

**A STUDY OF IMPACT OF PANDEMIC ON THE TELECOMMUNICATION  
INDUSTRY: DESCRIPTIVE ANALYSIS OF THE SITUATION**

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**ABSTRACT**

Telecom industry within sector of Information and Communication technology and is the second largest in the world. In this research paper, which is descriptive in nature, researchers have tried to portray the support of telecom industry during COVID-19 situation to other sectors and challenges faced by it. The source of data is basically secondary by nature. Private players of telecom industry like Reliance Jio, Airtel and Vodafone Idea are studied in detail. During COVID situation, most people were confined to homes. The economy and businesses were run from home. Besides, when people had more leisure time at their disposal, the usage of data resulting from surfing, chatting, browsing, playing online games and so on increased drastically. This led to growth of telecom industry. The paper concludes that telecom industry is a booming sector, and it had low losses as compared to others. How telecoms are responding to various challenges is also discussed in this paper.

**Keywords:** Pandemic, Booming, Private Players, Challenges

**I. INTRODUCTION**

The impact of corona virus pandemic on India has been largely disruptive in terms of economic activity as well as loss of human lives. Almost all sectors have been adversely affected as domestic demand and exports sharply plummeted with some notable exceptions where high growth was observed. In this research paper, researchers have selected telecommunication industry for study, as it was the industry which was providing supportive services to all other sectors and kept the wheels of the economy moving (Economic Times). The Indian economy as well as the economy of entire globe slowed down. However, it did not get static owing to availability of telecom services. While providing supportive backbone to other sectors the challenges faced by telecom industry are also discussed.

**Challenges Faced by Telecom Industry due to COVID 19 and its Impact on Employees of Telecom Sector.**

The COVID 19 virus has created havoc and is one of the biggest pandemics of the world. It has claimed life of numerous people and created fear all over. The economy of the world is at the worst. Global telecom service providers have played vital role in the COVID 19 pandemic. Whereas other sectors have faced biggest setback, some of the sectors have played a supportive role. The telecom sector is one of them. Telecom industry have provided service in parallel to the employees of other industries and helped to keep the economy going. Be it healthcare, education or other sectors; uninterrupted calls, video calls, video conferencing, Google meet, zoom meets etc. kept activities on even in the situation of crises. Thanks to the various teams of telecom working day and night to make it possible. The increase in internet use has created many opportunities as well as problems for the telecom industry. The telecom industry has helped the people to connect. India is the second largest country in the telecom industry having subscriber base of more than 1.18 billion (Indian Express).

The burden on telecom has grown up as people at home prefer to engage in chatting, browsing and other online options.

The normal traffic before the lockdown was 10% as per reports and now after the lockdown, it has increased even more than 25%. An increase and dependence in the services of digital devices have posed new challenges to the telecom industry. Network traffic is one of the significant issues. As per the government reports, the speed of the mobile and broadband in India has fallen as there is increase in the traffic (Business Standard).

All the ISPs and telecom operators these days are working hard to provide adequate internet access to their customers (Economic Times). Many of them have also brought various upgrades to their existing systems to keep the internet up and running for the masses in the country.

Thus, for the continuity of the business during current pandemic, companies are solely relying on video conferencing and webinars which has triggered the demand of technology and telecommunication sector.

Continuous use of internet and digital tools has invited various opportunities along with the problems and difficulties for telecommunication sector.

## II. LITERATURE REVIEW

Dhir (1992) The Indian telecom sector was completely under government ownership until 1984, and was characterized by under investment, outdated equipment, and growth well below the potential of the market. In the mid-1980s, telecom was included by the government as a part of the so-called technology Missions a set of dedicated, welfare-oriented, and well focused programmes then implemented at national level.

Jain and Shastry (1996) advocated that despite the increase in number of villages connected by phone, rural connectivity was a subject of concern. Even among the villages where telephones had been provided, it was found that large number of them did not function at all. Many were not accessible to the public, or did not have a long distance connection. Although various surveys had indicated that those were good sources of income and provided a reasonable level of service. They further added that the Indian telecom sector has made rapid progress during the past five years. In fact, with more than 52 million lines, India has one of the largest telecom networks in the world. The growth of this sector has been greatly facilitated by certain major reforms undertaken in 1999. While the process of reforms had been initiated several years earlier in 1992, the reforms process had been stalled by litigation lower than expected revenues leading to non-payment of licenses fees and the lack of clarity in the regularity regime.

Dutt and Sundram (2004) studied that in order to boost communication for business, new modes of communication are now being introduced in various cities of the country. Cellular Mobile Phones, Radio Paging, E-mail, Voice-mail, Video, Text and Video-Conferencing now operational in many cities, are a boon to business and industry.

Subedi et al., (2020) E-learning tools have played a vital role during this pandemic, helping educational institutions to facilitate student learning during the closure of universities and schools

Joshi and Khurana (2010) suggested that telecom manager have to strive hard to organize their service offering in order to accomplish their corporate goals. They further added that Network quality, Responsiveness and Other factors seem to be most important dimensions influencing customer satisfaction with the

telecom providers. Network quality has been found to be very important factor in determining service quality. So every telecom provider should give emphasis on improving the Network coverage so that more and more customers can be retained. So emphasis should be on strong Network Coverage.

Nadeem & Abbas (2009) conducted a study in telecom sector of Pakistan to analyze the relationship between work life and job satisfaction. Data is collected from 157 employees of public and private sector through questionnaire. Data is analyzed through Correlation, Regression and Descriptive analysis. The research results indicate that work overload does not influence job satisfaction and there is a positive relationship exists between Job autonomy and job satisfaction.

Saif *et al.* (2011) conducted research on telecom sector of Pakistan to analyze relationship work life balance practices have with job satisfaction. Data is collected from 450 layoff supervisors from two large organizations in Pakistan through questionnaire. The results reveal that work life balance practices and level of job satisfaction share a Positive relationship.

Kumar, A., Balaji, M., Krishna, U., & Yadav, M. (2018) declared in their study that Airtel ranks all above the top 3 mobile service sectors. Airtel is a leading global sector operating in 18 countries. Airtel ranks all above the top 3 mobile service sectors. It contributed tremendously in changing businesses and lives of people.

The study of Hao (2020) stated that since COVID-19 is a global issue, researchers around the world from fields as varied as biomedicine, virology, data analytics, and artificial intelligence have contributed to combating this pandemic, spurring the online publication of over 24,000 articles on COVID-19 in less than 4 months (Hao, 2020).

In light of the pandemic, the International Telecommunication Union (ITU) conducted an emergency meeting of the Broadband Commission for Sustainable Development, which directed governments, industries, and society at large to improve the capacity of communication networks at critical location such as hospitals and transportation hubs (ITU News, 2020d).

The literature covering the topic under study was studied thoroughly, gaps were identified and on the basis of it, the following objectives were developed:

- To study the problems that telecommunicating sector encountered during COVID-19 situation.
- To study the measures adopted by telecos to overcome the pandemic crises.

### III. METHOD

Descriptive research method has been used for writing this research paper. Interviews were conducted with company officials to have in depth view of the situation. Telecommunication industry has been actively providing supportive services to all other sectors. Thus, there has been huge work pressure and challenges of work on the employees which has been discussed in this paper.

### IV. RESULTS and DISCUSSIONS

#### **Telecom Industry Disruption due to the Rise in COVID-19:**

The COVID-19 wave has disrupted every industry. The telecom industry has been largely disrupted, as it is required for medical, government and private sector business functions to operate seamlessly. For e.g. reliable, high speed internet access is key to ensuring that hospitals and medical institutions have access to global information networks and resources necessary to fight the virus. Broadband connectivity is also now absolutely crucial for educational institutions and businesses to continue to provide essential services.

The sudden disruption of normal business operations caused by the corona virus has forced companies to drive their businesses remotely. That shift has spiked the demand for better network connectivity and improved internet coverage, especially in remote or rural areas. As a result, the telecom industry (wireless and wireline) is trying to deliver better internet infrastructure to their customers. The sector had to let go over one lakh employees and saw a high attrition of 20-25% on average in 2017-2018 as Vodafone India & Idea Cellular prepared to merge, Bharti Airtel set out to buy Tata teleservices mobility segment and Telenor India and operators Reliance Communications and Aircel headed for the exit. Around seventy thousand job losses are expected in telecom industry in India. This excludes seven lakhs employed in handset manufacturing which was shut during lockdown. Losses are likely to be in areas of operators,

ISPs, Tech solutions due to cost optimization drive. Some losses in handset sales are due to lack of demand (Business Standard).

### **Covid-19 Impact on Telecoms**

The Covid-19 outbreak has brought many challenges for telecommunications operators and technology providers. Our goal is to analyze some of them and evaluate possible improvements and solutions for the benefit of the industry.

The home has become the center for our everyday life. Children are being educated via home schooling, and office staff now has their desks in their domestic space. This has given Communication Service Providers (CSPs) new opportunities to provide more services to their customers.

The challenges that come with current changes can be tackled in many different ways.

#### ***1. Wider and More Stable Internet Connection***

Operators can intensify the improvements roadmap to offer their customers better Internet access technology and plans. According to recent studies, churn rates are likely to decline, and offering new features to customers might further strengthen their relationship with their service provider. Another possibility is to differentiate the traffic. Offering free access to some applications, for instance video conferencing or educational platforms, and offering better rates at different hours to encourage users to access the Internet at different times of day, might be a way to gain favor with customers.

#### ***2. Safer Internet Access***

Nowadays people are more concerned about the secure transactions. Increased traffic, attacks and attempted illegal access to different systems have increased the concern for cyber security. In order to protect systems and data, operators should deploy different cyber security strategies and even monetize them by offering contracts that include enhanced security bundles.

#### ***3. Counting on Enterprise Features such as Virtual Private Networks (VPNs) and Conferencing***

While working remotely, many end customers may be more interested in contracts offering enterprise features that can facilitate their day-to-day

operations from home. As everyone is not an IT expert, some of the now mandatory tools can be offered to workers in a home service model.

#### ***4. Remote Problem-Solving***

Delivering on-site support during the pandemic is pretty difficult – not because of the resources, but because of the increased risk those technicians and their clients are at risk of getting exposed to COVID-19. Reinventing on-site support with the use of videoconferencing tools or augmented reality techniques can help both parties maintain safe social distancing while addressing any technical issues that may arise.

With call centers at the traditional heart of troubleshooting, the crisis is also a great opportunity for operators to implement robust processes and strengthen self-care channels to ensure their customers enjoy a true digital experience.

#### ***5. Changing the Methodology for Field Service Engineers, While Protecting their Health***

On-site operations require radical reinvention if they are to adapt to the “new normal”. The Field Service Management software tools are required to be rich in features so they can support the new reality and service demand.

#### **Challenges Faced by Employees**

Telecommunication is a people-intensive industry, with a seasoned workforce that includes teams in offices, on trucks and in retail storefronts. If they are forced to work remotely, that could impact productivity.

Some elements of telecommunications work cannot be easily duplicated remotely — or in some cases done at all.

***Telecom Network Operators.*** Telecom network operators have had to address the increased networking requirements of their customers. Further, we identify opportunity areas for the telecom operators/service providers that have emerged in the wake of this coronavirus pandemic. Customer complaints rose during the lockdown due to poor mobile network signal reception and slow internet speeds are important concerns that the service providers need to carefully examine and review. Telecoms are building customized service offerings for their customers.

They try to maintain continuous interaction with users and to move forward with their business processes.

**Field Technicians.** Also known as telecom technicians, those who work in this field usually handle telecom equipment maintenance and repairs. Their duties include planning network installations, troubleshooting outages, testing circuits and preparing installation diagrams. They must possess troubleshooting and mechanical skills as well as strong customer skills. Compensation policies for sick time may not be adequate for hourly workers. Front-line employees — such as retail customer representatives or field technicians who regularly visit customers — may have concerns about COVID-19 exposure and transmission. To overcome this situation, steps which are considered:

Assess how workloads could increase or decrease as a result of the outbreak.

- Determine which employees can work remotely without compromising productivity.
- Prioritize cybersafe remote technology capabilities to transition workers to remote work while maintaining productivity.
- Assure the safety of employees who need to continue working on-site by continually updating and communicating risk-mitigation guidelines.

**Cyber Security Engineers:** Cyber security engineers have a very challenging role to play. They have to develop strategies to strengthen remote connectivity with proper authorization procedures. Their work and challenges increased to prevent any fraudulent happenings by security networks.

**Capacity Planner.** With the cable industry more than year in to the Covid-19 pandemic, it's not exactly news anymore to say that the increased use of videoconferencing and other apps taxed the upstream capacity fiber/coax networks (HFC). That situation caused cable operators to add capacity to their HFC networks, push ahead with node splits and accelerate the use of AI-assisted technologies that enable networks to use the existing spectrum more efficiently. The general finding is that demand for upstream capacity far outran the increases witnessed in the downstream. Prior to pandemic, the average yearly growth in the upstream bandwidth was typically 20% but surged some 57% over the past year.



Pre-pandemic capacity planner typically relied on the simple equation to figure out future bandwidth needs- determining the average utilization during the peak busy period, which produces a relatively static look at the usage of the number.

Network capacity planning is the process of planning a network for utilization, bandwidth, operations, availability and other network capacity constraints. Network capacity planning is generally done to identify shortcomings or parameters that can affect the network's performance or availability within a predictable future time usually in years. Typically, network capacity planning requires information about : Current network traffic volumes, network utilization, type of traffic and capacity of current infrastructure. This analysis helps network administrators understand the maximum capability of current resources and the amount of new resources needed to cater to future requirements. In addition to technical network infrastructure, network capacity planning may also include planning for human resources that will manage and/or monitor the network.

**Lead Engineer.** During the lockdown period, several organizations shifted to work from home, virtual meetings and video calls. Therefore, the importance of telecom services has grown manifold in order to mitigate the pandemic impact and has necessitated the continuity of telecom network. So the role of telecom infrastructure providers became more critical during such unprecedented crisis. It was important for the telecom industry to ensure minimum disruption to networks, and a committed effort was required to preserve the health and wellbeing of the people. While mobile networks provided direct connectivity for millions of subscribers to keep in touch, satellite technology plugged the gaps and strengthened critical networks, providing network operators, governments, and establishment's much-needed support for remote work practices and extending essential services to the remotest corners of the country.

#### **Response of Telecoms to Critical COVID-19 Situation(Business Standard)**

- Vodafone has claimed to increase its capacity by 50% since lockdowns were put in place, so that it can support other sectors without disturbance. It has applied flexible work policies that enable flexible working hours and work from home across the organization. This has allowed us to respond quickly to the current situation by enabling our workforce to

adopt alternative forms of work. Majority of our staff members across offices are working remotely from home, Vodafone Idea spokesperson told business standard. He added “Our centralized network monitoring facilities across multiple locations like Pune and Hyderabad, have been prepared for any kind of emergency evacuation due to the corona threat at any particular building”.

- Airtel has a fully fledged contingency plan in place to deal with any event. This includes quarantining any of the company’s critical network operating centers among others. The company has enabled each location to operate in a distributed as well as virtual way. Every team has also been broken in to two in order to reduce the workplace the workplace safer. The company has started the process of monitoring and managing networks from different locations in case any geography is not accessible for some time. It has also enabled work-from-home for its employees through secure connections. “Airtel’s networks are in business continually planning mode and are fully prepared to support any exigency. Our mobile, fixed broadband, DTH and fiber networks are fully geared up to serve customers in the emerging scenario” said Randeep Sekhon, Chief technology officer (CTO), Bharti Airtel. All operations are running smoothly with major staff working from home seamlessly.
- Jio: With 388 million 4G users on its platform, it has touched more than 50 per cent of the total internet base in India. A year later, while the world is still in the midst of Covid-19 induced upheavals; Reliance has unveiled its vision for the future through two of its business entities named jio Platforms and Jiomart. Reliance already offers the cheapest data in India compared to anyone else in the world. With a planned upgrade to 5G networks in the early 2020s, it is well set to capture an extraordinary share of India’s consumer spending, including spending on merchandise, and on the wide range of services like entertainment, education, and learning, gaming, financial products such as insurance, and healthcare. When the COVID-19 pandemic broke in 2019, the entire organization mobilized on a war footing. The frontline COVID-warriors displayed a commendable spirit of service at our hospitals, across Jio offices, Reliance Retail stores, PPE manufacturing facilities, at Reliance Life Sciences and more. They have seamlessly transitioned to “Work from Home” for more

than a year. To address mental health challenges, the company on boarded Silver oak Health Partner for the Employee Assistance. For the year 2021 also, their priority remains safety of their employees. The company urges to provide all the support to peers, colleagues and teams. Review 'business critical' deliveries for the teams. Prioritize deliverables keeping in mind the challenges members must be facing due to pandemic. Extend support, empathy and flexibility. Jio is fast moving, innovative and focused on execution. This means HR must quickly hire, onboard, train and support people everywhere leading to a very aggressive focus on making HR world-class. One example of this is is the "fractal model" for operating the Jio business. Jio sells phones and services in thousands of small towns all over India. Typically this organization would be designed as a massive matrix, with local managers, regional managers and so-on. The chairman looked at the idea and rejected it. Decision making would be far too slow. Instead, Reliance designed a network based operating model, where each small sales and service team operates independently. There are regional and country managers, but they get sales, support, hiring and financial information in a real time dashboard. If an employee or local manager needs information on product shipment or features, they just go online, bypass the entire hierarchy and interact with real-time operations center.

## V. FINDINGS AND CONCLUSIONS

The following results have been drawn on the basis of the brief paper presented above:

- The pandemic has brought several benefits and drawbacks to various industries, including telecommunications.
- In India, the telecommunications industry is quickly expanding and undergoing numerous changes. People were confined to homes. Businesses were operated from homes. This over-dependence on telecom industries led to its rapid expansion.
- While other sectors faced severe set-back during pandemic, telecom industry had a different scenario. The telecom business has a lot of potential as a result of this Pandemic.
- The telecommunications industry has arrived to help the business and education sectors recover. This Through video callas, zoom meetings,

Google meetings, and other means, it has aided several sectors such as education, healthcare, and food to continue their operations.

- Telecommunications operators and technology providers, on the other hand, have faced numerous obstacles as a result of the Covid-19 pandemic owing to excessive use of the internet. Increased reliance on digital gadget services leads to increased traffic or signal issues.
- Apart from many hurdles, the telecom business has provided a variety of service by providing a more reliable and consistent internet connection, safer access, remote problem addressing, virtual private networking, and field support, among other things.
- Employees in the business, such as telecom operators, field technicians, and engineers, have faced obstacles such as network issues, maintenance and repair, and preventing customer fraud, among others, while delivering service.
- During the Pandemic, telecom firms such as Vodafone, Airtel, and Jio had to release a slew of new incentives for clients including better service, data at a low cost, and new installations etc to make telecom service customer friendly.
- Telecom sector also provided a comfortable working environment for its employees, including favourable working conditions, flexible working hours, education, and medical assistance, among other things.
- Customers in India were provided the cheapest data by Reliance Jio. It has reached more than half of India's overall internet population.

## CONCLUSIONS

On the basis of the detailed study on telecom sector, it can be concluded that COVID-19 turned out to be a blessing in disguise for telecom sector. It gave a ray of new hope during the doom phase of recession. It kept economy at least crawling, if not running. The industry faced tremendous challenges during the pandemic phase, but it kept the wheels of economy rolling. The telecom business thrived during Covid 19, expanding its market and reaching new benchmarks.

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