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An Empirical Study on Issues, Opportunities and Challenges in Indian Telecom Industry

KEYWORDS

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INTRODUCTION:

In present scenario, the mobile subscriber base in India expanded to 670.6 million in August 2010 with the addition of 18.2 million new users during the month. Indian telecom is the fastest growing industry next only to IT industry. It has been demonstrating strong growth due to the govt. support in the form of many regulatory and policy changes during the last 15 years. The industry has always surpassed the expectations of government targets particularly in the area of tele-density which has reached 59% now.

The following regulatory and policy changes which created positive impact on the industry are,

- Switching over from fixed licence fee to Revenue sharing,
- Introduction of third and fourth operator,
- Introduction of calling party pays regime
- Introduction of universal access licence,
- Issue of licence to new operators and
- Transparent 3G[1] spectrum auction policy

Apart from that, indian telecom sector offers unprecedented opportunities in various areas, such as rural telephony, 3G, virtual private network, value-added services, et al. Nonetheless, the lack of telecom infrastructure in rural areas and falling ARPU of telecom service providers could inhibit the future growth of the industry.

The plethora of telecom services evolved over the years, ranging from basic telephony to voice, video and data services, Wimax, WLAN and VPN, and bandwidth on demand to virtual private networks have catalysed revolutionary changes in the business operations for the service sector, i.e., IT, BPO and also the manufacturing sectors etc, besides providing millions of people access to new technology.

The sector has reflected promising growth, the teledensity in India still remains at a very low level compared with international standards and thus providing tremendous opportunity for future growth. The industry is expected to continue to record good subscriber growth as a result of low penetration levels, heightened competition; a sustained fall in minimum subscription cost and tariff that increase affordability for lower-income rural users, expansion of coverage area by mobile operators.

a.) ISSUES FACED BY THE INDUSTRY :

- Falling ARPU[2]
- Lack of infrastructure
- Rural Areas – underpenetrated
- Excessive Competition
- Price War
- Spectrum Allocation
- Lower Broadband Penetration

Rapidly Falling ARPU

The competitive intensity in the telecom industry in India is one of the highest in the world and has lead to sustained fall in realisation for the service providers. Intense competitive pressure and cut throat pricing has resulted in declining ARPUs. With increasing number of new entrants in the telecom space the competitive intensity is likely to continue, putting further downward pressures on the telecom tariffs. Thus, the telecom companies might have to grapple with further decline in ARPUs, going forward.

Further, with the telecom companies moving their focus to the rural areas for driving the future subscriber growth they might not witness a commensurate increase in revenues. In fact, the risk of steep decline in ARPUs will increase going forward as the telecom companies penetrate rural markets that are characterised by higher concentration of lowincome, low-usage customers.

A higher-than-expected decline in ARPU poses a risk of reduction in margins of service providers. Alternatively, telecom operators are turning their focus to steadily increasing the minutes of usage (MoU) to counter the sustained fall in ARPUs. Likewise, the growth of the VAS is also crucial for some improvement in the ARPUs of operators.

Lack of Telecom Infrastructure

Lack of telecom infrastructure in semi-rural and rural areas could be one of the major hindrances in tapping the huge rural potential market, going forward. The service providers have to incur a huge initial fixed cost to enter rural service areas.

Further, as many rural areas in India lack basic infrastructure such as road and power, developing telecom infrastructure in these areas involve greater logistical risks and also extend the time taken to roll out telecom services.

The lack of trained personnel in the rural area to operate and maintain the cellular infrastructure, especially passive infrastructure such as towers, is also seen as a hurdle for extending telecom services to the under penetrated rural areas.

Rural Areas Continue to Remain Under Penetrated

A rural teledensity of merely 15% point towards the fact that a majority of Indian population still do not have access to telecom services. The rural India seems to have remained untouched by the telecom revolution witnessed in the last few years. A huge 'digital divide', which is reflected by the enormous difference of 74% between the urban and rural teledensity, reiterates this fact.

However, with the urban markets reaching a saturation point, the telecom service providers are penetrating rural areas for driving future growth. Thus, the service providers entering new rural markets might witness substantial increase in subscriber base. The expansion in the rural areas, however, has increased the risk of further decline in the ARPUs. Nonetheless the revenue growth from these regions is unlikely to match the surge in the subscriber base.

Excessive Competition

The major concern that has come to the forefront in the re-

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cent past has been heightened competitive intensity in the industry that has correspondingly fuelled the price war between industry players. The Indian wireless market is one of the world's most competitive markets, with 12 operators across 23 wireless 'circles' and 6 to 8 competing operators in each circle. The auction of new 3G licences and the introduction of mobile number portability (MNP) are likely to heat up competition in the industry, going forward.

Spectrum is the most important resource that is required for providing mobile services. Given that spectrum is a finite resource, the availability of the same would be inversely proportional to the number of operators. Thus, larger the number of service providers smaller will be the amount of spectrum available to each of them.

Scarcity of spectrum leads to higher apex on deployment of mobile networks for the operators as they need more cell sites to improve service quality. Further the growing usage of spectrum and the resultant scarcity may lead to re-use of spectrum and increase chances of congestion in networks leading to constraints on service quality.

The competition in the industry is expected to intensify further with the entry of new players, both domestic as well as foreign players. With the competitive intensity of the industry already at such high levels new operators might find it difficult to gather significant share in Indian telecom market. While the new players may benefit from a faster network rollout through tower sharing, they will face challenges in terms of high subscriber acquisition costs and lower ARPU customers.

Price War Between the Service Providers Putting Pressure on Margins
The ever-increasing competitive intensity in the sector, with licenses and spectrum in several circles allotted to newer operators, is also a concern and could lead to unrealistic pricing levels to grab subscribers. The pricing strategy of per second billing already has taken the price war between telecom operators to the next level. The intensifying price war could put significant downward pressure on the industry revenue growth.

Further, the ongoing price war and the concomitant decline in telecom traffic could raise the entry barrier for new companies.

Spectrum Allocation:
3G Spectrum availability is one of the major concerns for the industry. Lack of adequate spectrum which is the most integral part of the mobile telephony sector could hamper its growth severely. However, the spectrum allotment has been the most controversial issues in the Indian telecom sector.

The smooth process of scheduled 3G and BWA spectrum allocation is likely to be one of the key factors affecting the industry dynamics, going forward. Given the highly-competitive nature of the Indian telecom industry on one hand, and limited licenses in the 3G network on the other, the risk of excessive biding by the service providers has increased. Irrational bidding, especially in some circles, might render 3G services financially-unviable.

Further, there exists a risk of delay in allotment of proposed spectrum to the service providers who have successfully bid for the 3G spectrum.

Lower Broadband Penetration:
The Indian economy remains highly underpenetrated in terms of broadband connections. High cost of devices (PC and laptop), high internet charges and lower wireline connections have been some of the major factors inhibiting broadband penetration. Broadband is one of the key catalysts for economic development and major initiatives by both the government and service providers are needed to increase its penetration.

Regulatory Charges:
The regulatory charges in the telecom sector have a complicated structure because multiple levies impede the smooth implementation of telecom projects in India. Given the continuously-declining ARPUs, and the extremely-low tariffs, sustianing the current growth rates of the industry requires urgent attention towards rationalising the convoluted tax structure in the sector.

TRAI has recommended to the DoT[3] committee to phase out the multiple levies in this sector with a single levy in a phased manner.

Further with regard to license fees, which currently stand at 6%-10% of total revenue, TRAI has suggested that it be reduced at a uniform rate of 6% across all licences.

Other Growth Inhabiting Factors:
The implementation of mobile number portability is likely to aid improvements in quality of service, it is also likely to increase the churn out ratio significantly. The service providers are likely to turn to the VAS as a service differentiator; however, widespread VAS deployment is restricted due to language and illiteracy.

The consumption of 3G services is likely to help the emergence of new VAS. Mass acceptance will be crucial for the success of 3G services in India. Comparatively higher cost of handsets required for accessing 3G services is likely to be one of the major roadblocks in mass 3G adoption in India.

b.) OPPORTUNITIES FOR THE INDUSTRY:
- Rural Telephony
- 3G Services
- WiMAX
- Value Added Service(VAS)
- Infrastructure Sharing
- Managed Service

Rural Telephony – Connecting the Real India:
With the urban markets fast reaching their saturation points for telecom services, especially the voice telephony services, the vast rural market holds a huge potential to drive the future growth of the telecom companies. In fact, the teledensity in rural areas is just about 15%, which reflects the extent of opportunity left untapped for telecom companies, going forward.

Further, the government initiatives for increasing telecom connectivity in rural areas are also likely to aid the telecom service providers to extend their services in the unconnected rural areas. Penetration in rural areas will not only support the growth of telecom service providers but also boost demand for equipment and telecom infrastructure.

3G Services – Potential Growth Driver:
Currently the 3G deployment in India is at a very nascent stage. In fact, 3G services have been launched very recently (February 2009) in India. The 3G services will be instrumental in stimulating future growth of the telecom industry. The 3G services will not only facilitate business through provision of high-speed data and content rich services but also will play a pivotal role in bridging the urban-rural divide by facilitating faster mobile deployment in rural areas.

The launch of 3G will be beneficial to the Indian BPO industry by increasing their competitiveness. In India, where mobile cellular penetration is much higher than that of fixed telephone lines (nearly 30 mobile cellular subscriptions per 100 inhabitants as compared with less than 4 fixed telephone lines per 100 inhabitants in 2008), mobile broadband through 3G will drive broadband penetration. The inherent benefits

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of economies of scale and faster time to market of 3G services will benefit service providers. The high-end customers may get attracted to these services and provide a first-mover advantage to the initial entrants in the 3G space.

3G is also likely to facilitate introduction of various VAS such as video calling, gaming, high-speed Internet access and other data services, which in turn might provide some support to the falling ARPU.

Government has planned to sell the spectrum for 3G services through an auction and thereby create a competitive environment that offers better services to consumers. Auction of 3G and broadband spectrum will be done through e-auctioning which shall be executed by a specialised agency to ensure transparency in the selection process. Bids would be invited from domestic, as well as foreign players. New players would also be allowed to bid which in turn is likely to usher technology innovation, increase competition, lead to prompt roll out of services and provide more choices to customers at competitive prices.

Allotment of the 3G spectrum, the pressure on the 2G spectrum is likely to ease especially in the heavy traffic areas. Moreover, freeing 2G bandwidth might help the operators to cater to additional subscribers without significant additional investments. Given the comparatively high cost of handsets and 3G services, the deployment of 3G services is likely to be limited to high-end customers.

So, the 3G spectrum is expected to be used for voice services, whereby the wireless subscribers might experience improvement in service quality. Going forward, the 3G spectrum is expected to attract major investments and open new growth avenues for the telecom sector.

Worldwide Interoperability for Microwave Access (WiMAX) – Reaching the Last Mile:
In the wireless communication arena, this technology has emerged as one of the most significant developments. Deployment of WiMAX[4] would not only enable the provision of high-speed internet services through high bandwidth spectrum but also prove to be a useful mode of communication in inaccessible terrains.

WiMAX could be used as an alternative to cable and DSL for providing broadband access in rural areas and hence could be a major factor driving the growth of Indian telecom services, especially the wireless services.

Moreover, it is likely to facilitate the propagation of the e-governance services such as telemedicine, e-learning et al through broadband, particularly in the rural areas. Given the fact that WiMax deployment does not require significant resources, it will also be an economically-feasible option to cater to rural communication needs.

Mobile Value Added Service (MVAS) – An Opportunity to increase the ARPU:
VAS segment is rapidly emerging as a potential revenue generator for the telecom services industry. Given that a substantial part (around 60%) of the total VAS revenue goes into the kitty of the service providers, the development of this segment is likely to offer them an opportunity to support their falling ARPU. The increasing acceptance and usage of mobile commerce services is also likely to boost the VAS segment. Mobile banking is likely to emerge as a major growth driver in the near future given the issuance of M-banking guidelines[5] issued by the RBI and increasing demand for this service.

The demand for new VAS services is likely to surge given that increasing number of younger generation has started using mobile services and are more inclined to adopt the VAS services. With the implementation of mobile number portability, the service providers would be encouraged to constantly develop new VAS as a service differentiator and retain their existing customers and attract new ones. The introduction of the Next Generation Networks would help in bringing down the cost and roll out time of new MVAS and provide impetus to the growth of the VAS, going forward.

Further, with reduction in prices of the feature rich handsets capable of accessing many of the VAS services the demand for the MVAS is set to increase in the future.

Infrastructure Sharing – A Profitable Proposition:
The rapid expansion in subscriber base has brought to the fore the challenge of increasing and upgrading the telecom infrastructure to maintain quality of services. In the recent years, infrastructure sharing has emerged as a profitable proposition for both the parties involved, as for the tenant it lowers capex and opex, and for the owners, it is an additional source to earn revenue. It would lead to considerable reduction in initial set-up costs for new service providers and existing service providers planning to enter new service areas. Infrastructure sharing might assist the service providers to reduce their operating costs. The cost saving through infrastructure sharing could be passed on to the customers thereby augmenting their affordability.

Further, with infrastructure sharing, the companies can reduce the time required to roll out the telecom services in the rural areas. The sharing of telecom infrastructure by companies could lead to optimum utilisation of these resources and thereby improve efficiency.

A step forward in infrastructure sharing is the proposal of TRAI to include those rural and remote areas in its purview that are not covered by wireless signals with assistance from the USO Fund.

Managed Service – Outsourcing in Telecom:
It is typically involve the outsourcing of a specific technical function or capability to a Managed Service Provider (MSP). It is an alternative to in-house management or traditional outsourcing since firms/enterprises do not have to transfer complete control over assets/operations to the MSP but rather can contract or outsource specific management challenges for a shorter period of time.

The rapidly-growing subscriber base, managing infrastructure and networks is becoming increasingly difficult for the service providers. Therefore, many service providers have been outsourcing their infrastructure or network management operations completely or partially. Managed Services are fast-emerging as an attractive proposition for many enterprises that do not want to dedicate human resources and capital toward acquiring and administering technology infrastructure. It also allows the telecom service providers to focus on their core activities, to develop new and innovative products and services so as to distinguish themselves from other players in this highly-competitive market.

The service providers can gain significantly in terms of cost reduction and improved efficiency in operations from the economies of scale that an MSP can offer.

OPPORTUNITIES FROM OTHER SERVICE SEGMENTS:
Investing in technologies such as NGN, 3G, WiMAX, is likely to open up new frontiers of business. Some services such as IPTV, VPN etc. are expected to gain some momentum in the medium to long run.

Virtual Private Network (VPN):
Virtual Private Network, also known as closed user group (CUG), is a private data network that provides connectivity within closed user groups via public telecommunication infrastructure. The option is less expensive as it relies on sharing of public infrastructure. This service was first availed in India by corporate units that required VPN services to connect to

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their branch offices.

IPTV:
Internet protocol television (IPTV) also referred as 'triple play' offers internet, television and telephone services on a single platform. IPTV provides the telecom service providers an opportunity to widen the gamut of existing services and is likely to be beneficial for large players in the telecom sector. Given the lower broadband penetration, the usage of IPTV is likely to be restricted to metros and some urban centres.

c.) CHALLENGES FOR THE TELECOM INDUSTRY:
Some of these key challenges faced by the telecom industry are listed below.

- Revenue growth
- Subscriber growth
- Profit Margin
- Number of operators
- 3G and BWA roll out
- Mobile Number Portability
- Security clearance for procurement of Telecom equipment
- Review of spectrum management and license terms and conditions
- Re-verification of mobile subscribers
- mobile virtual network operator Network
- Data segment
- Telecom Regulatory Authority of India directive on value added services

Revenue growth:
There are 15 telecom operators in the country today. In each circle there are around 9-10 operators competing for the same revenue pie which is not growing. Lower tariff and high introductory offers which the industry saw during 2009 resulted in multiple SIM ownership and reduced realization per minute of use. The new operators who entered the market during 2009 offered subscriptions at throw away prices loaded with free talk time. The incumbent operators are also forced to get into this tariff war and this converted the existing paying minutes to non paying minutes and slowed down the revenue growth of the sector. The revenue growth during the calendar year 2009 was just 12% as compared to 22% during the previous year 2008.

Subscriber growth:
India will continue to be the fastest growing telecom market in the world in terms of total number of new subscriber additions. However the industry's focus has now shifted from customer market share (CMS) to revenue market share (RMS). This is because the multiplicity of SIM ownership has made the subscriber numbers meaningless to gauge the strength of the business. The dual sim is contributing to 30%-35% of the new additions. There is a huge disparity between the CMS and RMS as the higher CMS has not led to higher RMS for some of the operators. This is because of the huge inactive subscriber base and the low ARPU from the newly added subscribers. While the industry will continue to achieve the subscriber growth mile stones, reaching these subscribers profitably will be a major challenge. The operators need to work on new business models and radically change the products to improve the profitability.

Profit Margin:
The telecom operators are trying to overcome the profit margin pressures by reducing the operating costs through business process outsourcing, infrastructure sharing, IT outsourcing and revenue assurance.

Number of operators:
The total number of operator now stands at 15. With several operators operating at tariffs lower than cost, the eventual consolidation of the operators is inevitable and expected very soon. Some of the new operators have already approached the government for surrendering their licences and seeking refund of licence fee paid. However, the telecom industry provides lucrative long term opportunities for strong operators with deep pockets.

3G and BWA roll out:
The launch of 3G operations require huge funds for spectrum fee and also for network roll out. The other challenges are rolling out new 3G value added services and ensuring availability of 3G handsets at affordable prices. The 3G roll out will pose major challenge to the non 3G operators. There is a possibility some of these operators may lose their high end customers to the 3G operators. 3G launch is expected during Q3 end mainly in big cities.

MNP:
The Government has announced that Mobile number portability will be implemented on 1st November 2010. The industry is expecting a huge churn of subscribers from the weak operators to major operators who offer better services. There is an opportunity for the new operators who are looking forward to grab the high end subscribers from the established operators. This move is bound to be beneficial to the operators who offer congestion free network and excellent customer service.

Security clearance for procurement of telecom equipment:
The Government has not given the clearance for procuring equipments particularly from the Chinese manufacturers due to security reasons. This has impacted the network roll out in the country. As per DoT directive prior approval is required before procurement of any telecom equipment / software. This created a situation where the telecom operators have not been able to import network equipment since 3rd Dec 2009.

Review of spectrum management and license terms and conditions:
The recent success of 3G and BWA spectrum auction has encouraged the DoT to review the existing 2G spectrum allocation policy. It has suggested that the existing operators who have excess spectrum, need to pay for additional spectrum charges at the 3G rates. As this will result in huge payout for most of the established operators they have not agreed to this proposal.

Re-verification of mobile subscribers:
The Home ministry has issued instructions to all the operators that they should ensure proper address and identity proof for all their subscribers particularly in the case of prepaid. In a recent survey conducted in Mumbai by the police it was reported that approximately 60% of the addresses of prepaid customers are incorrect. The Government feels that there is a major security threat as in many cases it is observed that the prepaid cards were procured by terrorists and criminals with fake name and address. To comply with the recent directive, the operators have been asked to carry out a re-verification of all their mobile subscribers incurring huge cost in this process.

MVNO:
The policy on MVNO is not yet announced by the government. Even though MVNO will provide additional revenue stream to the existing MNO, by buying the excess capacity, they pose a threat to the MNO if MVNOs end up grabbing high end customers from them.

Network:
Network operations are usually designed to address frequent disruptions caused by equipment failures. Sometimes the telecom companies do not address the catastrophe level incident like fire, earth quake etc. This is because in telecom, the network equipments are located across the country and at multi-occupancy premises which are shared with third par-

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ties. All of these factors have an impact on fire, security and health and safety issues which are required to be managed to ensure that there is no interruption to the service.

The network roll out is a big challenge and time consuming and involve huge capital expenditure. The telecom industry is capital intensive as the industry needs to continuously adapt itself to the latest technology. The recent media reports on radiation from the mobile phone towers and the municipal permission issues is creating serious disturbance to the operations and services to the customers when the sites are sealed by the authorities or by court. The COAI and AUPSI are jointly addressing this issue.

Data segment:
In India the voice contributes to 80% of the total revenue and the balance 20% is contributed by data. In matured markets like Japan the data contributes to 50% of the revenue. As the voice calling rates are falling every day due to intensive competition, focusing on data revenue is the only option left with the telecom companies to maintain and grow revenue.

TRAI directive on value added services:
TRAI[6] issued a directive on 27th April 2009 that all value added services like caller ring back tune etc can be offered to a customer only after receiving a confirmatory SMS from him. This order was modified later which allowed the subscription of VAS by pressing * and 9 on the handset thereby making double electronic confirmation.

d.) SCOPE IN FUTURE:
The government has proposed to achieve a rural Tele-density of 25% by deploying 200 million-connections at the end of the Eleventh Five Year Plan[7], given that more than 70% of the population lives in villages. The optimum utilization of USO fund and increase in mobile services might help the government attain this goal. The government's thrust on welfare programmes such as community development, education and health and rural connectivity can also be facilitated through satellite communications, internet connections etc.

Besides, broadband connections for all gram panchayats and public healthcare centres, secondary and higher secondary schools and provision of 3G services to all cities/towns with more than 0.1 mn population is also likely to be achieved during the Eleventh Five Year Plan. It is also visualized to link block headquarters and the nearest exchange through the State-Wide Area Networks (SWAN) connectivity.

Major initiatives such as e-Agriculture, e-Health, e-Education, rural BPOs are slated to increase internet penetration as they set the base for increasing acceptance of the same.

During the Eleventh Five Year Plan period, Rs 2,670 bn worth of investments are projected to be made in the telecom industry and the public sector is expected to have a 33.50% share in the same, while the private sector is expected to contribute 66.50%.

Further, a total of 650 mn connections (including 66 mn wired and 584 mn wireless connections) are expected to be achieved by the end of 2012. The growth process in this ever-evolving sector needs to be backed by a strong R&D support. The active participation of the private sector in R&D would ensure greater benefits for the sector. Further, the government also envisions making India a hub for telephone equipment manufacturing that is expected to be achieved through telecom specific special economic zones (SEZs) and by setting up Export Promotion Council to promote export of telephone equipment and services.

The following table will display the summary of issues, opportunities and challenges in Telecom sector:

ISSUES	OPPORTUNITIES	CHALLENGES
Falling ARPU	Rural Telephony	Revenue growth
Lack of infrastructure	WiMAX	Subscriber growth
Rural Areas – underpenetrated	3G Services	Profit Margin
Excessive Competition	Value Added Service	Number of operators
Price War	Infrastructure Sharing	3G and BWA roll out
Spectrum Allocation	Managed Service	Mobile Number Portability
Lower Broadband Penetration		Security clearance for procurement of Telecom equipment
Falling ARPU		Review of spectrum management and license terms and conditions
Lack of infrastructure		Re-verification of mobile subscribers
		Mobile virtual network operator
		Data segment
		Telecom Regulatory Authority of India directive on value added services

CONCLUSION:
In this present scenario, the Indian mobile subscriber base is likely to sustain the rapid growth recorded in the past few years. Presence of skilled labour pool, improving telecom infrastructure, favourable demographics, rising disposable incomes of consumers, declining tariffs, increasing demand, growing attraction for mobiles with new features and greater availability of handsets at lower prices, are expected to continue driving the growth of the telecom sector, going forward.

So, the companies are likely to encounter a more challenging business environment in the near future, given the sustained fall in ARPUs, rapidly increasing competition and consequent pressure on margins and regulatory risks. Companies with good rural coverage, better operational efficiency, and superior quality of service are likely to stay ahead of competitors.

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