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CREATIVE USE OF QR CODES IN CONSUMER COMMUNICATION

Xue Dou, Hairong Li

Abstract:

This paper introduces and compares three popular easy assess methods for mobile communication—short code, image code and QR code. It further exemplifies the actual use of QR codes with print ads, outdoor advertising, product package, and services in Japan. The analysis concludes that the real value of a QR code is its ability for marketers to implement a pull strategy in consumer communication, to integrate traditional media with interactive media, and to engage mobile users in interaction with marketers and fellow users. Because a QR code communication process is typically initiated by consumers, the process is less intrusive and more engaging, leading to what should be the ideal mode of consumer communication in the networked marketplace.

Keywords: QR code, mobile marketing, consumer communication

Mobile researchers distinguish a pull strategy from a push strategy in mobile communication (Li & Lee, 2006; Okazaki 2004, 2005). A push strategy sends messages directly to mobile phones of the target audience, which call for action from audience members. An action may be a response with an SMS message, a store visit to redeem a coupon or participation in a television program contest (Li & Lee, 2006). In contrast, a pull strategy exposes mobile phone users to commercial messages through other channels such as television, print media, outdoor or the Web that call for mobile phone users to respond either with the mobile phone or through other means. A pull strategy is often preferable to a push strategy because mobile phone users see the former as less intrusive.

Because of the small size of the mobile keypad, however, it is often inconvenient for mobile phone users to initiate a communication process by typing in a URL or sending an SMS message. As a result, how to facilitate a mobile phone user to start a communication process on a voluntary basis with a marketer constitutes a real challenge. New technological advances have resulted in innovations of strategic importance. One of the technologies is QR (quick response) codes, which are widely used in Japan and have altered the way consumers communicate with mobile marketers. Thus, the purpose of this paper is to introduce alternative methods for mobile users to initiate a communication process, examine



the actual use of QR codes in mobile marketing, and explore the potential impact of this technology on mobile marketing business in the U.S.

EASY ASSESS METHODS

Several easy access methods for mobile phones have been developed and used in mobile marketing campaigns. Among them are short code, image code and QR code. They are different in terms of the purpose of use, expenses for users and marketers, and visual attractiveness. This section introduces three popular access methods.

Short Code

Short codes are special numbers that are shorter (usually 5 to 6 digits) than normal telephone numbers, making them easier to remember and use for mobile phones. Short codes that are compatible across all participating cellular carriers are called common short codes (CSCs). In the U.S., CSCs are administered by NeuStar under a contract with the Common Short Code Administration (Anonymous, 2003). Two types of CSCs are available. A dedicated CSC is a code that is leased by a firm for its sole use. It enables the firm to possess total control over routing inbound and outbound messages. A shared CSC is assigned to more than one firm, and a keyword must be used to identify a firm or a campaign (CTIA, 2007).

Although short codes have been popular in Europe for a long time, they were not used widely in the U.S. until the "American Idol" show adopted them as a voting method during summer 2002 (Ankeny, 2003). The show allowed mobile phone users to vote for their favorable contestants by dialing a short code. AT&T Wireless was the exclusive carrier supporting the show's short code system, and its customers could send a text message to the short code "idols01" (Ankeny, 2003). Other carriers then started to get into the short code business. Several efforts were made to establish a unified system for compatible short codes across mobile service providers, resulting in the development of CSCs in October 2003 (Anonymous, 2003). CSCs have since become a popular method for opt-in mobile campaigns in the U.S.

Image Code

Image codes, short for image recognition-based codes, represent another type of easy access method. Mobile phone users can scan image codes with a camera phone, and upon sending a scanned image via multi-media messaging service (MMS) or an email, users receive further information from the mobile marketer. The receipt of a scanned image by the mobile marketer triggers a matching process. For example, an image of a print advertisement may cause the mobile marketer to send the user a coupon for the advertised product or a link to a Web site where the user can find more

information (Mobot, 2004; Snaptell, 2008).

Mobot Inc. is one of the leaders in the image code business in the U.S. Its codes were first used in a campaign for Jane magazine in 2004. In the September 2004 issue of Jane, 59 popular brands were featured, along with a Mobot code for each brand. Readers could scan a Mobot code for a brand and send it through text messaging to receive a sample and discount for the brand (Mobot, 2004). Mobot codes were used in several magazines for brands including Elle Girl, Adidas, Chanel, and Ford (Mobot, 2005).

Another leading firm in the image code business is Snaptell Inc. Snaptell offered a Snap.Send. Get solution in 2007. Partnering with the mobile marketing firm iLoop Mobile, Snaptell's solution was used in campaigns for Rolling Stone, Men's Health, and Random House (Snaptell, 2008). Snaptell also offered a service called Mobile Entertainment Explorer. Mobile users could take a picture of a poster or the cover of a DVD, CD or videogame and send it to Mobile Entertainment Explorer for prices, reviews and links to sites where they could buy the product. SnapTell claimed nearly 1 million titles of movies, music CDs and video games in the Mobile Entertainment Explorer database (Snaptell, 2008).

QR Code

QR (quick response) codes represent another type of easy access method for mobile communication. They were invented by the Japanese firm Denso Wave in 1994 for tracking parts in vehicle manufacturing (Denso Wave, 2006). Because of Denso Wave's effort, QR code specification was approved by ISO (ISO/IEC18004) in 2000 and updated in 2006 (Mobile Barcodes, 2008).

... each method [short codes, QR Codes, Images] has unique features and value for mobile communication.

QR codes are a two-dimensional image that can be created by a software application using textual information. Its content types include URL, text, phone number, and SMS. A camera phone with a QR code reader can scan and convert a QR code into textual information on the phone's screen. QR codes were first used in mobile communication in September 2002, when J-Phone of Japan (now Softbank) introduced the first mobile phone with a QR code reader (ITmedia Inc., 2002). Other mobile carriers soon started installing a QR code reader in newly released mobile phones.

As QR codes gained popularity in mobile marketing

in Japan, the demand increased for different types of QR codes to store more information and attract consumers' attention. Six new types of QR code were developed in Japan, in addition to the original QR code (see Table 1). They are: Micro QR code, Double QR code, Color QR code, Designed QR code, and Animated QR code. The new types of QR codes intend to save space (Micro QR code), increase information storage (Double QR code), and attract users' attention (Color QR code, Designed QR code, and Animated QR code).

Almost all the mobile phones sold in Japan in 2008 were equipped with a QR code reader. QR codes are highly popular in Japan, and more than 80 percent of Japanese mobile phone users scanned QR codes in 2008, representing an increase of more than 10 times from QR code usage in 2003 (Netasia Co., 2008).

COMPARISON OF EASY ASSESS METHODS

Although short code, image code, and QR code provide easy assess as an input method for mobile phone users, differences exist among these methods in terms of the purpose of use, users' expense, advertisers' expense, and visual attractiveness. A comparison shows each method has unique features and value for mobile communication.

As for the purpose of use, short codes and image codes are sent as SMS or MMS messages. When they are received by mobile marketers, further information is fed back to mobile users. It can be a coupon, a URL, a text message or an image (CTIA, 2007; Mobot, 2004; and Snaptell, 2008). Short codes are excellent for SMS voting, as used in American Idol (Ankeny, 2003). If the purpose of use is to connect to a Web site, QR codes are a better solution than short codes and image codes because QR codes involve only two steps—scan a QR code to get the URL instantly and click on the URL to connect to a Web site. So, which method is more preferable for mobile marketers depends on the purpose of use.

These access methods also differ in terms of the expense for advertisers to deploy them. For example, the lease fee for a dedicated CSC ranges from \$500 to \$1000 a month, often with a minimum three month commitment (CTIA, 2007). This could be an obstacle for small- and mid-sized companies to adopt CSCs in campaigns. Shared CSCs cost much less, about \$20 to \$30 a month. Image codes require services from mobile marketing firms, which often involve setup and maintenance fees. In comparison, QR codes cost almost nothing for mobile marketers in Japan because QR codes can be generated using publicly available software applications free of charge. The low cost in association with the use of QR codes in mobile communication is probably a key driver for the wide adoption in Japan.

Because the use of short codes and image codes involve sending and receiving SMS or MMS messages, mobile users

may need to pay for each message they send to and receive from mobile marketers. In comparison, QR codes involve no such fees because they are converted into URLs or text messages within a mobile phone, without use of SMS or MMS transmission. For all the three methods, there may be fees for mobile users to connect to Web sites, depending on the user's types of subscription. Overall, the use of QR codes cost less than the other two methods.

As for visual attractiveness, image codes are probably the best because they can be any picture or graphic. As a result, image codes are often generated from the covers of DVDs, CDs and albums as well as print ads. The image codes are recognized by special computer software maintained by mobile marketers or mobile marketing services companies. Short codes are the least visually attractive because they are just a series of numbers. QR codes can be visually attractive when they are used to create large image ads, such as in outdoor advertising.

CREATIVE USE OF QR CODES IN CONSUMER COMMUNICATION

2005 was a milestone in the mobile business in Japan; for the first time, more users accessed Web sites from mobile phones than from PCs. According to Ministry of Internal Affairs and Communications (2007), 6.9 million households accessed Web sites with mobile phones in 2005, whereas 6.6 million households accessed Web sites with PCs. Many factors have contributed to such a significant transition, and the QR code plays its unique role. According to a national survey in Japan in 2007, 90% of mobile phone users reported that "connect to Web sites" was the main reason for their use of QR codes (MyVoice Communication, 2007).

The wide use of QR codes by mobile phone users in Japan is attributable to the availability of QR codes in many traditional media. An August 2005 study shows that mobile phone users found QR codes from different sources: 84% from magazines, 51% from flyers, 32% from newspapers, 25% from direct mail, 24% from catalogs, 20% from personal computers, 14% from posters, 6% from business cards, and 13% from other media (Info Plant, 2005).

All of these stats suggest that QR codes have become an effective means for traditional media to connect mobile users to Web sites. In this sense, QR codes extend the reach and impact of traditional media and facilitate the integration of traditional and interactive media in consumer communication.

Print Ads and QR Codes

In Japan, mobile phone users find most QR codes in print media. Although magazine ads are the major source, other forms such as flyers, newspaper, direct mail, and catalogs also publish QR codes. By putting QR codes on print ads, advertisers can induce readers to the Web sites where readers can get more information about advertisers' products and services. For example, Fancl, a cosmetic and health product firm in Japan,

successfully attracted new customers using QR codes in print ads. It observed a steady increase of mobile site visits, which were generated by QR codes (Masayuki et al., 2007).

Outdoor Ads and QR Codes

QR codes are widely used in outdoor advertising in Japan. When QR codes were first used in mobile marketing in October 2003, Brandi Networks launched a four-week cross-media campaign. The campaign was to promote its new mobile Internet site for selling mobile ringtones. The campaign posters, which included QR codes, were placed in Tokyo and nearby cities (see Figure 1). People could get an URL by scanning any part of the picture that was made of QR codes on the poster and instantly access a mobile Web site to win prizes (Bandai, 2003). This campaign was an example of combining TV commercials, QR codes, attractive visuals and incentives to encourage users' response.



Figure 1: Brandi Networks Campaign Poster Made of QR Codes
Courtesy of Brandi Networks

Shougakukan, a publisher of comic books and magazines in Japan, launched in November 2006 a unique outdoor campaign using QR codes to promote its mobile phone comic Web site. The campaign placed many large-sized posters made of a QR code mosaic in Shibuya subway station, a shopping district in Tokyo (see Figure 2). Shibuya was chosen as the place for outdoor advertising because it is a popular place for young people in Tokyo. Shougakukan intended to catch the attention of young people who are the primary users of mobile phones and comics. Every QR code in the posters had the same URL that directed mobile phone users to Shougakukan's mobile Web site, where users could find comics that were optimized for viewing on the small mobile screen. The campaign also used TV commercials to generate interest among the target audience (Gizmodo Japan, 2006).



Figure 2: Shougakukan Outdoor Posters using QR Code Mosaic
Courtesy of Gizmodo Japan

Another use of QR codes in outdoor advertising was Yuniden, an electronic appliances maker in Japan. Its campaign consisted of humans walking around subway entrances in busy districts carrying a flat-screen TV showing local maps in front of their body and a large QR code on the back (Figure 3). To attract people's attention, the Designed QR code embedded two Chinese characters meaning "truth." The information in the Designed QR code was a URL to Yuniden's mobile Web site (IT DeSign, 2007). Because Yuniden was an online-only merchant and had no physical stores in Japan, it was essential for it to attract people to its mobile Web site, where people could make a purchase with mobile phones.



Figure 3: Yuniden's Human Posters Using QR Codes
Courtesy of Yuniden

Product Package and QR Codes

The use of QR codes in Japan has gone beyond advertising media to the packaging of products. The goal of using QR codes on product packages remains the same—to provide the consumer with a quick means of obtaining further information. Itoham, a manufacturer of processed/precooked food products in Japan, was one of the first companies in Japan to put QR codes on product packages in October 2004 (Itoham, 2004). The QR codes contained a URL to Itoham's mobile Web site named "Full of Smiles Site," where hundreds of recipes, product promotion, online forums, and movie content were available. The content of the Web site continued to grow, and by 2008 about 500 recipes were posted and some of them were animated recipes for customers to learn how to cook. The Web site also held cooking contests and results were shared on the mobile Web site (Itoham, 2008).

McDonald's in Japan also is one of the companies that used QR codes on its product packages. It started putting QR codes on packages in 2006 in the hope that instant information about the food being consumed could boost the customer's satisfaction (see Figure 4). The QR code on each package contained a URL of McDonald's mobile Web site. At present, QR codes have become a standard feature on the packages of many consumer goods in Japan.



Figure 4: McDonald's Packages Using QR Codes
Courtesy of McDonalds' Japan and Impress Watch Corporation

Services and QR Codes

From the relationship marketing perspective, any effort that can add value to consumers can be a good marketing practice. QR codes are innovatively used in association with different services for such a purpose. Bike Off, a bicycle and motorcycle company in Japan, launched an "Ecochari" campaign in October 2007 to provide free bicycle rental service to college students. It collected bicycles that were left on streets, repaired them, and sent them to campuses for students to use (Anonymous, 2006). Beginning in February 2008, to attract sponsoring companies to fund repair costs, Bike Off offered to place a QR code on a bicycle, which contained a sponsor's mobile Web site information (Figure 5). Grateful students could scan a QR code on a bicycle to learn more about the sponsor. This service was noted for its environmentally friendly approach and unique use of QR codes. Most sponsors for this project were the companies that wanted to recruit college students as full-time or part-time employees (Ecochari, 2008). For some small businesses, it was difficult to recruit graduating students because those businesses had little publicity and awareness on campus. This sponsorship opportunity attracted businesses who wanted to be seen caring for the environment and college students, thus facilitating their campus recruiting efforts.



Figure 5: Bike Off's Echochari Campaign Using QR Codes
Courtesy of Bike Off

Tokyo Metro started putting QR codes at all bus stations during August 2006. Travelers could find a URL by scanning QR codes on signage and access a mobile Web site to obtain the bus schedule as well as real-time information about where the bus was running (Bureau of Transportation Tokyo Metropolitan Government, 2006). The same QR code system was adopted in other cities in Japan. JR Hokkaido Bus placed QR codes at its 1,300 bus stations in Hokkaido in 2006. According to Hokkaido Tourism Laboratory, the system

was used primarily by high school and university students. In 2006, daily access to the system averaged 2,000 scans (Hokkaido Tourism Laboratory, 2006). Fukuoka prefecture, which is another famous tourism place in Japan, established a mobile Web site for tourist information in May 2008. Beginning June 2008, QR codes containing the URL of a mobile Web site were printed on the bulletin boards of all bus stations (Nagasawa, 2008). This mobile Web site offered information about tourist attractions, restaurants, hotels, and shopping places in Fukuoka (Yokanavi, 2008).

SUMMARY AND CONCLUSION

This paper introduces and compares three easy assess methods that are used by mobile marketers. In many aspects, QR codes are advantageous over the other two methods. QR codes are widely used in consumer communication in Japan, and they are being adopted in other countries. In the U.S., for example, Ventipix (2008) demonstrated their QR code Mapplet on Google Maps, which enabled users to perform any of the four functions—get directions to a business or event to their mobile phones, save the business contact details to their mobile phones, visit the business mobile Web site or blog, and bookmark the mobile Web site or blog on their phones (Ventipix, 2008). Facebook recently launched a service "Add to Friends Shirt," which created a shirt that let people get in touch with their Facebook persona via a QR code. The procedure was relatively easy. Facebook users clicked on "Make a shirt for me" and the QR code for the URL of the user's mobile Facebook page was generated on the fly and reproduced on a Zazzle page. From this page, users could order a variety of shirts with the QR code printed on the back (Facebook, 2008).

In sum, the real value of a QR code is its ability for marketers to implement a pull strategy in consumer communication, to integrate traditional media with interactive media, and to engage mobile users in interaction with marketers as well as fellow users. Because a QR code communication process is typically initiated by consumers, the process is less intrusive and more engaging, leading to what should be the ideal mode of consumer communication in the networked marketplace.

Table 1: Types of QR Codes in Japan

Name	Features	Example
QR Code	• Three-position detection patterns. • Error correction ability. • Requires at least a four-module wide margin around a symbol. • Capable of storing up to 4,296 alphanumeric and 7,089 numeric characters.	
Micro (マイクロ) QR Code	• One-position detection patterns. • Requires at least a two-module wide margin around a symbol. • Capable of storing up to 35 numeric characters	

Double (ダブル) QR Code

- A smaller QR code is embedded in an original QR code.
- The two QR codes can contain different information.
- Capable of storing twice as much information as an original QR Code.



Color (カラー) QR Code

- Same feature as an original QR code.
- Use of colors to stand out



Designed (デザイン) QR Code

- Same feature as an original QR code.
- An image as large as one quarter of a QR Code size can be embedded
- An image may be placed everywhere, except in a position detection pattern



Designed (デザイン) QR Code

- Same features as an original QR code.
- An animated image may be embedded
- Code can be scanned while the image is moving.



Note: Double QR Code and Animated QR Code were examples from the Web site of Design QR (IT DeSign, 2008).

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