



INDIAN WIRELESS DATA BUSINESS - CHALLENGES AND FUTURE PROSPECTS

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ABSTRACT

With the advancement of technological development in every field wireless data business has also grown like anything. India also has grown from no where to a giant in this business because of huge subscriber base and escalating demands. Over the years, telecom operators have offered a plethora of services--from plain vanilla voice services to VAS Services, broadband, fixed line, wireless broadband, mobile money, and many more. Now the emphasis is on acquiring more and more data subscribers by offering better speed and network quality. Telecom Operators are witnessing lot of challenges in terms of intense competition and managing growing customer expectations on one hand and difficulties in Growing and maintaining the telecom infrastructure/network that is expected to run 24X7 without fail, on the other hand. This study will investigate the factors that led to the growth of this sector, its future prospects and challenges that are an impediment to its growth and finally some suggestions and recommendations to overcome those challenges.

KEYWORDS: VAS Services, Wireless Technology, Wireless Broadband, Mobile Money.

INTRODUCTION

Wireless data communications are an essential component of mobile computing. The various available technologies differ in terms of availability in different categories of markets, Network coverage range/parameters and performance, and in some circumstances, users must be able to use multiple connection types and switch between them. To simplify the experience for the user, connection manager software can be used, or a mobile VPN deployed to handle the multiple connections as a secure, single virtual network. Supporting technologies include:

Wi-Fi

Wi-Fi is a wireless local area network that enables portable computing devices to connect easily to the Internet. Standardized as IEEE 802.11 a, b, g, n, Wi-Fi approaches speeds of some types of wired Ethernet. Wi-Fi has become the de facto standard for access in private homes, within offices, and at public hotspots. Some businesses charge customers a monthly fee for service, while others have begun offering it for free in an effort to increase the sales of their goods.

Cellular data service

They offer coverage within a range of 1 to 3 KMs from the nearest cell site. Speeds have increased as technologies have evolved, from earlier technologies such as GSM, CDMA and GPRS, to 3G networks such as W-CDMA, EDGE or CDMA2000.

Mobile Satellite Communications

They may be used where other wireless connections are unavailable, such as in largely rural areas or remote locations. Satellite communications are especially important for transportation, aviation, maritime and military use.

WIRELESS DATA IN INDIA

Wire to Wireless

The history of internet in India started with launch of internet services by VSNL on 15 August 1995, the 48th

anniversary of Indian independence. It added about 10,000 internet users with in 6 months. However for the next 10 years internet experience in the country remained less attractive with narrow-band connections having speed less than 56 kbit/s (Dial-Up). In 2004, Government formulated its Broadband policy which defined the broadband as an always-on internet connection with download speed of 256 kbit/s or above.

From 2005 onward the growth of broadband sector in the country attained acceleration, but remained below the growth estimates of government and related agencies due to the resource issues in last-mile access which depended on wired-line technologies predominantly. This bottleneck was removed in 2010 when government auctioned the 3G spectrum followed by an equally high profile auction of BWA or 4G spectrum that set the scene for a competitive and invigorated wireless broadband market. Now internet access in India is provided by both public and private sector companies using a variety of technologies and media including Dial-Up (PSTN), xDSL, Coaxial Cables, Ethernet, FTTH, ISDN, HSDPA (3G), WiFi, WiMAX etc. at a wide range of speeds and costs. The country has the world's third largest Internet users with estimated numbers to be over 150 million users (of whom 59% who only access the internet via mobile devices) as of December 2012.

As per the Report published by Internet and Mobile Association of India (IAMAI) and IMRB on 2nd Jan'2013, India is expected to have close to 165 million mobile Internet users by March 2015, up from 87.1 million in December 2012 as more people are accessing the web through mobile devices and dongles.

According to the report, the number of mobile Internet users increased to 87.1 million by December 2012 from 78.7 million users in October 2012, who accessed Internet through dongles and tablet PCs. This is expected to grow further to 92.9 million (by March 2013), 130.6 million (by March 2014) and 164.8 million by March 2015.

During the same time, 38 million rural users claim to use internet while 31 million are active users.

Communication is the single largest purpose of accessing internet in urban India followed by social networking. Out of the 34 million internet users surveyed in Urban India, 87 percent use the internet for email, while 67 percent of the users access internet for social networking. On the other hand, entertainment is the primary driver of internet use in rural India. 75 percent of rural users use internet for entertainment while 56 percent use it for communications. Users like to access Music, Videos and Photos for entertainment.

The report further finds that internet usage in urban India has seen a steep rise over the last year with 54 percent of the active internet users accessing internet daily. This growth can be attributed to the fact that there is increased accessibility of rich content on the mobile phones and other handheld devices.

The number of broadband users as of July 2012 is 14.68 million. Cumulative Annual Growth rate (CAGR) of the broadband during the five-year period between 2005 and 2010 was about 117 per cent. Among the technologies, DSL, whilst holding slightly more than 75% of the local broadband market, was steadily losing market share to other non-DSL broadband platforms, especially to wireless broadband platforms.

There were 155 Internet Service Providers (ISPs) in February 2012, who were offering broadband services in India. Public sector companies BSNL and MTNL dominates the market with a share of 64.8 and 7.6 percent respectively while from the private sector Bharti leads with a share of 10 per cent. Cyber Cafe remains as the major source of internet access. In 2009, about 37 per cent of the users access from Cyber cafe, 30 per cent from office and 23 per cent from home. However, the number of mobile internet users found acceleration from 2009 onward and there were about 274 million such users at the end of September 2010, though majority belonged to 2G mobile networks. Mobile internet subscriptions (Data Subscribers on Mobile) as reported by India's TRAI in June 2012 increased to 460.84 million.

The Revenue Growth

The total revenue in the telecom service sector was ₹ 86720 crore (US\$16.0 billion) in 2005–06 as against ₹ 71674 crore (US\$13.2 billion) in 2004–2005, registering a growth of 21% with estimated revenue of FY'2011 of Rs.835 crore (US\$ 19 Billion Approximately). The total investment in the telecom services sector reached ₹ 200660 crore (US\$36.9 billion) in 2005–06, up from ₹ 178831 crore (US\$32.9 billion) in the previous fiscal. Telecommunication is the lifeline of the rapidly growing Information Technology industry. Internet subscriber base has risen to more than a 121 million in 2011. Out of this 11.47 million were broadband connections. More than a billion people use the Internet globally. Under the Bharat Nirman Programme, the Government of India will ensure that 66,822 revenue villages in the country, which have not yet been provided with a Village Public Telephone (VPT), will be connected. However doubts have been raised about what it would mean for the poor in the country.

It is difficult to ascertain fully the employment potential of the telecom sector but the enormity of the opportunities can be gauged from the fact that there were 3.7 million

Public Call Offices in December 2005 up from 2.3 million in December 2004.

The Total Revenue of Indian Telecom Services company is was went up from 1,71,347 Cr. to 1,82,459 Cr. in FY 2011-12 according to telecom journal Voice & Data. The Telecom services include cellular, fixed line, National Long Distance (NLD), International Long Distance (ILD), broadband and VSAT services. Cr (US\$ 36 Billion approximately).

TECHNOLOGICAL TRENDS

Analytics: Rate of creation of data is far exceeding the human capacity for assimilation and analysis. Finding relevant information is important, but hard to accomplish. This is where advanced analytics can play a vital role. Advanced analytics will provide the ability to perform analysis and simulation of all business transactions, and present a model which is concise, relevant, and accurate.

Cloud: Cloud computing has finally emerged from the folds of experiments to becoming a real-world business enabler. For telecom service providers, cloud is a critical enabler in their transformation to next-gen telecom companies. It is Cloud which is responsible for making services, and not devices and connectivity, the true differentiator.

Social: Social Media has been a disruptive trend not just among communities but increasingly in enterprises as well. It was once popular to say that the voice of one disgruntled customer reaches 10 others. Social Media makes it 10 million others. The wealth of information availability, the unlimited reach, and the ease of use make social media a compelling business tool, which some telecom service providers are very effectively using to stay connected with their customers.

Mobility: The consumerization of smart mobile devices has had a dramatic impact on the enterprise. It is essential to be connected with the business no matter where you are. BYOD (Bring Your Own Device) is gaining momentum as the need for a seamless experience is gaining ground. These mobile devices have access to the data for supporting business decision making, leading to a more empowered workforce which can deliver at anytime and from anywhere.

CHALLENGES

The wireless data however is facing certain challenges to overcome. It is because of these barriers the growth of the industry remain stagnant. Let's discuss them in detail-

- 1) One of the major issue, the internet segment facing is the lower average bandwidth of broadband connections compared to that of developed countries. According to 2007 statistics, the average download speed in India hovered at about 256 kbit/s, the minimum speed set by TRAI, whereas the international average was 5.6 Mbit/s(Which is more than 20 times faster) during the same period. In order to attend this infrastructure issue the government declared 2007 as "the year of broadband". To compete with international standards of defining broadband speed the Indian Government has taken aggressive step of proposing the \$13 billion national broadband network to connect all cities, towns and villages with a population of more than 500 in two phases targeted for completion by 2012 and 2013. The network is

- estimated to handle speed up to 10 Mbit/s in 63 metropolitan areas and 4 Mbit/s in additional 352 cities.
- 2) The Internet penetration in India is one of the lowest in the world and only accounts for 10.2% of the population, While the world average is 32.7%, penetration in Asia is 26.2% and rest of the world average is 41%.
 - 3) The digital divide of the growth story biased in favour of urban areas is another issue. According to statistics of the year 2010, more than 75 per cent of the broadband connections in the country are in top 30 cities. TRAI tried to boost the growth of broadband in rural areas by promoting higher investment in rural infrastructure and subsidized tariff for rural subscribers under Universal service obligation scheme of the Indian government.
 - 4) One of the biggest challenge today is the widening gap between growth in revenues (defined by ARPU, customer acquisitions) and the growth in cost of providing service at an acceptable price (defined by voice and data traffic). While the former is at a plateau, the latter is growing almost exponentially. Growth in traffic is spurred by the very trends which TSPs strongly promote-viz growing subscriber base and proliferation of smart mobile devices.
 - 5) Hyper competition and an uncertain regulatory environment are the other challenges. Lower than expected adoption of expensively acquired 3G services, possibly due to lack of differentiating applications that subscribers are willing to accept at a premium for, contributes further to the travails of the service provider.
- vii. Unlike 3G, tariffs for 4G should be down so that everyone can afford it paving the way for economies of scale. Both 3G and 4G will have their market share.
 - viii. More and more telcos has to enter into 4G business so as to ensure the growth of this segment. Otherwise it will become difficult for handful of players to survive in the longer run.
 - ix. Competition should be healthy not cut-throat. This will ensure the viability of the business in the longer run. Since India is such a big market everyone will have his piece of pie.
 - x. The emphasis should be on quality and speed rather than other factors. These two things are so much important that even if Operator "X" is a bit expensive one will opt to have "Operator X".
 - xi. Continuous effort in the direction of educating the clients by healthy marketing campaigns and regular awareness drives.
 - xii. Mobile service providers need to identify and segment subscriber groups with similar behaviours and customise the products and services for each group. Service providers will increasingly try to understand the usage pattern of their subscribers, trends for different data services and issues affecting the network performance to offer customised options for subscribers. This will enhance the experience level of service usage. Offerings will be customised in terms of price, usage and bouquet of services used by the subscriber. Customer experience management (CXM) solutions and analytics will play a large role in offering this level of customisation.
 - xiii. Spectrum constraints will become more acute as rich media content drives data traffic on the network. For efficient usage of spectrum and network resources, configuration of quality of service (QoS) parameters will be customised for subscribers having similar usage patterns. So a subscriber who is a heavy user of mobile TV, but not of music streaming, will have higher QoS delivered for mobile TV service rather than music streaming. Similarly, if location-based services are more popular in urban areas and m-education services are popular in rural areas, then higher QoS will be provided for location-based services and m-education services in these areas, respectively.
 - xiv. Growing demand for media and entertainment content will also raise customer demand for higher quality. This demand will be even more pressing as distribution of content becomes more global in nature. Content Delivery Networks enable improved user access through the use of caching and streaming techniques. A content delivery network caches the content on the peripheries of the network and uses intelligent routing mechanisms. This reduces the distance content has to travel to reach the end user, thereby reducing waiting time and substantially increasing customer experience. Scale, speed and reliability of infrastructure are extremely important for customer satisfaction.
 - xv. Service Level Agreements for meeting the quality of experience are the most important Service Level Agreements in the delivery of data services. Different functions in the service provider must avoid working

SUGGESTIONS AND RECOMMENDATIONS

- i. Apart from capacity, Quality of Service (QoS) models and Key Performance Indicators (KPI) are completely different in 4G. A comprehensive study is required to investigate such models in detail and enable appropriate monitoring mechanisms
- ii. The mobile handset companies should be instructed to kick start the production of 4G enabled handsets as soon as possible, may be by way of offering some kind of incentives in terms of tax benefits etc.
- iii. A nation wide drive in the form of marketing campaign by the regulator will pave way for the awareness and importance of Data products to facilitate growth in Social, Medical, Education and Government Sectors.
- iv. Service providers should continuously look to provide innovative data services, thereby opening up new revenue streams. Service providers need to be open to change and adopt new ways of working as the existing ecosystem evolves. Nimble operators will be faster to react to market conditions and will have the first-mover advantage in the market by introducing new customer oriented data services.
- v. Ensuring that the infrastructure for security deployed for 4G should be scalable and accounts for new usage patterns like social networking, peer to peer applications.
- vi. Promoting IPv6 for 4G deployments which is required to scale for nation-wide broadband internet use.

in silos and should be bound together by consumer experience Service Level Agreements. These Service Level Agreements need to be carefully defined after understanding the experience level at which the user would be delighted and also the level at which they would stop using the service. Consumer preference and behaviours will change quickly for data services, especially with new disruptive services and business models expected to gain more traction in the market. Therefore, all service providers, whether incumbent or new, should continuously monitor consumer behaviours to spot changes in user preferences and change their product portfolio, service offerings and consumer experience SLAs accordingly.

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