M-COMMERCE: ITS CHALLENGES AND ISSUES

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ABSTRACT

In this era of globalization everyone wants to be a racing horse. It is the urge of every individual to be connected with the world 24*7. Mobile commerce is the easiest way to do so. In this paper we shall discuss the need of m-commerce, the way it is used and its importance in every field. M-commerce has built up a strong and long lasting relationship not only between businesses and consumers but also between different businesses. This paper also brings building blocks of m-commerce under the spotlight. Along with the older technologies like GSM and GPRS, new technologies like UMTS/3G, EDGE should be used to create flexible infrastructure for m-commerce. Moreover, issues related to bandwidth and security are also discussed for more reliable wireless commerce.

Keywords: *M-Commerce, GSM, GPRS, UMTS/3G, EDGE, PDA*

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I. INTRODUCTION

'Mobile-Commerce' as the name implies is the commerce carried out through a mobile or a wireless system that uses internet. The cellular service is getting cheaper day by day which has brought it to be the most popular device these days. It has not only limited to calling and messaging , the introduction of other value added services has made it a necessity in everyones' life. Every individual wants to be connected to the world with a single click. The internet facility in mobile phones, PDAs etc has enabled the concept of "anywhere and anytime access" to grow at its fullest. Service providers are no longer simply network operators, but are evolving to become providers of rich, interactive media, productivity services, and retail experiences[1].

II. NEED AND IMPORTANCE OF M-COMMERCE

As life has become very fast and everyone wants to win the race, cellular phone or PDA or other handheld devices are the only tools by which one can keep himself up-to-date. Rather than spending time reading newspaper, one can get all the latest news at any news website while travelling to job. We can keep ourselves connected to our favorite community website for the whole time. We can shop, do our billings, plan a trip and do lots more. No-one likes to stand in a queue and wait for hours for paying electricity bills. What if it can be done by our Smartphone which saves time as well as energy? Because of this busy life we all want to do smart-work instead of hard-work.

The only thing we need is a internet connection on our Smartphone or PDA.

Fig 1: M-commerce in different fields [4]

Although laptops and note books computers are in a great demand but these smartphones and PDAs are the most handy tools.

III.   NETWORK TECHNOLOGIES

As new protocols are being designed every now and then, the technologies used in m-commerce also change for creating a fast, reliable and inexpensive connection. The technologies used are:

1) GSM

GSM stands for Global System for Mobile Communication. It operates in the 900 MHz and the 1800 frequency band[2]. Now GSM accounts for approximately 65 percent of the total digital wireless market today.

2) HSCSD

HSCSD is High Speed Circuit Switched Data protocol based on GSM. It can transmit data up to 4 times the speed of the typical theoretical wire-less transmission rate of 14.4 kbps. The major problem in the emergence of this technology was that there were only few manufacturers who could manufacture PCMCIA modem cards for HSCSD. It is thus couldnot reach to its heights except in some regions for internet connectivity on laptops.

3) GPRS

GPRS (General Packet Radio Service) is a packet switched wireless protocol that offers instant access to data networks. [3] Its transmission speed is of up to 115 kbps. The advantage of GPRS is that it provides. instant IP connectivity) between the mobile terminal and the network but the actual capacity would be consumed only when data is actually transmitted.

4) EDGE

EDGE stands for Enhanced Data Rates for Global Evolution and is a higher bandwidth version of GPRS that enables transmission speeds of up to 384 kbps. GPRS speed was limited to look for music, videos and other heavy content at the internet so the advent of EDGE overcame the limitations of GPRS.

5) 3G/UMTS

UMTS is Universal Mobile Telecommunications System. The consumers now demanded for video calling facility for which the 3G phones came into existence thus UMTS is a key member of the "global family" of third generation (3G) mobile technologies. Today everyone wants a 3G phone and wants to use internet to its maximum. It is of very high

speed and has minimized the distance among different users by providing the facility of online calling via phone.

IV.   FEATURES AND ADVANTAGES OF

M-COMMERCE

M-Commerce possess the following features:

1) Ubiquity –

independent of his current geographic location, the user can carry out transactions and avail of services.

2) Immediacy –

 User gets immediate response to his requests as a real-time system does.

3) Localization –

 Location based services such as GPS, enables user to find his nearby devices companies to offer goods and services to a specific user to his current location.

4) Instant connectivity –

 With the help of this feature the user remains connected to the internet everytime and is with its contents with in a fraction of seconds.

5) Simple authentication –

 Mobile devices use an electronic chip called SIM (subscribers identity module) .It uses a Personal Identification Number (PIN) which makes the authentication process simple.
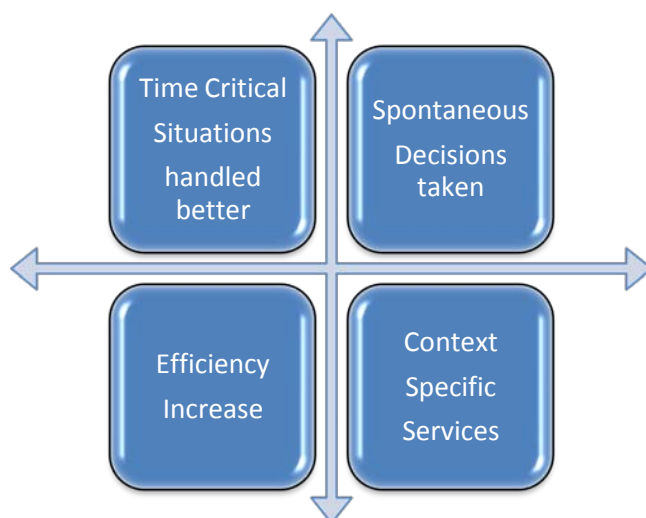

Fig 2: Advantages of M-Commerce[4]

V. CHALLENGES TO M-COMMERCE

As technology brings along threats, the challenges faced by M-Commerce are:

1) Security-

Although, internet on mobile has brought a drastic change in our lives but along with it the security needs have also been increased. One single mistake can lead to whole data hacked which may ruin a person or an organization.

2) Business:

The companies now need to integrate in telecommunication as well as information technology. Racing in such conditions has become much harder.

3) Bandwidth:

As consumer needs are different and are always increasing thus the service providers may suffer from bandwidth scarcity which will have to be solved by it to exist in the market.

VI.   ISSUES TO M-COMMERCE

Issues related to the introduction and usage of M-Commerce are:

1) Privacy & Security-

It is one of the most important issue related to M-commerce. If a person is not up to full knowledge of his system he can be a victim of fraudent access to his data which can shatter him mentally, emotionally or financially.

2) *Locational Information-*

Although, technology like GPS has made positioning easier and convenient but it may also lead to hazardous results when one may be tracking your each and every movement with some bad intentions.

3) *Liability for transaction-*

The youth market for financial services has become increasingly competitive, and providers have started to tempt teenagers with offers of free advanced phones that can manage m-commerce applications, to sign up for specific accounts[5].

4) Content-

With concern to content who will be responsible for the breach of regulations? Whether it will be the telecommunication service provider or the content provider? is also a major issue related to m-commerce.

5) Taxation-

M-commerce is likely to present additional taxation problems. Some sites use Internet Protocol addresses to try to see whether a customer is in a particular tax jurisdiction, some try bank addresses, while others require social security numbers[5].

VII.　CONCLUSION

M-commerce has made life easy and fast. E-payments has made businesses much closer by just hitting a single key. Newer technologies are coming up day by day. Every new one tries to overcome the limitations of the previous one , but along with that brings new challenges and threats. A regulatory forum is supposed to be established so that consumers can enjoy a secure and reliable internet access on their phones. Perfectness is difficult to attain but not impossible.

VIII.　REFERENCES

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