SMARTPHONE POWERED SMART LIVING IN URBAN INDIA– AN OVERVIEW ON EMERGING TRENDS

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Abstract

Mobile technology provides enhanced mobility and improved usability that improves delivery capabilities, increases efficiency and reduces costs besides offering maximum flexibility, transparency and efficiency. Technology and digitally enabled Smart cities will soon encompass smart governance, smart citizenship, smart infrastructure, and smart healthcare – in short "Smart Living". Mobile connectivity is the bond that will connect the urban dweller to the benefit of the Smart City concept. Smartphones are interacting and influencing urban life in real-time to navigate and coordinate daily routines to the advantage of the urban dweller. In the urban landscape that is characterized by fragmentation, the Smartphone provides a form of aggregation and centralization of daily routines that involves business transactions, commuting, providing for product and services and providing options for entertainment and leisure.

This paper has analyzed four anticipated high growth segments in the Smart living space in Urban Indian context in 2016 that will be powered by Smartphones. These are Smart Homes, Hyper -local Home and Local Services, Ride Sharing and the Mobile Wallet. The use of technologies while extremely beneficial is engulfed with numerous challenges as well. The biggest challenge is the Quality of Network and poor signal strength that inhibits internet services. Digital technologies in the coming years will enhance the quality of living and there is great hope and anticipation that the year 2016 is likely to witness a connected digital India. Smartphones and Mobile services are going to play a crucial role in this transformation.

Keywords : Mobile Technology, Mobile Services, Smart Cities, Smart Living, Smart Phone, Urban India

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Introduction

(Ling, 2012)has mentioned that the three seemingly unrelated innovations that have forever changed the way we live and work are the Clock, the Automobile, and the Mobile Phone. These three social mediation technologies have redefined the concept of time and space. While the clock helped to create a framework for routines in daily living and the automobile changed the concept of mobility, the Mobile phone has circumvented the entire concept of fixed time and space. Contemporary society and in particular the Urban society largely depends on a convergence of communication, timekeeping and transportation. The manner in which time and space is being conceptualized with technology is increasingly changing the urban life space and landscape. Erstwhile boundaries of work, home, public, private are getting diffused and redefined (Moss & Townsend, 2000).

The use of mobile technology is continuously developing to meet the ever increasing expectations and demands of users. It is not only providing enhanced mobility but improved usability which helps in improving the delivery capabilities, increasing efficiency and reducing costs. Mobile technology is not only used by the producers but also by the drivers, dispatchers, sales personnel and the end customers in the process covering the entire logistics network. Using mobile technology thus offers and allows maximum flexibility, transparency and efficiency and in the Urban context enables the emergence of Smart cities and Smart Living.

Background and Related Work

Smart Cities

Smart cities a very modern terminology that represents an archetype of "continuous transformation" that is driven by technology and the use of network infrastructures to enhance overall efficiency(Ianuale, Schiavon, & Capobianc, 2015)

(Albino, Berardi, & Dangelic, 2015)through an exhaustive literature review have identified the key criteria that distinguish a smart city, what are its features ,how do they differ from the erstwhile definition of cities and what are the performance measures for smart cities.

(Harrison, et al., 2010)have defined smart cities as an " instrumented ,interconnected and intelligent city ",while Gartner Inc. has defined a smart city as "an urbanized area where multiple sectors cooperate to achieve sustainable outcomes through the analysis of

contextual, real-time information shared among sector-specific information and operational technology systems". Gartner, Inc. has projected that there will be 1.6 billion connected things that will be used by smart cities globally in 2016, an increase of 39 percent from 2015. (Gartner Report , 2015).

A Smart City takes into account aspects of People, Economy, Mobility, Governance, Living and Environment. To make Smart Cities, it was important to make available ICT enabled services and applications to the inhabitants, to the governing administration and to service providers. The main objective is to enhance the inhabitant's quality of life, improve the efficiency and quality of the services provided by governing entities and businesses which requires an integrated approach towards a city's infrastructuresand all its components (Correia & Wunstel, 2011)**.**

The concept of Smart City thus entails an integration, convergence and formation of networked communities on a digital information platform. Across the world, governments and administrations have started to look for answers that enable an integration of transportation, innovative land uses and high-class urban services that would positively impact the economy and the dweller. In line with the Central Government's thrust on creating 100 Smart Cities in India, cities will need to transition in the mindset of people living in urban cities. This will reflect in their life styles, in the governance and also in the systems (Rao, 2015).

Smart Living

Technology and digitalization will be the medium for creating Smart cities that will encompass smart governance, smart citizens, smart infrastructure, smart healthcare – in short "Smart Living".

(Nam & Pardo, 2011) have identified the key components to smart living in smart cities as technology, people and institutions of governance A city is smart when human and social capital along with ICT infrastructures enables sustainable growth , enhance the quality of life and work

(Carli, Dotoli, Pellegrino, & Ranieri, 2013)have looked at Smart Living to also include new indicators of citizen's satisfaction and well-being besides traditional indicators of physical infrastructure.

The role of ICT as a facilitator for Smart living, for creating a new type of expansive environment for a balanced development and virtual collaborative spaces cannot be downplayed (Komninos, 2011). ICT play a very significant role in the concept of Smart living that encompasses hardware and infrastructure (buildings, energy grids, natural resources, water management, waste management, mobility and logistics (Neirotti, Marco, Cagliano, Mangan, & Scorrano, 2014), as well as on the softer intangible aspects such as healthcare , education, culture, policy innovations, social inclusion.

Connected devices and Mobile connectivity is the bond that will connect the urban dweller to the benefit of the Smart City and Smart Living concept. The Connected devices which are combination of sensors, actuators, distributed computing power, wireless communication on the hardware side interacting with applications, and big data on the software have enabled a wide variety of devices to understand their environment and act accordingly.

 (Yan & Hao, 2013)highlighted how Smart Phones can create " convenience,intelligence and controllability "towards Smart Living. In their paper, they have reviewed the use of Android Smartphones based applications specifically in the area of Home lighting control systems using Bluetooth technology.

(Tom & Sitte, 2006)proposed a reference model of Family System that could be used to enable Smart Living by integrating finance, meal planning , health care, education, household maintenance, generating income , recreation and social life maintenance as well as managing relationships and interaction with external elements through Home Automation.

Smartphone

From the perspective of an urban inhabitant, the urban system, the transactional exchanges and the way they are communicating with each other is undergoing major transformations due to the developments in Mobile technologies. In the face of the compression of space and acceleration of time, the Smartphones for example enables the urban dweller to navigate,

coordinate and manipulate their daily routines to their advantage. In the urban landscape that is characterized by fragmentation, the Smartphone provides a form of aggregation and centralization of daily routines that involves business transactions, commuting, providing for product and services and providing options for entertainment and leisure. There is a gradual change and evolution in urban societies through the introduction of new communications technologies like the Smartphones. The Smartphone is engaging and influencing the urban life in a real-time way that assists the coordination of individual actions and movements. This technology driven new urban lifestyle is being eagerly adopted by urban Indians. Many urban Indians, especially the younger profile between the age groups of 21-35years have reorganized their lifestyles around their Smartphone device. Its effects can be seen in the way they navigate everyday lives - the manner of working, in the way they socialize, their leisure and entertainment pursuits, their shopping styles and preferences, in the way they travel and in the manner they conduct monetary transactions. The cost, speed and reliability of mobile communication networks have enhanced the overall experience for the urban user and have resulted in delivering vast amount of data and services which is reliable, cheap and quick.

Mitchell Baker, executive chairwoman, Mozilla at the Mobile World Congress at Barcelona on March 2015 was quoted as "The Smartphone is what's driving things right now. It is allowing people to connect to anyone, anywhere' (Scott, 2015). As consumers, the urban consumers in particular have embraced e -commerce in practically every aspect of their lives. Right from the time of birth to going to the grave, their needs as consumers is being met by their Smartphone enabled mobile connectivity. Smartphones through its nature and its adaptability has penetrated every aspect of the urban consumers' life. It would therefore be appropriate to say that the contemporary Smart Life is powered by Smartphones. Payment Services, Digital Banking, Ride Booking Services, Travel and hotel booking, Health and Fitness Tracking, Home Services are high growth segments that are seeing both huge investments in the market place and huge adoption at the consumer end. Connecting with the end user via Smartphones and Mobile applications are the way to stay relevant and in business as most industries have realized.

(E-Marketer, 2014), a leading research and analysis firm, has revealed that there will be 2 billion Smartphone users by 2016 worldwide. Smartphone penetration in India according to e-Marketer is 1.67 million with a penetration rate of 26% for 2015. There are 159 million Mobile Internet Users in India that comprises 45% of all internet users according to (Internet

and Mobile Association of India (IAMAI), 2015). Further IAMAI anticipates that mobile internet will account for nearly two-thirds of all internet connections by 2017. India has emerged as the largest growth market for Smartphones. India has one of the youngest populations in the world, with a median age of 26 years across age and gender. The demographic data of Indian cities indicate that every third person today is a youth. By 2020, India is expected to become the world's youngest country with the median individual age at 29 years, primarily city dwellers with 64 per cent of its population in the working age group according to a study report published by IRIS Knowledge foundation and UN- Habitat 2012. According to (Cooperate Catalyst India , 2015) , 30% of the Indian Population lives in cities and this is likely to grow to 40% by 2030. The Ericsson Consumer Lab Data of 2015 shows that 38% in the age group 20-30 years and 30% in the age group 31-40 years were urban Smartphone users in 2015. 55% of the affluent educated income groups use Mobile Internet powered by Smartphones. The Mobile Maze 2013 study by EY across their global consumer sample shows that Smartphone are being used by about 70% of all those under 35 years of age who are mainly urban dwellers in comparison to 54% of the balance population. In terms of use of mobile internet services, the under 35 years age group is using 5 mobile internet services on an average as compared to other consumers who use 3.6 mobile internet services. Approximately 8 million Smart phone users in India accounting to 30% of users use their Smartphones for banking & finance, travel, shopping and accessing other web portals according to Nielsen Informate Mobile Insights 2012. Smartphone data services use across categories is 36% for Banking, 32% for navigation, 25% for bill payments and 17% for ecommerce. Mumbai and Delhi lead the Smartphone powered online industry followed by Kolkata, Bengaluru, Chennai and Hyderabad according to IAMAI report of 2014.

Over the last two decades, India has shown a marked upward curve in economic growth and development that is indicated by the high rate of gross domestic product (GDP). This has directly resulted in the increasing spending power and demand for a better quality of living and services, healthcare and food among its population. According to a 2012 report by Boston Consulting Group (BCG) and the Confederation of Indian Industry (CII), "India's robust economic growth and rising household incomes would increase consumer spending to US$ 3.6 trillion by 2020. The maximum consumer spending is likely to occur in food, housing, consumer durables, and transport and communication sectors".

To summarize, the phenomenal adoption rates of Smartphones, the economic growth story combined with a sociological trend to lead a very consumer centric and materialistic living among Urban Indians is driving trends towards Smart Living. By Smart Living one can say that technology has begun to play a very significant role in the everyday living of Urban Indians. It has penetrated into every aspect and its centrality becomes known only in the absence of the technology driven tools that run their lives. From the curiosity of what we would use technology for, we have come to an age where we are trying to figure what don't we use it for. "Technology is not just a tool but that which shapes us and our lives" (Turkle, 2011). The concept of Smart Living involves on the go, anywhere- anytime, real-time. Smart Living seeks a convergence, integration and synchronization and demands that technology should maximize the benefits in everyday living experiences.

Smartphone Powered Smart Living Trends in Urban India

Looking at the trends of 2014 and 2015, e-commerce consolidated its position by the mass penetration of Mobile based apps spurred by Smartphones. Fifty four percent of Smartphone users used shopping apps in May 2015 according to Neilson Informate Featured Insights 2015

(Neilson, 2015). The value of online purchases in India totaled to USD 12.5 billion in 2014 (INR 81,500 crore) and is still in its nascent stage. 10% of the users in the age group of 16-64 used Mobiles to research a product for buying and 11% actually used Mobiles to buy products in July 2015 (We are Social Report , 2015).

Two segments have seen consolidation in 2014 and 2015 in terms of penetration rate and engagement. The first is the e-commerce mobile shopping segment. Players like Flipkart, Snapdeal and Amazon and some others that offer an extensive selection of products are focusing more on their Mobile apps than their websites. By offering greater discounts to customers who purchase through Mobile apps, engagement levels on Smartphones are rising. The growing familiarity of shopping apps is spearheading a new form of modern retail trade that allows consumers to browse, purchase and have products delivered without actually entering the traditional brick and mortar retail establishment. The second segment which has seen considerable stabilization has been the Mobile Banking, Mobile insurance, credit and savings. Mobile money is a rapidly maturing industry. " Mobile money services are now

available in over 60% of the world's developing markets, providing unbanked customers with choice, security, convenience and affordability" (GSMA Global Mobile economy , 2015).

Going by the literature, trends and the investments that are taking place in the Indian Mobile industry, Startups and e-commerce space, this paper has analyzed four anticipated high growth segments in the Smart living space in the Urban Indian Context in 2016 that will be powered by Smartphones.

1.   Smart Homes- A fully integrated Home

Young Urban individuals are eager to accumulate new technologies and build a smart home in order to make their lives and surroundings more interesting and convenient. From smart living rooms to smart homes, there is a transition from short-range control of devices by Smartphones to full integration of the Smartphone with smart appliances. A smart home involves advanced technologies, a good mobile network and smart home accessories. A smart home can be created using simple infrared and Wi-Fi technologies on Smartphones. Smartphones are used to replace all the remote controls to control different home appliances and memorize individual habits of dwellers so that home appliances can be switched on or off based on individual choices. Smart home is expected to adjust multimedia (TV, Audio , Video, stereo systems), environmental devices (Air conditioners, lights, curtains), remotely controlled kitchen and bathroom home-appliances and devices , connect a home camera and other security monitoring equipment to keep an eye on their children , elderly parents and pets, assist in monitoring health etc. (Mian Zhou, 2014). In short, using Technology enabled smart homes, urban dwellers expect the smart home concept to become a companion, housekeeper, security guard, and health expert all rolled into one. The Gartner Report indicates that among the highest user of Internet of Things (IoT), smart homes is likely to represent 21% use in smart cities in 2016. There is an increasing maturity in the smart home concept through an integration of infotainment, home appliances and home sensors that are powered by Smartphones. (Gartner Report , 2015). Home security and entry access controlled by wireless technologies like Wi-Fi, RFID, and Bluetooth are increasingly being adopted by Smart Home Users (Piyare & Tazil, 2011). The use of Bluetooth technologies on Android Smartphones for home security systems without the need for internet is also a popular trend (Piyare & Seong, 2013).

Corroborating this trend, data from real-time Smartphone usage tracking provides insights on consumption patterns of Smartphone users and reveals that the majority of e-commerce products viewed and bought are electronics items, a segment that is being driven by young men who have a desire for acquiring the latest technology (Nielsen Informate Mobile Insights2015).

The smart home is still in its nascent stage but there is huge potential for its boom supported by Smartphones and convenience-enhancing smart home appliances.

Hyper Local Home and Local Services- Redefining the Mobile Shopping Experience

As part of Smart living, young Urban Indians find it a waste of time to stand in queues in supermarkets, or to engage with the local grocer to procure their daily needs , a marked shift from the earlier consumer who needed a touch and feel grocery buying experience. With the increasing comfort and convenience of shoppers with the digital online retail format, consumers are expecting this to extend to grocery shopping and home services as well. Home services include plumbing, electrician, laundry, beauty, fitness, appliances, repair, etc. Market Savvy players are tapping on this emerging need of the consumer by offering technology driven smart solutions. According to the Nielsen Global Survey of E- Commerce conducted in 2014, the willingness to use digital retailing options is highest in developing countries in Asia- Pacific, Africa/ Middle East and Latin America. These consumers are most willing to browse through Mobile shopping lists and use Online or Mobile coupons. There are 100 services offered and 20 thousand individuals on a daily basis search for home service providers using mobile application in top 5 metro cities. The Urban Consumers are no longer depending on ordering by a phone call but they are checking the retailer's page and ordering using their mobile application. There is a huge scope for localization as the market is segmented. The major challenge in providing home services using the mobile application is the requirement of trained local manpower, reliability and affordability of services, on demand services, delivery time, retention of customers and service partners. The study also found that packaged FMCG products in personal care and household categories that have a long shelf life are popular items for Mobile application shopping. Not just limited to groceries and medicines, this segment is quickly getting organized to also cover a range of health and wellness, specialized meal delivery services, home services. About 1 million users order groceries via mobile applications and this market is growing at 30% month on month.

This is among the largest e commerce segment and is in the process of being organized. Among the toughest e commerce segment, the challenge lies in reducing delivery times, creating strong wholesale market linkages. The new startups like UrbanClap, LocalOye, Housejoy, TaskBob, Timesaverz, Zimmber, Bigbasket, Goffers , Pepper Tap who have entered this space has attracted the maximum investment in 2015.

The number of startup in this space has risen to 731 in Food with funding of USD 115.8 million, 426 in Local Services with USD 82.8 million funding, 382 in Groceries with USD 115.8million investments according to (Sharma, 2015).

2.   Ride Sharing - A New Transportation Model

The transportation management system has been growing steadily over the years and is expected to grab a large share of the future market. The use of innovative mobile technology techniques also plays an important role in managing transportation services and with the cost associated with these services. The implication of these technologies has a great impact on overall Supply chain Management. The use of technology has reduced the chaos of transportation and made it more convenient and easier by offering always connected, seamless services for not only business but almost any major functions of daily life. The mobile technological advances in Transportation gives an advantage of being continuously connected which acts as a means to improve efficiency and thus creates a competitive advantage (Robinson, 2015).

Taxi services that are involved in transporting commuters is witnessing a completely new level of integration of information based on real time data that is facilitating movements of individuals and the taxis in the process replacing the entire erstwhile concept of planning and scheduling. This real time ability and the Global Position System (GPS) of coordination have made this new urban transporting lifestyle sustainable and very successful (Townsend, 2000). Taxi Service Aggregators such as Uber, Meru and Ola are disrupting the traditional taxi hiring space among urban India, offering new innovative models that traverse share cab ,car pooling , hitch- hiking to now even courier delivery! Taxi aggregators by force have moved large scale to Mobile Wallet payments owing to a 2014 RBI directive curtailing other multiple payment options of cash, credit, and debit card payments. There are over 1 million users who are using Mobile based Taxi apps across over 100 cities and this space has seen

investment to the tune of over USD 1 billion by leading investors. These services are probably the answer to reducing the growing vehicular pollution and in turn reducing the personal car population on city roads. This is one of the most competitive segment.The service providers have also to fall in line with government registration, regulations on CNG and most importantly verification of the drivers that are being deployed.

Mobile Wallets – A move from Cash based to a Cashless Digital Society

The diverse range of payment services that include commercial trade payments, international remittances and large scale payments such as subsidies (government to people transfers) and salaries that is offered by mobile money providers is growing and making mobile money propositions extremely alluring . "Just over 23% of all the value moving through mobile money systems globally in December 2014 was processed in transactions involving an expanding ecosystem of institutional and business users. In December 2014, mobile money users transacted a total of USD16.3 billion through 717.2 million transactions globally", as quoted by The GSMA Mobile Economy Report 2015. In India, the electronic clearing services offered by NEFT-RTGS and IMPS have overtaken traditional payment system. With 900 million mobile users, a mass adoption trend is underway that will make every Smartphone user into an ATM! The most recent development is that the Government has initiated "Mobile Seva" as a thrust towards a cashless economy. Cashless payment systems have the advantage of increasing secure financial transactions bring transparency and do away with intermediateries. This would cover inter-ministerial, vendor transactions and payments for government services with the aim that ultimately 90% of all government payments will be made either through Mobiles, or through credit cards, RTGS, DBT (Agarwal 2015). With the introduction of Biometric authentication linked to the Aadhar server, Smartphone users will have access to online payments and receipts, online KYC and online authentication. Smartphone are very soon going to replace debit, credit cards as soon as Mobile wallets become operational on a large scale.

The RBI has issued 11 new licenses to companies entering the Mobile Wallet space in order to boost the economy and make payments easier and accessible. The RBI License allows the Mobile Wallet Companies to take deposits, convey remittances, and dispense payments to recipients. According to a study done by research firm RNCOS in December 2015, the market size for Mobile wallets which is currently Rs.350 crore is estimated to grow to Rs

1200 crores by 2019. The investments in this segment have been to the tune of USD 1 billion by startups.

Mobile Wallets are becoming the most popular mode of payments for Phone Recharging, DTH services. Leading players in this space like Paytm, Oxigen, Mobikwik, Payumoney ,Airtel Money are offering heavy discounts and cash back deals to users. In fact they are directly competing with credit card companies for market share. Besides on-line stores, they are proposing to make inroads in the offline in-store payment space. There is integration of banking companies who are actively looking to tie up with the Mobile Wallet players to stay relevant and preserve continuity of business. The Economic Times New Delhi, 28 Dec 2015 carries an article that states that Mobile Wallet Company Paytm expects its customers to add USD 500 Million to their topline in 2016.

SNAPSHOT SUMMARY

Services	Adoption Rate / Number of Users	Present Status	Challenges	Investment in the Segment and Investors	Some Key Players
Groceries (fresh and frozen fruits and vegetables, FMCG products, personal care, cosmetics, medicines etc.)	About 1 million users order groceries via Mobile apps and this market is growing at 30% month on month.	This is among the largest ecommerce segment and is in the process of becoming organized.	Among the toughest ecommerce segment, the challenge lies in reducing the delivery times, creating strong wholesale market linkages.	USD 175-200 million. Accent Capital Partners, Helion Ventures, Sequoia , tiger Global	BigBasket, Grofers, PepperTap.

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Home Services (plumbing, electrician, laundry, beauty, fitness, appliances repairs etc.)	100 Services on Offer 20 thousand individuals on a daily basis search for Home Services providers using Mobile apps in top 5 metros	Huge scope for localization as the market is fragmented.	Trained local manpower, reliability and affordability of service, on demand service, delivery time, retention of customer and service partners.	USD 50 Million Matrix Partners, Saif Partners, Tiger Global, Helion Venture Partners, Brand Capital	UrbanClap, LocalOye, Housejoy, TaskBob , Timesaverz, Zimmber
Taxi Services and Aggregators (Taxi on Hire, Ride Share, hitch hiking, courier delivery)	1 million users can book taxis everyday across over 100 cities in India	A way of creating better transportation system in cities and a possible answer to reduce personal car traffic on city roads.	Very Competitive segment. The Service providers have also to fall in line with government registration, regulations on CNG and most importantly verification of the drivers that	Over USD 1 Billion . Soft Bank, Tiger Global, DST Global, GIC Falcon Edge Capital	Uber, Ola, Meru, Carzonrent, ZoomCar

			are being deployed.		
Mobile Wallets	The market size for Mobile wallets currently pegged at Rs.350 crore is estimated to grow to Rs 1200 crores by 2019	Cashless payment systems have the advantage of increasing security in financial transactions , bring transparency and do away with intermediateries .	To create synergy , convergence and cooperation between Consumer Internet companies the Banking System and bulk payment by Government .	USD 1 billion Sequoia Capital ,Alibaba, Cisco Investments , Beenos.	Paytm, PayU, Oxigen, Mobikwik, FreeChargeAirtel money

Source: Singh Shelly, "From Cradle to Grave- How Ecommerce has changed your Life", Economic Times, New Delhi page 18, 8 Oct 2015 Special Feature.

All of the top five funded startup companies in 2015- Olacabs- USD 900 million, Paytm - USD 890million, Flipkart- USD 750 million , Snapdeal -USD500 million, and Grofers - USD165 million rely on a business model that is Mobile apps based (Sharma 2015). All these cater to the segments where the consumer profile is strongly Urban and who besides being eager adopters will be the future game changers towards a Smart Life.

Challenges

The biggest challenge to Smart Living continues to be the Quality of network for Internet and the overall infrastructure that is still not up to the satisfaction level of customer expectations. Poor signal strength significantly inhibits service. India's connection speed of 13.9 Mbps remains disappointingly slow and is still well below the global average peak connection

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speed of 24.8.5 Mbps asreported inAkamai's Third Quarter State of the Internet report 2014 (Internet Report , 2014). Besides there is an uneven distribution between rural users that account for a mere 17% of India's internet users despite representing about 70% of the nation's population according to (We are Social Report , 2015). This remains a huge untapped market. Indian Mobile Users are eagerly awaiting smooth and seamless 4G Broadband services which are likely to be the game changer in the Mobile Internet Space.

While there is a huge opportunity in the Mobile internet driven e-commerce digital space, consumers continue to shop offline and it is actually going to be a simultaneous process based on what suits the consumer best at that point of time. Consumers still seek the human touch and feel shopping experience and the brick and mortar format is here to stay as well.

While technology is a strong enabler of connected devices, it also acts as an impediment particularly if people behind the scene are not equipped and skilled to provide the necessary support and services. On the user side, there is high need for education on a mass scale so that Urban citizens quickly adopt technology to make their everyday living into an efficient and Smart Living experience.

The way forward

Mobile Internet based environment is the next wave in the telecom revolution. The government has allocated Rs.7000 crores for developing 100 smart cities in the 2014-15 budget with a plan to digitalize basic public services by 2018 (Rao, 2015) . Besides a major restructuring of the Financial Services, there is also likelihood of Smart solutions in energy management, waste management, water and waste management solutions, traffic management, environmental solutions, etc driven by digital technology that will enhance the quality of living for urban dwellers.

There is great hope and anticipation in the coming years to see an empowered India through digital solutions. Digital technology and enabled solutions will interface and transform every level of living experience whether it is digitally driven government schemes such as Aaadhar, Direct Benefit transfer for better governance, social inclusion initiatives by public- private partners and choices of tech driven smart living options at individual level. Smartphones and Mobile Services are going to play a very crucial role in this transformation.

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