LAPPEENRANTA UNIVERSITY OF TECHNOLOGY

LUT School of Industrial Engineering and Management

Software Application and Innovation

"MarketBlue"

A Bluetooth Application

Eleni Almpanopoulou (0444614)

Alejandro Antillon(0444627)

Fahad Rezwanul Islam (0406380)

Prasanna Lakshmi Kuchimanchi (0433913)

Introduction

Mobile marketing is becoming one the major investment areas for business technology, due to huge progress in mobile technology and usage. Mobile Marketing Association (MMA) states smart devices are uses various marketing tool such as customer acquisitions, loyalty building, sales promotion tool, raising brand awareness, coupon mechanic, direct marketing, effective business-to-business communication tool and much more [1].

However, mobile marketing concept still requires further improvisation to not only to be used as an advertisement viewer rather assisting a customer with a physical guidance till the purchase phase.

MarketBlue, is a Bluetooth application that will communicate with a specific application incorporated in a supermall or Megastore. The primary idea involves an Advertising display, installed in a megastore, from where the application installed in mobile device can get updated automatically in the entrance. This updates includes, Shops information and discounts, Restaurants information and on day menu, Healthcare services and emergencies, Transportation services and schedule.

The user of the application can use the system to get to the desired discount, sales information and other information on current data, and can easily obtain required service and purchases. Furthermore the user can also update other user of the application to share their information to other user through Bluetooth.

However, this plan also includes the enhancement of the existing system to consolidate data onto a single platform. This enhancement of existing system includes the live data and location services in some cases to enable user of the system to get a wonderful luxury to not only find appropriate services but also save a tremendous amount time by avoiding huge products checking and service queue.

Discussion

Based on the feedback from the professor, below is the discussion related to the application.

Difficulties of centralization:

The system is designed as a centralized platform (Application and Database), where all the information is going to be stored and managed. All advertisers (shops, restaurants, etc) will manage their information directly from this platform. Thus, all customers (users interested in advertiser's information) will use a front-end application to access this information.

The way advertisers will manage their information, is through an account in the system. Once logged in, the advertiser will be able to create, update or delete offers. This process will be carried out through a detailed form that will guide the advertiser in creating or editing process. The form will also be validated to ensure information is consistent.

However this system can be separated from the open data and critical business data, as the data flow will be maintained by the shop and service owners.

Data synchronization throughout the workspace:

The idea of the system, being a centralized platform, and all users (both advertisers and customers) accessing information through this platform, offers a main advantage, which is having all the information in a single place, preventing, duplicity, inconsistencies, as well as a centralized server which responds to the client request, it also helps in file sharing. To help maintain information updated, the customer's application will request the user to perform updates.

The network composed of two sides, the main server will be connected with a LAN within the mall, and however, the digital board could be also updated by an advertiser through a Bluetooth device. The customer will automatically get updated by several digital board placed in different places in the mall. Furthermore, customers can also synchronize the advertisement within themselves. Therefore, the application promises to be pretty synchronous.

However, since the Bluetooth range might vary from 10 to 20 meters [3], based on the market interior area and customer proximity there will be installation of Bluetooth module installed.

User experience of the person who updates special deals or in general the data:

The system would be designed to be as simple and easy to use as possible, and it would be targeted to non IT specialists, meaning that any user should be able to use it. However, all operations and functions will be documented, and a brief training might be required.

Value addition to business and customer:

There are many advantages over traditional printed advertising. The main fact is that electronic advertising does not require paper, and does not generate paper waste. It supports and promotes a Green Culture.

Another great advantage are the possibilities to manipulate the information to make it more suitable for the customer. A good example is the possibility to show the information in many languages. Since here in Lappeenranta all the advertising is in Finnish, but there is a great number of people from other countries who do not speak Finnish.

Other advantages are the opportunity for users to filter, and look through the content more easily. Furthermore, the possibility for advertising and rapidly update their information, and deliver it to the possible customers makes the system more desirable.

Multiple location and data centralization:

The primary reason to choose shopping mall came from business considerations. From application sales point of view, medium to large shopping malls are the best place to implement the system. Shops and large vendors within a mall will always like to draw the customers by advertising and using other marketing techniques. Therefore this application could be a potential tool for the shops and vendors as it will notice customers the current deals

and location of the vendor and shops within the mall. Hence, they will draw potentially more customer entering the mall.

In the proposed application all the data from all the shops, vendors, emergency services like health service and transportation will have their information consolidated into a common platform to circulate to the customers.

Market competitors:

Regarding current methods for sales information in shopping centers, there are some companies offering advertising services through shopping centers, but these are mainly based on television screens located through the shopping center facilities, or printed advertising.

However these companies generally have a deeper scope, focused on professional marketing and advertising. The scope of our system is only sales information for particular stores. Other competitors would be traditional paper advertising companies, and also the fact that people often experience difficulties or feel unsure when using new products or services.

Architecture

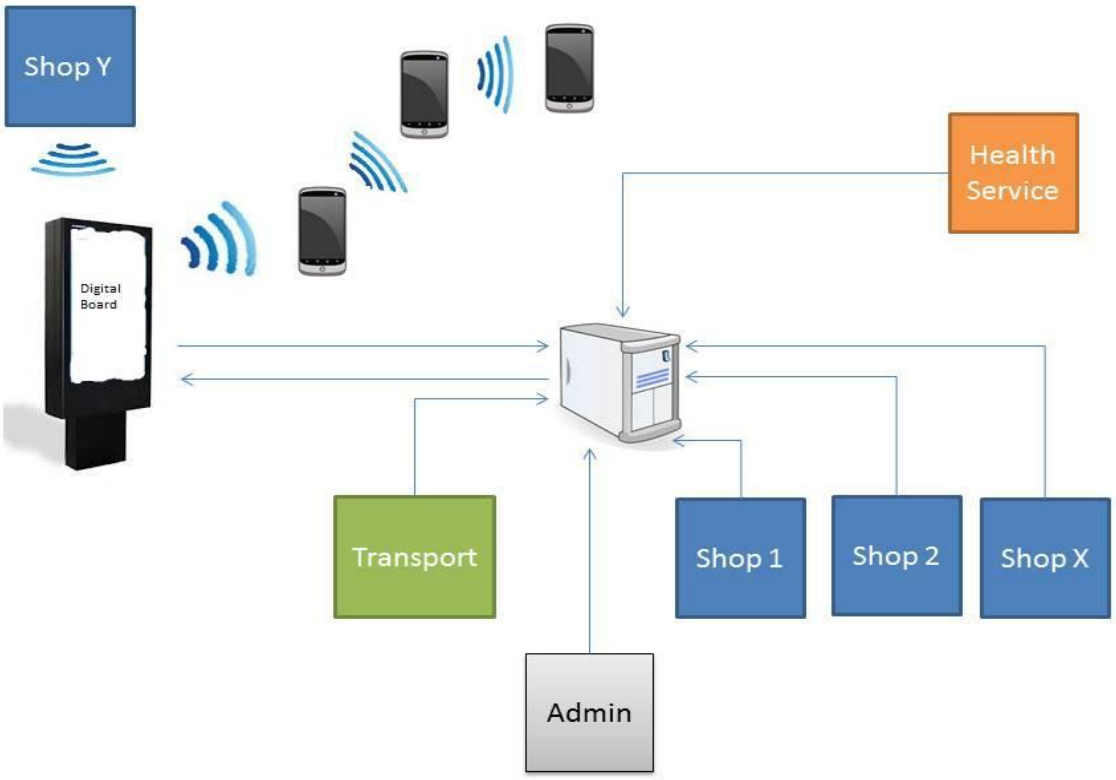

Figure 1: Brief architecture of the system. “MarketMob”

Conclusion

While making a thorough search on the available market products, it seems our proposed product has quiet potential opportunity to become an innovative IT-Business perspective. This idea will make business excel in proximity marketing with a long time savings over unnecessary printings. Green technology by reducing paper usage makes our proposal pretty competitive. However, there is a potential challenges like deployment of new infrastructure and marketing idea. Hence, we have put an extra effort in our plan to make a monetary fact for business cost minimization. Furthermore, making this system well programmed for user friendly and secured.

References

1. Al-Salman, A. (2006). Broadcasting commercial advertising using bluetooth technology. *International Journal of Web Information Systems*, 2(2), pp.135-141.
2. Aiello, M. , de Jong, R. , de Nes, J.(2009). Bluetooth broadcasting: How far can we go? An experimental study. 2009 Joint Conferences on Pervasive Computing (JCPC), IEEE, pp. 471 – 476.
3. Jäppinen, P. and Porras, J. (2001). Flash notes over Bluetooth Wireless Technology. *Wireless LANs and Home Networks: Connecting Offices and Homes: Proceedings of the International Conference on Wireless LANs and Home Networks: Singapore, 5-7 December 2001*, pp.91-99.
4. Hämäläinen, A., Jäppinen, P. and Porras, J. (2003). Applying Wireless Technology to an Access control system. *1st Workshop on Applications of Wireless Communications (WAWC'03), Acta Universitatis Lappeenranta Ensis*, 158.
5. Chan, A., Leong, H., Chan, J., Hon, A., Lau, L. and Li, L. (2003). BluePoint: a bluetooth-based architecture for location-positioning services. *SAC '03 Proceedings of the 2003 ACM symposium on Applied computing*, pp.990-995.