when. On the other hand, mobile phones are connecting people more than ever before and becoming new glue holding together social interactions and relationships. A mobile phone makes us available to others, be they businesses or individuals, 24 hours a day, 7 days a week. This is an enormous break with the past, when we needed to know where a person was in order to contact them.

THE MAGNITUDE OF THE OPPORTUNITY

There are currently over 3 billion mobile phones worldwide (Informa, Nov 2007). How can we make sense of this huge figure? It means that approximately 40% of the world's population currently carries a mobile phone. Mobile phone adoption continues to grow. By 2010, it is expected that there will be 4 billion mobile phones worldwide. In many developed countries mobile phone penetration is well above 90%, so saying "everyone has a mobile phone" is very close to reality. Mobile phones are central to the lives of most people in developed countries and are growing in importance in less developed countries. Since their mainstream adoption in the 1990s, they have remained primarily communication devices. We use mobile phones to talk to other people and we carry mobile phones with us so that other people can talk to us. However, the situation is changing. Mobile phone manufacturers have developed mobile devices that can serve many functions beyond voice communication such as taking photos and listening to music. Mobile network operators are offering services that give greater value to subscribers, such as portable email for business users. Mobile phones are now equipped



with cameras with the potential to turn them into portable bar code scanners. Handset manufacturers are developing RFID chips that can turn mobile phones into mobile wallets able to carry and exchange electronic money securely and engage in other transactions with RFID readers in the physical world. The combination of more powerful mobile devices, more innovative mobile operators and change in the mobile network infrastructure (such as 3G networks able to carry large amounts of data at high speed as broadband connections do for computers) is setting the stage for an enormous change in already fast-moving sector. Mobile devices are fast becoming the place where numerous technologies meet and create applications that are useful for both consumers and businesses across the globe. The mobile phone of the future is a device that enables users to communicate, connect, transact and innovate.

A communicative device

The mobile phone will continue to be a device that is used to communicate with others. Although this may be extended beyond voice to instant messaging and email, it is important not to forget communication is a central strength of mobile devices. As it becomes easier and cheaper to transfer larger amounts of data, sharing photos and videos with others will further extend this role.

A connective device

Mobile phones enable people to connect to other sources of data anytime, anywhere. This is what is happening with mobile email. As data on the web becomes more structured, mobile devices will become more and more powerful as entry points to tasks that have moved from offline to online but are currently still only available through fixed computers.

A transactional device

Mobile phones are ideal devices to be used for payments and transactions. There are a wide range of applications that aim to transform the mobile phone into an electronic wallet that can be used as a payment device.



An intelligent device

Mobile phones are a place where multiple applications can meet and fuse. Mobile devices that integrate a phone, a camera, a location finder (GPS) and a connection to the internet make it possible for a user to request context-dependent information such as finding out where a store selling a product they want to buy is located. As usage increases, mobile phones can become agents of change, tools that facilitate connecting things in the physical world to information about them in the digital world. Here are just a few examples:

- A consumer is in a shop. She is interested in a new cosmetic product but hesitates to buy. She notices she can view an advertisement for the product by taking the picture of the bar code. She does this and views the advertisement.
- A consumer notices billboard advertising for a handbag while walking down the street. By moving closer and activating the Bluetooth function of her mobile phone, she is able to download an electronic coupon to get 30% off the product in any shop today. She then uses her phone to find the location of the nearest shop. The bar code on the coupon will be read by a reader at the cash desk if she buys the product.
- A consumer is in a foreign country. He buys some medicine in a pharmacy, but wants to be sure he has understood the dosage instructions given by the pharmacist properly. He scans the bar code on the pack and finds is able to read the dosage instructions in his own language.
- A consumer is worried about allergens in a product she has just bought. By scanning the 2D bar code on product packaging, she is able to access a full range of product information including information about which allergens the product contains. The same concept can be used to provide consumers with nutritional information as well as instructions related to product handling, warranty or recycling. A consumer could also check whether food was organic or Halal/Kosher certified.



- A consumer sees an advertisement for a brand-loyalty scheme. She can accumulate points by scanning the bar codes on products that she has bought. When she has a certain number of points, she receives an SMS text with discounts on further products.
- Posted next to artwork or in musical or theatrical programs, QR codes might lead students to open forums where they could join in community discussions about what they've heard or seen.
- In scientific endeavors, QR codes could take the place of printed labels; attached to lab work, samples, or medication options, they could preserve confidentiality of participant names.

QR codes may presage other applications that use mobile devices to decode information. Already one popular mobile application interprets the music signature of a song it “hears” and provides the name of the work and artist. New applications might read photographs and employ face-recognition technology to provide a name and related data or identify a pictured object and direct users to online resources about it. The technology may evolve so that data embedded in a QR code can be interpreted differently by different viewers; that is, passwords or biometric data might open more data to some authorized users, or viewer signatures may unlock different information sets.

QR codes link the physical world with the virtual by providing on-the-spot access to descriptive language and online resources for objects and locations. In this way, the codes support experiential learning, bringing scholarship out of the classroom and into physical experience. Because much of the information in QR codes is browser-based, students engaged in study abroad can use the codes to read websites in their native languages or turn a local destination into a foreign-language lesson. Finally, the greatest importance of QR codes could lie not in their specific use, which may be superseded by newer codes and interpreters, but in the opportunities they offer for moving away from keyboards as input devices in learning environments.



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SOURCES:

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Wikipedia, the free encyclopedia. Accessed June 17, 2009.

January 7th, 2009 | by [Dana Oshiro](#) [28 Comments](#) [Dana Oshiro](#) at [hiyaablog.com](#). Accessed June 17, 2009.

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TNS Mobile Trends Guide 2006, Computer Industry Almanac, Tomi Ahonen, Jan. 2007

Mobile Commerce: opportunities and challenges A GS1 Mobile Com White Paper

<http://www.powerhousemuseum.com/dmsblog/index.php/2009/03/05/qr-codes-in-the-museum-problems-and-opportunities-with-extended-object-labels/> Accessed June 17, 2009.