QR Code: An Interactive Mobile Advertising Tool

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ARTICLE INFO	ABSTRACT
	Easy and rapid interaction between consumers and marketers enabled by mobile technology prompted an increase in the usage of mobile media as an interactive marketing tool in recent years. One of the mobile technologies that can be used in interactive marketing for advertising is QR code (Quick Response Code). Interactive advertising brings back some advantages for the companies that apply it. For example, interaction with consumers provides significant information about consumers' preferences. Marketers can use information obtained from consumers for various marketing activities such as customizing advertisement messages, determining target audience, improving future products and services. QR codes used in marketing campaigns can provide links to specific websites in which through various tools (e.g. questionnaires, voting) information about the needs and wants of customers are collected. The aim of this basic research is to illustrate the contribution of QR codes to the realization of the advantages gained by interactive advertising.

1. Introduction

Interactive marketing refers to a marketing philosophy that enables active participation between consumer and marketing campaign. Developments of information technologies that enable easy and rapid interaction between consumers and companies, stimulated the evolution of interactive marketing. Through integration of information technologies into the activities of interactive marketing, companies serve their customers properly and compete in the market successfully (Virvilaité & Belousova, 2005). In the context of interactive advertising, one of the interactive marketing activities, various information and communication technologies (e.g. NFC (Near Field Communication), LBS (Location-Based Services)) are used to advertise and promote products and/or services. One of the new technologies that can be used in interactive advertising is QR codes. The aim of this basic research is to illustrate how these codes contribute to the advantages gained by interactive advertising. In this context, initially QR codes and interactive mobile advertising are introduced briefly. Following, the advantages of interactive advertising are illustrated. After introduction of the studies in the literature in which the advantages of using QR codes in interactive marketing are briefly discussed, it is illustrated elaborately to what extent using QR codes in interactive advertising affects the advantages gained by interactive advertising. The conclusion section ends the study.

2. QR Codes

QR codes are 2D bar codes that were invented by the company Denso Wave, a subsidiary of Toyota, in 1994. Because Denso Wave chose not to exercise its patent rights, QR code is open to public. This means that, developers are free to create new varieties of QR codes and applications to interpret as well as process the codes (Coleman, 2011).

Creating ready-to-use QR codes is easy by using free, online QR code generators and following the steps below (Coleman, 2011):
- Navigation to a specific QR code generator or using a search engine to find one.
- Selection of the type of data (e.g. URL, phone number, e-mail address, plain text, SMS message, business card data, Google Maps location, wifi network keys, calendar event information) that will be encoded.

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- Typing or pasting the data requested by the generator (e.g. additional customization choices such as selecting the size of the image, modifying the background color or adding an image to the code).
- Generation of the code either by clicking a button or automatically once all the required information has been entered.

Decoding a QR code requires using a QR code scanner. Besides commercial scanners including hi-resolution, dedicated devices and handheld scanners, smart phones that have a camera and include a code reader software application can function as a scanner (Coleman, 2011). Code reader software applications are freely available online for most devices. When the application is downloaded, the phone's camera becomes a QR code scanner. User points the phone camera toward the code and scans it. The reader application software decodes the code, converts it into readable text and displays (Coleman, 2011), (EDUCAUSE Learning Initiative, 2009), (Niklas & Böhm, 2011), (Gura, O'Shea, Reddy & Sabatté, 2011). Figure 1 visualizes how QR codes works.
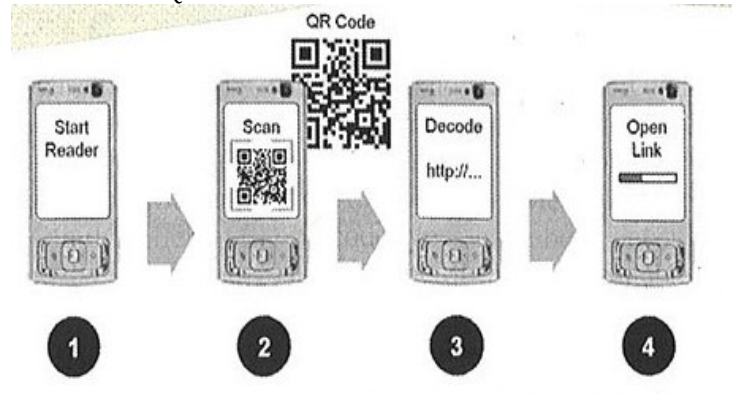

Figure 1: How QR Code Works (Gura et al. 2011)

QR codes can be used in different application areas. Some examples of their uses are listed below (Soon, 2008):
- It is possible to use mobile phones and QR codes for the payment of train or airline tickets.
- It is possible to use large scale QR codes on buildings in order to retrieve information about the companies that are operating inside the building.
- It is possible to use QR codes for TV program guides to view the program captured in QR codes.
- It is possible to use QR codes on maps in the bus stations to find out the arrival time of the next bus.

One of the application areas of QR codes is advertising in marketing. Most large companies in the world (e.g. Starbucks, H&M (Hennes & Mauritz)) have conducted campaigns comprising QR codes (Riedel, 2011).

3. Interactive Mobile Advertising

Development of economic systems from manufacture towards services makes it clear that more attention should be paid to the satisfaction of consumers and the establishment of long term consumer relations. Interactive communication which means bilateral active communication between the consumer and the company makes an essential contribution to the customer satisfaction and the establishment of customer relations. It allows consumers to respond to the offers of companies, present their wishes, requirements and to get personalized services/products (Virvilaité & Belousova, 2005). As already mentioned, interactive marketing is a marketing philosophy that encourages interactive communication between the consumer and the company/marketing campaign (Lake, n.d.). It aims to develop various forms of interaction and cooperation seeking to find out potential consumers and establish a dialog with them. Information technology (IT) is an important mediator which facilitates interactive communication and marketing (Virvilaité & Belousova, 2005). Continuous developments in communication technology, a part of the information technology ("Bilişim Teknolojileri", n.d.), leads to new opportunities for companies to communicate and engage with their target audience in a more effective way. The probably most important

development in communication technology is that of the mobile technology. Due to recent advancements in mobile technology and rapid proliferation of mobile devices, mobile channel has emerged as a new potential tool for marketing activities (Smutkupt, Krairit & Esichaikul, 2010). In this context, mobile media is defined as a communication option for interactive marketing (Kotler & Keller, 2012). Using mobile media in interactive marketing generated the term "interactive mobile marketing". As MMA (Mobile Marketing Association) emphasizes interactivity feature of mobile marketing in its mobile marketing definition, the definition of MMA for mobile marketing is adopted to define interactive mobile marketing in this study. According to this, under interactive mobile marketing "*a set of practices that enables organisations to communicate and engage with their audience in an interactive and relevant manner through any mobile device or network*" is understood (Mobile Marketing Association [MMA], n.d.). The major advantage of interactive mobile marketing is its ability to provide information in a personalized and interactive way without restriction of time and place (Smutkupt et al., 2010).

 Among the activities of interactive marketing (e.g. research, public relations, product pricing, sales), the advertising activity is considered closer in this study. Interactive mobile advertising is a form of communication for interactive mobile marketing. It uses mobile technology to enable interactive advertising which "*refers to promotional techniques that include an element of feedback from those to whom the advertisements are directed*" (Janssen, n.d.). This feedback forms for advertiser analytical data that can be used to improve advertising methods being employed (Janssen, n.d.).

4. Advantages of Interactive Advertising

Interactive advertising brings back the following advantages for the companies who use it:

- **Gaining information about consumers' preferences:** Interaction with consumers provides significant information about consumers' preferences related to products and product features. Marketers can use information obtained from consumers to customize their advertisement messages, to determine their target audience, to improve future products and services. Furthermore, interactive media can support marketer's learning on consumers' characteristics and preferences. This improves customer support, technical assistance and future promotions (Pavlou & Stewart, 2000).
- **Participation:** Interactive marketing has the potential to increase consumers' involvement in the advertising process. Many commercial websites allow their consumers to participate in their search process. For example, a company can offer an adaptive process that attempts to help consumers identify the product parts based on their preferences (Pavlou & Stewart, 2000).
- **Consumer satisfaction:** Interactive advertising has the potential to increase consumers' satisfaction through interactive communication. Various services and tools (e.g. adaptive questionnaires, live operators) used for interactive advertising make information collection about products, finding new products and comparing products easier for consumers. These activities are executed through an interactive process that takes in account personal preferences both for the product characteristics and the nature of the information search process (Pavlou & Stewart, 2000).
- **Promoting trust:** Interactive advertising has the potential to promote trust which has an important impact on the behavior of consumers towards the advertiser and the product through information exchange, reduction of information asymmetry, customer support, technical assistance and other specific adaptations by the marketer to the needs of the consumer (Pavlou & Stewart, 2000).
- **Persuasion of consumers:** Interactive advertising has the potential to enhance the ability of marketers to persuade consumers by enabling personalized advertising, promoting trust and identifying objections and points in need of further clarification as well as by modifying the offering itself (Pavlou & Stewart, 2000).
- **Avoiding irrelevant messages:** Interactive advertising has the potential to assure consumers that they receive only the relevant messages. Irrelevant messages are likely to detract consumers accepting pertinent messages and decrease customer satisfaction. Moreover, mass advertising is costly and usually unnecessary for many products that are not pertinent for all consumers. In this context, personalized advertising that is based on individual characteristics and tailored to individual preferences is potentially efficient for the marketer (Pavlou & Stewart, 2000).
- **Advertising efficiency:** Interactive advertising may produce advertising efficiency through the combination of advertising process, sales transaction and payment collection. These activities can be performed almost simultaneously. This reduces the total time and effort required to communicate an advertising message and sell a product or service (Pavlou & Stewart, 2000).

- **Level of returned goods:** Interactive advertising has the potential to reduce the level of returned products after purchase. Through a good interaction between the marketer and the consumer prior to purchase, appropriate expectations can be developed and the frequency of the product return can be reduced. From a transaction cost perspective, interactive advertising can be regarded as a way to diminish the ex-post cost of receiving already purchased products. According to transaction-cost terminology, this type of ex-post costs may be regarded as a maladaptation costs associated with an unsuccessful transaction. A method to reduce the ex-post costs of maladaptation is to employ ex-ante ways such as integration of interaction into the advertising to avoid future contingencies (Pavlou & Stewart, 2000).
- **Resistance to new products:** Interactive advertising helps to decrease resistance to new products by avoiding communication of irrelevant or unimportant features of the product and by improving consumers' understanding of the product (Pavlou & Stewart, 2000).

5. QR Codes and Interactive Advertising

5.1 Related Work
The studies in the literature concerning the use of QR codes for marketing activities emphasize usually the importance of these codes for marketing in general and not especially for interactive advertising. Furthermore, they discuss only some of the advantages of QR codes for marketing. Following, such studies are introduced briefly in which some advantages concerning the utilization of QR codes for interactive advertising among the illustrated advantages of using QR codes in marketing are considered.
According to Larkin (2010), QR codes bring back the following advantages for marketers:
- They enable greater level of connectivity with consumer. This can strengthen the dedication of a particular brand.
- They provide advanced traceability and tracking options. Various software programs exist to track the individual code. Using these software options it is possible for a marketer to know the number of scans per day, what time those scans took place, the type of device being used to scan the code and even the location each scan took place. This knowledge enables marketers to see what's selling and what's not. Thereby they can decide the placement of products or to continue selling a product better.
- They enable to evaluate consumer interest at quicker rates. QR codes allow companies to connect with consumers in real-time and evaluate interest in a particular product or campaign immediately. By monitoring how many consumers scan the code, the marketer can get real-time feedback about how well the campaign is being received by the consumer.
- QR codes integrated into displays can arise curiosity, make consumer stop and take notice of the promotional materials while shopping. This is one of the important benefits of QR codes for marketers.

Cooper (2011) denotes that QR codes can be used to bring offline media, including press and outdoor ad campaigns, into the online space. Cost-effectiveness of QR codes is also an advantage of them to be used as an advertising tool (Cooper, 2011).

According to Sago (2011), integration of QR codes into ads allows consumers to link to web sites that provide additional information, allows consumers to download coupons, enter sweepstakes, link to a firm's social media sites, and access information while shopping. These codes allow also to track the return on investment of mobile marketing (Sago, 2011).

In their study Narang, Join and Roy (2012) denote that integration of QR codes into print advertising offers interactivity, enables to track some indicators like the average time spent by the consumer on the site, the frequency of QR codes being scanned and the geographical location of the consumer. All of these indicators are important to measure the overall effectiveness of the advertisement.

According to Johnson & Quinn, Inc. (n.d.), QR codes have the following advantages related to interactive marketing:

- They make static direct mail interactive and allow consumers to engage immediately with a call to action. This ability eliminates many barriers (e.g. a time delay that might result in a loss of interest or lost information) that might negate a response. Through instantly provided additional information or an added incentive, QR codes engage consumers while they are considering a product or service. Companies can achieve a higher response rate and return on investment on their marketing campaigns through integrating this capability with the traditional power of direct mail.
- They convert offline audiences into online relationships.
- They potentially shorten the sales cycle.
- They provide valuable insights into consumer behavior, response rates and demographics
- They enable to track online interaction and make it easier to measure in terms of campaign ROI.

As is understood, existing studies are usually limited to the contributions of QR codes to marketing and discuss the advantages of using QR codes for interactive advertising not elaborately. This study aims to supply this deficiency. Following, it is illustrated how QR codes can contribute to realize the in Section 4 illustrated advantages gained by interactive advertising.

5.2 The Role of QR Codes for Interactive Advertising

QR codes have various impacts on the in Section 4 illustrated advantages of interactive advertising. QR code user can execute buying and payment mobile and almost simultaneously (Stewart, 2010). This enables to shorten the sales cycle (Johnson & Quin, Inc., n.d.) and affects the advertising efficiency positively. For example, H&M incorporated QR codes to their advertisements and gave an option to its consumers to purchase its goods with their mobile phones through scanning the codes. Scanning directed the consumers to the website of the company. There, consumers could choose the size and the color of the clothes on the ads and place their orders. Costs were charged to the consumers' cell phone bills (Stewart, 2010).

Marketers need a good customer database in order to determine needs and wants of their customers. They may use QR codes to provide links to specific websites in which through various tools (e.g. questionnaires, voting) information about the needs and wants of customers are collected. The captured information are then analyzed and used to determine offerings for the target customer (Bayrak Meydanoğlu, 2012). QR codes linked to websites or e-mails can require registration to access to websites, to download a content, to benefit from an immediate incentive (e.g. discount coupon, product sample offers, free downloads, sweepstakes) or to access a code which allows users to access specific information. For registration, consumers can be asked to disclose their demographic data and personal information such as preferences. Information gained through this way can be used for customizing products according to the consumers' needs, developing new products/services or determining target customers (Okazaki, Li & Hirose, 2012). As is understood, QR codes have an essential contribution for gaining information about consumer behaviors, demographics (Johnson & Quin, Inc., n.d.).

QR codes can be embedded with a personalized URL (PURL). A PURL provides a unique web address for an individual. The content of the site that is accessed through this unique address can be personalized for the visitor for whom the PURL was created (Henkel, n.d.) (Johnson & Quin, Inc., n.d.). Some essential benefits of PURLs are:

- They enable to display a customized selection of products/services (Henkel, n.d.).
- They enable to execute consumer surveys (Henkel, n.d.).
- They enable tracking consumer responses in real-time ("What are", 2011).
- They provide valuable information about executed campaigns such as who followed the web links, how interested your prospects are. All this information can be used in follow up campaigns (Scharf, 2011).

Personalized advertising via QR codes and PURLs can contribute essentially to avoid sending irrelevant messages to consumers and to persuade consumers to buy offered goods/services. PURLs can also contribute positively to improve consumers' understanding of a new product which helps to decrease resistance to this new product. Personalized advertising can contribute directly to gain information for future marketing and advertising campaigns.

Through scanning QR codes, users can be directed to interactive marketing materials such as videos, websites, live operators and more (Wickes, 2011). These materials support interactive communication between marketers and consumers and contribute to reduce information asymmetry, to enable information exchange and to support customer.

QR codes enable to access anytime and anywhere to companies' websites that are designed considering consumers' involvement in some business processes (e.g. service improvement) and considering consumers' satisfaction realized through interactive communication enabled by various services and tools used at websites. That is to say, QR codes contribute indirectly to the above illustrated advantages "participation" and "customer satisfaction".

Through enabling access to websites that can develop appropriate expectations about the offered products via a good interaction between marketers and consumers prior to purchase, QR codes can also contribute indirectly to reduce the level of returned products after purchase.

QR Codes can also enable to track marketing campaigns through some special software that can determine which QR Codes are being scanned, the number of scans per day, the time those scans took place, the location each scan took place (Larkin 2010), (Johnson & Quin, Inc., n.d.), (Narang et al., 2012). These indicators enable to evaluate the success of the marketing campaign and can help to develop the next campaign.

6. Conclusion

Developments of information and communication technologies led new technologies to be used as interactive media by the companies to advertise and promote their products or services. One of the new technologies that can be used as interactive media is QR codes. Besides their well-known advantages such as easiness of scanning, using without license and free of charge, they can be preferred by marketers as advertising media also due to their above illustrated contributions to support the advantages of the interactive advertising. Findings of this basic study rely on secondary sources. Naturally, these findings have to be concretized and validated through case studies in future researches.

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