

Towards Payment Solutions for Mobile Commerce

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Mobile commerce presents opportunities for operators to increase revenue through selling more products and services, generating more transaction commissions, and increasing network traffic. Mobile commerce will require new payment solutions to make it easier for customers to add credit to their account and to purchase goods using their mobile phones.

Why Mobile Commerce?

Mobile commerce means the purchases of goods or services charged against the mobile account or to an external payment body. It creates an alternative money transfer system which is easy and convenient for customers, and does not rely as heavily on established banking infrastructure. Some applications of mobile commerce will enable customers to conduct banking transactions without having a bank account, for example bill payments, funds transfer. As such, it represents an exciting growth area, particularly in markets where there may be less existing infrastructure, or where customers have low uptake of banking services.

Mobile payment includes "hard", "soft" and distance commerce:

Hard commerce is the activity of buying goods or services at the physical point of sale. This can be done through either manual or automatic transactions. The transaction is manual if there is a vendor, or automatic if there is no vendor, i.e. purchasing from a machine. Examples of hard commerce transactions are paying for pizza deliveries, shopping, using parking meters or buying items from vending machines.

Soft commerce is the activity of buying digital goods to be used on the mobile phone, for example ringtones and icons.

Distance commerce is the activity of buying physical goods or services for later delivery. Examples of this are online shopping and paying utility bills.

The greatest proportion of mobile commerce transactions are likely to be a large number of small payments, i.e. parking meters and public transport. The most profitable areas, according to Arthur D Little, will be mobile insurance, mobile gambling, and transportation/ticketing. The biggest growth markets with a high ratio of pre-paid customers are China, Indonesia and South America.

A growing use of mobile payments is international remittances. Money transfers from migrants in developed countries, to friends and family in their country of origin, are done by people who often have lower access to banking services, and so are a target demographic for mobile payment solutions. It is also expected that these international remittances will cost less for customers than traditional means via banks or post offices.

For example, according to the Informa Telecoms and Media report "Global Mobile Prepaid Strategies 6th Edition" (2006), Globe Telecom in the Philippines has taken advantage of the high pre-paid SMS penetration to launch a non-banking payment service to transfer money internationally, where all transactions are conducted by SMS, and the operator earns revenue on a per transaction basis and based on SMS traffic.

Mobile payments can be also used for:

- Purchasing goods and services

- Micro-loans
- Tax payments and other bill payments
- Peer-to-peer e-money transfer
- Remote prepaid re-loading
- Donations.

The benefits of mobile commerce include making purchasing easier for consumers, by removing the need for cash (i.e. vending machines, parking meters), or by providing another means of making online purchases, useful if customers don't feel secure using their credit card, or don't have one. It provides an alternative form of payment using a device the customer is familiar with. Mobile payments remove the need for customers to have a bank account, allowing more flexible payment options, whether for shopping or purchasing services, in countries where there is not a widespread or well-established banking infrastructure. In any cases, mobile payments are well suited for micro-payments below 10€.

The mobile commerce market is not yet mature, and as such it has not reached profitability. Drawbacks include a lack of interoperability, and slow uptake with an older generation of customers.

However, mobile commerce will allow merchants to gain a competitive advantage if they are early adopters. Mobile commerce could increase sales, and may also reduce the impact of credit card fraud. Customers will benefit from the high potential for ease of use and greater security.

What role for operators in m-commerce?

Mobile operators are well-positioned to take advantage of the huge potential for mobile commerce. Operators have established relationships with a large customer base, which trusts the operator to deliver the core communication service. Mobile commerce can be delivered either to pre-paid customers, where the payment required is deducted from existing pre-paid credit, or to post-paid customers; where the payment is added to the monthly bill.

Mobile commerce will allow operators to leverage off their existing infrastructure, as the payment systems and methods for receiving payment are already in place. Pre-paid customers are familiar with recharging their prepaid accounts, and both groups of customers could theoretically have access to a "Stored Value Account" product, which would enable the customers to engage in mobile commerce activities.

Operators can move forward to mobile commerce, whether through providing the basic transmission network, and/or the payment mechanisms, or by becoming a virtual bank. Note that no universal legal framework exists, but depending on the country, a banking licence may be required to host a customer's Stored Value Account. The more value-added the option, the more revenue can be generated. Operators can also choose to provide an extra layer of services to their clients, whether through selling related services such as WiFi access, which could be paid for by SMS out of pre-paid credit, or by entering partnerships with third-party retail providers.

Operators can play one of three possible roles in m-commerce:

1. Provide the basic transmission network used by other parties to provide their services, e.g. mobile banking, where the mobile handset is used for contacting and effecting payment with the bank, but the transactions are controlled by the bank interface.
2. Provide the enabling technology, i.e. the payment mechanisms. For example customers may buy a premium rate service which is the passed on to the merchant by the operator.
3. Become a virtual bank, by providing direct transfer or direct-to-bill payment methods. Direct transfer consists of debiting the customer's "Stored Value Account" to pay a merchant, as done by Globe Telecom in the Philippines. This payment method targets prepaid or hybrid

subscribers. Direct-to-bill consists of aggregating purchases on the subscribers's monthly bill. This payment method targets postpaid subscribers.

Enabling the customers to transfer funds to other mobile customers, rather than simply paying merchants, has applications for international remittances and transfer of airtime credit.

The latter two methods can be provided under the operators' brand, extending the range of services provided to customers. Customers can then graduate to become customers of additional products, using the same mobile phone interface. This will increase network traffic and it will further increase revenue depending on what level of value-added services are delivered to the customers.

Regardless of whether the operator provides the service that the customer is paying for, the operator can retain value if they are involved in the charging operation – for example if they hold customers' cash, or they can provide reports or settlements.

How does m-commerce work in practice?

There are a number of different scenarios for m-commerce based on an "Stored Value Account" operating from a pre-paid platform.

Cash In

The customer puts funds into their Stored Value Account while at a physical merchant location. The customer gives cash to the merchant to add the money in the Stored Value Account. The merchant initiates the transaction. Credit is transferred from the account of the store held by the operator to the customer account. When the cash is successfully received in the account, the store and the customer are informed.

On-portal

Customers can purchase goods and services supplied by the operator. These may be core telecom services, i.e. airtime, SMS or MMS services, or they may be additional value-added services such as ringtones or handsets. The customer can initiate payment directly from their mobile phone, or using an online interface which deducts funds from the Stored Value Account. "Soft" goods are delivered immediately (i.e. ringtones), or the operator may partner with a third-party to supply physical goods.

Off-portal

This refers to purchasing any goods or services not provided through the operator's interface, i.e. online shopping on a third-party website, purchasing items in a shop, or purchasing services via SMS, typically digital content, parking tickets, or vending machine items.

To buy goods while physically located in a merchant, the customer selects goods in the store and is given the bill, and authorises payment from the Stored Value Account. In some cases this can be done by scanning the mobile phone via a device which detects the account.

Bill Payment

Paying for utilities, for example an electricity bill, can be done one of two ways. Either the customer can give cash to the merchant who will convert this into stored credit and transfer the credit to the account of the service provider, or the customer can initiate payment directly using their Stored Value Account. Once payment is completed, the payment request will be delivered to the billing system.

Peer to Peer Transfer

Customers can initiate the transfer of money from their own Stored Value Account to other customers' Stored Value Accounts.

Cash out

This allows the customer to convert part of the credit in their Stored Value Account into cash. The customer can get cash from their Stored Value Account when physically located in a store. The merchant initiates the transaction. Cash plus the relevant fee is transferred from the customers' Stored Value Account to the account of the store held by the operator. On successful transfer, the store and the customer are informed. The store then hands over the cash to the customer.

Payment Methods

The payment system behind m-commerce can either be through SMS, USSD, IVR or Web. Using SMS, the customer sends an SMS, which identifies the service and the amount to be paid, to a short code, and is given the goods/services, usually with an SMS-based confirmation.

USSD is a mobile phone interface which has a web 'look and feel', based on browsing menu options. This gives customers a great deal of flexibility and allows operators to expand the number of interactive services they offer their customers.

IVR (Interactive Voice Recognition) is the most well-known way to interact with the system to top up a prepaid credit account. It identifies the subscriber who can perform an m-payment by entering the product or service id and the amount to be paid.

Web will be the natural interface for on-portal payments. The customers will be authenticated by entering their MSISDN and PIN code. They could also potentially receive a confirmation SMS on their mobile phone to increase the overall security of the transaction.

More Recharge Options Are Required: E-retailer Management

Stored Value Accounts can be recharged through a number of different methods. In order to provide all these transaction scenarios, the challenge for operators is to provide as wide a range of payment options as possible. Also, any merchant should be able to offer payment solutions, so merchants can sell customers products and services directly.

Accordingly, retailers should look for a payment and recharge solution which offers a wide range of payment options, real-time transactions and greater flexibility to operators.

Ideally, a payment solution should give retailers the ability to recharge any prepaid customer MSISDN account from a qualified operator, without the need for vouchers. This would allow operators to manage and expand their own distribution networks. Voucherless recharging also reduces costs and also eliminates any loss due to voucher theft. Real-time transactions allows payments to be processed instantly and funds to be available as conveniently as possible for customers.

Mobile commerce is a fast-evolving area with great potential to expand. Offering customers easy mobile payment options to add credit to their account and to purchase goods using their mobile phones will encourage the growth of mobile commerce, resulting in greater network traffic and increased revenue.