

DESIGNING AN ARCHITECTURE FOR DELIVERING MOBILE INFORMATION SERVICES TO THE URBAN CONSUMER

Nitin Singh, Saket Kumar

ABSTRACT:

Today the world has become a global village and in this age of globalisation the most dominant forces in any market let it be local or global are the multinational companies. The small local businesses find it really difficult to survive as they can't afford to spend on advertisement and other ways of increasing their customer base. This has led to monopoly in some of the cases as it's very difficult for the small businesses to compete with the well resourced, high-tech companies. This situation leads to the closure of most of the small businesses. What worsen this situation are the tensions that develop between the local business' group and the companies. A prominent example of this is the opening of Reliance Fresh grocery stores in many big cities which led to in some cases violent protest from the local vendors as the opening of the store meant their business would go down or may be even close. To tackle this situation we introduce a system that will resolve this conflict and will prevent any sort of monopoly in any market. Here we are using existing m-business features and

functions such as user experience, enterprise integration & flexible location[2]. The main component of this framework is a cell phone with mms facility and a server that can be maintained by a responsible and trusted third party.

INTRODUCTION:

The system is very simple and has two separate sub-systems. One of the sub-systems relate to finding a store in your nearby area and the other and the more important one is the system which relates to finding you the store that is providing the commodity you wish to buy for the lowest price.

Here we have two subsystems which are extensions of existing Mobile Information Systems [3]. The existing systems can further be easily updated to contain the features which we are suggesting. All that is required is a simple cell phone with sms and mms facility. Suppose you are new to an area and want to find out what all medical stores there nearby all you need to do is to send a sms saying MEDICAL

STORES to a predefined service number and you will get an immediate reply that has the name and addresses of the five MEDICAL stores that are nearby say in an area of 1 km-square. Now services similar to this are there in practice but they are mostly provided by the network providers and hence are biased in the sense that the only stores listed are the ones that paid the highest amount[1]. What we are talking about here is a service which is maintained by a trusted third party that takes a fixed monthly fees from all the stores and decides the priority of the search result based on some customer friendly criteria like highest monthly sales or the distance of the customer texting the message from the store. This will not only lead to a customer friendly environment but a more competitive and healthy market.

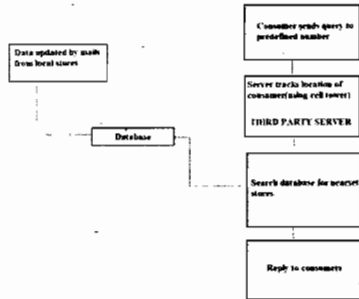
The second sub-system is the more interesting one and its moto is to provide the customer the commodity he wants at the cheapest possible price. All the customer needs to do is if he goes to a store to buy say a computer monitor and he is not sure that the price he is being asked to pay is the best what he can do is take a picture of the bar-code of the product and mms it to a predefined service number. Instantly he will receive a reply telling him whether he is getting the best deal or not and if not the reply text will include the name and address of any nearby store offering the product at the lowest price. This idea seems to be good but is fairly complex to implement and requires co-operation among local retailers and most importantly a very trusted third party.

THE FRAMEWORK AND WORKING:

1.Sub-system1 (Local Stores Search Service - LSSS):

Under this system the stores need to register with the third party which is responsible for providing the search results through text on cell phones. Let us call this trusted third party service as Local Stores Search Service(LSSS). Registering with the LSSS will make the store eligible for appearing in the search results. The stores would also have to pay a very minimal payment to LSSS for they have to maintain the server that provides the results and have to pay the technicians that work with the LSSS.

When a user texts the LSSS with the search query say General stores , the LSSS server will first track down the location of the user with the help of his phone number and the cell-tower he is using. After locating his position the server will automatically calculate the different areas that are there in a vicinity of say 1km-square of the user and the stores related to the users query that are present in those areas. Then the top five stores would be listed based on some predefined customer friendly criteria like highest monthly sales or distance. Finally the result will be sent to the user. With modern technology i.e. a good server this will be done in just a matter of seconds.



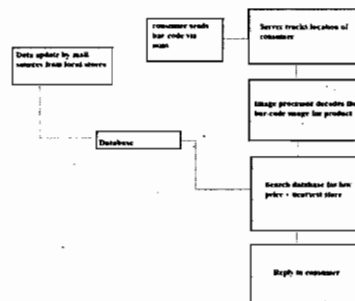
LSSS

2.Sub-system 2 (Cost based Store Search Service - CSSS):

This system can be thought of as a further extension of the first sub-system but would require a more advance and faster server and more data processing. Hence the stores willing to register for this service would have to pay a price higher than the subscription price for the first system. Under this system a user texts the CSSS a mms that has the BAR-CODE of a particular product and what he wishes to know is the nearby store providing the lowest price for that particular product.

What the system does is that after receiving the mms the whole process of the first subsystem would be done expect for the last step i.e. listing the top five results. Instead the server will determine from the bar-code the product that the user is trying to buy and then it will find from its database, by comparing price, the name and address of the store offering the product on the lowest price and then text it to the user.

As it is clear from the working of this system the servers database would need a regular update of prices may be weekly from the store owners. There won't be any problem in this as the store owners can send the weekly price updates, in their very own interest , via mail or post and then the database can be updated accordingly thus providing the customer maximum value for his money. This will ensure a healthy and competitive market and the at the end of the day the store with the best sales will be the one offering its goods at the most competitive price and with best customer service. Thus it will provide equal opportunities to all the businesses immaterial of their size , so even local businesses gets equally fair chance to compete with big multinationals. This will for sure resolve the ugly conflicts between local and large businesses as mentioned above.



CSSS

EVALUATION AND CURRENT WORK:

The problem with this system is that it can't be implemented in rural areas or very

small towns. The other hindrance is the requirement of mms and camera phone for the second sub-system, as many people don't use such phones in developing countries. Establishment of a third party that can be fully trusted both by customers and store owners and the IT-infrastructure needed to maintain the database and servers require great effort and involvement of some government agency to ensure the honesty and non-biased working of the third party service provider that is the key to this whole system.

As told before there are systems similar to the first one (LSSS) in place but they are all biased and the results provided are not area specific. The second system (CSSS) is nowhere being implemented in any way but the basic concept behind it has popped up for sure in many places.

REFERENCES:

1. Designing an Architecture for Delivering Mobile Information Services to the Rural Developing World, Tapan S. Parikh, Department of Computer Science and Engineering, University of Washington, Box 352350, Seattle, WA 98195-2350, tapan@cs.washington.edu
2. M-business Barrier or Facilitator of Collaboration.htm
3. Search Engines
 - a. www.google.co.in