



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2017; 3(11): 471-476
www.allresearchjournal.com
Received: 21-09-2017
Accepted: 24-10-2017

M Srinivasa
Research Scholar in Commerce
Dravidian University
Kuppam, Andhra Pradesh,
India

Dr. D Govindappa
Research Guide in Commerce
Dravidian University
Kuppam, Andhra Pradesh,
India

Correspondence
M Srinivasa
Research Scholar in Commerce
Dravidian University
Kuppam, Andhra Pradesh,
India

Telecom services in India: An empirical study

M Srinivasa and Dr. D Govindappa

Abstract

Telecom in India is one of the fastest growing sectors. It has undergone both evolutionary and revolutionary changes. Latter is faster, farther and deeper than the former. Telecom has completely shaken the way of communicating among the masses and corporate sector. The process of globalization is facilitated by communication through interconnectivity, networking and the speed with which information is flooding. The concepts of globalization, liberalization, marketization and privatization are more pronounced in the telecom sector of our country. Instantaneous connectivity, access, interception are made feasible by high-end cutting edge technology. The present research paper analysed 1050 sample consumers from six telecom service providers in Karnataka. It takes account of the various marketing strategies of the telecom service provides and the results are presented in the form of a capsule.

Keywords: Telecom services, market strategies, internet of things

Introduction

The telecom industry around the world is redefining communication services more frequently than ever. The bandwidth promised by newer technologies is setting new benchmarks rapidly. Every new technology is superior to the former one by 100 or even 1000 times. Digital commerce finds place in everyday news for many reasons like new ventures, creative business models, funding, valuations, market offerings and profitability. Some of the segments such as electronics, insurance, and travel booking have a substantial online platform presence while other segments like pharmaceutical products, automotive, machinery are still inclined towards traditional business models. The convergence between telecom and information technology means that there needs to be innovation, competition, and investment in the telecom networks, as well as in the services, content, applications and operating systems. The success of each of these players in the digital ecosystem depends on the success of the other.

Cyber Security Drivers for ICT in India

The government and related agencies have been impressing to integrate the security at each layer of the business within the ICT. The current government has emphasized to provide Cyber security the utmost importance to combat any possibility of Cyber war. The government over the last few years has taken necessary steps to enhance the cyber security measure and has setup policy framework, issued guidelines and regulatory mandates for secure implementation and management.

Fourth-Generation Regulation

The evolution of the fourth-generation regulator's role can be viewed as a necessary response to several critical issues arising out of the changing environment. These issues, as depicted on stem largely from economic and social development realities and objectives set by government policy-makers. To be clear, these issues should be seen as additions to the more traditional tasks of regulators, which should progressively become less important with the maturing of a competitive market place.

Table 1: Shows Regulation in effect in India and Focus Area

Regulation in effect in India	Focus Area
The Indian Telegraph Act and Rules ^[1]	<ul style="list-style-type: none"> Prohibits and penalizes unlawful interception of communication and tampering with messages sent over telegraphs Licenses issued to Telecom Service Providers (TSPs) under this Act require TSPs to take measures to safeguard the privacy of their customers and confidentiality of communications
Telecom Regulatory Authority of India (TRAI) ^[2]	<ul style="list-style-type: none"> Issued a direction seeking to implement the privacy and confidentiality related clauses in the service providers' licenses Service providers are required to put in place an appropriate mechanism to prevent the reach of confidentiality on information belonging to the subscribers and privacy of communication
Department of Telecom (DoT) ^[3]	<ul style="list-style-type: none"> Includes the security conditions in the UASL that are to be adhered to by the telecom service providers Mandates in UASL to induct only those network elements which have been tested as per relevant contemporary Indian or International Security Standards and certified by authorized and certified agencies/ labs in India
National Telecom Policy 201232	<ul style="list-style-type: none"> Provides directions to build national capacity in all areas – specifically security standards, security testing, interception and monitoring capabilities and manufacturing of critical telecom equipment Mandates and enforces that the Telecom Service Providers take adequate measures to ensure the security of the communication flowing through their network by adopting contemporary information security
IT Amendment Act 2008 (ITAA 2008) ^[4]	<ul style="list-style-type: none"> Mandates implementation of reasonable security practices and procedures with respect to Sensitive Personal Information of any individual Has provisions to penalize on fraudulent use of identity of an individual and criminalizes wrongful disclosure of personal information in breach of lawful contract
Amendment to the Unified Access Service license agreement 201134	<ul style="list-style-type: none"> Includes requirements such as existence of organizational Information Security Policy covering Security Management, Network Forensics & Hardening, conduct of Network penetration testing, Risk assessment, establishment of security operations center (SOC), etc.
National Cyber Security Policy, 2013 (NCSP-2013) ^[5]	<ul style="list-style-type: none"> The mission is to protect information and information infrastructure in cyber space, build capabilities to prevent and respond to cyber threats, reduce vulnerabilities, and minimize damage from cyber incidents through a combination of institutional structures, people, processes, technology and cooperation Aims at facilitating creation of secure computing environment and enabling adequate trust and confidence in electronic transactions and also guiding stakeholders' actions for protection of cyber space Aims at creating a secure cyber ecosystem and an assurance framework, encouraging open standards, strengthening the regulatory framework, vulnerability management, promotion of research and development in cyber security and enhancing our technical skill sets and human resources

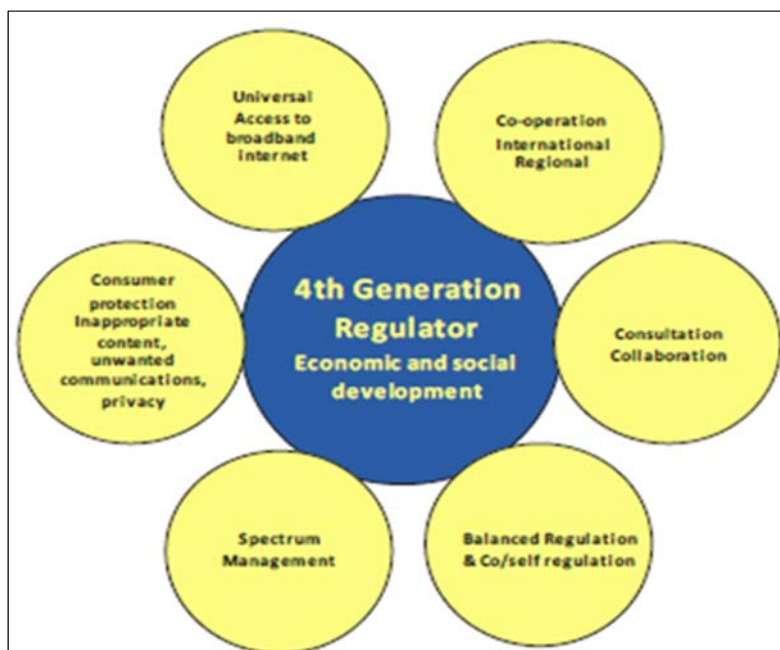


Fig 1: The Evolving Role of regulators

(Source: Alan Horne. (2014). Fourth-Generation Regulation: A New Model of Regulation for The digital Ecosystem. Trends in Telecommunication Reform: Special Edition, 1-220)6.

Review of Literature

Hemant Joshi [6] feel that the Internet of Things (IoT) is expected to be the next big thing in the mobile ecosystem and a key driver for further growth in cellular. Numerous services are planned for IoT over cellular networks, including utility meters, vending machines and automotive applications. There are already some IoT services use cases we see around, such as wearable. It is expected that the use of wearable consisting of multiple types of devices and sensors will become mainstream. Smart services will become pervasive in urban areas, and usage will also grow in suburban and rural areas (Hemant Joshi M. U.).

Torgovnik (2017) [7] opine that over the past 15 years, the rapid and widespread growth of the mobile telecommunications industry has helped women by increasing connectivity and access to goods, services, and information. In the developing world, the industry has supported employment and economic growth, helping bring hundreds of thousands of people out of poverty (Torgovnik, 2017).

Rahul Venkatram (2012) [8] contends that the Telecommunications industry today is a key enabler of productivity across economies and societies. The Telecom industry is not only a significant contributor towards the economic activities of countries, but also towards the growth of other industries. In recent times, developing nations have witnessed significant transformation within this sector due to the impact it has had on their economies. The booming and emerging economies of China and India have been impacted the most by the rapid growth of the Telecom industry in the past decade (Rahul Venkatram, 2012).

Hemant Joshi (2015) [9] propounds that the Indian telecom industry has crossed two decades post privatization of this sector. Since then a lot of innovation, consolidation, and maturation have happened in the industry, and today we have 12 major mobile telecom operators operating in the country. Presently, the total revenue of telecom operators is about ₹ 1.8 trillion with a burden of ₹ 2.5 trillion debts with a dwindling voice and SMS revenue. This is happening due to severe tariff competition in case of voice and declining SMS revenue due to the advent of new instant messaging applications, etc. Operators are facing disruptive technologies, rapidly changing business rules, and intensified regulatory environment leading to eroding service margins. In this scenario, the only stabilizing factor for telecom operators is revenue generated from data provisioning and driving value from this data (Hemant Joshi B. D., 2015)

Sampling

The sample size in respect of consumers from six telecom service providers in Karnataka is 1050.

Strengths, Weaknesses, Opportunities and Threats (SWOT)

Analysis for Telecom Sector by Service Providers

Both internal and external forces influence the telecom firms. The ever-changing competitive environment has re-defined the way of functioning of telecom firms in our country. The sample firms were asked to indicate the SWOT variables. The common factors are arrayed at table 1

Table 2: Strengths, Weakness, Opportunities and Threat Analysis for Service Providers

Strengths	Weaknesses
Huge investment	Falling Prices
Connectivity	Centralized Decision Making
Range of Services	Lack of Indigenous R&D at low cost
Abundant Value added services	Sudden and unexpected change in regulatory
Increasing Customer base	Inability to cope with turbulent changes like very high expectation of consumers about services
Cutting-edge technology	Customer complaints
Brand Image	Lack of Indigenous technology at affordable Price
Talented Work Force	
Infrastructure Sharing	
Opportunities	Threats
Untapped Markets	Falling ARPU vis-à-vis galloping Operational Expenditure (OPEX).
Rural Coverage leveraging Government Policy	Tough Competition
Wealth Creation	Availability of wide range of SIM based CDMA handsets at low range on par with availability of GSM handsets
Acquisitions, Mergers and strategic alliances	Technological obsolescence
FDI	Spectrum Policy
Easy Licensing for various Services like NLD, ILD operations	Customer Churn and retention Management
Increased demand from Top Corporate houses for telecom services	Transparent and two- way IUC agreements
Going Global	Regulatory initiated policy for Revenue Sharing
	Bad word of Mouth
	Fraudulent Customers and collection

Source: Primary Data

Hypothesis Testing

The entry of private firms has brought in a deluge of formidable challenges, opportunities and threats in the telecom industry.

- A. Conducive Environment arising out of opening up of the sector for private participation (Service Providers' Data Analysis)

Table 3: Shows Parameter Chi-Square Value at 0.5 percent level of significance and Remarks

Sl. No	Parameter	Chi-Square Value at 0.5 percent level of significance	Remarks
1	Technology	0.655	Insignificant
2	Competition	0.624	Insignificant
3	Liberalization	0.636	Insignificant
4	Privatization	0.649	Insignificant
5	Flow of FDI	0.499	significant
6	Inflation and deflation	0.382	significant
7	Cultural change	0.552	Insignificant
8	Regulatory Mechanisms	0.611	Insignificant
9	Globalization	0.614	Insignificant
10	Amendments to the telegraphic acts	0.699	Insignificant
11	Population	0.545	Insignificant
12	Emergence of infotech society	0.632	Insignificant
13	Surging purchasing power	0.599	Insignificant
Opportunities			
1	Untapped Market	0.714	Insignificant
2	Technological innovations	0.684	Insignificant
3	Range and quality of services	0.498	significant
4	Network coverage and foot prints	0.501	Insignificant
5	Plunging prices/call Rates	0.584	Insignificant
6	Demand from corporate clientage	0.491	significant
7	Infrastructure sharing	0.522	Insignificant
Challenges and Threats			
1	Billing problems	0.382	significant
2	Customer retention and effective churn management	0.356	significant
3	Hassle free services	0.594	Insignificant
4	Rapid technological obsolescence	0.676	Insignificant
5	Network Security	0.614	Insignificant
6	Telecom frauds	0.436	significant
7	Fulfilling all regulatory formalities	0.541	Insignificant
8	Tactful investment decisions	0.489	significant
9	Oligopolistic market features	0.671	Insignificant
10	Cultural shocks	0.522	Insignificant
11	Retaining skilled manpower	0.584	Insignificant
12	Adaptability to change in the telecom environment	0.536	Insignificant
13	The very survival and long term growth	0.644	Insignificant
14	Bad word of mouth / Maligning canvas	0.576	Insignificant
15	Spectrum allocation	0.671	Insignificant
16	Complying with IUC agreements	0.689	Insignificant
17	Controlling galloping OPEX	0.655	Insignificant
18	High Customer Expectations	0.634	Insignificant
19	Absence of indigenous telecom equipment manufacture like various handsets	0.611	Insignificant
20	Changing business environment	0.699	Insignificant

From the above Chi-square analysis results, it shows that, the hypothesis “*The entry of private firms has brought in a deluge of formidable challenges, opportunities and threats in the telecom industry*” is proved beyond doubt. The figures indicate that at 0.5 percent level of significance, the Chi-Square values for majority of the parameters show more than 0.05 values. It can, therefore, be inferred that the statistical relationship between conducive environment and the entry of private service providers- their consequential ramifications, that is, an innumerable opportunities, challenges and threats has arisen for the telecom players in

our country. The tentative statement received insignificant opinions from the service provider respondents. Hence, the stated hypothesis hold good.

To corroborate the aforesaid hypothesis, sample telecom firm respondents have given SWOT analysis for telecom Industry in India, which are analyzed elaborately, consciously and meaningfully in table 1 above.

B. Conducive Environment arising out of opening up of the sector for private participation (Corporate customer Respondents’ Data Analysis)

Table 4: Shows Parameter Chi-Square Value at 0.5 percent level of significance and Remarks

Sl. No	Parameter	Chi-Square Value at 0.5 percent level of significance	Remarks
Opportunities			
1	On-line/virtual marketing	0.655	Insignificant
2	High transmission of data in virtually real time	0.612	Insignificant
3	Reduced transaction costs	0.584	Insignificant
4	Audio and video conferencing	0.532	Insignificant
5	Voice and data connectivity anywhere anytime	0.514	Insignificant
6	Range and quality of services	0.522	Insignificant
7	Reduced OPEX because of Telecom Facility	0.541	Insignificant
Challenges and Threats			
1	Falling call-rates	0.623	Insignificant
2	Billing problems	0.499	significant
3	Increased competition	0.541	Insignificant
4	Technological obsolescence	0.381	significant
5	Globalization of business	0.549	Insignificant
6	Getting SLA commitments by TSPs	0.326	significant
7	Technological acquirement by TSPs to suit the needs of corporate customers	0.501	Insignificant

The corporate customer respondents too have conceded the fact that the conducive environment arising about of opening up of the telecom sector to the private competition has heralded a plethora of opportunities to the telecom firms and at the same time benefited to the corporate customer in terms of enhanced and wider range of services with good QOS. The sector is not an exception to facing challenges and threats on equal footing. The infuse of domestic and origin competition in the sector created dramatic and unimaginable paradigm shifts. The hypothesis that “*The entry of private firms has brought in a deluge of formidable challenges, opportunities and threats in the telecom*

industry” was tested by using Chi-Square analysis. The results at 0.5 percent level of significance show the calculated values above 0.05 which can be construed as ‘insignificant’. In addition, the SWOT analysis indicated by the corporate customers on the scenario of the telecom sector at present endorses the fact that there exists opportunities, challenges and threats for the telecom players. Hence, from the perspective of the corporate customers the aforesaid hypothesis holds water.

C. Conducive Environment arising out of opening up of the sector for private participation (Individual customer Respondents’ Data Analysis)

Table 5: Shows Parameter Chi-Square Value at 0.5 percent level of significance and Remarks

Sl. No	Parameter	Chi-Square Value at 0.5 percent level of significance	Remarks
Opportunities			
1	Improved network coverage	0.612	Insignificant
2	Connectivity	0.645	Insignificant
3	Service on demand	0.655	Insignificant
4	Enhanced teledensity	0.394	significant
5	Rural coverage	0.419	significant
6	Employment generation	0.612	Insignificant
7	Better quality and standard of living	0.641	Insignificant
8	Improved service	0.513	Insignificant
9	Instantaneous exchange of data/text/image	0.542	Insignificant
10	Furthering InfoTech society concept to rural areas	0.539	Insignificant
11	Vast untapped rural market	0.655	Insignificant
Challenges and Threats			
1	Inadequate telecom infrastructure	0.649	Insignificant
2	Inadequate investments	0.316	significant
3	Increasing share holders’ value	0.349	significant
4	Tariff clarity	0.509	Insignificant
5	Complaint resolution	0.655	Insignificant
6	Mass individual customization	0.601	Insignificant
7	connectivity in the first attempt	0.498	significant
8	No indigenous hardware equipments	0.514	Insignificant
9	Cut-throat competition in the sector	0.655	Insignificant
10	Churn	0.656	Insignificant
11	High customer expectation	0.686	Insignificant

The individual customer respondents are in tune with the corporate customers. The former endorses a majority of latter’s view. The Chi-Square results on the above parameters clearly indicate the value more than 0.05. It can

be inferred that the statistical relationship of the fact that the entry of private players in the industry has opened up several new hitherto unexploited opportunities. The anti-thesis of closed economy paradigm is ruling the roost in the

form of unformidable challenges and threats. Therefore the conjecture that conducive environment enabling the barrival of new opportunities and posing challenges and threats is proved beyond reasonable extent.

Findings

- Sixty six percent of the service provider respondents know telecom policy proposals to a great extent while the remaining 33.33 percent of the respondents all the policy proposals. Interestingly, there is none who does not know the telecom policy proposals.
- 7.5 percent of the respondent didn't answer and the remaining majority of the users have answered in affirmative that the entry of private layers has benefited the common man in the use of telecom services. It is definitely the awareness of the users of telecom services to deduce that the state owned players have supplemented by private players to extend help to the common man.
- SMS, MMS, Conferencing are the vital Value added services (VAS) that have been experienced by the majority chunk of telecom service users (94 percent). 89 percent have felt that the telecom service prices are falling while 80.8 percent have experienced that the global connectivity at all times. We are living in Information society with lot of technological advancements having positive impact with other sectors, which has led to the emergence of, aptly called, 'InfoTech Society'.
- 67 percent of the respondents have opined that infrastructure establishment has paved way for entry of MNCs, while 31 percent have told that the present infrastructure in telecom is enough for adequate coverage and reach.
- 66.67 percent of the respondents stated that liberalization; privatization and legal environment have impacted considerably. While 33.33 percent of the respondents expressed on the same parameters that they have impacted moderately on the sector.
- If the services of the telecom providers are good and effective, the customers cannot shift their loyalty from one player to another (40%). Half of the sample respondents felt that if the quality of services is poor then the telecom service users naturally shifted their telecom service provider. 10 percent of the sample respondents shifted their telecom service provider on account of a few range of services with old technology.

Conclusion

While data services will continue to drive mobile revenue growth, their impact will be largely offset by continued declines in mobile voice services. Also, while Internet of Things connections are proliferating-and projected to reach 25 billion by 2025-their top-line contribution is still relatively small, with revenue per connection remaining low and set to trend down further. The telecom industry has undergone a major revamp and up gradation in the recent years with industry looking out avenues for the growth. The sector is here to stay with the e-commerce on the rise.

Reference

1. <http://www.dot.gov.in/act-and-rules/indian-telegraph-act>

2. <http://www.trai.gov.in/WriteReadData/Direction/Document/Direction3dec10.pdf>
3. http://www.dot.gov.in/sites/default/files/as-iii_2.pdf
4. http://deity.gov.in/sites/upload_files/dit/files/downloads/itact2000/it_amendment_act2008.pdf
5. [http://deity.gov.in/sites/upload_files/dit/files/National%20Cyber%20Security%20Policy%20\(1\).pdf](http://deity.gov.in/sites/upload_files/dit/files/National%20Cyber%20Security%20Policy%20(1).pdf)
6. Alan Horne. (2014). Fourth-Generation Regulation: A New Model of Regulation for The digital Ecosystem. Trends in Telecommunication Reform: Special Edition, 1-220.
7. Hemant Joshi MU (n.d.). Digital Revolution. Deloitte, 1-36.
8. Torgovnik J. Recommendations for the Mobile Telecommunications Sector. Women's Economic Empowerment in Sub-Saharan Africa, 2017, 1-41.
9. Rahul Venkatram XZ. Blekinge Institute of Technology. A case study of China and India, 2012, 1-53.
10. Hemant Joshi BD. Importance of Big Data in Telecom Industry, 2015, 1-32.