Technology

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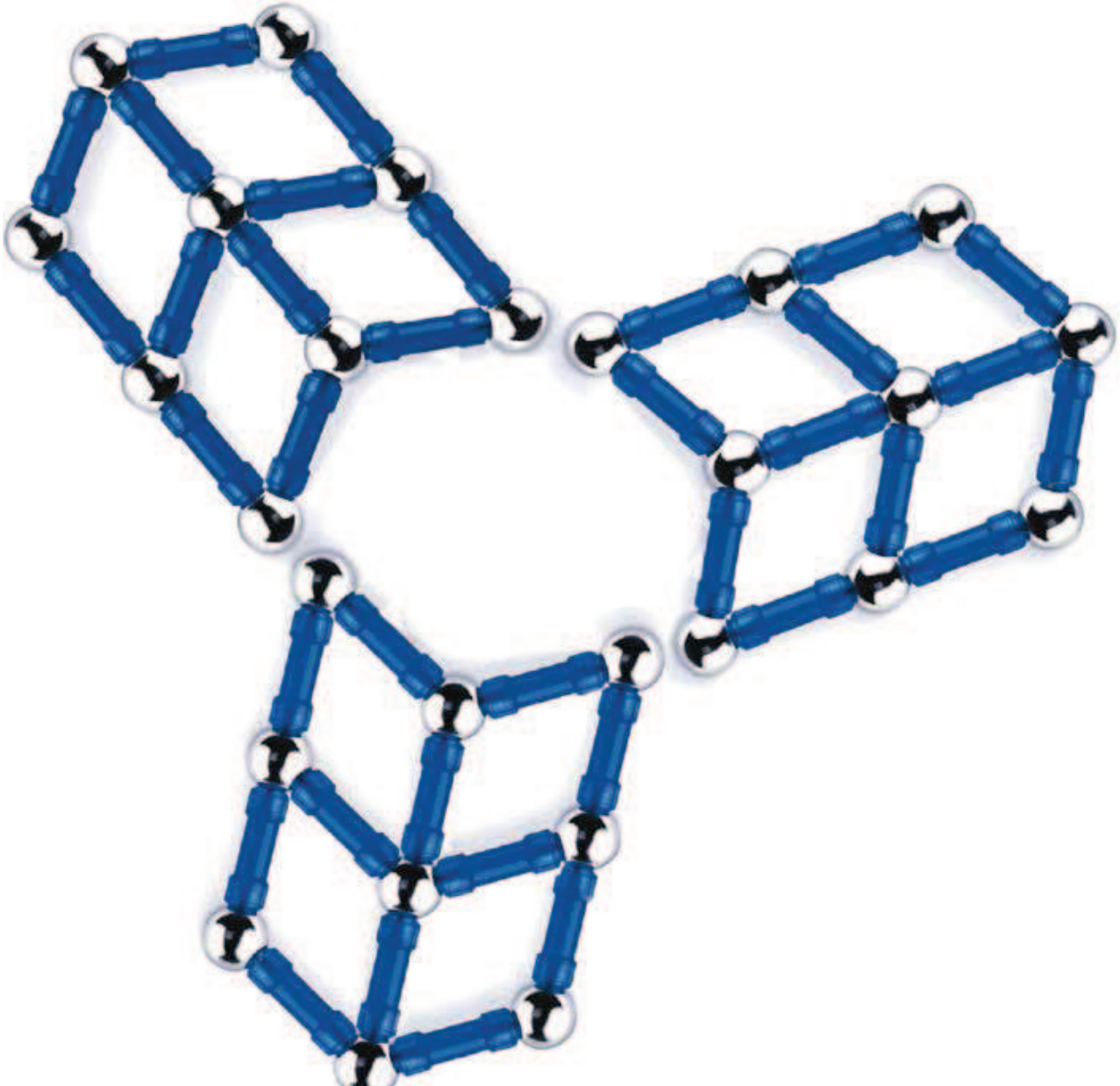
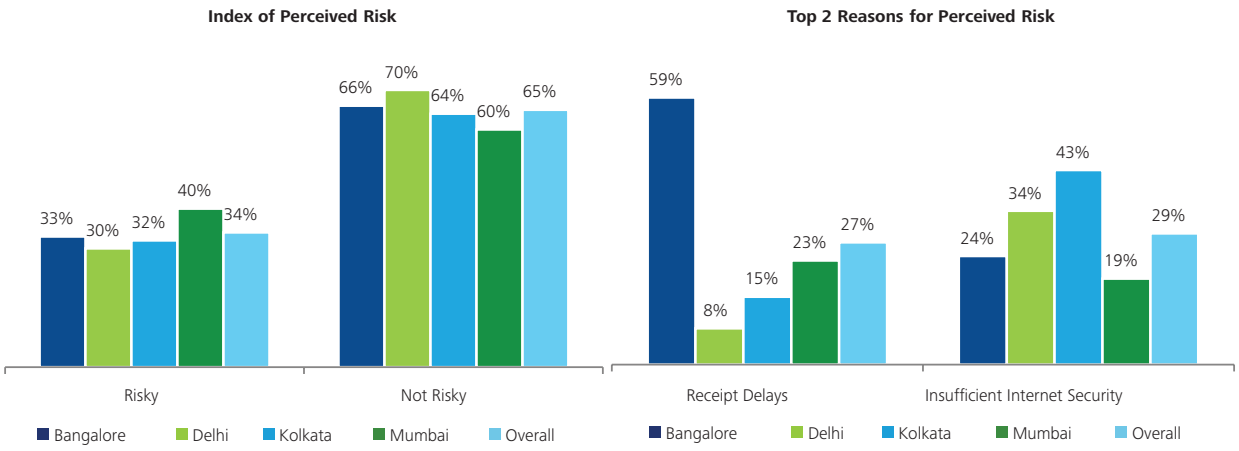


Mobility and e-Commerce: Driving innovations in payments and cash displacement

Deloitte predicts that, 2014 onwards India would witness a proliferation of technology-enabled platforms that would accelerate cash displacement. These technology platforms, most of which would be mobile enabled, would have far-reaching impact in providing accessibility to a larger populace to alternate retail channels. They will also play a key role in banking a large section of the unbanked population. While a significant minority of urban consumers have simultaneous access to debit or credit cards and robust internet connectivity, the availability of such a package does not hold true for bulk of the population especially in tier III cities and beyond. Lack of robust payment technology, which can address such gaps remain a critical area of concern for most of the online retailers, which is impeding growth in this segment. Deloitte expects new models to emerge that would address this challenge.

As smartphones and tablets become ubiquitous and merchants are increasingly accessed by customers via multiple channels, there is a strong case for the development of non-cash payment alternatives. In India, the potential of cash displacement remains huge as the current level of non-cash-based transactions is minimal.

Figure 1: Perceived Risk associated with Cashless Transactions in India



Source: Visa, IDF and IAMAI Analysis

Globally, among the various cash displacement technologies, mobile Point Of Sale (POS) focused solutions would witness most significant growth. In a relatively mature market like US, mobile POS could expand current payment card acceptance by as much as 20 million firms, if eligible firms started accepting payments.[1] While such a larger trend holds true for India as well, given its own unique retail and banking ecosystem, it would witness certain innovations independent to the ones that are being globally adopted.

As per the Internet & Mobile Association of India (IAMAI) and India Development Fund (IDF) Survey, around 11 percent of the urban households in India have embraced cashless transactions. A significant part of the cashless transactions happen in various e-commerce sites and are predominantly card-based online payments. There have been a lot of initiatives towards ensuring larger participation of consumers in cashless payment methods and in "banking the unbanked" - another critical area where cash displacement can play a pivotal role. Despite these initiatives India is long way from a mature payments ecosystem and it remains a critical concern across merchants and customers due to issues ranging from transaction failure to supplier integrity.

As banks, merchants and regulators proactively promote alternate payments and cashless channels, Deloitte expects significant number of innovations across the ecosystem ranging from mobile, e-wallet, cards, Point of Sales (POS) solutions, gateways and transaction management services. Given that payments are governed by a highly regulated environment, all of the above innovations need to pass the regulatory muster.

The issue that still remains at the forefront of payments being a bottleneck in transactions is the limited availability of cash alternates to bulk of the Indian population. However, so far, banks have only observed this from the fringes and the merchants are wary of accepting such payments. Deloitte believes that while the technology becomes friendlier for the merchants, facilitating their acceptance, the traditional banks need to step in to provide the stamp of integrity and authentication for this trend to succeed. Concepts like prepaid debit cards and mobile wallet would gain prominence. We foresee a strong use-case for hybrid payment model where online payment providers would tie-up with retailers, both large and small, to bring more customers under the umbrella. Such payment models would not only foster Business to Customer (B2C) transactions but would also facilitate areas like remittances, which are big in India.

We see a strong business case for the development of an alternate to the cash on delivery (COD) option. E-commerce, as a segment, bleeds largely due to working capital challenges that it faces due to the concept of COD. Problems regarding supplier integrity in a traditionally unorganised market remain so strong that the Indian consumers would find it very difficult to break out of the "pay as you look and feel" policy. This could eventually lead to innovations that reduce the delivery to cash cycle for the merchants. Features such as escrow services from the likes of PayuPaisa[2,3,4] for B2C transactions may gain prominence. Deloitte expects lot of activities around similar concept in Business to Business (B2B) commerce as well, where the supplier payment cycle is reduced and the ensuing cost benefit is shared with the buyer.

The most critical factor that affects the adaptation of online payments is the incidence of transaction failure. It is estimated that not more than 60 percent of payment transactions over the internet are consummated.[4] Technologies that will reduce transaction failures and ensure smoother and immediate reconciliation process in case of erroneous payments would gain traction in the market. There are already quite a few solutions in the market designed to make the payment process more efficient like Cleartrip's Expressway and NGPay[5,6].

Another key area in payments, where we expect a large number of innovations happening is that of micro-payments Even if it is assumed that a mere 1 percent of the SMB accept alternate payments where smaller transactions are ubiquitous, that is tantamount to around 250,000 more businesses being able to reach a larger audience. Another set of beneficiaries of the micropayments are a larger set of consumers, especially young professionals and students, who find limited usage of credit or debit cards, as most of their transaction fall under the category micropayments, where cashless transactions are rare.

Mobile payments would give rise to simultaneous rise of two segments – first in mobile-POS devices and the second being in mobile payments channel like Near Field Communication (NFC). NFC, however, would be more than a year away before it starts finding acceptance in India as the market would wait for its global standards to develop before the device manufacturers adopt it. Amidst all these myriad developments, Deloitte predicts the biggest impact in this segment will be registered by the banks, who are emerging as an anchor for the alternate payments ecosystem by adopting innovative solutions. We also see banks stepping-in to promote common transaction platforms so that retailers can move to a plug and play model. This will facilitate the linkage of their systems with the banking channel. The promotion of such a standard would create a virtuous cycle that would remove impediments related to trust in alternate payment channels.

Bottom line

Indian market presents a tremendous opportunity for various forms of cash displacement technologies. The greater dispersion of mobile devices as compared to the debit/credit cards would ensure that alternate payments methodologies like mobile POS would see significant growth and would bring a larger number of merchants and consumers into the fold of cashless payments. Related areas like mobile banking, remittances, etc., are also poised to grow significantly and we expect greater participation by banks to ensure common standards, foster greater transparency and bestow a seal of authentication to the payments ecosystem.

Localization: Scaling the tower of Babel to achieve growth

In 2014, Deloitte predicts that India would witness a surge in the development of local language applications and localisation of content, as any incremental increase in mobile data and internet subscriber base would be achieved among the section of the population whose digital accessibility is limited by language constraints.

Language localisation of IT and mobility software should have been a logical progression in India. However, for years, language localisation as a concept had languished even though mobile and personal computer penetration has increased manifolds. There have been multiple reasons holding back the language localisation of devices and software. Total number of internet users in India was around 120 million as on 2012. As per the 2001 census data, a total of around 125 million had listed English (of which 86 million had listed it as their second language and around 39 million as third) among their top 3 languages.[7] Secondly, internet and mobility had been an urban youth-centric phenomenon. This socio- economic category is the strongest proponent of usage of English language in their day-to-day communication. Also, while the total number of internet-enabled devices existing in the market is around 500 million[8], bulk of these devices are not linked to any data plan and are predominantly used for making and receiving voice calls, sharing text messages, listening to music, sharing photographs and playing basic games. Except for the sending and receipt of text messages, none of the other activities require a command over English language.

It is understood that about 500 million devices can be potentially internet-enabled and that there are only about 200 million internet connections as on date. Assuming that almost all the non-mobile devices PCs, laptops, tablets are internet-enabled, bulk of the non-internet enabled devices, amounting to 300 million are likely to be mobile devices. One could reason that some of these devices are purely supplementary connections that are meant for basic telephony and a significant number of devices are used by a segment of the population that is not web-literate and hence not all these 300 million devices are likely to be internet-enabled.

However, Deloitte believes that there could be significant developments in local language computing in India with the mobile as the medium. The aspects leading to this belief are:

- The total number of internet users has already reached around 200 million in December 2013[9].
- The elderly, a large section of self-employed and those employed in the unorganised sector have displayed a progression in terms of their internet usage, especially via mobile.
- A large student community, who earlier had a limited mobile usage, has emerged as voracious consumers of data.

The telecom companies too have realised the potential of this segment and have since started providing data packs of smaller denominations to attract the intermittent and small ticket users. These new set of users at present limit their usage to entertainment and games but would soon move to communication applications likes Skype, Whatsapp, Viber, etc. and Utility & Productivity apps for bill payments, financial transactions, etc. There is a dire need to develop local language interface in order to tap the small-ticket user market and enable easier access of the relatively new-fangled applications. Moreover content consumption via Social media like Facebook, news portals like Google News, content platforms like Tumblr and Quora are not limited entirely to the young. A large number of senior citizens who access these platforms are more comfortable viewing the content in their mother tongue than in English. Also, the Government's initiatives to facilitate more Government to Citizen services would necessarily require the devices and applications to have vernacular compatibility, as bulk of such services are aimed at the wider segments of population. There seems to be a clear use-case for applications and devices to be adapted to support vernacular language capabilities. Given the current scenario, it is safe to assume that English as a medium in Internet has reached a saturation point and further substantive penetration needs to happen via the vernacular medium.

The two largest global software vendors have put their weight behind Indic language computing, thus taking IT and mobility to the masses. Microsoft's Project Bhasa is a comprehensive program, which aims to localise Microsoft's flagship products, Windows and Office to offer local language input tools and interface packs in 12 Indian Languages offers.[10] Android's Jelly Bean Version already allows Hindi as an in-built input language for all its devices and Gmail is enabled in various Indian languages on feature phones operating on Android platform. While these two players are strongly promoting in-built application in their operating systems and enterprise-class software, there are a whole range of third party application providers, which facilitate specialised language services like gesture-based input and transliterated language services, etc. Google itself is working with the likes of Robosoft to provide in-built local language interface in Android operating system.[11] Device manufacturers like Samsung are also working with transliteration solutions provider like Reverie Technologies for offering content across various Indian languages.[12]

Despite much action, there remains a lot of ground to be covered to unleash the real value of language localization. Marketers would want to derive meaningful insight out of the humungous quantity of data generated by users as an outcome of being able to use such applications more meaningfully and, the corresponding text mining techniques are yet at best in their infancy. Also such data mining and analytics would require specialised ability in psychology, sociology and linguistics, which are in short supply in India.

While we see a strong use case for local language applications in personal computing and mobile domain, we expect to see a robust pipeline of relevant solutions over next two years. The real impact of this phenomenon would be felt in the long term – over a period of next 4-5 years.

Bottom line:
Internet penetration among the users who prefer accessibility via English as the medium has reached substantive levels in India with limited headroom. Any further substantial increase in the mobile subscriber base in general and internet subscription in particular is likely to happen in a segment whose unfamiliarity with English would act as a severe constraint in their adoption of mobile and web technology as it is today. There is a significant pressure on the telecom companies to increase internet subscription to offset the stagnancy in overall telecom penetration by enhancing Average Revenue Per User. This can be achieved if the accessibility to devices and applications is enabled via further language localisation to address the population, which is beyond the 125 million who list English among their top 3 language of preference and communication. India would thus witness a strong push from global players to translate and contextualize applications, content and devices to suit the local preference.

Smart 'Home & Utilities': Two drivers of Machine to Machine application

Deloitte predicts that in 2014 a sizeable number among the approximately 350 million Internet-enabled but unconnected devices in India would be connected to the web.[13,14] We also believe that there would be a surge of connectivity with the traditionally standalone devices primarily in the home appliance segment. This would be the first step towards building an Internet of Things (IoT).

India contains two of the three pillars towards building an ecosystem of IoT. It has a large base of internet-enabled access devices and it has a large and growing market for home appliances and devices, which are traditionally not networked. What currently India lacks are relevant applications, which would enable such an interconnected cluster of machines. With all the major players across the original equipment manufacturing, device and industrial ecosystems being optimistic about IoT, Deloitte believes that India could be a test market for many relevant applications of the concept.

Internet of Things is not a new concept as the current intensity around the topic would prompt us to believe. According to the Cisco Internet Business Solutions Group (IBSG), IoT is simply the point in time when more "things or objects" were connected to the Internet than people.[15] India has around 431 million internet capable mobile devices and around 60 million Personal Computers. Combine the same with the 10 million tablets cumulatively sold over last two years and the industrial computing gears that are extant in the market, the total number of internet capable devices would be a tad above 500 million.[16] As of now for an internet user base of around 130 million (actual number of people connected to Internet via narrowband, broadband and mobile)[14], India has around 500 million internet capable devices, though it is not very clear what percentage of these devices are actually connected. Thus India has already reached the inflexion point that can be considered as the advent of Internet of Things. This will only mark the beginning of a more long term phenomena, as connectivity starts spreading from individuals to the ecosystem. Deloitte believes that India would become very relevant in the M2M communications landscape in next 24 months.

India remains a very important market for the consumer electronics / home appliances companies and the mobile device manufacturers despite the slowdown in mobile telephony and the recent low spends on appliances by the growing middle class.

Table 1: Household appliances industry size (in ₹ billion)

	FY04	FY09	FY14 (projection)
Colour TV	68	110	185
Room Air Conditioners	23	47	95
Refrigerators	31	51	81
Washing Machines	11	21	36
Total	133	229	397
Five Year CAGR		11.5%	11-12%

Source: National Council for Applied Economic Research

Based on the above table, it is estimated that the number of units sold in FY 2014 alone would be around 40 million. We can safely estimate that a significant part of these 40 million devices being marketed every year would be technically capable of being a part of the connected ecosystem.[17]

At least three of the five global brands, which operate in the mobile device market of India, have an equally big home appliances business in this market. This could prompt a significant differentiation war between these companies, possibly leading to "integrated electronic lifestyle solutions" reaching the market in next two years. Such solutions could be a set of interconnected devices including mobile, TV, washing machine, refrigerator, home security solutions, car security solutions and kitchen appliances. The demand for such solutions would be further fuelled by the growing need of high value residential real estate providers to differentiate their offering and justifying the premium in an oversupplied market. While the next generation home automation play cannot exactly be classified as an internet of things; it could rather be seen as a large set of purpose built network. While we do not expect

these set of individual networks to be connected, this could act as the first step towards assigning unique device level identification and enabling the devices to evolve with more capability towards management, security, self-learning, predictive action and inter-device communication. It could be argued that the R&D behind such innovations would probably not happen in India, but we have enough reasons to believe otherwise.

Most of the Indians cannot be termed as couch potatoes not because they spend lesser amount of time glued on to the TV set but more due to the absence of a concept of a couch in many Indian homes. One step in getting the TV sets being more than mere receivers of content and enabling them for a limited duplex communication has been the drive of digitization or set top box enablement. This step in itself has created a platform by means of which, each set is uniquely identifiable at least within the realms of the corresponding Multi Service Operator (MSO). A significant portion of the urban households already have DTH connections where the same premise holds true. We expect a clear transition towards more intelligent Set Top Box (or equivalent devices) along with IP-enabled TV sets, which would jointly drive TV to be a part of the internet. Unlike mobile and tablets, India is yet to see a glut of applications around the internet enabling of TV, but we believe that in next two years many such applications would be developed locally.

Another front where we expect the advent of significant inter-device networking is in Utilities. India has witnessed significant IT enablement of the utilities under the aegis of Re-structured Accelerated Power Development and Reform Programme (R-APDRP) programme with a roadmap that will eventually lead to processes like metering, billing and provisioning being automated. This could lead to the adoption of advanced metering solutions where a growing number of electricity meters are enabled to collect and transmit a large amount of data indicating the health and utilisation of the last mile network and the connected devices. The adoption of meter data management solutions assists the utilities to facilitate proactive load balancing, fault management, customer relationship, billing and provisioning. Even in the utilities segment, while we do not expect the network to evolve into a full blown IoT in next two years, significant chunk of the network would evolve into an automated hub and spoke model with the local distribution company at the centre and the branches extending to advanced meters at the customer premises.

Deloitte believes that a large part of this innovation will directly emanate out of India. Currently, a significant amount of product innovation does happen in the India-based Research & Development (R&D) outsourcing/ product engineering companies or divisions of global firms. The growing interest of many such firms in acquiring players with capability in M2M space is a clear indicator towards this trend. In mobile devices and tablets, with the market tilting more and more towards the home-grown players, it is natural that local innovation or local adoption of a global innovation would play a role. This would propel many such mobile device-focused M2M solutions being promoted by the local firms.

While the evolution of a full-fledged IoT still remains unclear and a lot would depend on global developments like transition to IPv6 and development of standardised platforms and middleware for interconnectivity across a wide array of devices, the next two years in India would see strong strides taken towards developing a collection of Intranet of Things across driven by home automation and appliances, mobile devices and utility services.

Bottom line:
A significantly large ecosystem of appliances and devices that have or are being sold could be web enabled. There is a strong use case for such an integrated environment to emerge. Statistically India is at a point that could be deemed as the advent of Internet of Things.

The phenomenon would be further hastened by the growth in the home appliances segment, which along with the high growth expected in smartphones and tablets would help the electronics goods vendors to come up with "integrated electronic lifestyle solutions" for differentiating themselves in a highly competitive marketplace. TV may start gaining acceptance as a significant node in the integrated home electronics solutions and also in accessing the web.

The other driver for IoT would be in the utility segment, where we expect significant strides towards smart metering and automated device management.

Instead of a full-fledged transition towards Internet of Things, India is expected to make significant progress in developing clusters of "intranet of things" in the next two years.

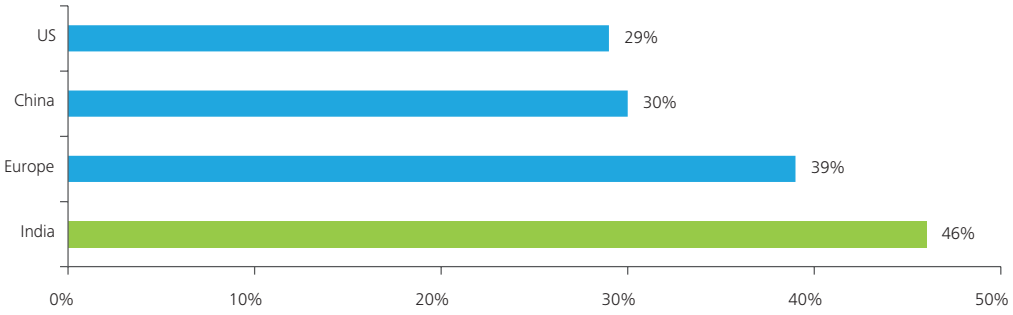
Multichannel Enterprise Applications: Let a thousand application providers bloom

Deloitte predicts that 2014 will mark the surge of a new set of solutions and services emerging in the market, which will enable an enterprise to adapt itself to two new challenges viz. Bring Your Own Device (BYOD) and Multichannel Customer Management. The wide range of devices, which people use to access information, has thrown up two key challenges to the Chief Information Officers and Chief Technology Officers of the organisation. The first is an inward looking challenge of how to manage BYOD or even its milder version of access to office applications by employees from outside the office premises using their personal devices. The second facet is how to address customers and vendors who are increasingly using a multiplicity of devices and touch-points to interact or transact with the organisation. These will pose significant challenges to organisations in areas like security, inter-operability and data/device management. In India, while the penetration of smartphones and 3G service is significant, it is not the norm and bulk of the operating systems in the extant devices are not cutting edge. This poses significant India-specific challenges to enterprises and technology vendors that need to be addressed.

We believe that India would see a growing number of localised applications that would enable multi-channel access of various enterprise applications both from the employees and the customers.

A Deloitte Global survey shows that organizations are responding to the increasing use of mobile devices in the workplace. Currently, 45 percent of organisations have BYOD policies. Surprisingly, more than 51 percent of employees, who work where BYOD policies are offered, primarily use their personal device as their work device and 58 percent of those personal device owners receive the same or more reimbursement. The Survey also shows that one of the fears (technical incompatibility/challenges) around BYOD may be less of a factor than anticipated with 69 percent of organizations who implemented a BYOD policy reporting they experienced no technical, or support related challenges.[18]

Figure 2: Enterprises prohibiting BYOD by country



Source: ISACA Survey[19]

However, according to a 2012 survey in India, conducted by Information Systems Audit and Control Association (ISACA), "India stood first among its global counterparts in prohibiting BYOD, with nearly half (46 percent) of Indian enterprises successfully deploying a BYOD policy to prohibit the use of personal mobile devices for work to mitigate the risk to the enterprise. India is followed by Europe (39 percent), China (30 percent) and the US (29 percent)".[19] The two key challenges in adopting the BYOD concept in India are incompatibility of devices with the office applications and the data security risks associated with BYOD. But before the immediate impact of BYOD is discounted, one critical aspect needs to be understood that it is an irreversible process and once the enterprise implements BYOD it would be virtually impossible to go back to its former "Devices on Premises" practice.

Deloitte believes that it will prompt a glut of security products and services in the market, especially from local vendors who have a better reach and are functionally more geared to address the large SMB market in India. There would also be a large number of solutions that would enable the seamless migration of enterprise applications that has been traditionally residing and are being accessed on premises of what would be residing on cloud and accessed from a range of devices off-premises.

Meeting the second challenge of letting customers and vendors access company data and interact via multiple devices and multiple channels like social media would prompt a range of applications and solutions. These solutions would witness interplay of technologies spanning CRM, mobility, social media and cloud.

There would be a strong localisation play that would be caused by the multichannel and BYOD disruption. The organisations would need to re-think their technology investment strategy and in the short run make significant investments in the above mentioned fields. A part of this, capex spent would however be offset by the fact that many of these applications would be cloud enabled. Further, the CTOs would still like to prune the cost of investment and given the flexibility and reduced switching cost offered by the pay-as-you-go models, might settle for localised and thinner version of the more traditional enterprise products. For example, we might see workflow applications that are overlaid on a simple email application or simple CRM solutions as Facebook apps.

These local innovations would primarily be undertaken by the local start-ups while larger global players focusing on SMB business may also start addressing the specific needs of Indian market. However, we do not expect these innovations to be limited to India and in fact expect that there would be an eventual adoption of the same in a more global arena.

Bottom line:
BYOD and multichannel customer facing applications would be the two most important drivers for enterprises to adopt a completely new range of applications. The latter would in fact be as important a driver for SMBs, as it would be for larger enterprises. On account of this, India could witness a significant number of local application vendors who would provide innovative solutions for security, process and workflow management, multichannel CRM and mobile enablement.