

Improving the Retailing Experience of the New Age Information-Seeking Consumers Using QR Code

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ABSTRACT

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Shopping your apparels by scanning your friend's clothes sounds bizarre, however QR technology can make it possible. This paper intends to introduce the idea of how QR Codes of shoppable links can be printed on the tags of apparels and can be scanned by the wearer's social group to shop the product anywhere and anytime. The QR technology was developed by an engineer at Denso Wave, a company located in Aichi, Japan. It started as 1D Barcode then progressed to a 2D barcode and now we have multi-coloured, customisable and personalised QR Codes. This technology has a long history. Since QR codes have been around for more than a decade now there is already a considerable share of businesses and brands that have successfully started the use of QR code campaigns. However apparel marketing industry is taking longer than expected to catch up with QR code technology. Today, smartphones come with in-built QR Code Readers, hence it takes only a few seconds to scan the code that lends customers to the product's website. In Scannable marketing, QR Codes have a big future.

Keywords: QR Code, Scannable Marketing, Shopping Apparels, History of QR technology, Use of QRC

1. Introduction

People are now using their smartphones more than ever before, thanks to the advent of better and quicker technologies. It's all about moving details from one person to another, or from a company to a customer, as quickly as possible. The QR code is one of the most popular marketing platforms today. Most people have heard of QR codes, those odd-looking black and white graphical barcode displays that enable advertisers to send additional information to anybody with a QR code reader. QR Code has been used by marketers on advertisements, magazines, websites, and other marketing materials.

Brands that have successfully implemented QR Code Marketing.

1. Porsche

Porsche unveiled an interactive experience at the 2018 Digital Signage Expo that allowed attendees to design the 2019 Porsche Cayenne Turbo and interact with it using haptic cues.. Scanning a QR code was all it took to accomplish all of this.

2. Louis Vuitton

Visual QR codes have been introduced into the promotional campaign of the luxury giant and

manufacturer of high-quality and stunning leather handbags. The brand collaborated with Takashi Murakami, a Japanese artist, to create its first designed QR code, which was tailored to the brand's intent and goal (Claeys, 2020). They ran a 'cute' and 'cool' QR code campaign to support the Louis Vuitton online store, and it succeeded!

3. Instagram

Instagram has introduced a feature called Nametags, which is similar to Snapcodes in that it can be completely personalised by users and searched by other users using the camera inside the app to follow accounts (Chaudhary, 2019). When it comes to cross-platform compatibility, this also fits well. Businesses may use their Nametag to gain more followers by putting it on other social media profiles.



Figure No.01 Nametag feature on Instagram.

4. PayPal

PayPal brought QR code use to the next level, integrating it into their overall mobile strategy. Using QR codes, PayPal users can automatically initiate payments with other people or businesses on the platform (Kelly, 2020). No sign-up is required, either. The QR code can be used to make purchases quickly and easily.



Figure No.02 Sample of QR Code used in PayPal.

5. Starbucks

Starbucks is another well-known company that has adopted QR codes as a marketing tool. They began integrating QR codes into their print and outdoor ads, often connecting customers with discounts or promotions through the app (Katts, 2020). They have used QR codes in their store to accept cashless mobile payments, which was a very innovative idea when it was first launched in 2016. Since they cater to a millennial demographic, the QR code programme has been so popular that they have incorporated QR codes into all of their promotions since the initial launch.



Figure No.03 Sample of QR Code used in Starbucks.

6. Burger King

During the COVID-19 pandemic, Burger King announced two big deals for people caught in lockdown. One of the deals encouraged users to check a QR code found in their TV advertisements, while another encouraged them to exchange screenshots of video calls with their peers (Chaudhary, 2019). Three TV advertisements using a floating QR Code across the frame were used to promote the QR Whopper giveaway. Users were routed to a website promising

coupons for a free Whopper via their BK app after scanning the QR Code.

7. IKEA

IKEA launched a mobile checkout initiative that used QR codes to mark the items that the shopper was ordering in an attempt to increase user interactions and speed up the checkout process. They basically check the QR codes on the items they want to purchase (Kelly, 2020). The total is calculated, and users will pay for their purchases and print a receipt right in the app.

8. Netflix and Snapchat

As part of a promotional campaign for *Gilmore Girls*, Netflix used QR codes to turn 200 real-world cafes into Luke's Diner from the film. Snap codes which is Snapchat's equivalent of QR codes was printed on the coffee cups of these cafes, giving the initiative a branding boost. When the snap codes were scanned, a *Gilmore Girls* Snapchat filter was unlocked.

9. L'Oreal

To grab consumers waiting in traffic, L'Oreal collaborated with Glamour and used QR codes within taxis. By connecting QR code promotions to videos on how to use the products and redirecting to the shop website, the initiative supported the Lancôme and Yves Saint Laurent product lines (Claeys, 2020). L'Oreal increased app downloads by 80% as a result of the promotion.

10. Nike

Nike used QR codes to make personalised QR codes sneakers for consumers, they brought QR code marketing to the next level. Nike collaborated with WeChat, a popular Chinese messaging app, to create this initiative (Joshi, 16 Epic QR Code Examples from Brands Killing it!, 2020). To begin, customers had to scan a QR code in order to follow Nike. The users were then required to choose a colourful image of their choice and submit it to Nike, who would then respond with a personalised shoe that matched the colours in the image.

11. Diesel

Knock-offs of apparels is a major problem in the fashion industry, especially with name-brand clothing. This is particularly true for flea market and aftermarket specialty store customers. It's impossible

to tell whether you're having something genuine or a plausible knockoff. Diesel decided to use QR codes to tackle consumer dissatisfaction by allowing shoppers to check the authenticity of the clothes they purchased (Claeys, 2020). The Diesel app will tell you if the product you're buying is genuine by checking the QR code, as well as other product information.



Figure No.04 QR Code used by Diesel to verify their apparels.

QR codes are a solution that can support the customers in a number of ways. With a little imagination, you can come up with innovative ways to use QR codes that will not only motivate your customers to act, but will also enrich their experience. However many advertisers are still unsure how to use QR codes effectively.

II. Objectives

- To explain the reason why usage of QR Codes is a viable Scannable Marketing Option.
- To throw light on why using QR Codes as a means of shopping apparel items is easy and feasible.

III. Literature Review

Before we get into the origins of QR codes, let's make sure we understand what they are. The abbreviation 'QR' refers to a quick response code. A two-dimensional square barcode that can store encoded data is known as a QR Code. The data is almost always a connection to a website. QR Codes can now be used on leaflets, posters, magazines, and other printed materials. These two-dimensional barcodes are easy to find all over the place QR codes are now so ubiquitous that hardly a day goes by without seeing one (Reulier, 2014). QR codes are being used more and more to access information and, more recently, to pay for products and services. The technology was the brainchild of an engineer at Aichi-based manufacturer Denso Wave.

Invention of Barcodes.

It was the year 1948. Pennsylvania, United States of America. Bernard Silver, a graduate student, overheard his Dean and the President of a local store discussing business. The topic at hand was developing technology that could read product information during the checkout process. This would reduce human errors and relieve staff of the tediousness of data entry by hand (Rizwan, 2016). Bernard and his friend Norman Joseph Woodland produced the first barcode after a few experiments in the year 1951. By the late 1970s, barcodes had become an essential component of inventory management. Particularly in the retail and automotive manufacturing industries. The invention of the barcode simplified people's lives.

Invention of 2D Barcodes.

The invention of the barcode simplified people's lives. It did, however, have some drawbacks. For starters, barcodes were one-dimensional i.e. 1D and could only store data in one direction. The barcode would not scan if the scanner was not aligned in that direction. Just 20 characters could be stored in a barcode. Barcodes stopped working when affected by dirt or damage. More the characters, the longer the Barcode. Printing a long barcode on a small product was a challenge. To overcome the limitations of barcodes, 2D barcodes were created. David Allais created the first 2D barcode in 1987. This code, too, has limitations, but it was the forerunner of the famous PDF417. Aztec Code, Data Matrix, NexCode, and many other 2D barcodes quickly became common (Jathar, Gurav, & Krantee, 2019). These were more compact than 1D barcodes and could hold more data. Most 2D barcodes remained proprietary, and as a result, they did not gain widespread acceptance.

Invention of QR Code - a 2D Barcode and its release for public use.

When Japan entered its era of rapid economic growth in the 1960s, supermarkets selling a wide variety of goods from food to clothing started to spring up in many areas. The price had to be manually entered into cash registers, which were then used at these stores' checkout counters. As a result, many cashiers experienced wrist numbness and carpal tunnel syndrome. Cashiers yearned deeply for a way to ease their load. The invention of barcodes solved this problem. Following that, the POS scheme was developed, in which the price of an item of goods was

automatically reflected on the cash register when the item's barcode was scanned by an optical sensor, and the item's information was transmitted to a computer at the same time. However, as barcodes became more widely used, their shortcomings became clear. The fact that a barcode can only contain about 20 alphanumeric characters of information was the most noticeable. Users approached Denso Wave Incorporated which was a subsidiary of Denso Corporation at the time, asking if it was possible to create barcodes that could carry more details, like the capability to code Kanji and Kana characters as well as alphanumeric characters (Goyal, Yadav, & Mathuria, 2016). Moreover Denso Wave, a Toyota subsidiary needed a way to track vehicles and parts during manufacturing more accurately. To achieve this, they looked to develop a type of barcode that could encode kanji, kana, and alphanumeric characters, a development team at Denso Wave set out to create a new two-dimensional code, all in the name of meeting the needs of users.

A QR Code capable of coding about 7,000 numerals with the additional capability of coding Kanji characters was finally developed a year and a half after the development project began and after countless and repetitive trial and error. Along with his other two members, Hara came up with the concept of the square because their analysis found that it was an easily distinguishable shape. This shape also allowed for information to be coded both horizontally and vertically. Another benefit was that it increased the speed at which this data could be read i.e. up to 10x faster than Barcodes (Schwabstr, 2020). The combination was a jackpot. In the year 1994, Denso Wave Corporation announced the official release of QR codes. Denso Wave released their QR Code invention to the public without keeping their patent rights, and the use of QR Codes flourished.

Evolution of Adoption and Development of QR Code.

Kanban, a form of electronic communication tool used in the automotive industry in Japan, was the first to use QR Codes. They soon realised QR Codes' flexibility and started to use them in a variety of applications, including manufacturing and shipping, as well as transactions. Following the societal demand for increased product traceability, especially in the food and pharmaceutical industries, these industries realised that QR Codes could provide them with a

competitive advantage (Schwabstr, 2020). The QR Code was used not only in Japan, but also in countries all over the world, since it was an open code that everyone could use. Its use grew as rules for its use were established and the code was standardised. It was designated as an AIM i.e. Automatic Identification Manufacturer standard for use in the automatic identification industry in 1997. JIS i.e. Japan Industrial Standards accepted it as a standard 2D code in 1999, and it became a standard 2D mark on the Japan Automobile Manufacturers Association's EDI i.e. Electronic Data Interchange standard transaction forms (Inc., 2013). QR Codes were later introduced to ISO i.e. International Organization for Standardization international specifications in 2000.

The idea's initial adoption was slow, and although QR codes were simple to create, QR readers were not widely accessible. The first mobile phones with built-in QR readers were released in Japan in 2002. As a result, the number of businesses using QR codes grew, and the first consumer-ready QR codes appeared. The marketing of cell phones with QR Code-reading capabilities was the reason the code was widely adopted by the general public in Japan (Goyal, Yadav, & Mathuria, 2016). People could access a website or get a coupon by simply scanning a weird, eye-catching pattern on these phones. The code's popularity among the general public grew quickly as a result of its simplicity.

QR codes became commonplace in people's everyday lives. Meanwhile, technological advancements continued to evolve. In 2004, a micro QR code was designed to meet the need for smaller codes. This was so small that it could be printed in a small space and it was made a JIS standard in 2004. The iQR Code was released in 2008, with a limited footprint despite its huge coding capability and the ability to use rectangular code modules (Inc., 2013). Around the same time, the first iPhone was released, putting QR readers in the hands of a larger number of people all over the world. When brands and companies realised the potential of QR codes for sales and marketing, they began to develop their own. The QR code received a Good Design Award for industrial design in 2012, eighteen years after its invention. The QR code had spread all over the world by this time, and it could be seen on billboards, magazines, leaflets, and other locations (Kaspersky, 2020). In 2014, 'FrameQR' was

introduced. FrameQR helped to improve the look of code by allowing to mix and match diagrams and images. As previously mentioned, evolutionary changes to QR Codes have been made to them on a regular basis, based on the technical knowledge gained at DENSO WAVE, so that any of a variety of varieties can be selected to satisfy a particular need.

Since 2019 QR codes have been more vibrant, personalised, and enticing. QR codes have become much more accessible and important in comparison to their implementation in the past, with the new Android and iOS smartphones enabling native scanning of QR codes without the need for a third-party app (Joshi, The Story of QR, 2019). Denso Wave continues to build on their original concept even now, in 2020. Their new QR codes include features including traceability, brand security, and anti-forgery protection. The QR code has a variety of new applications, ranging from payment transfers to identifying the location of items in augmented reality.

III. FINDINGS



Figure No.05 Invention of 2D Barcode from 1D Barcode.

Use of QR Code for Marketing Campaigns.

While the original purpose of QR codes was to aid in the storage of more product and inventory-related data, they have since developed into a marketer's favourite tool for driving offline traffic online and thus bridging the online and offline marketing gap. Different types and formats of QR codes have arisen, allowing advertisers to use each QR code for a specific purpose. The good news is that QR Codes can be designed without compromising scan ability. Marketers may use this function to use QR Codes in their marketing campaigns. Since QR Codes can be personalised, brands can use them to integrate their visual identity into their QR Codes (Reulier, 2014). They can be any colour as long as there is a strong

contrast between the light and dark areas. QR codes can be multi-coloured as well. Some guidelines regarding the composition of QR Codes must be observed when customising so that they remain readable. Customization of QR Code is a very successful way to promote the brand's visual identity.



Figure No.06 Customers scanning a QR Code service Outside a retail store.



Figure No.07 Click and collect service provided through QR Code.

IV. Conclusion

QR codes have come a long way. Once invented to solve a basic labelling and sorting problem, Now have become an extensively used marketing tool.

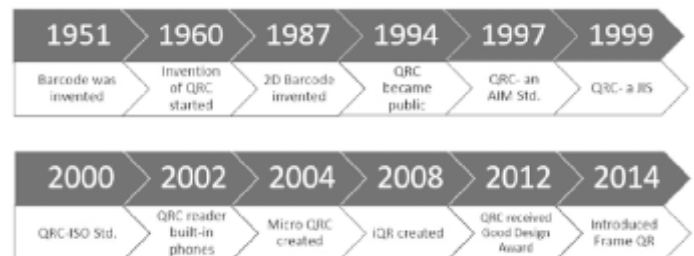


Figure No.08 Timeline of QR Code technology.

QR codes are all over the place. Businesses and brands have realised the potential of QR codes as a tool in their marketing arsenal, from using scan and go technology at convenience stores to using QR codes as a way to propel post-purchase consumer interaction through strategies such as coupon marketing.

Denso Wave has produced advanced versions of QR

Codes based on their popularity. There are four types of QR codes: Micro QR Code, iQR Code, SQRC, and Frame QR. Although these are more technologically advanced than QR Codes, they are not in the public domain. These technologies, without a doubt, outperform the QR Code. However, neither are they affordable nor universal. The majority of smartphones, for example, also lack NFC readers. Users would need to download a new app for each AR campaign. In the end, technology has progressed, but the QR Code has held its ground since 1994 (Rizwan, 2016). QR codes aren't going to replace UPC barcodes anytime soon. The latter is too deeply embedded in supermarket activities to be dethroned in a few decades. However, many of the characteristics that made QR Codes such a good fit for Denso Wave in the 1990s still make them good choices for individuals and businesses today. For starters, they're simple to operate. They are more user-friendly than barcodes because they can be scanned from many angles. Since cameras are perfect optical two-dimensional scanners, they can be scanned by anyone's phone (Scott, 2020). As a result, they're ideal for a variety of customer-facing applications, such as QR code menus and QR codes on tables in bars and restaurants. They can also store vast volumes of data, making them suitable for QR code marketing in general. Finally, they're simple to make and keep. Even for small businesses.

Given that QR codes have a vast range of uses across various industries, each organisation is developing its own unique use-case for QR codes, and niche-popular brands are still awestruck by their capabilities, it is fair to assume that QR codes are here to stay. Today, QR codes are a game-changing method of integrating the tangible and digital realms of industry. QR code-based campaigns act as a bridge for driving offline traffic to achieve online exposure. QR codes are a point of fascination for all types of companies, from small retail outlets to niche famous luxury brands. QR codes offer a company's customer service a competitive advantage. Over the course of its two-decade lifetime, QR codes have been used in a wide range of industries and have been successful as a means of marketing. Hence, using them in the apparel industry for Scannable Marketing can boost Return of Investment of a brand. Printing QR Codes on apparel items is easy and feasible. Brands can print a coded link on the apparel to make shopping possible in seconds of time.

Hence, from the history of its technology and its success in various marketing campaigns it is safe to say that the idea of printing QR Codes of shoppable links on the tags of apparels as scannable marketing is plausible. With QR Code your camera can be your browser.



Figure No.09 Illustration of Scannable marketing in apparel industry.

Future of QR Code in Marketing

Touch-free controlled solutions with QR Codes have come to our rescue as the novel coronavirus has wreaked havoc. In the aftermath of the pandemic, QR Codes, once thought to be a long-dead legacy of the early 2000s, have resurfaced, ushering in a touch less world. QR Codes are used in contactless shipping, contactless pickup, and, most notably, contactless payments all around the world. The QR Code market is expected to accelerate due to the growing need for a secure way to keep customers engaged. Since a large percentage of companies and brands of all sizes are heading into a technology-enabled market, QR Codes are more relevant than ever. The number of scans has been steadily growing, drawing everyone's attention to QR Codes. Over the next few years, the technology is expected to multiply by a huge margin. In-app use and scanning capability will be one of the main areas where QR Code technology will be focused. Contactless payment systems, the transit and travel industry, healthcare, and marketing are all expected to expand.

V. Future Scope for Research

Usage of QR Codes for Reverse Engine Supply chain management has a great potential. This will enable the product users to retrieve information about the source and history of the product and verify the authenticity of the same. Contactless proof of delivery of parcels is also an area where QR Codes can play a vital role. To confirm successful delivery, recipients won't even

need to sign on the mailman's screen or paper. The application on the smartphone can be used to search the QR code on the parcel. When customers sign in on their own devices to confirm delivery, the process is complete. QR Codes can be a key to touch less future.

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