M. Korotchenko

School of Business of BSU, Minsk, Belarus

QR CODES IN DIGITAL MARKETING

The article focuses on the disclosure of opportunities provided by the use of QR codes, the structure of QR codes and methods of their implementation in the field of marketing. The analysis of materials on the topic is supported by statistical data and findings.

Keywords: *QR code, «quick response», digital marketing, the structure of QR code*

On the basis of several studies, the average duration of human attention concentration has reached 8 seconds. That resulted to the growing need in achieving simplicity and effectiveness of customer engagement and communication with the brands. Mobile devices determine the behavior of consumers in today's era. On average, users spend more than 4 hours per day. Therefore, attracting mobile users is a priority for marketing agencies, and QR codes provide a good opportunity for that purpose.

Over the past few years, QR codes have taken over many aspects of human life, with the COVID-19 epidemic accelerating the transition to touch-free payment and paperless menu alternatives. We see them on display at every table and bar at a restaurant or bar, all through the grocery store hallways, and at almost every checkout counter that accepts Apple Pay, Venmo, Paypal, and similar payment methods.

Many companies actively use QR codes for marketing purposes, for example, for coding promotional links to the site. Also, QR codes allow companies to inform their customers about various offers and generally make the process of interaction between the buyer and the store easier.

A questionnaire survey was conducted via Google Forms among 36 people who were students and graduates. Using the statistics data revealed, it can be noted that 75 % of people see QR codes multiple times per day.

Each QR code (referred to as the «quick response») has a specific arrangement of squares and white space that may be linked to a single piece of online information. Additionally, the codes are readable from all angles, allowing the user to rapidly scan them with a smartphone and instantly arrive at the desired web page.

QR code types include: 1) static – for information that cannot be edited after a code creation. Suitable for fixed actions: encryption of WiFi settings, employee identification, event registration, transfer of details; 2) dynamic – information is updated at any time. Such codes business chooses to collect statistics, reviews, marketing campaigns [4].

The reading process of QR code. To scan the QR code, you need to turn on the camera and point it at the matrix. The link to the page, picture or information will open automatically, but some devices need a special program. According to the conducted survey, it was found that most smartphones (97 %) already have QR scanners. This fact proves the availability of QR codes nowadays.

Certain structures can be identified in QR codes:

1. Positioning markings indicate the direction in which the Code is printed.

2. If the QR code is large, this additional element helps with orientation called Alignment markings.

3. Using Timing pattern lines, the scanner determines how large the data matrix is.

4. Version information specify the QR code version that is being used. There are currently 40 different QR code versions. For marketing purposes, versions 1–7 are normally used.

5. The format patterns contain information about the error tolerance and the data mask pattern and make it easier to scan the Code.

6. Data and error correction keys hold the actual data.

7. Quiet zone (the white space) is important for the scanning program in order to distinguish the QR code from its surroundings.

The device (a special scanner or smartphone) recognizes the QR code by three square marks, located at its corners. They tell where to read the code. After detecting them, the scanner reads the contents of the square, and then analyzes the QR code, presenting it as a grid. The reading process provides specialized software capable of extracting data from templates in the matrix. For the scanner to recognize a QR code as such, the Code must always be square (Fig. 1).
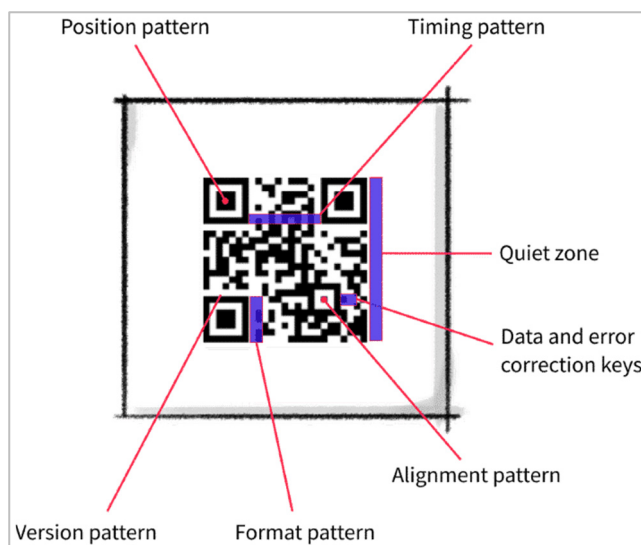

Fig. 1. QR code structure

To ensure that the information contained in the QR code can be read even if it is damaged, the data keys include duplications (redundancies). Because of this, up to 30 % of the Code structure can be destroyed without affecting the readability of the Code.

QR codes are essential to be implemented in marketing of an organization for such reasons as:

1. *Better brand visibility.* Becoming a staple of the marketing mix QR codes provide the ability to direct consumers where needed. This allows marketers to conduct measurable marketing campaigns and monitor the effectiveness of their traditional advertising.

2. *Quicker access to any information.* The QR code placed on receipts, printed materials or product packaging helps to obtain information about offline customers, points of sale, as well as to assess the effectiveness of shares offline. Without at least a minimum set of data from offline clients, further communication may not take place.

3. *In-depth monitoring and analysis.* After printing and distributing QR codes, the control system allows you to monitor the productivity of each of them. The most significant indicators are the frequency of scanning QR codes, the number of unique scans, the location, date and time of scanning, the model of the applied, advertising campaign that led the customer to purchase. This is huge, since audience engagement for these channels was previously based only on an estimated number of views that might see the ad.

4. *QR codes as multilingual tool.* According to this fact there are wide possibilities helping global businesses connect with a diverse and multinational audience.

5. *Health.* The pandemic encouraged people to maintain a social distance and avoid contact. QR codes are a convenient solution, as they save consumers from the need to touch objects in public places, from the menu in the cafe and buttons on payment terminals.

6. *Savings.* Compared to the cost of printing information booklets, QR codes are much cheaper and take up less space.

QR codes become especially relevant in connection with the introduction in 2020 of the system of fast payments and the system «Оплати» in the Republic of Belarus. With quick payment, the QR code is synchronized with the bank code, which helps the customer to specify the required purchase amount in the bank's mobile application, while the code with the purchase information is displayed on

the terminal screen immediately. According to the statistics conducted among students and graduates, on the question «Do you use the system of quick payment „Оплати"?» 64 % of the participants responded positively.

Examples of QR codes usage in marketing:

1. *Link to the site.* The most common use of QR codes in marketing is to direct users to a website or target page. QR codes allow marketers to direct offline audience to a website or target page using the QR code URL. This eliminates the need for manual input of the URL, which increases the availability and usability of users. With the help of QR code the company leaves a link to the personal site anywhere: in the shopping complex, cafe, shop, in the window and on the street.

2. *Advertising and discount provision.* The customer goes by code to your site and sees the range of goods and services in detail. Companies often use codes to distribute promotions and discounts.

3. *Scanning the code on the check and receiving bonuses.* With the QR code you can create a cashback program for buyers. Customers buy a product or service and in this program the check is saved, on which further bonuses are awarded. This positively affects sales growth and improves the interest and loyalty of buyers to the store.

4. *Digital Card.* After scanning, a person has access to a digital business card, which can be much larger than paper and include links to social networks, health data and other information. Such cards with an address can even be created for pets to return to the owner. Business card can generate independently or contact the company that offers such services.

5. *Augmented Reality.* Augmented reality is the possibility of combining the real world with the digital one in the form of videos, images, and even games. With the announcements of what the Metaverse will be and further advances, it is good to start updating ourselves within these developments.
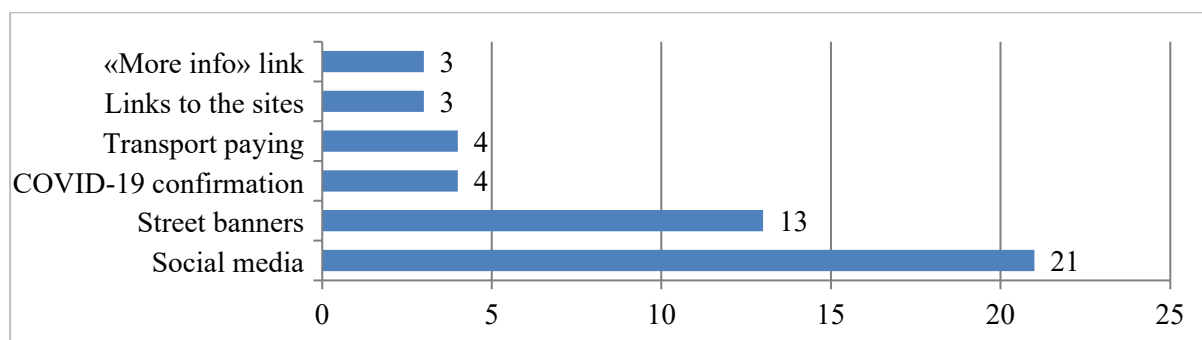

Fig. 2. When do you use QR codes?

A questionnaire survey was conducted via Google Forms among 36 people who were students and graduates. The statistics of QR codes usage variants according to the questionnaire survey via Google Forms can be seen below (see Fig. 2). Accordingly, the most common variants of QR codes usage are social media, street banners, transport payment and COVID-19 confirmation. That provides with concrete information about what are the spheres of a high interest where QR codes are implemented.

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