



Mobile Service Unlimited

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Introduction

Are you a mobile phone user?? Most probably you are. Until few years ago, when your only mode of communication was your fixed phone line at home or at work, you probably used some interesting features like international direct dialing, IDD locking codes, forward your call to another phone or even a Caller ID display and you thought, you are lucky to be able to use sophisticated phone system in the world. Now that you have started to use mobile phones with all the fancy features offered by your expensive handsets, you cannot imagine a life without a mobile phone anymore.

Today, the mobile phone users are not bothered about the technology whether it is a GSM phone or CDMA phone he or she is using but all he cares about is the service it offers at affordable costs. As a result of liberalization of the sector everywhere and competition among the service providers, the users are able to enjoy many attractive services at affordable cost. Yet service providers are not stopping at that, but to stay in business and to attract new customers they are always rolling out new services.

Mobile Services

Mobile services are broadly categorized into two types, the Voice and Non-voice services. Most of us are quite familiar with the Voice services like the International dialing, Caller ID, Call forwarding, Voice Mail Service, Wake-up service etc.

The services, which are catching up, and fast gaining popularity are the Non-voice data related services. As per the global trend, voice is still the major source of revenue for operators but it is expected that, very soon revenue from non-voice services will far exceed the voice-services.

Among the services, which took off at a speed nobody in the industry expected was the SMS. For most operators, revenue generated by SMS accounts

for major portion of their total revenue. Along with simple text messaging, then came hordes of SMS related services like information services such as weather forecast, horoscope even telephone number of the nearest restaurant. Among many SMS based services, few services like bill inquiry and SMS banking has started in Nepal also and other services will also follow soon. This is only the tip of an iceberg in the world of services in the mobile communications technology.

Mobile Service Trends

With the development of networks and terminals to support more advanced data bearer technologies like GPRS, EDGE and WCDMA in GSM and EV-DO technology in CDMA 2000 1x, has allowed introduction of new exciting data related services. These technologies allow for a greater bandwidth and more capable execution environment, therefore permitting for the development of various mobile applications. The world has become increasingly computer centric and computer applications are now used for a number of tasks such as communications, financial management, information retrieval, entertainment and game playing. It is a natural progression for the user to expect these applications to be available to them on their mobile terminal.

In GSM, the introduction of higher bandwidth capability allowed for richer applications, and the packet switched nature of GPRS networks facilitated the introduction of true multimedia services such as Multimedia Messaging Service (MMS) which allow the user to send and receive messages containing pictures, images, sound and text. Also with the GPRS, it is now possible to browse the Internet, send/receive email and other data related services requiring not



very high bandwidth of data capability.

Subsequent to GPRS and MMS, with the evolution of 3G technology, users are now able to enjoy the services like streaming video, video on demand, real time video conferencing etc.

Among the services mentioned above, a Mobile Commerce Service, the Micro Payments is discussed briefly as follows;

Mobile Commerce

Mobile Commerce is the effective delivery of electronic commerce into the consumer's hand, anywhere, using wireless technology. This advance has the power to transform the mobile phone into a 'mobile wallet'. It can also be termed as E-money as popularly known these days. Already, major companies have begun to establish partnerships with banks, ticket agencies and top brands to take advantage of the retail outlet in the consumer's hand.

Micro Payments

To begin with few examples of Micro Payments;

Example 1- Purchase of goods from the store.

- * The consumer approaches the cashier and requests to pay with his mobile phone.
- * The consumer tells the cashier his mobile phone number.
- * The cashier enters the number and the amount into the cash register or the POS terminal.
- * The cash register or the POS terminal communicates with the payment system, verifies the user and initiates a call to the consumer's mobile phone.
- * The consumer answers the call. The payment system IVR reads out the receiver name and the amount. The consumer authorizes the payment by typing his 4 digits PIN into his phone.
- * The cashier receives the confirmation via his cash register or POS terminal. The consumer is notified via SMS.
- * The payment system handles the processing with the financial networks.
- * The consumer makes the actual payment together with his mobile phone bill or is deducted from his prepaid account balance.

Example 2 - Purchase of things from a vending machine.

- * The consumer sends an SMS to a specified number which is displayed on the vending machine.
- * The vending machine system communicates with payment system to validate mobile number, pay-

ment limit and wallet status.

- * The vending machine releases the product.
- * The consumers are billed through his mobile phone bill or from the prepaid account balance. These are only few examples of Micro Payment system. The applications maybe unlimited.

Definition

A micro-payment is defined as a low cost transaction (typically ranging from a few rupees up to Rs. 1000 ~ 2000), for a physical item bought or downloaded/recorded onto a mobile device and paid in a cash equivalent, i.e. a prepaid phone account, stored value account or phone bill. In simple words, phone users can make small purchases for which he/she will pay for through his/her phone bill or the prepaid account balance in his phone.

As per a white paper published by Mobile Commerce Interest Group (MCIG) of GSM Association (GSMA), the market analysts predict significant revenue streams from micro and macro payments. According to the estimates, the value of micro payments business will reach Euro 5 billion by 2005 which was only about Euro 424 million in 2002. From the rate of rise of the volume, the huge potential of the business is obvious.

Micro-payments offer the operators the opportunity to generate new sources of revenue. Mobile Operators are well placed to provide micro-payment services because they have well established customer base, billing systems and simple authentication techniques which other sectors are currently unable to provide globally. However, other players like Financial Service Providers, Network and Payment Infrastructure providers, Terminal Device vendors, Internet Portals, Merchants, etc. are also seriously looking at their options.

The success of m-commerce services will largely depend upon the customer's confidence in the security and integrity of financial transactions envisaged and the attractiveness and ease of use of service offerings. Operators have core competencies that make micro-payments an attractive proposition; however, there exist a number of technical, commercial and legal challenges, which must be overcome if they are to compete effectively with the competition that will emerge from other sectors.

Some operators in the west currently provide localized micro payment services like parking, ticketing, vending etc., however, the scope to extend these services in a cross border environment is limited due



to the adoption of proprietary solutions with different interfaces and the absence of a standard merchant management tier to handle the 'many to many' relationships that will emerge.

Legal & Regulatory Issues

While it is accepted that mobile operators can play a major role in providing and facilitating micro-payments, such activities make operators more vulnerable to additional financial services regulation. As a general rule, the more functions an operator decides to fulfill, the more regulation tends to be imposed.

Risk Management

The adoption of operator based micro-payment services potentially exposes GSM security vulnerabilities to greater attack on for example, algorithms resulting in higher instances of SIM cloning. While mobile operators have developed unique fraud management capabilities, their general risk management skills, particularly in dealing with non-telephony products and third parties, e.g. content/service providers/merchants, is somewhat limited. The challenge for micro-payment providers will therefore be to create a balance between reducing fraud risks, generating revenue and minimizing customer dissatisfaction.

Roaming Service

In GSM, obviously international roaming is one of the key features of its success story. Therefore, the Micro-payment system shall also be not limited to national boundaries but will certainly cross the border limits by making the service available while roaming in other networks as well. However, this is still in a very immature stage as operators do not currently have an intermediary platform solution (like the financial sector's credit card model) for settling between the many to many relationships that micro-payments will bring. Operators & Clearing houses will also need to review Micro-payment billing requirements including the need for greater data exchange frequency.

Conclusion

Considering the global trend and also government's efforts to promote and develop IT sector in Nepal by the formation of High Level Commission for Information Technology (HLCIT), who recently organised a workshop on topics of E-Commerce and E-money. If the government is able to bring out adequate policies and regulation in this field, the Micro-payment system may not be very far away anymore. ☺

Management Glossary

- * **Avoidance learning** : Learning that occurs when individuals change behaviour to avoid and escape unpleasant circumstances
- * **Brainstorming** : Decision making problem solving technique in which individuals or group members try to improve creativity by spontaneously proposing alternatives without concern for reality or tradition.
- * **Bureaucracy** : Organization with a legalized formal and hierarchical structure.
- * **Career plateau** : Career stage in which the likelihood of additional hierarchical promotion is very low.
- * **Charismatic leaders** : Leaders who, through personal vision and energy inspire followers and have a major impact on their organizations
- * **Profit center** : Organizational unit where performance is measured by numerical difference between revenue and expenditure.
- * **Risk** : Decision making condition in which managers know the probability a given alternative will lead to a desired goal or outcome.
- * **Stakeholders** : Those groups or individuals who are directly or indirectly affected by an organization's pursuit of its goals.
- * **Turbulence** : Decision making condition that occurs when objectives are unclear or when the environment is changing rapidly.
- * **Whistle blowing** : Alerting management to decisions, policies or practices that may be ill advised, detrimental, or illegal, can include publicizing such matters outside the organization.