Bridging the Digital Divide through the Mobile: A Process Perspective

In the last few decades, very few gadgets have made a bigger impact on the Indian population than the inconspicuous mobile phone. India has witnessed one of the fastest growth patterns of the cell phone industry in the last decade (10 million connections per month in 2008). Affordable handsets coupled with the expanding mobile network have brought the freedom of connectivity to the finger tips of different population strata across the Indian society.

In addition to transforming the way people connect and communicate, the humble cell phone is today expanding the reach of the services and processes of Indian companies to a much larger base of the population. The increasing use of mobile phones opens up newer opportunities, channels and marketplaces with benefits like cost savings, cycle time reduction, increased productivity, etc. To exploit the mobile enablement of business processes, enterprises need to examine the changes required in the way processes are designed and managed, process-technology architecture, partners and vendors etc.

In this article we will look at the potential for Indian companies to extend their reach to a large population that was until recently inaccessible and unconnected. We will also examine how the mobile phone impacts the management of business processes in the enterprise.

Usage scenarios in India

Cell phone adoption for those using high-end mobile devices like Blackberry and iPhone, is quite significant for processes involving business and employee (B2E), and vendors/suppliers (B2B), business and consumer (B2C). Most of the web based applications are rendered on the mobile devices allowing the employee/customer to be connected to the business while on the move and allowing real-time updates and progress to the process. But this segment of the population is well connected through the internet, and has access to physical offices when it comes to participating in a business process. However, large segments of the rural and remote population, who did not own a phone (70% of fixed lines are in urban areas) or have internet access (all-India levels are low at 5% penetration) until the arrival of the cell phone, are now connected to the mainstream through mobile integration of business processes. This segment uses the basic cell phone model, and hence to include them in a process requires special consideration. Business processes are being redesigned to explore usage of mobile phones and devices to access this new market and offer innovative services and solutions. Many Indian enterprises, especially the banking, telecom and retail sectors are exploring innovative processes and mechanisms to offer products and services to this remote consumer base.

The varying levels of capabilities and usage maturity of the cell phones have differing impact on business process. At one end of the spectrum, just the fact that it allows you to call someone and talk has brought in many interesting changes and improvements in business processes. A research report by the Center for Knowledge Studies [1] about the mobile phone developments in India has highlighted case studies that show how individuals have been able to improve their businesses and outputs by being able to interact with traders / buyers in distant locations, thus
optimizing their travel and transportation expenses. IBM is piloting a project called the “spoken web” [2] which is a network of voice-sites that can be created and accessed by callers. Service providers like plumbers, electricians, etc can create their voice sites, and when someone needs their services, they call the directory or online yellow pages and get to the individual service provider’s phone or voice site and schedule an appointment.

SMS or text messages are next on the mobile services maturity. SMS service in different formats has been one of the widely used mechanisms to extend business processes to include end customer participation in the process.

**Push – broadcast:** Companies broadcast text messages with details of new products / services to reach out to people. SMS based coupons are being used by many retailers in urban cities. In the recent elections, many political parties also used SMS to reach out to the electorate.

**Alerts:** Businesses use SMS-based alerts and messages to inform customers of activity on their account usually signifying the end of a process or workflow. This system is used by most service providers like banks, insurance companies, securities depositories (NSDL) and telecom companies. Service institutions like hospitals use it to send reminders and confirmation of appointments.

**Information retrieval:** A business process for information retrieval can be initiated by sending an SMS to a preset number with the relevant instruction for a number of inquiries such as balance inquiries reservation status, requests for a statement, etc. Several banks, public utilities and government organizations utilize this channel which has resulted in increased customer satisfaction and reduced workloads in their customer service centers. This service is particularly useful where customers now have easy access to the latest information.

**Process participation:** In this mode, SMS is used to collect data, provide information for decision-making in a process, and reach the remote customer by extending the features to approve and initiate processes. Fund transfers and bill payment approvals are being offered by banks through their mobile banking services. Some government departments use this system to collect data from village officers for study and analysis. Companies can integrate their field force personnel in remote areas with back office enterprise systems to transfer information and data between the personnel and the systems. By doing so, the time and cost of data gathering is reduced while eliminating data entry errors introduced by manual processes.

The mobile handset along with new applications and technologies is being used to bring new services to customers as a result of innovative process changes by enterprises. Reuters [3] along with the Government of India has launched a mobile information service for Indian farmers to provide them with up-to-date, local and customized commodity pricing information, news and weather updates. The objective is to connect the 250 million strong agricultural community to various buyers and traders through their mobile phones to facilitate business transactions. Another example is a solution by ACDI/VOCA [4] along with Infosys focusing on improving the efficiencies of the agro supply chain in India. The solution gives the organized retail sector access to small farmers who provide a reliable production base, using wireless software applications that are accessible on handheld devices where there is limited or no network availability. Some of the above examples leverage the MMS-enabled phones through which the farmers can click a picture using their camera phone, transmit it to an expert located at a back office and receive the expert’s advice on resolving the issue at hand.

Indian public sector banks are exploring the financial viability of serving the rural population where the average bank balance is about $5 (200-250 Rupees). One such pilot program entails a bank staffer going physically to the rural customer with a mobile phone, smart card reader and finger print reader which communicate with each other. The finger print reader authenticates the account holder, the transaction details are entered on the mobile phone, and the customer’s smart card is updated with the transaction details like a digital passbook. Basic banking and micro-finance services are offered while the technology-enabled security makes the customer feel...
comfortable, while at the same time reducing the cash management risks for the bank. Other examples include micro-finance solutions offered by mobile payment solution providers like mChek, Obopay and PayMate through partnerships with micro-finance institutions (MFI) [5]. In this example, the payment application is embedded in the SIM card and supports basic banking activities on even the most basic handsets. MFI's claim they can save up to 20% of their operating costs by deploying mobile technology, allowing them to pass on a substantial reduction of 1.5-2% in the interest rate to the customer.

Impact on Business Processes and Challenges

Enterprises and businesses that want to tap into the comparatively under-served market of rural India by leveraging the reach of the mobile network will need to re-examine their processes to create mobile integrated business processes. Mobile as a channel for interacting with the stakeholders needs a process based approach to identify touch points, activities, information flow and control flow within the business process that can be mobile enabled. Process redesign to accommodate the mobile channel not only alters certain activities within the process but involves many other changes for the enterprise.

New business roles are introduced while eliminating/reducing current roles which would require change management approaches to be deployed. Processes for mapping customers to phone numbers, the business services they are interested in and relevant alerts need to be defined. From a technology angle, the process-technology stack will need to interface with suitable systems for sending and receiving SMSes. Organizations will need to explore effective partnerships with telecom and technology service providers and other agencies that would need to be part of the new process.

Some risks and challenges related to information security and privacy emerge as the process has been extended beyond the safer confines of the organizational ecosystem into public space. Ensuring that messages go only to the person they are intended for, regular updating of the cell phone mapping, mechanisms to handle misplaced cell phones, etc. are a few of the challenges. Another challenge is the rapidly changing cell phone technology which forces the business process and systems to be in sync with the latest models of phones used by the customers. There are immense opportunities for businesses to innovate around the use of mobile technology in their processes for significant business gains. As cell phone usage grows at an exponential rate, accompanied by greater adoption into business processes, the rural 'man on the street' can afford to smile having crossed many a digital divide.

References