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THE IMPACT OF M-COMMERCE IN BUSINESS OPERATIONS

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ABSTRACT

Twenty first century is a digitization, networking and information-based era. Mobile and wireless communication technologies have enabled the provision of innovative services for individuals, organizations and society, while at the same time they have spawned a superabundance of research opportunities. Mobile e-commerce is a trend, getting rapid development and a wide range of applications because of its flexible, simple, convenient, as well as the advantages of anytime and anywhere. Unlike e-commerce, m-commerce is more personalized and there is a need for a novel approach to evaluating m-commerce applications. According to independent research findings, m-commerce, the conducting of business and services over portable, wireless devices, plays a dominant force in business and society. The viability of these projections depends on the power of the underlying technology drivers and the attractiveness of m-commerce applications. To compete in a marketplace dominated by wireless devices, businesses must devise effective m-commerce strategies. Building successful strategies begins by recognizing the forces driving m-commerce's emergence. Mobile technology innovations have allowed organizations to expand the way they conduct business. Organizations are increasingly leveraging the unique value propositions of mobile business in terms of convenience, ubiquity, unison, and personalization to improve business performance and support their value chain activities. This article addresses the following research questions: (i) How does m-commerce create value for organizations? and (ii) What are the organizational impacts of m-business?

KEYWORDS: Mobile Commerce, Mobile Business, Wireless Device, Mobile Technology

INTRODUCTION

Mobile Commerce is the subset of e-commerce, which includes all e-commerce transactions, carried out using a mobile (hand held) device. There is tremendous opportunity for mobile technologies based business models to explore the market around the rural poor, and translate it into a business opportunity to serve around 75 million rural population in the country. Unlike the e-commerce based business models, mobile technology based businesses can overcome barriers of literacy, availability and cost. The new mobile devices are feature rich and user friendly. The mobile service charges are at an all time low in India compared to the world, enabling even the low-income groups to own and operate mobile phone.

Mobile Commerce can be described in simple words as, 'business transactions that are made via mobile devices'. There are a plenty of mobile commerce applications on the industry so far with which we are getting benefited in many ways. Applications that favor mobile banking, Mobile payment, location maps, news, mobile shopping, ticketing and mobile file sharing are on the higher demands, as for now. The high availability of mobile phones, which is greater than

that of the computers in most countries, is leading to conception of new, innovative mobile services, which are collectively described as M-Commerce.

The use of mobile technology has become widespread with astonishing speed all over the world. The more mobile phones go to the hands of people who formerly lacked access to financial services, the more the notions of mobile money, mobile payment and mobile banking become pervasive as a means of financial inclusion.

REVIEW OF LITERATURE

According to Tiwari, Buse, & Herstatt (2006), "M-commerce is directly linked to electronic commerce (e-commerce)". Saidi (2009), in his research focuses that e-commerce provides "anytime" access to online services, whereas m-commerce potentially allows users to perform online transactions "anytime and anywhere. According to Benou & Vassilakis (2010), the use of innovative wireless devices such as smart phones and personal digital assistants (PDAs) is widespread and facilitates access to critical information and electronic transactions ubiquitously. According to European Information Technology Observatory (EITO) the total amount of revenues generated by Mobile Internet and Mobile Content services, combined together, were reported to be less than €19 million in the whole of Western Europe in 2001 [EITO, 2002]. Just 2 years later the revenues in Germany alone had registered an impressive growth to reach €280 million [EITO, 2004]. The M-Commerce turn-over in Great Britain was reported to be €212 million, in France €127 million in the same year [EITO, 2004]. The reasons for these developments can be traced back mainly to technology innovations, e.g. faster data transmission technologies and better mobile devices that are equipped with improved computing capacity, enhanced data storage and better user-interface.

THE FEATURES OF M-COMMERCE

M-Commerce is characterised by some unique features that equip it with certain advantages against conventional forms of commercial transactions, including E-Commerce [Müller-Veerse, 2000; Buse, 2002]:

- **Ubiquity:** Ubiquity means that the user can avail services and carry out transactions largely independent of his current geographic location ("anywhere" feature). This feature can be useful in many situations, e.g. to cross-check prices while standing in a supermarket or while one the move.
- **Immediacy:** Closely related to the feature of ubiquity is the possibility of real-time availment of services ("anytime" feature). This feature is particularly attractive for services that are time-critical and demand a fast reaction, e.g. stock market information for a broker. Additionally, the consumer can buy goods and services, as and when he feels the need. The immediacy of transaction helps to capture consumers at the moment of intention so that sales are not lost in the discrepancy between the point of intention and that of the actual purchase.
- **Localisation:** Positioning technologies, such as the Global Positioning System (GPS), allow companies to offer goods and services to the user specific to his current location. Location based services can be, thus, offered to meet consumers' needs and wishes for localised content and services.
- **Instant Connectivity:** Ever since the introduction of the General Packet Radio Service (GPRS) mobile devices are constantly "online", i.e. in touch with the network ("always-on" feature). This feature brings convenience to the user, as time-consuming dial-up or boot processes are not necessary.

- **Simple Authentication Procedure:** Mobile telecommunication devices function with an electronic chip called Subscriber Identity Module (SIM). The SIM is registered with the network operator and the owner is thus unambiguously identifiable. The clear identification of the user in combination with an individual Personal Identification Number (PIN) makes any further time-consuming, complicated and potentially inefficient authentication process redundant.
- **Convenience:** The small size and ease of use of mobile receivers, coupled with freedom from problems caused by infrastructure, makes for a higher degree of user convenience.

BUSINESS MODEL OF M-COMMERCE

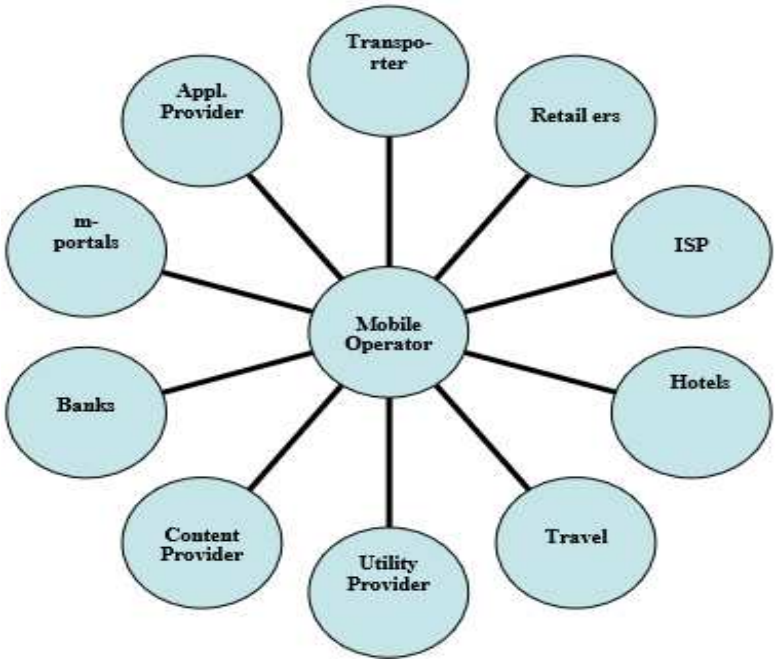

Figure 1: M-Commerce: The Service Providers Web

The 3G (Third generation networks) mobile services include video calls, transfer of video images, m-portals, retail goods sale, micro payments, m-banking, location based services etc. The business model of m-commerce places the mobile operator at the hub and other service providers reach mobile users through this hub. The service provider gamut includes banks, mobile operators, retailers, content providers, small and large business enterprises, application developers, hotels, travel etc. The application developers or aggregators develop m-portals, m-games, translate content suitable to mobile downloads etc., and are a major link between content industry and mobile operators. Presently in India the content services are being offered through m-portals of aggregators or of mobile operators.

However the GPRS (Global Packet Radio Switching) and MMS (Multimedia Messaging Services) are being offered directly through operators. For all transactions through mobile, payments are primarily made by the mobile operator who later recovers the amount with some additional service charges from the user in his monthly bill.

M-COMMERCE APPLICATIONS

In the following, we present a brief overview of diverse m-commerce applications.

Table 1

M-Commerce Applications	
Application	**Examples of Offered Services**
Mobile Banking	• Mobile Accounting • Mobile Brokerage • Mobile Financial Information
Mobile Entertainment	• Mobile Gaming • Download of Music and Ring Tones • Download of Videos and Digital Images • Location-based Entertainment Services
Mobile Information Services	• Current Affairs (Financial, Sport and other News) • Travel Information • Tracking Services (Persons and Objects) • Mobile Search Engines and Directories • Mobile Office
Mobile Marketing	• Mobile Couponing • Direct (context-sensitive) Marketing • Organisation of Mobile Events • Mobile Newsletters
Mobile Shopping	• Mobile Purchasing of Goods and Services
Mobile Ticketing	• Public Transport • Sport- and Cultural Events • Air- und Rail-Traffic • Mobile Parking
Telematics Services	• Remote Diagnosis and Maintenance of Vehicles • Navigation Services • Vehicle Tracking and Theft Protection • Emergency Services

BENEFITS OF MOBILE COMMERCE TO BUSINESS ORGANISATION

M-commerce is connecting businesses with their clients on their mobile devices. M-commerce is huge; everyday it is becoming a larger slice of total sales recorded. M-Commerce serve as beginning points for managers to explore how their organizations can use wireless technology to achieve competitive advantage. Illustrated below are the benefits of Mobile Commerce:

- **Achieving Greater Business Efficiency:** Mobile applications available today can also help companies achieve greater efficiency in carrying out B2B commerce. Using notification and monitoring applications, companies can keep track of the fulfillment side of the B2B equation. In a speed-conscious, constantly changing world, these technologies offer huge cost savings over the traditional communication method of gathering groups of employees in a room to explain the changes in person.
- **Customization:** The service provider has access to data about the user's preferences and status which facilitates better, personalized service. In addition, the service provider can be constantly updated about the current status and location of the customer so that the service can be customized; for instance, a request for a certain product can be met with the nearest possible source.
- **Online Trading of Goods and Services:** M-Commerce helps the organizations with the means to buy the goods and services from suppliers and to deliver essential information to the management at anytime and anywhere. And also it improves the customer services by bringing the products and services directly to the customers.

This technology allows instant communications with both customers and employees.

- **Decision Making**: M-Commerce allows employees to access real-time data to make timely decisions and actions. Better visibility of costs and expenditures, which leads to more financially responsible decision-making.
- **Increasing Productivity:** The productivity aspect of businesses will certainly witness enhancement with mobile commerce. It is not possible for an employee of a concern to sit for 24X7 hours in office and at any time, any instant he would have to leave his office. But, it is not assured that whether the work is done properly or not. With m-commerce solution, this sort of issues can be over dealt resulting to productivity/sales enhancement.
- **Pro-Active Functionality:** M-Commerce opens, by the virtue of its ability to be immediate, local and personal, new avenues for push-marketing, such as content- and product offers. Services like “Opt-in advertising" can be offered, so that a user may choose the products, services and companies, which he wants to be kept informed about. The Short Message Service (SMS) can be used to send brief text messages to consumers informing them of relevant local offerings that best suit their needs. This feature ensures that the “right” (relevant) information can be provided to the user at the “right” place, at the “right” time.

USING M-COMMERCE TO IMPROVE BUSINESS PROCESSES

Mobile technology could enable businesses to react quicker, improve employee communication and help to simplify business processes. Even the smallest business could provide mobile workers with interactive access to company information relevant to their work via mobile phones, PDAs and other Web-enabled devices. Sales people could quickly and easily find information on a particular customer e.g. order history, from a PDA or mobile phone while on the way to the customer.

Mobile Commerce Solutions enable organizations to extend the knowledge systems within the organization to wherever they are needed in the field. The resulting benefits include:

- Empower field personnel to be more effective in decisions and activities.
- Enable easy editing and management of transaction data.
- Increase accuracy of account status through on site data entry.
- Reduce administrative cost and time by eliminating paperwork.
- Generation of timely updates on transaction information.
- Immediate storage and manipulation of current information in HQ.
- Ease and portability of data away from the office
- Access to field status information at close of every business day.
- Reduced Transport costs and risks of document transfer.
- Empowered decision-making due to better appreciation of current status.
- Risk and Exposure identified, isolated and acted on faster.

LIMITATIONS OF M-COMMERCE

- Efficient and fast wireless telecommunications services are often focused within specific area.
- Weak processors, limited memory, tiny screens, poor resolutions, poor data entry are main Device Constraints.
- While WAP has been a very important in the evolution of the wireless Internet and in turn m-commerce, there are problems/difficulties with the standard, such as the lack of WAP-enabled devices and security issues.
- Wireless Mobile Internet access more costly than wired Internet access.
- Concerns over privacy and security still pervade the wireless data transmission world.
- Many individuals and organizations still harbor concerns over the health issues of wireless technology.
- User adoption and experience, mainly related to security, privacy, trust, fraud and risk perception.
- Business model problems arising from restrictions and complexity including obstacles to adoption and the need for an ecosystem with multiple operators and relations.

RECENT TRENDS IN M-COMMERCE

Cloud-Based Mobile Payments

Google, PayPal, GlobalPay and GoPago use a cloud-based approach to in-store mobile payment. The cloud based approach places the mobile payment provider in the middle of the transaction, which involves two separate steps. First, a cloud-linked payment method is selected and payment is authorized via NFC or an alternative method. During this step, the payment provider automatically covers the cost of the purchase with issuer linked funds. Second, in a separate transaction, the payment provider charges the purchaser's selected, cloud-linked account in a card-not-present environment to recoup its losses on the first transaction.

Electronic Wallet

Analysts believe that easy mobile payment is one of the main prerequisites for the success of m-commerce, when the mobile phone can function as an electronic wallet for mobile payments, including micropayments, application developers and service providers will find it attractive to introduce new mobile communication services to the market.

Case Study 1

Karmaloop a leading online retailer for street-wear in the U.S. had rolled out a mobile commerce application for their consumers, to shop from anywhere, anytime. The mobile app offers Karma loop’s entire amazing mix of over 500 brands for men and women. The application lets consumers browse through the products (clothing, accessories, footwear etc.) and purchase products online via Mobile Web, iPhone App and Android App. This application is available for free on iTunes and Google Play Store. The Mobile Web version is built using HTML5 and is platform agnostic. With the introduction of M-commerce for their products the sales for the company improved by 36%.

Case Study 2

Avenue Stores, a specialty retailer with five-hundred stores that caters to women wearing apparel sizes 14 or larger, reported a 6,600% ROI from sending MMS coupons and promotional content each week to customers.

The average open rate of the MMS campaign was 97%, and the subscriber database has continued to grow at a rate of 30% month over month.

CONCLUSIONS

This paper has attempted to provide a comprehensive picture of the M-Commerce Applications, Benefits and Improvements in Business Operations by using Innovative Mobile Services. And at the same time, some issues, limitations and obstacles also there in M-Commerce. Hence, Pro-active rather than reactive public policy and regulatory initiatives are needed in India to fully utilize the opportunities offered by mobile technologies and facilitate an exponential growth of this sector.

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