Infogile
Delhi – Hyderabad -- London

Mobile Banking – The Future

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As mobile networks are upgraded with WAP, GPRS and UMTS to deliver next-generation multimedia services, the banks are getting ready to unleash services on mobile phones. Customers will be able to view their account statement, transfer funds between accounts, be notified of large payments or get notified of transactions above a pre-defined threshold, and will have immediate and full control over their finances. Next-generation mobile banking services will deliver significant improvements with user-friendly icon driven instructions, instant access, security and immediate transaction processing all at a lower session cost. Banks will attain higher levels of customer satisfaction and increased loyalty by providing anywhere, anytime banking. They will benefit further from lower administrative costs, lesser number of branches, reduced headcount, streamlined call centers and lower handling charges - savings which, hopefully, will be passed onto customers.

Introduction to Mobile Banking

Internet Banking helped give the customer's anytime access to their banks. Customer's could check out their account details, get their bank statements, perform transactions like transferring money to other accounts and pay their bills sitting in the comfort of their homes and offices.

However the biggest limitation of Internet banking is the requirement of a PC with an Internet connection, not a big obstacle if we look at the US and the European

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White Paper Overview

Abstract

This paper describes the basic concepts, services offered, market survey and technology which enables Mobile Banking. Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. This opens up huge markets for financial institutions interested in offering value added services. With mobile technology, banks can offer a wide range of services to their customers such as doing funds transfer while traveling, receiving online updates of stock price or even performing stock trading while being stuck in traffic. Mobile devices, especially smart-phones, are the most promising way to reach the masses and to create “stickiness” among current customers, due to their ability to provide services anytime, anywhere, with high rate of penetration and potential to grow.

Document Audience

This document is primarily intended for Marketing, Sales, Product Support, Internet Services Group, Project Engineering and anyone who is interested in Mobile Banking.

countries, but definitely a big barrier if we consider most of the developing countries of Asia like China and India. Mobile banking addresses this fundamental limitation of Internet Banking, as it reduces the customer requirement to just a mobile phone.

Mobile usage has seen an explosive growth in most of the Asian economies like India, China and Korea.

The main reason that Mobile Banking scores over Internet Banking is that it enables 'Anywhere Anytime Banking'. Customers don't need access to a computer terminal to access their bank accounts, now the can do so on-the-go while waiting for the bus to work, traveling or when they are waiting for their orders to come through in a restaurant.

The scale at which Mobile banking has the potential to grow can be gauged by looking at the pace users are getting mobile in these big Asian economies. According to the Cellular Operators' Association of India (COAI) the mobile subscriber base in India hit 40.6 million in the August 2004. In September 2004 it added about 1.85 million more. The explosion as most analysts say, is yet to come as India has about one of the biggest untapped markets. China, which already witnessed the mobile boom, is expected to have about 300 million mobile users by the end of 2004. All of these countries have seen gradual roll-out of mobile banking services, the most aggressive being Korea which is now witnessing the roll-out of some of the most advanced services like using mobile phones to pay bills in shops and restaurants.

Mobile Banking Business Models

A wide spectrum of Mobile/branchless banking models is evolving. These models differ primarily on the question that who will establish the relationship (account opening, deposit taking, lending etc.) with the end customer, the Bank or the Non-Bank/Telecommunication Company (Telco). Models of branchless banking can be classified into three broad categories - Bank Focused, Bank-Led and Non Bank-Led.

Bank-focused model
The bank-focused model emerges when a traditional bank uses non-traditional low-cost delivery channels to provide banking services to its existing customers. Examples range from use of automatic teller machines (ATMs) to internet banking or mobile phone banking to provide certain limited banking services to banks' customers. This model is additive in nature and may be seen as a modest extension of conventional branch-based banking

Bank-led model
The bank-led model offers a distinct alternative to conventional branch-based banking in that customer conducts financial transactions at a whole range of retail agents (or through mobile phone) instead of at bank branches or through bank employees. This model promises the potential to substantially increase the financial services outreach by using a different delivery channel (retailers/ mobile phones), a different trade partner (Telco / Chain Store) having experience and target market distinct from traditional banks, and may be significantly cheaper than the bank-based alternatives. The bank-led model may be implemented by either using correspondent arrangements or by creating a JV between Bank and Telco/non-bank. In this model customer account relationship rests with the bank.

Non Bank-led model
The non-bank-led model is where a bank does not come into the picture (except possibly as a safe-keeper of surplus funds) and the non-bank (e.g. Telco) performs all the functions.

Originally posted at NetBanker:

With the recent Motorola/C-Sam mobile payments announcement followed by similar payments platform launches from PayPal, Black Lab Mobile Inc., Commerciant LP, Sify Ltd., Q-Pass, and SVC Financial Services Inc., it's obvious that mobile payments aren't the mere pipedream they seemed to be last year.

What's less obvious is the change about to befall the payments industry, especially banking, that mobile payments embodies.

Mobile Banking Forecast for US

	2007	2008
SMS Banking	50,000	300,000
Mobile Website	600,000	1.5 million
One Touch Banking	100,000	350,000
Total	700,000	2 million

Source: Online Banking Report estimates, +/- 33%, Aug. 30, 2007

In countries like Korea, two SIM Cards are used in mobile phones. One for the telephonic purpose and another for banking. Bank account data is encrypted on a smart-card chip. About 3.3 million transactions were reported by Bank of Korea in 2004.

Mobile Banking Services

Banks offering mobile access are mostly supporting some or all of the following services:

Account Information

- Mini-statements and checking of account history
- Alerts on account activity or passing of set thresholds
- Monitoring of term deposits
- Access to loan statements
- Access to card statements
- Mutual funds / equity statements
- Insurance policy management
- Pension plan management

Payments & Transfers

- Domestic and international fund transfers
- Micro-payment handling
- Mobile recharging
- Commercial payment processing
- Bill payment processing

Investments

- Portfolio management services
- Real-time stock quotes
- Personalized alerts and notifications on security prices

Support

- Status of requests for credit, including mortgage approval, and insurance coverage
- Check (cheque) book and card requests
- Exchange of data messages and email, including complaint submission and tracking

Content Services

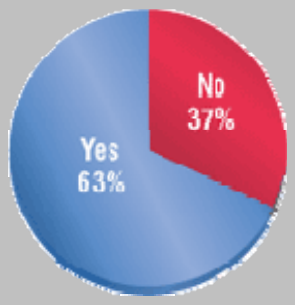
- General information such as weather updates, news
- Loyalty-related offers
- Location-based services

One way to classify these services depending on the originator of a service session is the 'Push/Pull' nature. 'Push' is when the bank sends out information based upon an agreed set of rules, for example your banks sends out an alert when your account balance goes below a threshold level. 'Pull' is when the customer explicitly requests a service or information from the bank, so a request for your last five transactions statement is a Pull based offering.

The other way to categorize the mobile banking services, gives us two kind of services – Transaction based and Enquiry Based. So a request for your bank statement is an enquiry based service and a request for your fund's transfer to some other account is a transaction-based service. Transaction based services are

Have you heard about mobile banking?

Base: 360 IT industry and corporate users of mobile phones and banks offering M-banking
Source: DATAQUEST
Given the profile of the people surveyed, it's no surprise that over 26% of the sample had heard about mobile banking services. *Dataquest* did a mix of 60:40 (non-IT: IT people) in the NCR region. Awareness about mobile banking services was higher among 'IT people'. HDFC Bank's CN Ram agreed—"We have 1.75 lakh registered users for mobile banking services. And we are hitting 4,000 transactions per day."



Would you like to use mobile banking services?

Base: 265 respondents not aware of m-banking services
Source: DATAQUEST

While awareness remains at 26%, people are keen to try out mobile banking. 63% of the respondents evinced interest in the services. Given the convenience factor—the fact that mobile banking can be used from anywhere in the world as long as one can send and receive SMS'—most were interested. Since m-commerce is still about the core virtues of mobile communication, issues like mobility, any-time access and ease of usage emerged as the driving factors in the ongoing year.

also differentiated from enquiry based services in the sense that they require additional security across the channel from the mobile phone to the banks data servers.

Based upon the above classifications, we arrive at the following taxonomy of the services listed before.

	Push Based	Pull Based
Transaction Based		• Fund Transfer • Bill Payment • Other financial services like share trading.
Enquiry Based	• Credit/Debit Alerts. • Minimum Balance Alerts • Bill Payment Alerts	• Account Balance Enquiry • Account Statement Enquiry • Cheque Status Enquiry. • Cheque Book Requests. • Recent Transaction History.

Technologies Behind Mobile Banking

Technically speaking most of these services can be deployed using more than one channel. Presently, Mobile Banking is being deployed using mobile applications developed on one of the following four channels.

1. IVR (Interactive Voice Response)
2. SMS (Short Messaging Service)
3. WAP (Wireless Access Protocol)
4. Standalone Mobile Application Clients

IVR – Interactive Voice Response

IVR or Interactive Voice Response service operates through pre-specified numbers that banks advertise to their customers. Customer's make a call at the IVR number and are usually greeted by a stored electronic message followed by a menu of different options. Customers can choose options by pressing the corresponding number in their keypads, and are then read out the corresponding information, mostly using a text to speech program.

Mobile banking based on IVR has some major limitations that they can be used only for Enquiry based services. Also, IVR is more expensive as compared to other channels as it involves making a voice call which is generally more expensive than sending an SMS or making data transfer (as in WAP or Standalone clients).

One way to enable IVR is by deploying a PBX system that can host IVR dial plans. Banks looking to go the low cost way should consider evaluating Asterisk, which is an open source Linux PBX system

Ten years ago, online banking leapt from nice-to-have status to must-have. In hindsight, it's pretty obvious why it became so popular, but at the time there were still questions as to if and when it would break out into its own "channel," on par with telephone and in-branch delivery.

Today, we are at a similar point in the development of mobile banking. The adoption curve of mobile banking in the next 10 years will look a lot like the 1995-to-2004 take-up of online banking. However, there is a huge difference. With higher penetration than internet and broadband, Mobile banking offers a lot more potential, especially in the developing countries. With voice prompts and text-to-voice capabilities it seems only a little while when one-button mobile banking will be the industry standard.

We believe mobile banking and payments are at a tipping point. While they have already taken root in much of the world, Indian financial institutions are finally arriving at the party, one they largely abandoned in 2001/2002 when the first generation of PDA-based banking failed to take root. This time around adoption is expected to be relatively rapid, especially with names like ICICI, Bank of America and Citibank launching mobile services.

SMS – Short Messaging Service

SMS uses the popular text-messaging standard to enable mobile application based banking. The way this works is that the customer requests for information by sending an SMS containing a service command to a pre-specified number. The bank responds with a reply SMS containing the specific information.

For example, customers of the HDFC Bank in India can get their account balance details by sending the keyword 'HDFCBAL' and receive their balance information again by SMS.

However there have been few instances where even transaction-based services have been made available to customer using SMS. For instance, customers of the Centurian Bank of Punjab can make fund transfer by sending the SMS **'TRN** (A/c No) (PIN No) (Amount)'.

One of the major reasons that transaction based services have not taken of on SMS is because of concerns about security.

The main advantage of deploying mobile applications over SMS is that almost all mobile phones are SMS enabled.

An SMS based service is hosted on a SMS gateway that further connects to the Mobile service providers SMS Centre. There are a couple of hosted IP based SMS gateways available in the market and also some open source ones like Kannel.

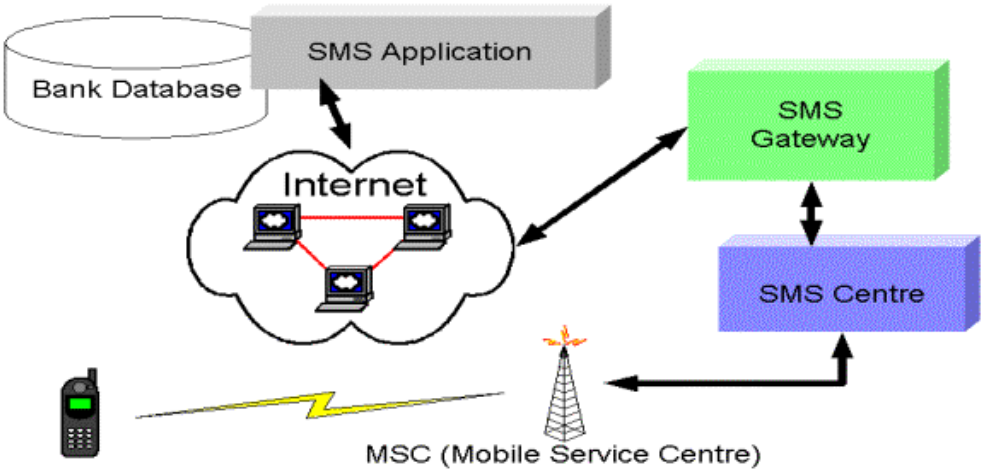


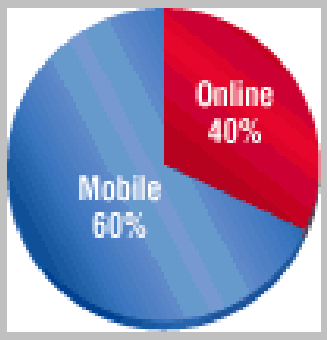
Figure 1: SMS Network Architecture

WAP – Wireless Access Protocol

WAP uses a concept similar to that used in Internet banking. Banks maintain WAP sites which customer's access using a WAP compatible browser on their mobile phones. WAP sites offer the familiar form based interface and can also implement security quite effectively.

Bank of America offers a WAP based service channel to its customers in Hong Kong. The banks customers can now have an anytime, anywhere access to a secure reliable service that allows them to access all enquiry and transaction based services and also more complex transaction like trade in securities through their phone

Which option would you prefer—Mobile or online Banking?



Base: 360
Source: DATAQUEST

According to research firm Ovum, mobile commerce is expected to grow to over $35 billion by 2007. And banking is going to be a major benefactor of the same. According to studies by some global firms, one of the most used services for mobile commerce would be mobile banking—with services like transfers, balance and trading bringing in the revenues for mobile bankers.

No wonder then, banks are making their infrastructure "mobile-enabled". While, some like HDFC Bank are riding on their existing infrastructure of Net-banking, others like the IDBI Bank are making considerable investments to provide wire free banking experience. IDBI Bank's mobile banking infrastructure is based on the GSM Data Suite of products that makes its services accessible through any GSM operator across the world. The systems at IDBI Bank are also interfaced online with its banking, demat and payment systems. HDFC Bank, on the other hand, does not have any separate infrastructure for mobile banking service. Rather, the bank uses the same server/database as used for Net-banking. "We have a Web Server and Application Server which runs on WebSphere 4.04 on Win2000 using SQL 2000 as the database for storing the profile information.

A WAP based service requires hosting a WAP gateway. Mobile Application users access the bank's site through the WAP gateway to carry out transactions, much like internet users access a web portal for accessing the banks services.

The following figure demonstrates the framework for enabling mobile applications over WAP. The actually forms that go into a mobile application are stored on a WAP server, and served on demand. The WAP Gateway forms an access point to the internet from the mobile network.

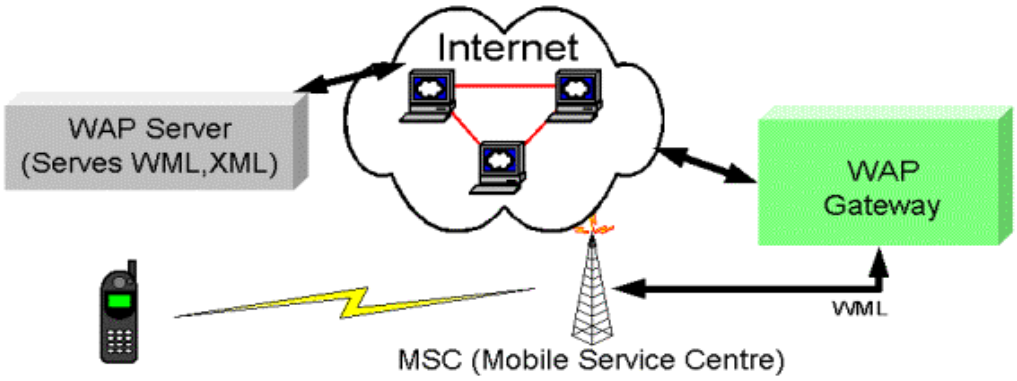


Figure 2: WAP Network Architecture for Mobile Applications

Standalone Mobile Application Clients

Standalone mobile applications are the ones that hold out the most promise as they are most suitable to implement complex banking transactions like trading in securities. They can be easily customized according to the user interface complexity supported by the mobile. In addition, mobile applications enable the implementation of a very secure and reliable channel of communication.

One requirement of mobile applications clients is that they require to be downloaded on the client device before they can be used, which further requires the mobile device to support one of the many development environments like J2ME or Qualcomm's BREW. J2ME is fast becoming an industry standard to deploy mobile applications and requires the mobile phone to support Java.

The major disadvantage of mobile application clients is that the applications needs to be customized to each mobile phone on which it might finally run. J2ME ties together the API for mobile phones which have the similar functionality in what it calls 'profiles'.

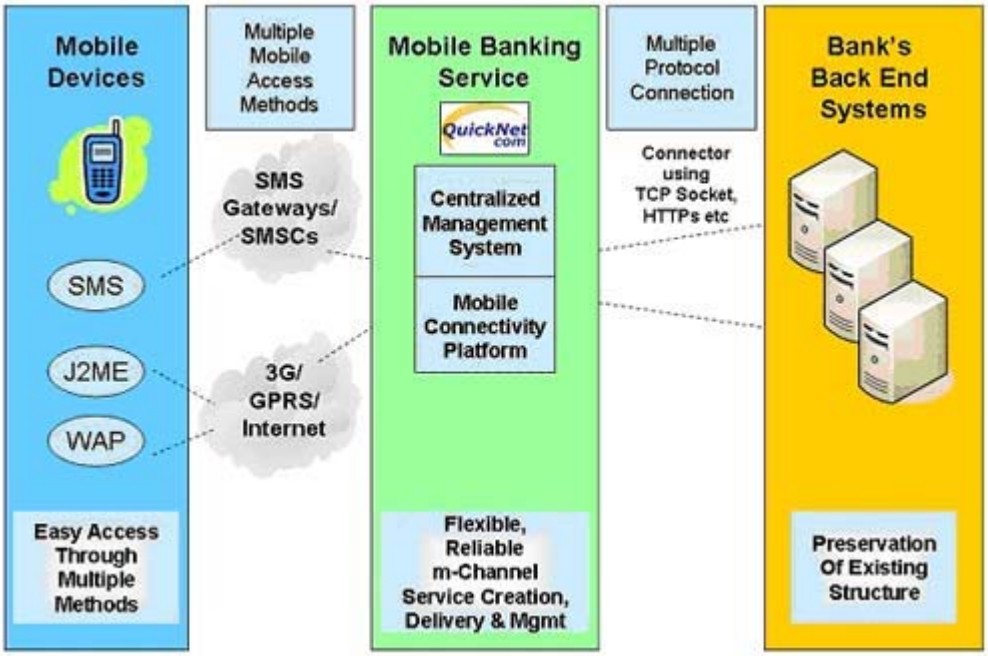
Out of J2ME and BREW, J2ME seems to have an edge right now as Nokia has made the development tools open to developers which has further fostered a huge online community focused in developing applications based on J2ME. Nokia has gone an additional mile by providing an open online market place for developers where they can sell their applications to major cellular operators around the world.

Quite a few mobile software product companies have rolled out solutions, which enable J2ME mobile applications based banking. One such product is Wireless I-banco. The mobile user downloads and installs the wireless I-banco application on their J2ME pone. The J2ME client connects to the wireless I-banco server through the service providers GSM network to enable users to access information about their accounts and perform transactions. One of the other big advantages of using a mobile application client is that it can implement a very secure channel with end-to-end encryption.

In 2000, fewer than 8 million Africans had a mobile phone - now over 100 million do. That's one in nine. Now, anyone with access to a cell phone has a place to keep his or her savings without needing a traditional bank account. We won't see millionaires suddenly emerging from the shantytowns just because they're "banked," but even a small nest egg needs a safe resting place.

At the moment, enthusiasm for m-banking has outrun its implementation. For one thing, regulators break out in a cold sweat at the thought of all the overlapping issues involved. But there are success stories. Leading the way is the Philippines, with over 3.5 million users split between G-cash and competitor SMARTmoney. South Africa is the other heavyweight, with MTN Mobile Banking and Wizzit both entering their second year of operations. In Brazil, m-banking may even surpass Internet banking in just five years. And on January 22, SafariCom, partly owned by Vodafone, is set to expand its M-Pesa pilot to all of Kenya.

However countries like India face a serious obstacle in the proliferation of such clients as few users have mobiles, which support J2ME or BREW. However, one of the biggest CDMA players in the Indian telecom industry, Reliance Infocomm has about 7.01 million users all of which have handsets, which support J2ME. Reliance has unveiled one of the most ambitious data services deployment program in the country. On the other hand a country like South Korea with its tech-savvy population has a widespread adoption of the higher-end mobiles, which support application development.



Advantages of Mobile Banking

The biggest advantage that mobile banking offers to banks is that it drastically cuts down the costs of providing service to the customers. For example an average teller or phone transaction costs about $2.36 each, whereas an electronic transaction costs only about $0.10 each. Additionally, this new channel gives the bank ability to cross-sell up-sell their other complex banking products and services such as vehicle loans, credit cards etc.

For service providers, Mobile banking offers the next surest way to achieve growth. Countries like Korea where mobile penetration is nearing saturation, mobile banking is helping service providers increase revenues from the now static subscriber base. Service providers are increasingly using the complexity of their supported mobile banking services to attract new customers and retain old ones.

A very effective way of improving customer service could be to inform customers better. Credit card fraud is one such area. A bank could, through the use of mobile technology, inform owners each time purchases above a certain value have been made on their card. This way the owner is always informed when their card is used, and how much money was taken for each transaction.

Similarly, the bank could remind customers of outstanding loan repayment dates, dates for the payment of monthly installments or simply tell them that a bill has been presented and is up for payment. The customers can then check their balance on the phone and authorize the required amounts for payment.

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mobilebanking

General terms/acronyms:

MMS >>> ***Multimedia messaging service***: An evolution from SMS, allowing messages to contain multimedia objects such as images, audio, video, and rich text.
CSC >>> ***Common short codes***: Special short telephone numbers of just four to six digits used typically by businesses to make it easier to send text messages their way.
WAP >>> ***Wireless Application Protocol***: An open, international standard for applications that use wireless communication; primarily used to enable Web access from mobile devices
Mobile IM >> ***Mobile instant messaging***: Similar to desktop instant messaging, but slimmed down to fit on a much smaller mobile device screen
SMS or text alerts >> Simple one-way messages from the financial institution or payments provider to the mobile user with account-specific information
Mobile payments >> Payments initiated through a mobile device, could be via SMS, WAP, or a device-specific application.
Mobile banking >> Online banking functions performed via a handheld mobile device (*PDA, cell phone, etc.*); the general term that encompasses *WAP Banking*, *SMS Banking*, or *True Mobile Banking*.
WAP banking >> Accessing secure online banking functions through a mobile device's browser.
SMS or text banking >> Two-way messaging; for example, using text messaging to query the server for account-specific information and have it returned to the mobile device, or responding to a bank-initiated text message to initiate a transaction
True mobile banking >> Term used for banking functions delivered through a downloaded application run locally on the mobile device

The customers can also request for additional information. They can automatically view deposits and withdrawals as they occur and also pre- schedule payments to be made or cheques to be issued. Similarly, one could also request for services like stop cheque or issue of a cheque book over one's mobile phone.

There are number of reasons that should persuade banks in favor of mobile phones. They are set to become a crucial part of the total banking services experience for the customers. Also, they have the potential to bring down costs for the bank itself. Through mobile messaging and other such interfaces, banks provide value added services to the customer at marginal costs.

Such messages also bear the virtue of being targeted and personal making the services offered more effective. They will also carry better results on account of better customer profiling.

Yet another benefit is the anywhere/anytime characteristics of mobile services. A mobile is almost always with the customer. As such it can be used over a vast geographical area. The customer does not have to visit the bank ATM or a branch to avail of the bank's services. Research indicates that the number of footfalls at a bank's branch has fallen down drastically after the installation of ATMs. As such with mobile services, a bank will need to hire even less employees as people will no longer need to visit bank branches apart from certain occasions.

With Indian telecom operators working on offering services like money transaction over a mobile, it may soon be possible for a bank to offer phone based credit systems. This will make credit cards redundant and also aid in checking credit card fraud apart from offering enhanced customer convenience. The use of mobile technologies is thus a win-win proposition for both the banks and the bank's customers.

The banks add to this personalized communication through the process of automation. For instance, if the customer asks for his account or card balance after conducting a transaction, the installed software can send him an automated reply informing of the same. These automated replies thus save the bank the need to hire additional employees for servicing customer needs

Success Stories

LG Telecom, South Korea

In terms of the evolution of services being offered on mobile applications, South Korea is showing the way. The big push came when LG Telecom Ltd., the smallest of Korea's three mobile service providers teamed up with the Kookmin bank to launch the 'Bank on' service. Under this scheme mobile users were able to use smart chips embedded in cell phones for accessing all of the transaction and enquiry based services. The chip-based service automated the authentication of users when they accessed their bank's financial services to make the whole process much faster and convenient. The icing on the cake came with the ability of these chip enabled cell phones to be used simultaneously as cash cards. By October 2004 there were already about 100,000 infrared readers adapted to take payment directly from mobile phone handsets in Korea.

Users can now use their cell phones to pay for everything, from restaurant bills, travel tickets, merchandise and even haircuts.

Reliance Communications, an Anil Dhirubhai Ambani Group company, has announced introduction of money transfer through mobile phones across India with the help of ICICI Bank as a joint venture partner. This new facility for the subscribers of Reliance Communications is an easy to use alternative for account-to-account transfer of money which is normally associated with banks and other agencies.

The money transfer market, according to R Comm, is more than $24 billion annually including global transfers to India. This will help customers having accounts with ICICI Bank to send and receive money anytime anywhere using Reliance mobile phones. The service is made available to the masses on Reliance mobile world enabled phones including the recently launched Reliance Classic range in the range of Rs 777 and Rs 1,234.

R Comm's product head Mr. Anil Pande said India was the fastest growing market in the world and the world's largest receiver of remittances. He said M-commerce would be a big business in coming years. ICICI Bank's Reliance mobile customers can go to the finance section. R World. Mobile Bank. M Banking. ICICI Bank. Saving account. The customers will be charged a mobile transaction fee of Rs 10 and can transfer money up to Rs 5,000 with multiple transactions in a day.

Reliance Infocomm, India

When Reliance Infocomm, India rolled out its CDMA network, (at the time the mobile market in India was still in its infancy, and data services were almost never heard off) it made sure that all handsets supported Java.The Reliance application platform, also known as R-World brought Java compatibility even to the lower end phones.

Reliance used a novel way to overcome the memory limitations of lower-end mobile phones, which hampered deploying of multiple standalone J2ME based clients. Instead of storing applications statically on their cell phones, users access a single menu based application called R-World, which connects them to the Reliance servers. Using the menu based user interface, mobile users select the application, which they want to run and download them over-the-air to their cell phones. These applications are then executed locally on the mobiles. From mid-2004 Reliance tied up with two of the popular private sector banks, HDFC and ICICI, to provide a host of their enquiry and transaction based mobile banking services through its R-World environment.

ABN Ambro, India

ABN AMRO Bank brings to the convenience of mobile banking using an application called MPOWER. It allows customers to access their account for inquiry & transactions using simple SMS messages.

One can do the following using MPOWER:

- Balance & Transaction Inquiry
- Share Holdings in Demat Account
- Funds Transfers to ABN AMRO & other banks
- Bill Presentment and Payment
- Cheque Inquiry & Stop Cheque
- Online Fixed Deposit Opening
- Request for Cheque Book & Statement
- Request for new PIN & change PIN online

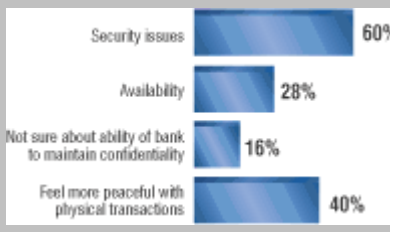
M-Banking: The Services Bouquet

	ICICI Bank	HDFC Bank	IDBI Bank	HSBC	Bank of America	Citibank	ABN Amro
Balance enquiry	✓	✓	✓	✓	✓	✓	✓
Last few transactions	✓	✓	✓	✓	✓	✓	✓
Cheque payment status			✓	✓	✓	✓	✓
Stop payment of cheques		✓					
Statement request	✓	✓	✓	✓	✓	✓	
Cheque book request	✓		✓				✓

Citibank

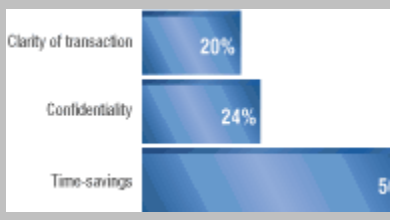
Banks are hoping to extend mobile banking as technology improves. Citibank has two ongoing cell phone trials. The first is a partnership with MasterCard, AT&T, and

ARE YOU COMFORTABLE USING WITH M-BANKING TRANSACTIONSS



Base: 95 (Those who said there are aware of mobile banking and/or their bank provides the service)
Source: DATAQUEST

WHY DO YOUUSE M-BANKING SERVICES



Base: 95 (Those who said there are aware of mobile banking and/or their bank provides the service)
Source: DATAQUEST

Bankers are punching away at their calculators and beginning to develop futuristic grins while driving daily to their banks—even if 1% of today's mobile phone base were to use their service, that's a total number of around 120,000. Factor in a similar number within the year for CDMA users (assuming policy changes allow service providers in this space to offer SMS, as Reliance Infocomm is already promising), and we have a total mobile banking user base of a very healthy 240,000 (Dataquest survey points to an awareness rate of 26%, a usage rate of 7% on the total respondent base of 360.

Says CN Ram, HDFC Bank's head of IT—"We have 1.75 lakh registered users for mobile banking services today. And we are hitting about 4,000 transactions per day." IDBI's CTO Neeraj Bhai echoes the sentiment, "Over 12% of our Internet banking users use our mobile banking services as well."

Nokia that places chips in cell phones allowing Citi debit and credit to make payments by waving the cell phone at a participating store's register.

Citi's other pilot is with Obopay that lets debit and credit customers transfer money between mobile phones. Analysts say even more revenue is possible in the coming years when more functions are added to cell phones like international transfers, and booking travel arrangements. While mobile banking is relatively new, the service has shown some traction with customers. Citi Mobile says it had more subscribers than expected while the service was being piloted around the country in the spring. Wachovia Mobile says their service has been getting about 50,000 unique visitors a week since its launch. Celent predicts that by the end of 2010, 35% of all online banking households will be using mobile banking.

Conclusion

Mobile banking is poised to become the big killer mobile application arena. However, banks going mobile the first time need to tread the path cautiously. The biggest decision that banks need to make is the channel that they will support their services on.

Mobile banking through an SMS based service would require the lowest amount of effort, in terms of cost and time, but will not be able to support the full breath of transaction-based services. However, in markets like India where a bulk of the mobile population users' phones can only support SMS based services, this might be the only option left.

On the other hand a market heavily segmented by the type and complexity of mobile phone usage might be good place to roll of WAP based mobile applications. A WAP based service can let go of the need to customize usability to the profile of each mobile phone, the trade-off being that it cannot take advantage of the full breadth of features that a mobile phone might offer.

Mobile application standalone clients bring along the burden of supporting multiple mobile device profiles. According to the Gartner Group, mobile banking services will have to support a minimum of 50 different device profiles in the near future. However, currently the best user experience, depending on the capabilities of a mobile phone, is possible only by using a standalone client.

Mobile banking has the potential to do to the mobile phone what E-mail did to the Internet. Mobile Application based banking is poised to be a big m-commerce feature, and if South Korea's foray into mass mobile banking is any indication, mobile banking could well be the driving factor to increase sales of high-end mobile phones. Nevertheless, Bank's need to take a hard and deep look into the mobile usage patterns among their target customers and enable their mobile services on a technology with reaches out to the majority of their customers.

Indian telecom market is galloping with 162.3 million mobile users as on March 2006 and an average of 5-6 million mobile users being added every month. Given that mobile phones in India have become affordable, wherein a user can now go mobile for as low as Rs. 1,500, mobile banking can be a powerful tool to bank the un-banked. Banks and telecom companies can collaborate to offer the latest in banking services to rural areas.

Mobile banking is the evolutionary step after Internet banking. It is an additional service bolted on top of an existing solution, making access to services more immediate and reducing customer reliance on branch infrastructure or access to the Internet. As customer confidence increases over the security, it is expected that mobile phones will be the most preferred and convenient device for conducting banking transactions and emerge as one of the major payment channels in India.
