

# Augmented reality for a new social network marketing

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## Abstract

Online Shopping has become an attractive scenario for both sellers and buyers over the last years [Nutt, 2009] but the "look and feel" senses are still too important to get rid of them.

Imagine a future where augmented reality (AR) is part of our lives. Our mobile devices enable to add "extra" projected information onto everyday reality everywhere. It is obvious to think that this future there will be a new form of electronic commerce, where businesses deploy marketing campaigns through AR and the customers use their devices to get detailed product information on site.

## 1. Introduction

Traditional distribution channels have evolved to attract new customers used to the online world [Andrews, 2004]. If the appearance of Internet involved the most important change in people shopping manners in years, the application of Augmented Reality may entail the most outstanding evolution for the next decades.

Imagine a future where anyone with an AR application can find what they need during their walking way to the office by pointing at it, something we might call shopping cart assistant. We might use this wizard to any type of need: food, technology, services, fashion, etc. A specific scenario is being designed to provide such services. Following, three ideal stages of deployment are described:

1 . Network based Geolocation: Although it is common to find mobile devices with GPS and compass as well as plenty of AR applications, a large percentage of mobile phone users are still unaware of them. In a first phase an Internet center for customers and stock management was developed based on a social network portal such Facebook. The aim of the portal is to let customers select products and create shopping cart in such way the system will indicate uses the nearest shop selling the

desired product whenever they prefer. The geolocation of users is based in service provider's network infrastructure so a larger amount of users can use the service. No special handsets or applications are needed in order to use it. During this first version, nearby shops are displayed in a map along the customers location. As detailed in section 4, a product stock system and a geolocated shop list database must be maintained. Although the services provided by this version must be improved the application will be easily known and used thanks to a viral environment, that is Facebook. The expansion of the application will soon attract new brands and manufacturers willing to add their stock to the database. Meanwhile, the information regarding users tastes will rapidly increase. Such information will afterwards be very valuable.

2 . AR-Market: The second phase of the development includes new technologies such GPS and AR. In many situations, we may be too busy or otherwise unable to fully observe and interpret our environment. Augmented reality is possibly the best choice in order to help understand the reality. For instance, AR Compass based applications will help individual simply needs with assistance when finding an specific shop.

3. AR-Social Networking: People is very used to take into account others opinions and experiences when making decisions. Different

people presented with the same options may likely have opinions and make personalized decisions based on experiences, observations, and suggestions from others. The AR-Networking comprises a vast variety of resources, services, attractions so as to meet unique demands of individuals. In view of the wide selection of options presented in many aspects of everyday existence, a person can live and work more efficiently with at least some external assistance in regulating, monitoring, and advising decisions in a retail setting. In order to provide such services, data-mining techniques are being developed so different advices may show up in the users display screen in different moments. When pointing the mobile phone to a disco, the system will tell us what kind of shoes the disco costumers use. If we focus our device to a shop, the system will inform us if our friends normally go there or if clothes sold may be of our taste.

## 2. Product Selection

There are typical links on your Web pages that customers can click on, and which allow them to perform some of the functions described above. In our use-case the we will propose two methods for object/product identification:

- **RFID:** normally passive Ultra-HighFID tag can be read at ranges of up to 30feet (approximately 10 meters) there is another one that can be read at larger distances. The user wear (or have on their mobile) passive tags which are read by antennae placed on the "Ad-Man" who is wearing the objects could be of the user's interest. UHF based tags instead of Low or high frequency last generation tags provide accurate readings with specially designed antennas.
- **QR Codes:** are now used in a much broader context, including both commercial tracking applications and convenience-oriented applications aimed at mobile phone users.

In this case, an "Ad-Man" can wear a QR Code, and the user can photo or record this "Ad-Man" to get the information stored on the QR Code, like an address or URL to get more details about the product of interest.

When the user is close enough to an "interesting" or just "readable" object in the first case or has interpreted the QR Code in the second case , the user will be able to get the relevant information about the object or product and from mobile or other device, have the following interactions availability:

- Add to our shopping cart in the mobile.
- Compare with other similar products.
- Look for the nearest place to try it or buy it on a "sky-view map" or by using a compass to get there.
- Share with friends this product even by using social networks.
- know if some friend is already using this product and know their opinion (depending on privacy limitations).
- Save to favorites products and get information about the brand.

## 3. Augmented Shopping

The use of solid state compasses has grown over the last months improving geolocation and augmented reality developments. In the case of this project our aim is to use the compass to locate the shops where we can find the products of our list just by positioning the mobile in any direction. The system will show a tag with relevant information (distance, stock, price) of the shops located in the direction where the webcam is focusing.

Once shop is selected, the user can choose to be guided to the shops address by the mobile in a turn-by-turn basis. The cost of the Internet connection needed to locate places within a map has been also improved. Users will be able to download both the map and de list of places (mostly shops) given a location. The download process takes place every time the user is interested y the information is update via a webservice without the need of the user interaction.

## 4. Stocks and cart gathering system

The relational database will store the information needed to meet the system's functionality. It saves the information about users and products, so, the storage system must be scalable and flexible. Information regarding users must have sufficient data to uniquely identify them, in the same way that should enable us to relate them to their profiles on social networks, in our case the Facebook social network. Since this network user will be allowed to consult the database on their products and remove or add new to your list. To consult and handle products that are in our database, we must have a stock related products by category to which he belongs, so we get a list of products that interest our customers.

Users can not only handle the products they want through social networks, also may it do via the mobile device. When a user detects a product of his liking, through augmented reality, he will have the option to incorporate it into its list of outstanding. Therefore, to interact with the database there are two paths through the social network, or through the mobile application.

The products must be stored with all relevant information about them in the database. This includes information on stores that have the product and its geolocation (latitude and longitude). With these parameters will be possible to inform the user, with a simple query, where stores are located that interest depending on the product selected and the distance to them from their current location.

## 5. Conclusions

A caddy adapted to AR, inventory management and an Internet center where you can find all information relating to AR-market, state of personal accounts, online inventory management, statistics, etc.. All this without charging for services. Later, when the acceptance of AR by the company when advertising in this environment will bring benefits.

## 6. References

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