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# The Effect of Telecommunications Law on Economic Development in India

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SHIVAM KUMAR SINGH<sup>1</sup>, LAKKA PRATHIK REDDY<sup>2</sup> AND RAGHU YADAGANTI<sup>3</sup>

## ABSTRACT

*The telecom sector of India has witnessed fast and steady growth in the last few years. When the number of telephone users is taken as the factor, the Indian telecommunication network is the second largest in the world. In July 2012 the number of telephone subscribers in India was approximately 944.81 million. It has grown at a phenomenal pace with 1,172 million subscribers in July 2022, with both urban and rural telephone subscriptions experiencing growth making the Indian Telecommunication sector one of the fastest growing in the world. The telecom sector plays an important role in the socio-economic development of a country and the initiatives taken up by the Indian Government to make India digitally advanced have played a major role in the growth of the sector. An increase in domestic demand, liberalization and globalization, policy initiatives and policy amendments, increasing investments, regulatory reforms, and increasing competition are other factors influencing the telecom sector. This paper tries to analyze the role of major policies and regulations, and the changes they have brought to the telecom sector changing it into a more competitive market from a monopolistic market. The establishment of the Telecom Regulatory Authority of India (TRAI) in 1997 and the introduction of policies like the National Telecom Policy of 1992 and many more over the years helped regulate and sustain the competitive nature of the industry. The paper examines each policy and the impact it has on the growth of the Indian Telecommunication Sector.*

**Keywords:** Telecom Sector, Growth, TRAI, DoT.

## I. INTRODUCTION

Telecommunication plays an important part in a country's socio-economic development (Sharif, 2016). The industry also creates employment opportunities and increases India's Gross Domestic Product (GDP<sup>4</sup>), further helping in developing the economy (Pritish & Saxena, 2015). The telecommunication industry provides a wide range of services which help connect different sectors and facilitates the delivery of social services and central administration (Nafees, 2015).

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<sup>1</sup> Author is a Student at PES University, India.

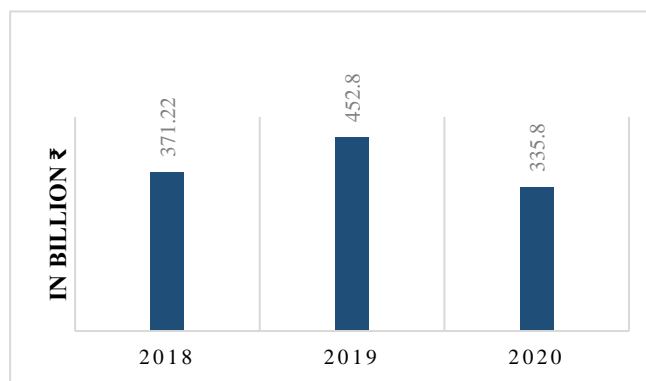
<sup>2</sup> Author is a Student at PES University, India.

<sup>3</sup> Author is an Assistant Professor at PES University, India.

<sup>4</sup> *Gross Domestic Product: It is the total market value of finished goods and services produced in a country during a financial year.*

The telecommunications industry is divided into the equipment sector and the service sector. The equipment sector mainly focuses on manufacturing products that are utilized by both customers and telecom service providers. They manufacture a wide range of products that include wireless equipment, broadcast network equipment and other types of equipment.

**Figure 1: Equipment market size in India**



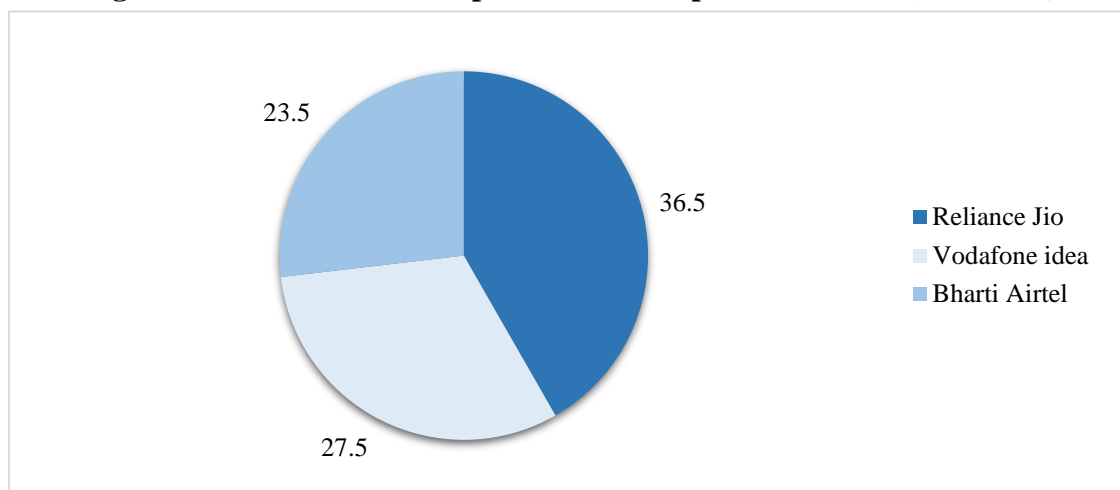
\*Source: Statista.com (Sun, 2022)

The service sector mainly works towards providing wired, wireless, internet and broadband services. The cooperation and collaboration of both the equipment and service sectors are necessary for the socio-economic development of the country, as well as the growth of the telecom sector as a whole.

The phenomenal growth of the Indian telecommunication industry has helped it secure a spot as the largest telephone network in the world, second only to China (The Indian Telecom Services Performance Indicators, 2021). Liberalization<sup>5</sup> made it easier for private players to enter the market, which further helped in the speedy growth we have witnessed and the telecom sector is expected to witness a 9.4 percent growth from the year 2020- 2025 making it one of the highest growth rates in the telecommunications sector of the world (CIO Insider Team, 2021). Currently, Reliance Jio, a company wholly owned by Reliance Industries launched on 27<sup>th</sup> December 2015 is the number 1 telecom company in India with a market share of 36.5 percent. The other big companies are Bharti Airtel Limited and Vodafone Idea Limited with a market share of 27.5 percent and 23.5 percent respectively (Bansal, 2020).

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<sup>5</sup>Liberalization: Elimination of control of the government over economic activities

**Figure 2: Market share of top 3 telecom companies in India (as of 2020)**

*\*Source: deshicompanies.com*

A comparative study of data available from 2012 (Telecom Subscription Reports, 2012) and 2022 (Telecom Subscription Reports, 2022) on total wireless subscriptions reveals that the total wireless telecom subscription was 1,148 million at the end of July 2022. Over the last decade, the telecom industry has seen exponential growth, with the industry working towards increasing network coverage. Wireless subscription in the rural parts of India was 338.54 million at the end of December 2012 and has increased to 521.29 million by the end of July 2022 which is a 53.98 percent increase in 10 years and simultaneously coverage in urban areas also increased from 556.96 million subscribers on December 2012 to 626.74 million at the end of July 2022 which is a 12.53 percent increase. The introduction of low tariff rates helped the growth of the subscriber base.

Subscription for internet services has also increased to 658 million as of January 2022, the main catalyst for the growth was when Jio entered the telecom market in December 2015 and provided free data for a period of 1 year to new subscribers and later offered cheap affordable plans. Since the beginning, the cost of internet data has gone down to ₹10.77 a GB from ₹160 per GB, as per the reports published by the Telecom Regulatory Authority of India. (Kashyap, 2021). Within a year of its launch, Jio gained 35million users. Data from GSMA Intelligence reveals that there were 1.14 billion cellular mobile connections in India which is equivalent to 81.3 percent of the total population (\*many people use multiple cellular mobile connections).

The number of telephone users in a region can be measured using teledensity. It indicates telecom penetration in a country. In simpler terms, teledensity takes into consideration the total number of landline phones for every 100 people residing in a certain area. When teledensity exceeds 100 it means that the telephone-to-people ratio is high. Overall teledensity in India

increased to 84.88 percent at the end of March 2022 (TRAI, 2022) from 75.23 percent at the end of March 2014 (TRAI, 2014).

The telecom sector has transformed from a ‘monopolistic environment’<sup>6</sup> to a ‘competitive environment’<sup>7</sup> and the government's regulatory measures have ensured the smooth running of operations and a sustainable environment for the industry. The measures taken up by the Telecom Regulatory Authority of India to implement policy initiatives, and policy amendments to form a regulatory framework have helped to create an environment where the government promotes and assists the service providers.

The active participation of private service providers, the adoption of cutting-edge technology and large chunks of revenue pooled from Foreign Direct Investment (FDI) have made the rapid growth of the industry a reality.

## II. METHODOLOGY

### *(A) Objectives of the study*

The main objectives of the study are:

- a) To identify the Government telecom policies.
- b) To identify other measures taken up by TRAI.
- c) To identify the trends and growth in the telecom sector.
- d) To identify the impact of telecom policies on the growth of the sector.
- e) To establish a relationship between the policies, growth of the telecom sector and the economy.

### *(B) Data Source*

This study is based on secondary data collected from various sources such as the Telecom Regulatory Authority of India (TRAI), the Department of Telecommunication (DoT), Government reports and other sources.

### *Objective 1: To identify the Government Policies*

#### **History:**

The telecommunication sector being one of the oldest functioning sectors of India started with the introduction of the telegraph, the electrical telegraph line which was laid from Kolkata (then

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<sup>6</sup>Monopolistic environment: one company owns 100% of the market share.

<sup>7</sup>Competitive environment: Market wherein many companies conduct their operations.

known as Calcutta) to Diamond Harbour (21 miles away) was built and utilized by the British East India Company. In 1883 EIC introduced postal services.

After gaining independence in 1947 the national government took over the operations of the pre-established lines and the entire sector at first was state-owned, its evolution began in the 1980s, with the Department of Telecommunication being separated from the Indian Post and telecommunication department (1985), the establishment of the Corporation of International services (1986) and the telecom commission (1989) (Joshi, 2014). In the 1990s the Government took up some policy initiatives that allowed private players to enter the industry, this was one of the most important steps toward change and shifted the industry from a monopoly to a free market structure. In 1991 India launched its economic reforms with the introduction of the New Economic Policy of Govt. The main goal of the policy was to establish India in the global market, develop national Infrastructure, attract more Foreign Direct Investments (FDI), Increase imports and exports, etc. The Telecom industry had to play a major role to make sure the goals were achieved; telecommunication services of the highest quality were important.

#### **NATIONAL TELECOM POLICY 1994 AND ITS IMPLEMENTATION:**

In 1994 the teledensity of India was 0.8% which was lower when compared to the teledensity of other developing nations in Asia. Asian countries such as China, Pakistan and Malaysia had a teledensity of 1.7%, 2%, and 13% respectively. At that time the world teledensity average was 10%. The National Telecom Policy was an attempt to help the country develop and grow, its telecommunications industry. It helped to codify the policy objectives and set some targets such: Telephone should be available on demand by 1997, All villages are to be covered by 1997, a PCO for every 500 persons to be provided in urban areas by 1997, and introduce all the value-added services available abroad in India, preferably by 1996 (National Telecom Policy, 1994). The resources required to achieve the target of releasing 10 million connections were over ₹23,000 crores. Funding such a huge project was beyond the Central Government's capacity. Therefore, to bridge the resource gap, for the first time the Government allowed private players to register and participate in providing telecommunication services. Raising additional resources was to be done through the international generation and methods such as BOT, BTO, deferred payments, leasing etc.

The policy gave more attention to consumer protection and promotion and made sure there is no monopoly by ensuring fair competition. The establishment of the Telecom Regulatory Authority of India (TRAI) in 1997 as an independent regulatory body of the telecom sector was a move to encourage competition, promote and protect consumer interests etc. Although TRAI

is the regulatory body of the telecom sector in India, functions like issuing a license, setting standards and allocation of the spectrum are completely in the hands of the central government. (National Telecom Policy, 1994)

#### **NEW TELECOM POLICY 1999 AND ITS IMPLEMENTATION:**

Telecom Regulatory Authority of India failed to achieve some of the targets it had set in the existing policy, which affected the development of the telecom sector, in addition to this India and the world witnessed growth in the Information Technology sector, electronic goods industry etc. And factors such as operators from one industry providing services in another industry made it important for TRAI to go through the previous policy and bring in some changes to the framework accordingly. India's vision to become an IT superpower which is both directly and indirectly affected by the telecom industry meant that the country needed to develop telecom infrastructure of the highest quality which provides the most favourable outcomes.

In 1999, the New Telecom Policy, formulated based on a report received after relooking into the existing policy framework was introduced. Attracting investments which could then help develop India's telecom infrastructure was a major focal point of this policy and the core vision of the policy was to provide affordable and effective services to the citizens of the country. The other objectives of the NTP'99 were as follows:

- Promote the development of telecom facilities in remote and tribal parts of the country including rural areas.
- Reaching the teledensity of 4 by the end of 2010 from the current level of 0.4.
- Provide internet and high-speed data to towns exceeding the population of 2 lakhs.
- To promote Indian Telecom Companies and provide a platform that enables them to become global giants.
- Protect the defence and security interests of the country.

NTP'99 made it easier for private telecom service providers to operate in the industry by changing the regime from a fixed license free to a revenue-sharing regime making it financially feasible for companies to operate.

Due to the long waiting list for telephones in the country, the Government invited private players to satisfy the demands as the Government failed to do it themselves. The introduction of licenses such as Cellular Mobile Telephone Service (CMTS) and Basic Telecom service helped private players enter the market and provide their services. Later on, this turned out to

be one of the smartest decisions as this led to the development and growth we see today. The New Telecom Policy 1999 is considered to be the catalyst for the growth of the telecom sector. The digital India programme that launched in 2015 has helped the telecom industry grow by enabling services such as online/digital payments through Unified Payments Interface (UPI), e-KYC and so on (New Telecom Policy, 1999).

#### **BROADBAND POLICY 2004 AND ITS IMPLEMENTATION:**

Realising that broadband services could help the government create employment opportunities, and increase Gross Domestic Product (GDP) which would help in the development of the country's economy, the Telecom Regulatory Authority of India (TRAI) introduced the Broadband policy in 2004 which was aimed towards accelerating the growth of Broadband services in India. Providing Broadband services also meant that the overall quality of life will be improved through services such as creating employment, e-education, entertainment and easily accessible information from the web.

The broadband access in the country at the end of December 2004 was 0.4%. The growth of broadband, the level of Internet and Personal Computer (PC) penetration were highly correlated. Internet and PC penetration stood at 0.02% and 0.8% respectively which was lower than that of other developing Asian countries.

For a healthy competition, the spread of world class infrastructure was very important and the Government took up the responsibility to make sure that the development of telecommunication infrastructure is not subjected to negligence in any manner.

To make it easily accessible and affordable the Department of Telecommunications teamed up with the ministry of finance to work on a package that made it financially feasible for the service providers as well as the consumers. This also meant that Broadband Services can cover both rural and urban parts of the country.

The Broadband subscription as on 31<sup>st</sup> March 2021 has grown to 778.095 million compared to the Broadband subscription as on 31<sup>st</sup> March 2012 which was 13.81 million (TRAI Annual Report, 2020-21)- (TRAI Annual Report, 2011-12). In 2019 the revenue generated from broadband subscriptions was ₹14,500 crores, this astronomical growth has led to easy and fast accessibility to useful societal applications.

#### **NATIONAL TELECOM POLICY 2012 AND ITS IMPLEMENTATION:**

On 31<sup>st</sup> June the Government of India approved the National Telecom Policy 2012. Telecommunications was a key factor in the socio-economic development of an increasingly



knowledge-intensive global scenario and this policy was designed to make sure that India plays a leadership role, by paying special attention to providing affordable and quality telecom services in remote areas of the country.

The vision of NTP-12 was to provide secure, affordable and high-quality converged telecom services anytime, to build a platform for accelerated socio-economic development.

The NTP 2012 emphasized achieving One Nation – Free Roaming, which allowed consumers to receive free incoming calls anywhere in India. Striving to create One Nation – One License across all services and service areas was one of the objectives of the policy (National Telecom Policy, 2012).

The Vision of the policy was:

- Development of a robust, secure and world-class telecom network which provides seamless coverage and especially focuses on remote areas as well as rural areas to bridge the digital divide and promote socio-economic development.
- Deployment of affordable, high-quality broadband services nationwide to create an inclusive knowledge society.
- Reposition mobile devices as a tool for citizens' socio-economic empowerment.
- To turn India into a global centre for telecom equipment manufacturing and a centre for converged telecom services.
- With a focus on safety and green technology, promote research, development and design of cutting-edge ICTE technology, products and services that meet the infrastructure needs of domestic and global markets.
- To promote the development of standards that helps to meet national requirements, generate intellectual property rights and participate in international standardization bodies and contribute to the global standards, thereby making India a leader in the telecom standards area.
- To attract foreign direct investment (FDI) as well as domestic investments.
- To enable jobs both directly and indirectly.

#### **IMPACT OF POLICY INITIATIVES AND POLICY AMENDMENTS:**

Before 1991, the telecommunication industry wasn't the best performing sector that we see today. The teledensity and quality of service remained low while the tariff rates were high. The telecommunication sector was also completely under the control of the Central Government.

Post-1991, after the LPG (Liberalization, Privatization, Globalization) reforms the regulatory framework was designed in such a way that it made it easier for the entire industry to cope with the new emerging challenges. Challenges such as licensing, setting tariffs, creating modern and efficient infrastructure, consumer satisfaction, protection of consumer interest, expansion etc. Providing a platform for fair competition by involving private players in the process helped the telecom industry procure investments which in turn helped in the growth and expansion of the industry as well as raising the satisfaction level of consumers. This regulatory framework has helped in the transformation in India.

***Objective 2: To identify other measures taken up by TRAI***

**LICENSING OF SERVICES:**

The role the Department of Telecommunications played in developing the licensing framework played a crucial role in bringing in a 'free-market' structure. The TRAI Act accorded an important function to the DoT and it was to recommend the introduction of a new service provider as well as the terms and conditions of a license as per the requirement and request of the licensor. This had an overall positive impact on:

- The internet service provider licensing regime created room to remove restrictive provisions from existing license terms.
- VSAT operations, allowed lower licensing fees for captive VSAT networks.
- Public mobile radio trunk service (PMRTC), created more choices of technology and helped in the reduction of licensing fees.
- 'Infrastructure sharing.'
- The Broadband Policy 2004 was formed based on the Telecom Regulatory Authority of India's recommendations. This, later on, helped in the growth of internet and broadband services.

All the recommendations discussed above and the other recommendations the TRAI has made over the years have had a positive impact on creating a free competitive market.

**TARIFFS**

The telecom industry's phenomenal growth over the years has been driven by low tariffs. The Telecommunication Regulatory Authority of India realised that affordable tariffs would enable the growth of the telecom network as a tool that would help in promoting competition in the industry. The service providers have the option to offer any tariff, provided that they are

working within the constraints of the regulatory framework including Interconnect Usage Charges (IUC). This flexibility is limited and it does not extend to certain areas of the sector.

The Telecommunication Tariff Order (TTO) 1999 was a major step in tariff regulation as it provided transparency in the tariff structure. The calling party pays (CCP) regime was an initiative taken up by the TRAI and such initiatives together with the help of other measures have played a role in the significant reduction of international, and domestic long-distance call charges, and reduced tariff charges which in turn has boosted the growth of the cellular mobile telephone industry. Lower prices meant affordability and the services being easily affordable and accessible helped in market penetration and increased the overall teledensity.

#### **MEASURES TO PROTECT CONSUMER INTERESTS:**

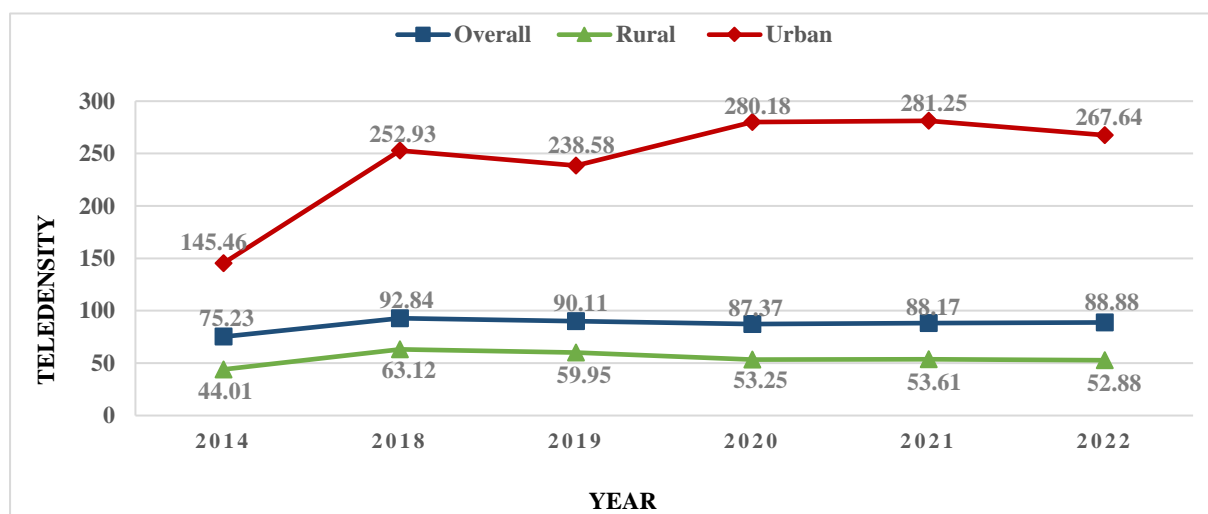
The Telecom Regulatory Authority of India invites consumer organizations to workshops, seminars and conferences to inform them of various changes and developments in the industry. To better understand consumers' problems, the TRAI holds half-yearly meetings with the registered consumer organizations. In March 2006 TRAI passed the Quality of Service Regulation. This regulation makes it mandatory for the service providers to audit their metering and billing system every year and put forward an audit certificate by June 30 every year. The annual audit can only be performed by auditors approved by the regulator.

In the year 2006 and later on the TRAI brought in different measures to protect consumers' interests. This included measures such as:

- Require all the service providers to provide complete details of the tariff plans they offer to their customers at registration
- Requiring service providers to review credit limits regularly for a post-paid service and reflect it in their monthly bill regularly.
- Requiring service providers to keep their customers informed about the details of their tariff plans including international lease line tariffs and domestic leased line tariffs.

The regulator also appointed independent agencies to survey to assess the effectiveness of the "Telecom Consumers Protection and Redressal of Grievances Regulation 2007".

**Objective 3: To identify the trends and growth in the telecom sector in India.**



**Figure 3: Growth of Teledensity in India**

*\*Source: Telecom Regulatory Authority of India.*

**Objective 4: To identify the impact of telecom policies on the growth of the sector.**

The cumulative impact of all the regulations, policy initiatives, and amendments together with the effectiveness of the recommendations is directly related to the growth of India's telecommunication sector which is evident in the numbers, increase in teledensity in urban and rural areas, increase in total subscriptions, increase in Foreign Direct Investments (FDI) into India, state-of-the-art infrastructure, improved service quality and consumer awareness. For example, teledensity in India increased to 88.51 percent at the end of July 2021 from 75.23 percent at the end of March 2014 and Wireless subscriptions increased by 53.98 percent in a decade reaching 521.29 million subscriptions in 2022 from 338.54 million in 2012. This indicates that the regulatory framework has had a positive impact. Even during a global pandemic, the telecom sector enabled 30-35 percent of India's GDP.

**Objective 5: To establish a relationship between the policies, growth of the telecom sector and the economy.**

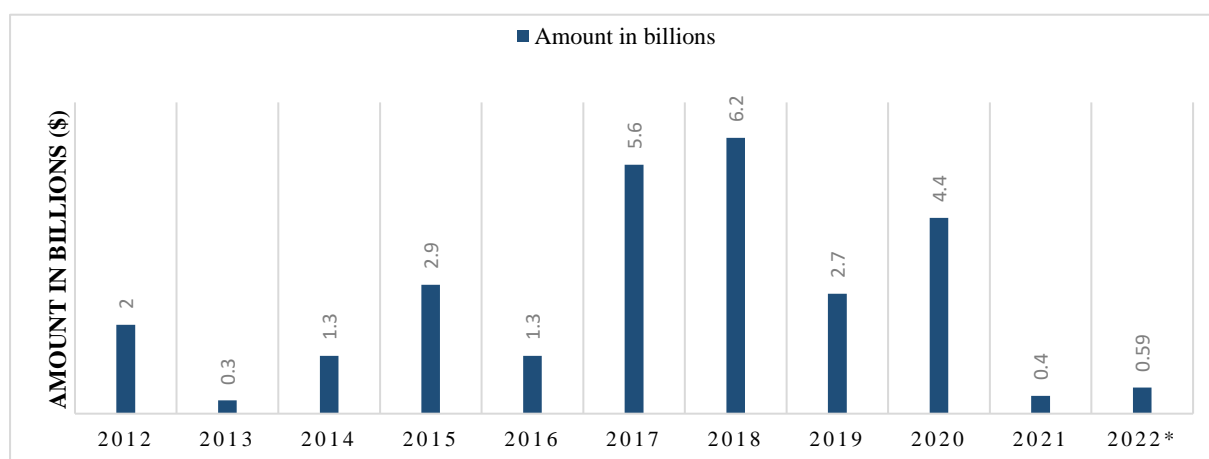
**Telecom sector's contribution to the economy:**

Telecom remains the 2<sup>nd</sup> highest revenue earner for the Indian Government, only after income tax. The auction of the 5G spectrum held at the end of July 2022 and approved by the Government grossed \$18.77 billion. The Telecom sector also contributes to 6.43 percent of total FDI inflow, between 2014-2021 the telecom sector witnessed a 150% increase in FDI inflow. The Foreign Direct Investment into the telecom sector between 2014-2021 is \$20.72 billion. On October 2021, the Government deregulated the framework and made it easier for the inflow of

FDI in the sector as it notified 100 percent foreign direct investment via the automatic route from the previous 49 percent. Research also showed that when investment in the telecom sector increases by 10 percent it leads to a 3.2 percent increase in GDP growth. The gross revenue of the telecommunication sector of India in the first quarter of the financial year 2022 was \$8.7 billion and is expected to increase in the coming years.

In the financial Year 2021, around \$400 million was the Foreign Direct Investment inflow into the Indian telecommunications industry, comparatively lower than the FDI inflow of the previous financial year which was around \$4.4 billion. The telecommunications sector also contributes to the increase in employment rate by providing 2.2mn jobs directly and enabling 1.8mn jobs indirectly.

**Figure 4: FDI Inflow in the telecom sector of India from F.Y 2012-22**



**\*Values for FY 2022 as of December 2021.**

*\*Source: Statista.com (Statista Research Department, 2022)*

India realised the importance of telecommunication by the end of the 20th Century. Today, India's Telecom Sectors are among the fastest-growing Telecom Sectors in the world. The Government of India is encouraging the Telecom Sector to enter foreign markets by adopting appropriate policies. It can be said that the Telecom Sector is playing a vital role in the growth and development of India's economic and social upgradation. The telecom sector has continued to improve infrastructure and quality of service, thus improving customer satisfaction (Baruah & Baruah, 2014).

The Indian Telecom sector has been seeing rapid technological change. Rapid change has impacted the aspect of the telecom business. There has been an increase in the competition in the market and the rural market has also been emerging. There have been a lot of challenges, changes and opportunities in the Telecom Sector which could lead to its improvement. The Telecom Sector highly focuses on the technology and the consumer segment targets. Major

companies in the Telecom Sector have been trying to reduce costs and reach a breakeven point to adapt to new technology as soon as possible. Customers are becoming very aware of the products and services with tools such as portability. The Telecom Sector is also playing a vital role in the development of the service sector in deciding economic stability. Also, Customer Relation Management (CRM) is going to be a high priority. The Telecom Sector despite achieving a lot still has a long way to go such as it has to penetrate new markets. This could be achieved through several new business models, infrastructure reforms, etc. which will help in giving better service and satisfaction to the customers. Thus, the Telecom Sector has a vital role to play and is impacting a lot of other sectors for the acceleration of economic growth (Yadav, Tiwari, & Divekar, 2015).

Telecommunication is playing a big role in the Mobile Phone Sector. The Indian Telecom Market has a growing demand for high-speed data and has also witnessed a huge increase in the number of subscribers. With the present technology of 3G and, 4G India has somewhat met its demand for high speed but this is not sufficient enough. India needs 5G to meet its high-speed demands. The introduction of 5G is very important as it will resolve the problem of the high-speed demand of subscribers (Sharma, 2018). The mobile phone sector is dependent on the Telecom Sector for adaptation of state-of-the-art technology such as 5G. 5G helps mobile phone manufacturers and service providers by providing new features for net banking, social media, and many more emerging features. Consumers today can access many new features such as video calls, etc. Today, net banking, installation of telecom towers, maintenance, etc. have become very easy. Thus, the mobile phone sector is very much dependent on the Telecom Sector (Gowri & Kesavan, 2020).

India along with many developing nations has always been facing a huge problem of capital. India can solve this problem by inviting FDI (Foreign Direct Investments) into the Telecom Sector. India over the past few years has been seeing a lot of FDI in the Telecom Sector. The inflow of FDI into India was very low during the initial stages of the telecom industry due to slow economic growth and high inflation. The policy initiatives have helped in the improvement of FDI inflow into the country. The FDI for Telecom Sector had grown fivefold in the Financial year 2017-2018 compared to the combined FDI from 1991-2000. Thus, the Telecom Sector is seeing rapid growth in FDI (Bholane, 2021). Today, India's major cities have very efficient Telecommunication systems. But there are other limitations such as expensive electronic devices, fragmented groups of industry operators, etc. Despite, all this India has been developing and has improved its rank to 117<sup>th</sup> out of 159 countries in the global ICT Index. India still has a long way to become the best like Japan and USA (Babu & Rao, 2015).

### III. FINDINGS

Although the telecommunications sector of India is one of the fastest growing telecom sectors in the world, it is a debt-ridden sector with one of the top 3 companies that holds a major market share, contributing heavily to the debt. The Telecom sector is the largest debtor in India. Analysts and researchers estimate a 12-15 percent increase in tariff rates due to carriers which have incurred savings from zero spectrum on the usage of charges purchased on airwaves purchases in the auction of 2022. It is estimated that the debt of Telecom companies in India will go up to ₹6 Lakh Crores by the end of the financial year 2022- 23. Vodafone Idea one of the biggest telecommunication companies in India currently has a debt figure of ₹1.9 trillion and this number is expected to increase by 13.2% which is an increase to ₹2.15 trillion in the coming years, and the recent 5G auction will lead to more debt in the industry. The government has planned to take steps such as a reduction in the licence fee, spectrum usage charge and other initiatives to improve the health of the debt-ridden telecommunications sector.

### IV. CONCLUSION

The telecom sector in India has grown many folds. Growing out of a monopoly regime and into a free/open structured market and has established itself as one of the leaders in the global telecommunications market. The growth of the sector has helped to increase the gross domestic product (GDP) of India in several ways, this is due to the policy initiatives and amendments introduced, and the constant improvements and changes in policies by the regulator. India still has a very huge untapped market in the rural areas, if the industry continues to reform and utilizes new technology to its maximum potential it will then truly become a global leader and will impact the Indian economy positively.

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