Mobile Advertising: A Revolutionary Method of Business to Consumer (B2C) Communication for promoting M-Governance

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ABSTRACT

Internet has become a popular medium for advertising over past few years. Using internet e-business communication objectives are achieved by means of web banners, sponsorships, pop-ups/pop-downs, interstitials, push technology and hyperlinks. Through e advertising, advertisers have attempted to meet one or a combination of their communication objectives. Creating awareness on the Internet, of either a company or new product, is much easier and cheaper than exploiting other types of traditional media. Although it is a much cheaper alternative of advertising for companies with limited budget, it is not a widely accepted mean because number of personal computer users with Internet connectivity is limited in developing countries like India. Therefore, other effective methods of advertising are required. Use of Mobile technology for advertising seems a viable option as number of mobile users is increasing swiftly moreover Mobile technology is developing constantly, which attracts both advertisers and customers and use of mobile technology for advertising is referred to as Mobile Advertising. In this paper we present a enabling advertising technology, which uses wireless medium for transmitting content using audio, short message service (SMS) messages, e-mail, multimedia messaging (MMS), cell broadcast, picture messages, surveys, or any other content for communication about a product or company. We analyze this idea from user's perspective and we also present framework of such a system and explore feasibility of its possible integration with existing advertising techniques for promoting m-Governance.

Keywords: m-Governance, Mobile Advertising, CSF, Technology Acceptance Model, Multimedia.

1. Introduction

m-Government" or mobile-Government is defined as extending the concept of government further to the delivery of information and/or government services to the doorstep of the citizens in a personalized way (Sundar, Garg 2005). The factors influencing the shift from e-government to m-government activities comprise of the advances in mobile telecommunication services and rapid changes in the technological infrastructure. Mobile devices, always with the user, enable government information to be reached from more places, extending the reach of the Internet. We have witnesses a huge rate of mobile device penetration, convergence of wired Internet and wireless telecommunication networks, and the move towards 3G to 3.5 G services and much higher data transfer rates. Factors that form a strong foundation for

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the governments to shift to and build their mobile services are mobile device penetration, the emergence of mobile Internet, Mobile Net applications and services.

Possible m-Government Application Areas are:

- Notifications by civic authorities
- Payment of utility bills
- Support to government healthcare and education information campaigns
- General access, submissions of service requests, complaints etc. by the citizens
- Notifications/alerts for payment of taxes
- Broadcasting of critical information regarding traffic condition and other events etc.
- Crisis/Disaster management

Acceptance of any new technology is directly related to the way it is marketed, so in this paper we have tried to explore the use of Mobile Advertising for promoting m-Governance. Mobile advertising has emerged as a pioneering technology and it has raised considerable interest of the researchers as mobile technology has advanced and companies world-wide are starting to use not only text messages, but also multimedia Messages in their mobile commercial communication. Advertising is defined as "the distribution of any kind of message or promotion that adds value to the customer while enhancing revenue for the firm" (Kalakota, & Robinson 2002). Moreover, the term mobile commerce or Mobile Advertising is sometimes used when referring to message distribution, although commerce generally refers to all the actions of doing business (Barnes, 2002b).

Mobile advertising has emerged as the one of the most important field in wireless data today because of the potential it holds for shattering the fundamental cost barrier that impedes mainstream adoption of wireless data services. Consumer Internet usage skyrocketed in the 90s because the industry solved two key problems that hindered adoption, namely user experience and business model. In terms of business model, advertising played a critical role in driving the mainstream adoption of PC-based Internet services. It eliminated the cost barriers associated with access while concurrently enabling content providers to build enormously lucrative businesses based on free content. It is highly justified to believe that using mobile advertising will have the same catalyzing affect for the wireless data industry that non-mobile advertising techniques had for conventional advertising industry.

Consequently, many analysts had forecasted that advertising on a wireless device would reach a new level in 2006 (Barnes, 2002a) but today's mobile advertising solutions still fail to solve the user experience and business model issues that stand in the way of widespread wireless industry acceptance of mobile advertising (Barwise & Strong, 2002) (Gupta, Kumar and Bhattacharya 2004). Even though rudimentary forms of mobile advertising such as WAP banners and event oriented SMS campaigns have been around for many years, these solutions still fail to capture the confidence and imagination of advertisers as well as of the customers. Both WAP and SMS fall short in delivering an impressive and device interconnected user experience because of the unyielding usability problems of WAP and consumer dissatisfaction with unauthorized SMS charges. This highlights the need to look for better options and then foresee the value that mobile advertising can offer to subscribers, content and media brands, advertisers and mobile network operators. Because of these enduring issues, advertising on wireless devices continues to be relegated to an advertising mechanism that do not provide the flexibility and longevity that most content provider and media brands are used to offering their advertisers (Denk & Hackl 2004). And even more concerning is the fact that wireless data continues to be a niche market for corporate users, high-income mobile professionals, and early adopters able to pay the premium fees for enjoying wireless data. Although the situation appears bleak, numerous companies ranging from content and media brands to technology enablers, like Action Engine, have now set their sights on solving the user experience and business model

issues that sit at the crux of the mobile advertising conundrum. The wireless industry is currently in the midst of a massive transformation that is bringing to existence new and more effective approaches to mobile advertising.

This paper presents new market developments that are essential for effective mobile advertising; In addition, we propose a framework for one such system and see its feasibility in its possible integration with existing systems.

2. Mobile Marketing

Mobile Marketing refers to one of two categories of marketing. First, and relatively new, is meant to describe marketing on or with a mobile device, such as a mobile phone. Second, is meant to describe marketing in a moving fashion - for example - technology road shows or moving billboards. Marketing on a mobile phone has become increasingly popular ever since the rise of SMS in the early 2000s in Europe and some parts of Asia when businesses started to collect mobile phone numbers and send off wanted (or unwanted) content (Oksman & Turtiainen, 2004).

Over the past few years SMS has become a legitimate advertising channel. This is due to the fact that unlike email over the public internet, the carriers who police their own networks have set guidelines and best practices for the mobile media industry (including mobile advertising). The IAB (Interactive Advertising Bureau) and the MMA (Mobile Marketing Association), have established guidelines and promoting the use of the mobile channel for marketers Mobile Marketing via SMS has expanded rapidly in Europe and Asia as a new channel to reach the consumer. SMS initially received negative media coverage in many parts of Europe for being a new form of spam as some advertisers purchased lists and sent unwanted content to consumer's phones; however, as guidelines are put in place by the mobile operators, SMS has become the most popular branch of the Mobile Marketing industry with several 100 million advertising SMS sent out every month in Europe alone. Over the past few years mobile short codes have been increasingly popular as a new channel to communicate to the mobile consumer. Brands have begun to treat the mobile shortcode as a mobile domain name allowing the consumer to text message the brand at an event, in store and off any traditional media (Facchetti, Rangone, Renga & Savoldelli 2005).

All the SMS services need to be run off a short code. These are 5 or 6 digit numbers that have been assigned by all the mobile operators in a given country for the use of brand campaign and other consumer services. The mobile operators analyze every application before provisioning and monitor the service to make sure it does not diverge from its original service description (Barwise & Farley 2005) . One key criterion for provisioning is that the consumer opts in to the service (Barnes, & Scornavacca 2004). The mobile operators demand a double subscription from the consumer and the ability for the consumer to opt out of the service at any time by sending the word STOP via SMS or by using DO NOT DISTURB SERVICE, which is provided by many mobile service providers.

Mobile Marketing via MMS

Brands are delivering promotional content such as mobile music to mobile games to drive consumer engagement. This mobile content is delivered via MMS (Multimedia Message Service) (Denk & Hackl 2004). Brands are also leveraging consumer generated content, a good example of this is Motorola ongoing campaigns at House of Blues venues where the brand allows the consumer to send their mobile photos to the LED board in real-time as well as blog their images online.

Mobile Marketing via Bluetooth

The rise of Bluetooth started around 2003 and a few companies in Europe have started establishing successful businesses. Most of these businesses offer "Hotspot-Systems" which consist of some kind of

content-management system with a Bluetooth distribution function (Dholakia & Dholakia 2004). This technology has the advantages that it is permission-based, has higher transfer speeds and is also a radio-based technology and it can not be billed and it is free of charge.

Mobile Marketing via Infrared

Infrared is the oldest and most limited form of Mobile Marketing. Some European companies have experimented with "shopping window marketing" via free Infrared waves in the late 90s. However, Infrared has a very limited range (approx 10cm - 1m) and it follows line of sight and could never really establish itself as a leading Mobile Marketing technology.

User Controlled Media

Mobile marketing differs from most other forms of marketing communication in that it is often user /consumer initiated, called Mobile Originated (MO) message, and requires the express consent of the consumer to receive future communications. A call delivered from a server/business to a user/consumer is similarly called a Mobile Terminated (MT) message (Barwise & Farley, 2005). This infrastructure points to a trend set by mobile marketing of consumer controlled marketing communications.

3. Driving Factors of M-Advertising System

Mobile advertising provides an approach for bridging the gap between a mobile network operator's objective of making money from content and a content provider's objective of offering that content free. Considering the digital services and internet access consumers enjoy today, advertising is responsible for enabling consumers to enjoy a rich plethora of services without additional costs beyond what they pay for data access, In effect, consumers are habituated to expect that they will receive access to a basic set of services without additional charges. The content and media industry has built a business model around this very premise in an attempt to make their services universally accessible to anyone with a TV or Internet connected PC (Oksman & Turtiainen, 2004). Content and media brands want to apply this same business and customer relationship model to mobile devices so they don't have to re-educate subscribers on how to access their services when they are on the go. Figure I shows a model depicting various mobile advertisement services.

An Analysis of Critical Success Factors (CSF)

One of the most important factors that determine the usability and acceptance of any technology is Users Perception and it is best described by Technology Acceptance Model (TAM) (Gupta, Kumar and Bhattacharya 2004), various driving factors are Perceived Usefulness, Perceived ease-of-use, Feasibility (Sadaf, 2006). Thus, there should be an optimization of these factors for successful deployment of mobile advertising

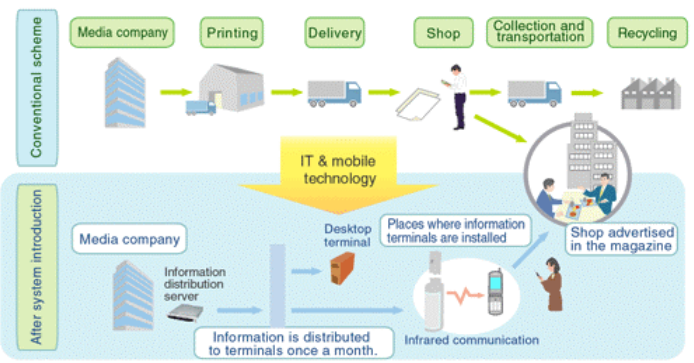

Figure 1: Model for Mobile Advertising Service *(Source: www.nec.co.jp)*

Consumers become infuriated when they perceive that the information they want is delayed because the application is downloading a full screen advertisement. These negative perceptions only serve to undermine a service provider's efforts for successfully introducing mobile advertising inside of an on-device application (Barwise & Strong, 2002) (Kalakota, & Robinson 2002), there are three approaches for incorporating advertisements into the natural flow of the application's user experience (Barwise & Farley, 2005).

Filling Gaps: Most on-device applications already have unused screen real estate and temporal space. A subscriber's eyes are naturally focused on these spaces because they are eagerly awaiting a response from the application (Facchetti, Rangone, Renga & Savoldelli 2005). This space is a prime location for conveying advertising messages without disrupting the natural flow of the application. Rather than leaving this space blank research shows that subscribers are open to having these gaps filled with something relevant to them

Offline Advertising inside the Application Body: Advertisements can be embedded into the actual user interface of the application in such a way so as not to monopolize valuable screen real estate or degrade user interface responsiveness. The advertisements are stored locally on the device and updated periodically using an insertion and rotation engine resident on the device.

Results-based Advertising: Many on-device applications enable subscribers to make selections offline so that the results that are retrieved from the network are more personalized and relevant (Kalakota & Whinston, 1996). A server-based advertisement inventory and insertion engine has the ability to insert an advertisement directly into the personalized results before it is sent to and stored on the subscriber's device. Research shows that consumers will more readily accept advertisements in this manner if the advertisement is relevant to the information they are seeking. Moreover, delays in receiving advertisements of this nature can be unperceivable by the subscriber when the platform being used has been purpose built to optimize network usage.

Splash screens, interstitial screens and carefully placed ad spots within the application body or inside a result page provide an unobtrusive method by which to incorporate advertising into applications such that the overall application experience is not interrupted or degraded by the presence of advertising.

Application Ongoing M-Governance Projects in India and Abroad:

- The online Grievance Redressal Tracking System (OGRTS), Ranga Reddy district, Andhra Pradesh, India
- Income Tax Department, Government of India
- TXT CSC: SMS Service for the Philippines Civil Service Commission
- Colorado State patrol , Public safety agency in NY
- The mobile student Program (USA): m-Government in Education
- District level m-government services model of China
- M-Government and Health care for elderly in Sweden

A mobile framework can use any wireless communication protocol and application environment like GSM, WAP, WLL etc. for streaming multimedia data to and from mobile devices and this scheme can be exploited in using it for Mobile Advertising. Here the contents to be advertised are uploaded onto the server of the service provider by the advertiser and then the service provider is responsible for broadcasting this information to all the subscribers or multicast this information to only those subscribers who have registered or opted for recieveing promotional messages.Using a double subscription method for broadcasting (De Reyck & Degraeve 2003) the relavant information to the concerned users is the best

option as it will definately enhance the level of user satisfaction by providing him higher levels of perceived usefulness and feasibility.

Indian consumers are very conservative when it comes to exploring new ways of doing things. They rely heavily on conventional methods over new method. In a typical scenario we Indian will prefer going to electricity board office to pay the bill or visit railway reservation counter than to use online payment systems for doing the same from the comfort of our homes reason being lack of awareness and poor and less effective promotional methods adopted by vendors and service providers. Customarily, any new online or mobile governance application is advertised using conventional media like newspaper of television commercial which targeted users fail to notice very often. e-Advertising also fails here as most of the online advertisements fall in Junk Mails and they are pre-filtered thus going unnoticed yet again. If operator specific/non-specific m-Advertising is used in this scenario, wherein information related to any new application or service is advertised using broadcasting or multicasting to all/few mobile subscribers, the desired information will reach the potential user in an efficient and cost effective way.

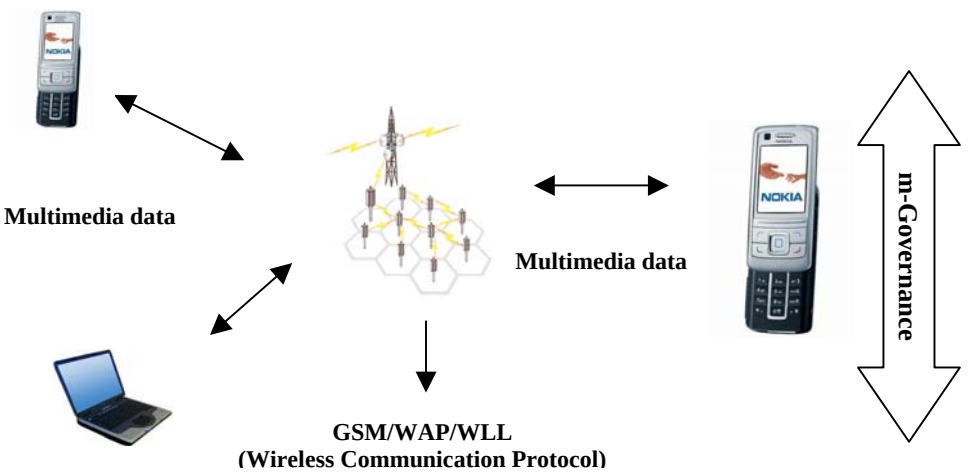

Figure 2: Functional Framework of Mobile advertising

4. Concluding Remarks

In this paper we have presented a pioneering advertising technology, which uses wireless medium for transmitting multimedia content over a wireless link, using wireless communication protocols like GSM, WLL or WAP. We have also illustrated a framework of such a system with all the components. If such a system is integrated with all the existing marketing and advertising media, it can revolutionize the entire system to buying and selling products and applications by promoting new goods, applications and services giving consumer an splendid shopping/transaction experience.

References

1. Barnes, S.J. (2002a). The mobile commerce value chain: analysis and future developments, *International Journal of Information Management*, Vol. 22. No. 2, 91-108.
2. Barnes, S.J. (2002b). Wireless digital advertising: nature and implications. *International Journal of Advertising*, Vol. 21, 399-419.
3. Barnes, S.J. & Scornavacca E. (2004). Mobile marketing: the role of permission and acceptance. *International Journal of Mobile Communication*, Vol. 2. No. 2, 128-139.
4. Barwise, P. & Farley, J.U. (2005). The state of interactive marketing in seven countries: interactive marketing comes of age. *Journal of Interactive Marketing*, Vol. 19. No. 3, 67-80.

5. Barwise P. & Strong, P. (2002). Permission-based mobile advertising. *Journal of Interactive Marketing.*Vol 16. No. 1, 14-24.
6. De Reyck, B. & Degraeve, Z. (2003). Broadcast scheduling for mobile advertising. *Operations Research*. Vol. 51. No. 4, 509-517.
7. Denk, M. & Hackl M. (2004). Where does mobile business go? .*International Journal of Electronic Business*, Vol. 2. No. 5, 460-470.
8. Dholakia, R.R. & Dholakia, N. (2004). Mobility and markets: emerging outlines of m-commerce *Journal of Business Research*, Vol. 57. 1391-1396.
9. Facchetti, A., Rangone, A., Renga, F.A. & Savoldelli A. (2005). Mobile marketing: an analysis of key success factors and the European value chain. *International Journal of Management and Decision Making*, Vol. 6. No. 1, 65-80.
10. Gupta M.P, Kumar P. and Bhattacharya J. (2004), *Government Online: Opportunity and Challenges*, New Delhi. TMH.
11. Kalakota, R. & Robinson M. (2002). *M-business: The Race to Mobility*, New York. McGraw-Hill.
12. Kalakota, R. & Whinston, A.B. (1996). *Frontiers of Electronic Commerce*, New York. Addison-Wesley.
13. Oksman V. & Turtiainen, J. (2004). *Mobile communication as a social stage*. New Media & Society. Vol. 6. No. 3, 319-339.
14. Sadaf T, (2006) Voice Biometric: A tool for Secure Identification, ICEG 2006, *Technology in Government* 2006.New Delhi.
15. Tähtinen, J. & Salo, J. (2004). Special features of Mobile Advertising and their Utilization. *Proceedings of the 33rd EMAC Conference*, 18-22.5.2004.
16. D.K. Sundar ,S. Garg, (2005) M-governance : A Framework for Indian Urban Local Bodies, *EuroMGov 2005*.

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