

Virtual Shopping

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Abstract - Virtual shopping provides user with completely different way of shopping. It uses Smart phone as a medium of shopping for the users. As the number of Smart phone users is increasing rapidly in the world, this will be the future of shopping throughout. The virtual environment allows shoppers to view the real size products, and purchase products just as they would in a real store. It has an extremely high degree of flexibility, unlike in-store intercepts which require significant effort and cost to change shelf sets or packaging, a virtual store will increase the speed and efficiency and removes the cost of changing shelves as in a real store.

Keywords

Virtual Shopping, QR Code, Smart phone, Android.

I. INTRODUCTION

Traditionally shopping is done by physically going to the shop and purchasing the product, but the new generation love's to use technology for that a new innovative way of shopping is introduced using virtual store. In a virtual store we use real size displays of product to be sold instead of real products which are known as virtual display. A barcode is being provided for each product separately. A Smart phone application has been provided to all the customers of the virtual store, using this Smart phone application we people can scan the relevant barcode or QR code with their Smart phone App to order different products and after ordering all the products required, customers need to send the list of products ordered by selecting the submit button from the Smart phone app to the virtual store's server. After sending the product list the customers will check in their bills and collect their products or the products will be home delivered.^[2]



Figure 1.Homeplus virtual shopping mall in Korea^[3]

The only thing required for a virtual store shopping is the Smart phone app. Shoppers download a related application on their Smart phone and make purchases by taking photos of the barcodes similar project has been launched in south

Korea by Home plus. Home plus was established in 1999 in a joint venture between British-based giant Tesco and South Korea's Samsung but is now 100 percent owned by Tesco.They have made a Smart phone app which is downloadable by its user

II. LITERATURE SURVEY

World's First Virtual Shopping Store opens in Korea. All the Shelves are in fact LCD Screens. User selects their desired items by touching the LCD screen and checkout at the counter in the end to have all their ordered stuff packed in Bags.

Shanghai is following in Seoul's footsteps by creating more shopping opportunities for metro commuter BE students.Yihaodian , China's leading online grocery store, introduced "virtual supermarkets" to Shanghai's metro stations earlier this week. Large LED screens advertising everything, from diapers to raw meat, have been posted at nine metro lines across the city. The time-saving idea is inspired by the subway supermarket in Tesco Home plus in Korea, where active mobile users are among the highest in the world. But Yihaodian and Tesco Home plus are two separate entities, and are not related to each other at all.

C&A Brazil Introduces FB Likes in Real World
C&A provided a good example of how the real world and the online can converge to create a modern shopping experience. By displaying Face book "likes" on small screens embedded in articles' hangers, the retailers showed the increasing tally of "likes" that different items of clothing were receiving from Web users. The hope was that approval from the online community would encourage shoppers to purchase a particular item of clothing

III. PROPOSED SYSTEM

Smart phone-friendly QR bar codes are printed next to each item on the Shanghai metro advertisements, and with a special app, shoppers scan what they want and check out on their own phones, accordingly. Once they have completed their purchases, the goods are delivered to doorsteps within 48 hours.

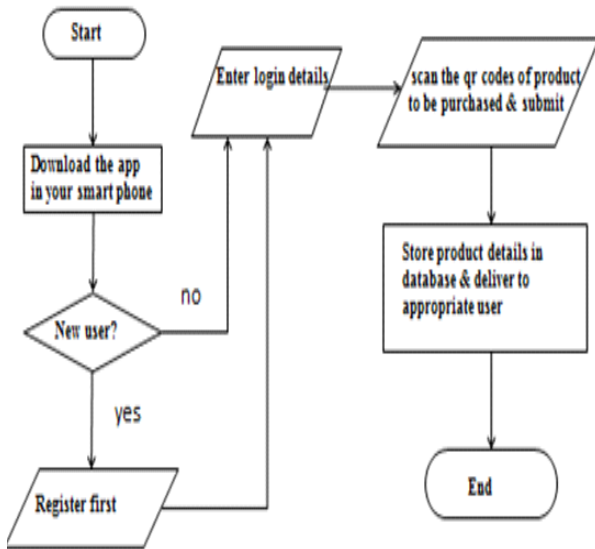


Figure 2. General structure of virtual shopping

directed to a shortened link embedded within the code and engage with useful content like images, videos, websites, or text. Compared to a standard barcode, a QR code can store and present much more data.

There are a number of QR code readers out there for smart phones, including QR Scanner, Shop Savvy, Kaywa Reader, and Scan Life. To get a QR reader for your smart phone, simply search your phone's app store for "barcode reader" or "QR code scanner."^[1]

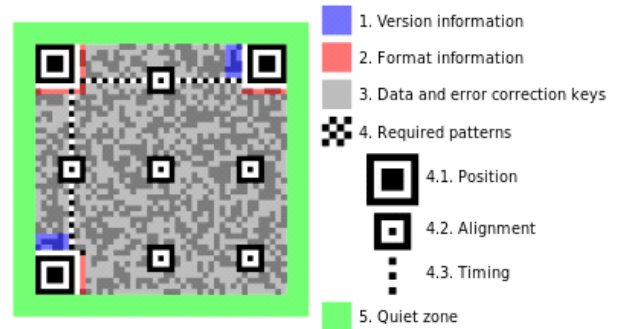


Figure 4. General structure of QR code

The above flowchart explains the flow of our system:

- Initially user needs to download the android in his/her smartphone. If the user is new then he/she needs to register to the system or the android application by providing personal details like username, password, address, phone number etc.
- If the user is already a member of our system then he/she needs to directly login by providing username and password. Using the application the user can scan the products, add or delete products from the shopping cart.
- After completing the purchase the user will submit the purchase details and move on to payment options.
- After completing the payment options the products will be shipped to the user.



Figure 3. User scanning a QR code in virtual shop in Korea

A QR code (QR stands for "quick response") is a two-dimensional barcode first invented in Japan for tracking auto parts in factories. The code can be printed or copied and placed on any material or object. The code works as an offline hyperlink, linking an offline experience to web content via a smart phone. Anyone with a mobile device that has a QR code reader can scan the code and then be

IV. Technical Aspects/Considerations

A. Session Tracking:

A session is a conversation between the server and a client. A conversation consists series of continuous request and response. When there is a series of continuous request and response from a same client to a server, the server cannot identify from which client it is getting requests. Because HTTP is a stateless protocol. When there is a need to maintain the conversational state, session tracking is needed. For example, in a shopping cart application a client keeps on adding items into his cart using multiple requests. When every request is made, the server should identify in which client's cart the item is to be added. So in this scenario, there is a certain need for session tracking. Solution is, when a client makes a request it should introduce itself by providing unique identifier every time. There are five different methods to achieve this.

- Hidden form field
- URL rewriting
- HTTP user authentication
- Cookies
- Java Servlet API provides set of classes namely the session tracking API, for session management purposes.

B. Authentication:

Authentication is the act of confirming the truth of an attribute or entity. Authentication often involves verifying the validity of at least one form of identification. User should have a unique username and the password should satisfy certain criteria like password should have combination of uppercase, lowercase, numbers etc

The main concern over authentication is whether the user is genuine, for validating this we use SSL 128-bit protocol. Secured Sockets Layer, are cryptographic protocols which are designed to give or to provide

communication security over the Internet. They use the X.509 certificates and hence they use asymmetric cryptography to assure the counterparty with whom they are communicating, and to exchange a symmetric key. This session key is then used to encrypt data flowing between the two or more parties. This allows for data/message confidentiality, and message authentication codes for message integrity and as a by-product, message authentication.

C. Payment details

Internet payment systems refer to the various methods by which individuals and companies doing business online collect money from their customers in exchange for the goods and services they provide. Customers who shop on the Internet are beginning to expect online merchants to offer the same variety and convenience in payment terms. Credit cards remain the most common form of payment for online purchases, although the options have expanded to include digital cash, smart cards, electronic checks, and other technologies.

Internet payment options

Credit Card: Credit card were also among the easiest payment methods, for consumers as well as for merchants. From the consumer's standpoint, ordering merchandise from the Internet required only entering a credit card number and expiration date in the appropriate fields on a merchant's Web site. Many consumers felt greater confidence in online transactions when they used a credit card, knowing that a third party (the credit card company or issuing bank) was involved and could help protect them against fraud.

Cash on delivery:

A final alternative for companies that conduct sales over the Internet is to accept payment via traditional, offline methods by taking orders through an address or phone number listed on their Web site. thus the payment of the transaction can be obtained during the delivery of the project

Security in Internet payment:

Secure third parties may be banks or other institutions that act as middlemen in financial transactions between merchants and customers. For small businesses, conducting transactions through a secure third party eliminates the need and expense of setting up a secure Web site. Secure third parties also provide consumers with added protection from fraud, since the merchants never handle their credit card numbers.

D. Connection between PHP(server) and Android(client)

The main reason for taking a scripting language like PHP is because of the interaction with databases it can offer. In this tutorial I will show you how to use PHP and the MySQL database to retrieve information from the server. For making connection to PHP script, we will use HTTP protocol from the android system. To implement this tutorial you should have basic knowledge of how to run PHP script and start server. If we talk about client-server architecture, client is Android device and in server side there is a combination of

PHP Script and MySQL. In short, PHP Script sits in middle as shown in image.



Figure 5. Overview of connectivity of android client and php server

V. ADVANTAGES

- Maximize customer satisfaction with the experience at the shelf.
- Increase dollars spent within the category and in adjacent categories.
- Implement plan-o-grams that improve the likelihood of increased brand sales.
- Enhance retailer and manufacturer collaboration through insights with retailer-specific relevance.
- Make fast go or no-go decisions based on in-store customer reaction to new packaging.

VI. FUTURE SCOPE



Figure 6. Virtual grocery stores developed in various city like Chicago, Philadelphia etc.

This kind of virtual grocery shelf has been held up as the next great innovation in retail ever since Tesco launched its program in the subways of South Korea last summer. It's Home Plus stores there sponsored virtual grocery aisles, enabling commuters to scan QR codes and have orders delivered directly to home.

A hold- owned Peapod debuted a similar initiative in Philadelphia earlier this year with 15 locations. The program has since been narrowed down to the nine most successful locations, according to Peapod spokeswoman Elana Margolis. Now the program has been expanded to Chicago, where Peapod has taken over a 60-ft. pedestrian tunnel at the State and Lake CTA station in the city's Loop.

Commuters can scan download Peapod's mobile app, scan a QR code from the virtual shelves and start shopping while in transit. It's about building awareness for peapod and capturing new customers, according to Thomas Parkinson, Peapod co-founder and chief technology officer.

In In This whole thing is built around customer awareness and acquisition," he told me in telephone interview this morning. "There's a huge difference in sales for us when (you add) mobile."

The average Peapod shopper spends \$160 per order on the Internet, says Parkinson. Those who shop exclusively using a mobile device — and that includes tablets — spend \$165 per

order. But if shoppers use both online and mobile in some combination, they spend \$168 per order. Given that Peapod shoppers order roughly every two weeks, it's a significant incremental bump in sales

And mobile is an increasingly large part of Peapod's business. "Roughly 20% of our business has been touched by mobile," Parkinson says. "In one year there's this huge sucking sound of our customer base moving to mobile. It has increased both sales and basket sizes."

Already Peapod is gaining big shopper insights from the initiative. They can see how many items people scan — typically one or two from the virtual assortment — how the "It was no-brainer to sign them up," says Parkinson. A 70 foot billboard and impulse buy opportunity in one of the most trafficked stretch of Chicago just doesn't come along every day. But it could soon. If Peapod's early enthusiasm for the initiative is any indication, the future of retail is indeed virtual. "Virtual Shopping Wall" at Delhi International Airport, India

In India, e-commerce firm HomeShop18 and Delhi International Airport introduced a "Virtual Shopping Wall" at the Delhi Domestic Terminal T3. The virtual mall is named "Scan N Shop". The wall offers premium merchandise to consumers. The passengers will be able to browse through the entire range of products and order by scanning the QR code displayed against each item with their smartphones. Consumers can also order by calling at the call centre of HomeShop18^[4]

VII. CONCLUSION

Thus Virtual shopping provides an interactive and Amazing experience of shopping using smart phone. The future of shopping is Virtual shopping replacing the traditional way of shopping.

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Figure 7. Proposed virtual shop in Delhi airport