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A Critical Analysis of Indian Telecom Sector from Customer's Perspective

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Abstract: *Telecommunication has supported the socioeconomic development of India and has played a significant role to narrow down the rural-urban digital divide to some extent. It also has helped to increase the transparency of governance with the introduction of e-governance in India. The government has pragmatically used modern telecommunication facilities to deliver mass education programmers for the rural folk of India. It's truly an objective thinking about that Airtel, which sent off in 1995, has nearly 358 million clients following 25 years. The objective is to comprehend the extent of rivalry in a profoundly homogenous industry where the extent of item separation is exceptionally less and where the main premise to contend is working expenses. This explorative review in light of writing surveys would assist with investigating how the telecom monsters are going through a virus battle with innovation disturbance in the midst of Coronavirus pandemic age. Along these lines, simulated intelligence has ended up being a distinct advantage in such possibility situation. This study helps to understand the competitive aspects between telecom giants by considering vivid telecom metrics such as average revenue per user, churn rate etc.To summarize the objectives of the study that there is a massive competition and Reliance Telecom seems to be overcoming as a better performer competing other in Indian market.*

Keywords: Indian telecom companies, competition, digital disruption, customer perspectives

I. INTRODUCTION

The Telecommunications industry is divided into following subsectors: Infrastructure, Equipment, Mobile Virtual Network Operators (MNVO), White Space Spectrum, 5G, Telephone service providers and Broadband.

As per GSMA, India is on its way to becoming the second-largest smartphone market globally by 2025 with around 1 Bn installed devices and is expected to have 920 Mn unique mobile subscribers by 2025 which will include 88 Mn 5G connections. It is also estimated that 5G technology will contribute approximately $450 Bn to the Indian Economy in the period of 2023-2040.

India added over 500 Mn new smartphone users over the last decade. We are expected to have 850 Mn smartphone users by 2026, representing ~55% of the total population.

Under the Union Budget 2023, The Government of India plans to set up one hundred labs for developing applications using 5G services in engineering institutions to realize a new range of opportunities, business models, and employment potential.

The DoT is targeting a combination of 100% broadband connectivity in the villages, 55% fiberisation of mobile towers, average broadband speeds of 25 mbps and 30 lakh kms of optic fibre rollouts by December 2022. Broadband connections rise to 816 Mn in September 2022 from 61 Mn in March 2014, growing by 1238%. By December 2024, DoT is looking at 70% fiberisation of towers, average broadband speeds of 50 Mbps and 50 lakh kms of optic fibre rollouts at a pan-India level.

India climbs up six slots and now placed at 61st rank as per Network Readiness Index 2022.

India secures 2nd rank in "Mobile broadband internet traffic within the country" and "International Internet bandwidth".

Internet connections jumped from 25.15 crore in March 2014 to 83.69 crore in June 2022, registering a growth of 232%.

Broadband connections rose from 6.1 crore in March 2014 to 81.62 crores in September, 2022 growing by 1238%.

Average revenue realization per subscriber per GB wireless data reduced to Rs. 10.29 in June, 2022 from Rs. 268.97 in December 2014, a reduction of more than 96.17%.

Average monthly data consumption per wireless data subscriber increased by 266 times to 16.40 GB in June, 2022 from 61.66 MB in March 2014.

India secures 3rd rank in "Annual investment in telecommunication services" and "Domestic market size".

5G services have been started in 238 cities distributed across all license service areas as of 31st January 2023.

India jumps 10 spots in median mobile speeds globally from 79th position in December to 69th place in January 2023.

Total telephone connections rose to 117.02 crore in October 2022 from 93.30 crore in March 2014, with a growth of 25.42 % in the said period. The number of mobile connections reached to 114.4 crore in October 2022.

Urban telephone connections rose to 64.99 crores in October 2022 from 55.52 crore in March 2014, a growth of 17.06% while the growth in rural telephone connections was 37.69%, which is double of urban increase, rising from 37.78 crore in March 2014 to 52.02 crores in October 2022. The rural tele-density jumped from 44% in March 2014 to 57.91% in October 2022.

Man-made intelligence in telecom area centers significantly around there like Organization advancement, Preventive upkeep, Menial helpers and Mechanical cycle computerization (RPA). At this point not restricted to giving fundamental telephone and network access, the telecom business is at the focal point of mechanical development, drove by versatile and broadband administrations in the Web of Things (IoT) time. This development is supposed to proceed, with Technavio foreseeing that the worldwide telecom IoT market will post an amazing CAGR of over 42% by 2020. The present interchanges specialist co-ops (CSPs) face expanding requests for more excellent administrations and better client experience (CX). Telcos are gaining by these valuable open doors overwhelmingly of information gathered over the course of the years from their monstrous client bases. This information is winnowed from gadgets, organizations, portable applications, geolocation, nitty gritty client profiles, administration utilization and charging information. Telcos are additionally outfitting the force of artificial intelligence to process and dissect these colossal volumes of Enormous Information to separate noteworthy bits of knowledge and give better client experience, further develop tasks, and increment income through new items and administrations. With Gartner determining that 20.4 billion associated gadgets will be being used overall by 2020, increasingly more CSPs are showing some signs of life, perceiving the worth of man-made reasoning in the broadcast communications industry.[techsee.me]

India ranks as the world's second largest market in terms of total internet users. The total number of internet subscribers increased to 757.61 million in January 2021. The total wireless or mobile telephone subscriber base increased to 1,163.41 million in January 2021, from 1,153.77 million in December 2020. India is also the world's second-largest telecommunications market. The total subscriber base in the country stood at 1,183.49 million, as of January 2021. Gross revenue of the telecom sector stood at Rs. 68,228 crore (US$ 9.35 billion) in the third quarter of FY21. Over the next five years, rise in mobile-phone penetration and decline in data costs will add 500 million new internet users in India, creating opportunities for new businesses.

The past two decades have been considered as the golden period for the telecommunications industry in India with exponential growth and development in terms of technology, penetration, as well as policy. Currently, India is the world's second-largest telecommunications market with a subscriber base of 1.16 billion and has registered strong growth in the last decade. The liberal and reformist policies of the Government of India have been instrumental along with strong consumer demand in the rapid growth of the Indian telecom sector.

Drivers for Growth of Telecom Sector in India

Robust Demand: In India, the total subscriber base stood at 1178.41 million in December 2021.

Also, India is one of the biggest consumers of data worldwide. As per TRAI [Telecommunication Authority of India] , average wireless data usage per wireless data subscriber was 11 GB per month in FY20.

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Attractive Opportunity: By 2025, India will need about 22 million skilled workers in 5G-centric technologies such as Internet of Things (IoT), Artificial Intelligence (AI), robotics and cloud computing.

Policy Support: The Union Cabinet approved Rs. 12,195 crores production-linked incentive (PLI) scheme for telecom & networking products under the Department of Telecom.

Also, to drive the development of 6G technology, the Department of Telecommunications (DoT) has developed a sixth generation (6G) innovation group.

Increasing Investments: In Union Budget 2022-23 the Department of Telecommunications was allocated Rs. 84,587 crores.

FDI inflow in the telecom sector stood at USD 39.02 billion between April 2000-September 2022.

II. LITERATURE REVIEW

The Cell Administrators Relationship of India (COAI), which addresses Airtel, Voda Thought and Jio, has added that the moves would help in drawing in first-class ventures.

M. Sankara Rao Prof. P. Srinivas Subbarao (2017) examine how mobile number portability allows customers to switch from one network to another based on the quality of services and options provided by the Indian telecom service provider.

Abani Mohanty and Dr. Sabyasachi Das (2018) explore if maintaining existing consumers is simpler for businesses than attracting new clients.

Mishra Arjyolopa, Pradhan Amruta, Bisht Oasis (2018) investigate the post-merger and acquisition dynamics of trusts, as well as integration strategy in the Indian telecom sector, as variables that contribute to a successful merger and its beneficial influence on consumers, market, and company.

The **TRAI report (2015 & 2019)** illustrates that a variety of factors influence the telecom industry's success and that a suitable framework is needed to improve the sector's performance.

Parsheera Smriti (2018) reveals that the Indian telecom sectors are entering a new period of development, according to the report.

According to **Bansal (2017)** customer engagement strategies had a moderately positive impact on customer loyalty. This indicated a stark improvement in customer loyalty with the enhancement of customer engagement experiences.

Tyagi (2022) explored the mediating effects of brand recognition and recalled the relationship between service quali customer satisfaction, and customer loyalty in the Indian telecom sector.

Bansal (2017) in his study performed parametric tests like ANOVA to establish a relationship between customer retention and customer engagement marketing.

Customers' choice of mobile telecom service provider depends crucially on the operators' quality of service. Service quality influences the choice of Managed Service Provider (MSP) **(Laxmi, 2017).**

Tyagi (2022) found that service quality positively influenced brand awareness, brand image, and customer satisfaction. All of these constructs influenced customer loyalty and retention.

Jeevapriya (2014) found that the service quality gap among urban customers was higher than that of rural customers. It had a negative influence on customer satisfaction and loyalty.

Stella (2018) opined that the overall service quality of BSNL was satisfactory among customers.

Jasrai (2016) found that after-sales service quality could have been better as there was no availability of the latest service plans, offers, recharge coupons, etc. The rural customers were satisfied with talk time, validity, and customer care services but not network quality, reliability, and signal strength.

(**Ojha, 2007).** Rural customers' innovativeness in mobile telecom services was significantly influenced by product involvement but not by the need for uniqueness **(Jasrai, 2016**).

Rao (2013) found that customers preferred prepaid connections over postpaid connections. They trusted the telecom operators to provide affordable products catering to their needs. As the users had trust in the retailers, they preferred to buy regular products from familiar places (**Porwal, 2014).**

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Fairness in price influences customer preference and satisfaction and thus influences customers' buying decisions **(Solanki, 2017; Laxmi, 2017; Khan, 2017; Raju, 2012; and Verma, 2018).**

As per **Paulasset, 2016** dependence jio is working as per Indian market; it gives best quality administrations at substantially less cost. Dependence Jio likewise giving test to in excess of 30 organizations since it moreoverenters in other assistance area connected with telecom area.

Sinha (2011) says consolidations and acquisitions in the telecom business have developed by significant extents in India since the mid 1990s. Financial changes embraced during the 1990s in India opened up the telecom area which used to be a dominatingly state controlled one.

Subsequent upon the consolidation of licenses, the absolute range held by the resultant substance shouldn't surpass 25% of the range allocated (Business Today, July'2013). Babu and Sheriff (2012) made sense of that Dab, TRAI, SEBI, MRTP, FEMA and Rivalry Commission of India all play an administrative part in M&As in the telecom business.

The heightening value war could come down on the business income development. Further, the continuous cost war and the corresponding decrease in telecom traffic could raise the passage obstruction for new organizations (Dun and Bradstreet India report'2009).

Arora (2013) expressed that client wearing down is high because of presence of close substitutes and almost zero exchanging expenses and specialist organizations are attempting to draw in clients from contenders by giving appealing offers. The recipients of contest being clients, the players are stressed over supportability and are expected to convey client driven techniques like, client relationship the executives, not exclusively to snatch an offer on the lookout yet to support over the long haul.

As per Burke and Litwin (1992) changes in administration practices, approaches and strategies, changes in work unit environment, change in task necessity, change in area, faculty, ability, group participation and states of administration and so on are the conditional changes which can bring first request change.

Gap finding

The secondary sources available are plenty in nature but there exist very few studies conducted on the location selected for the study. It's been observed that there exists a gap in the study and that makes me further conduct a study in this area for my doctoral research. Navi Mumbai being a socio-economic zone further needs such studies which would help to understand the mind set and satisfaction for both the stake holders such as business owners and customers regarding telecommunication services provided and the impact of same in their lives. Thus, I try to make an attempt to understand the explore more in this area for the location selected in the study. This study would be helping the hospitality businesses to understand the paradigm shift from traditional modes of operations to current trends of digital services. Also, an attempt is made to explore the impact of pandemic on the businesses and their survival instincts and sustainability efforts.

Objectives

- To understand the comparative analysis among top giants in telecommunication for the city of Navi Mumbai.
- To examine the impact of services provided by telecommunication giants on customers in terms of satisfaction level.

Scope of the research:

The scope of study includes the analysis of impact of Telcom services on customer loyalty and retention in Navi Mumbai.

Research design

Mixed research - Qualitative and Quantitative

- testing theory through observation and data (Primary & secondary).

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Exploratory Study

- Purposive, (deliberate) self-selection sampling and area sampling.

Length of study

- Approximately 3 years.

Collection of data

- In- depth personal interview with respondents from telecom sector.
- Survey method to be applied for data collection from stake holders.
- online / offline questionnaire method.

Delphi method / expert advice for probable solutions and understanding.

Self-completion diaries

- to track issues and dynamism in industry.

Sample size

864 customers, 100-150 Telcom officials / service providers

[structured and semi-structured] approximately

Location of study – Navi Mumbai

Analysis – SPSS package and data analytics tools/packages

Hypothesis of research

- The research hypothesis is designed based on literature review and objectives.
- There exists statistically significant correlation between Telcom service and growth opportunity for Telcom sector.
- There exists statistically significant correlation between provision of services and perceptions of customers.

Reliability Test

Case Processing Summary

		N	%
Cases	Valid	864	100.0
	Excluded[a]	0	.0
	Total	864	100.0

List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.779	.789	21

Reliability analysis for each parameter was done using Cronbach's Alpha and the calculated value is given above. The value is found to be above 0.779 for most of the cases for 21 items in total. Hence, we conclude that the values of reliability are satisfactory, and we shall proceed with the further analysis of data.

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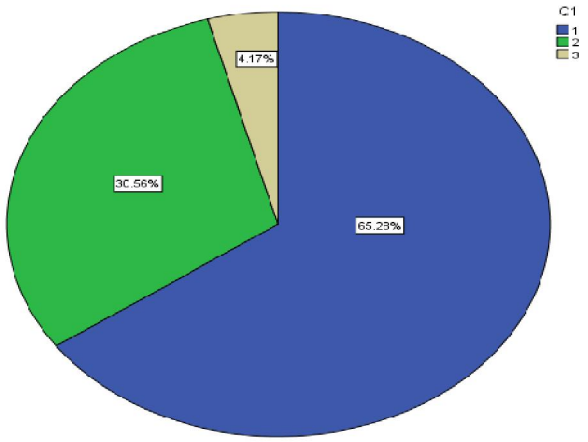
Descriptive Statistics

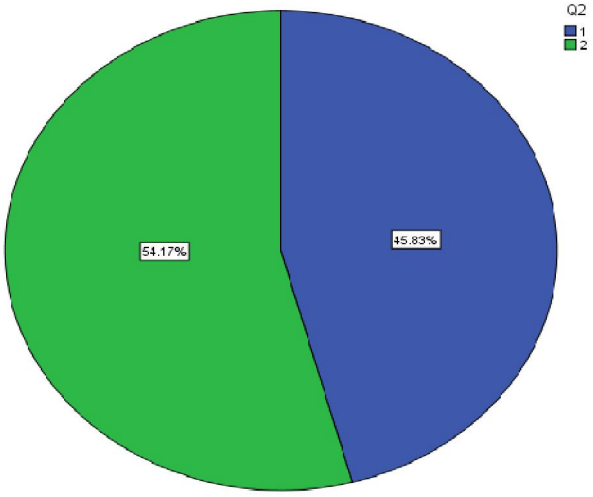
	N	Minimum	Maximum	Mean	Std. Deviation
Q.1. Age of respondent	864	1	3	1.39	.567
Valid N (listwise)	864				



The following table depicts that out of 864 respondents, 65.28% are between age group 18-30, 30.56% are between 31-45 whereas 4.17% are between 46-60 years of age.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q.2. Gender	864	1	2	1.54	.499
Valid N (listwise)	864				



The following table depicts that out of 864 respondents, 45.83% are male whereas 54.17% are female.

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Hypothesis Testing

Hypothesis 1

H0 - There exists no statistically significant correlation between Telcom service and growth opportunity for Telcom sector.

H1 - There exists statistically significant correlation between Telcom service and growth opportunity for Telcom sector.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q.7.Your Telecom Service Provider * Q.19.Are you satisfied with services that much as compared to that what you expected from your service provider	864	100.0%	0	0.0%	864	100.0%

Q7 * Q19 Cross tabulation

Count

		Q19				Total
		1	2	3	4	
Q7	1	0	24	96	132	252
	2	0	36	228	156	420
	3	0	0	12	12	24
	4	12	48	96	12	168
Total		12	108	432	312	864

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	163.719[a]	9	.000
Likelihood Ratio	165.274	9	.000
Linear-by-Linear Association	122.021	1	.000
N of Valid Cases	864		

a. 4 cells (25.0%) have expected count less than 5. The minimum expected count is .33.

As the Pearson Chi-Square significant level is 0.00< 0.05 from the results driven thus null hypothesis H0 is rejected and alternate hypothesis H1 is accepted showing good fit. Thus, we conclude that at 90% confidence level, there, exists statistically significant correlation between Telecom Service Provider and satisfaction with services that much as compared to that what you expected from service provider.

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Hypothesis 2

H0 - There exists no statistically significant correlation between provision of services and perceptions of customers.

H1 - There exists statistically significant correlation between provision of services and perceptions of customers.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q.7.Your Telecom Service Provider * Q.23.As a customer do you feel more satisfied with the telecom services and facilities of which of the service provider company, who are big gaints in the market	864	100.0%	0	0.0%	864	100.0%

Q7 * Q23 Cross tabulation

Count

		Q23			Total
		1	2	3	
Q7	1	204	48	0	252
	2	48	348	24	420
	3	0	24	0	24
	4	84	84	0	168
Total		336	504	24	864

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	355.249[a]	6	.000
Likelihood Ratio	395.195	6	.000
Linear-by-Linear Association	21.003	1	.000
N of Valid Cases	864		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is .67.

As the Pearson Chi-Square significant level is 0.00< 0.05 from the results driven thus null hypothesis H0 is rejected and alternate hypothesis H1 is accepted showing good fit. Thus, we conclude that at 90% confidence level, there, exists statistically significant correlation between Telecom Service Provider and a customer feeling more satisfied with the telecom services and facilities of big giants in the market.

Probable findings

The findings are helping us to understand the comparative analysis among top giants in telecommunication for the city of Navi Mumbai there, exists statistically significant correlation between Telecom Service Provider and satisfaction with services that much as compared to that what you expected from service provider. Also, this has helped to examine the impact of services provided by telecommunication giants on customers in terms of satisfaction level as there, exists statistically significant correlation between Telecom Service Provider and a customer feeling more satisfied with the telecom services and facilities of big giants in the market.

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III. CONCLUSION

Dependence Jio's outrageous free enterprise procedure, reflected in huge capital sending, enormously affects the business. This is driving number 2 player (Vodafone) and number 3 (Plan) to think about a consolidation. Conceivably organization is attempting an intense final stage to turn into a super-prevailing player in telecom industry. Indian telecom area is going through an adjustment of fruition, before there is contest in regards to less expensive paces of voice calls and living yet presently the battle is moved over information packs, quickest speed, most recent innovation and less expensive rates. Developing cell phone infiltration and arising repaired broadband take among families will fuel future development throughout the following five years. More than 600m individuals became Web clients over the rearward in six years and one more 600m more Web clients are supposed to come web-based throughout the following six years by 2025. To evaluate a company in the telecommunications sector, it's important for investors to review key metrics that are unique to the industry.

Three key metrics used to analyze a telecommunications company are average revenue per user (ARPU), churn rate, and subscriber growth. The average revenue per user (ARPU) measures the average revenue a company generates per user over a given time. The churn rate is a metric that measures the number of subscribers that cancel their subscriptions. Subscriber growth measures how many new customers a company adds over a given time.

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