Original Research Article

Study on Changing Trends in Telecom Sector in India

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Abstract

The telecommunication industry in India is rapidly growing and witnessing many developments. Globalisation has made telecommunication an integral part of the infrastructure of the Indian economy. India's telecommunication network is the second largest in the world based on the total number of telephone users (both fixed and mobile phone).It has gone through several transformations that has led to severe competition in the industry. This research studies the recent trends in the Indian telecommunication sector. The paper will provide a comprehensive knowledge on the recent developments in the sector and will help highlight the changes in the telecommunication industry. The study is based on secondary data. The paper describes the recent trends in Indian telecom sector.
Keywords: Telecommunication, Recent Trends, Market Size, Development.

INTRODUCTION

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 Indian mobile economy is growing rapidly and will contribute substantially to India's Gross Domestic Product (GDP) according to a report prepared by GSM Association (GSMA) in collaboration with Boston Consulting Group (BCG). In 2019, India surpassed the US to become the second largest market in terms of number of app downloads.

The liberal and reformist policies of the Government of India have been instrumental along with strong consumer demand in the rapid growth in the Indian telecom sector. The Government has enabled easy market access to telecom equipment and a fair and proactive regulatory framework that has ensured availability of telecom services to consumer at affordable prices. The deregulation of Foreign Direct Investment (FDI) norms has made the sector one of the fastest growing and the top five employment opportunity generator in the country. Communication is a hugely important aspect, not only for people around the world, but also for small and large businesses organizations. Businesses would be lost without the current technological advancements and a lot of companies would cease to exist. A world without telecommunications would not be possible; society has made itself so used to this type of technology that the world would end up collapsing if it was taken away.

The value of mobile and online communication has never been greater. However, telecoms now face a number of challenges such as high load on their systems and security risks. To both address the challenges and benefit from innovations, they embrace new tech trends such as 5G,IoT, big data, and cloud, and more. India ranks second in terms of number of telecommunication subscriptions, internet subscribers and app downloads globally. Moreover, India is also one of the largest data consumers globally. Total mobile data usage in the country grew 144 per cent year-on-year to 2,360 PB per month in December 2017.

Recent trends in this industry directly address these challenges, in addition to improving the overall efficiency for telecom companies. Increasing global connectivity, further fuelled by the COVID-19 pandemic, presents numerous opportunities for telecom companies to reach more subscribers and offer innovative products and services. Smart factories, cities,

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83

homes, cars, and industrial workplaces require efficient and affordable cloud and 5G technology solutions, especially to address the growing number of connected people and things.

The internet of things (IoT) devices and sensors, connectivity solutions including next-generation WiFi and Bluetooth, as well the promise of 5G networks and technology dominate the telecom trends. Artificial intelligence (AI) algorithms influence data analytics and offer various opportunities for automation in the telecom sector. The penetration of smartphones and reliable internet generates large volumes of high-resolution content. Telecom start-ups develop network solutions to manage and optimize speed and latency to further enable the growth of high-quality image and video content. In addition to these major telecom trends, the industry also sees the development of cloud and edge technologies for enabling smart industrial processes as well as solutions to improve human-to-machine and machine-to-machine communications.
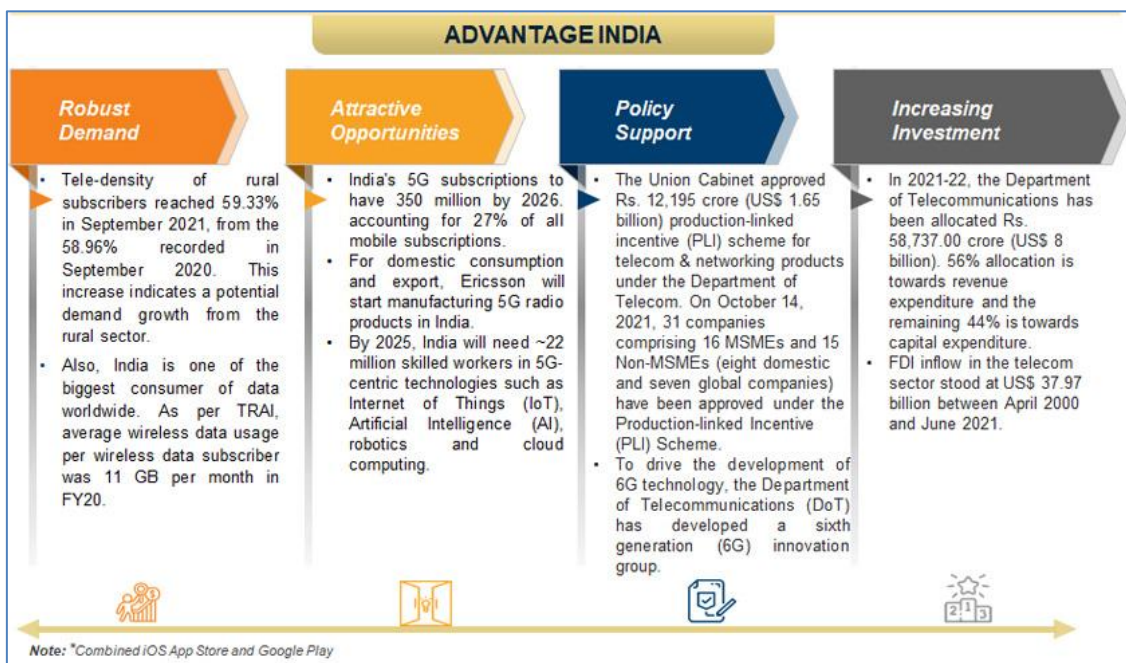
Market Size

India is the world's second-largest telecommunications market. The total subscriber base stood at 1189.15 million in September 2021. Tele-density of rural subscribers reached 59.33% in September 2021, from the 58.96% recorded in

September 2020. This increase indicates a potential demand growth from the rural sector. The total wireless or mobile telephone subscriber base reached 1166.02 million in September 2021, from 1,148.58 million in September 2020. The total number of internet subscribers reached 794.88 million in September 2021. Of this subscriber base, the number of wired internet subscribers was 24.29 million and wireless internet subscribers was 787.94 million. Gross revenue of the telecom sector stood at Rs. 64,801 crore (US$ 8.74 billion) in the first quarter of FY22.

The total wireless data usage in India grew 16.54% quarterly to reach 32,397 PB in the first quarter of FY22. The contribution of 3G and 4G data usage to the total volume of wireless data usage was 1.78% and 97.74%, respectively, in the third quarter of FY21. Share of 2G data usage stood at 0.48% in the same quarter.

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.

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

OBJECTIVES
1. To study the recent trends in the Telecom Sector in India.
2. To study the future growth opportunities in the Indian Telecom Industry.

RESEARCH METHODOLOGY

The study is descriptive in nature. The present study is based on secondary data obtained from the Telecom Regulatory Authority of India (TRAI), Department of Telecommunication (DoT) and the reports from Government of India and other sources.

Different telecom magazines, newspapers and journals were consulted for gathering of information. Through books, journals, websites, govt. reports etc.

Telecom Industry Trends in 2021

1. Internet of Things: IoT devices and sensors influence almost all industries of the technology economy. It improves people's quality of life, allows businesses to increase their profits, and improves management. IoT is also beneficial for governments looking to decrease their information technology (IT)-related expenses. Interconnection between devices, sensors, infrastructure, and computing elements further enables new ways for management.

2. Connectivity Technologies: Connectivity technologies are constantly evolving and include both wired and wireless communications. The development of communications technology is critical in today's IT-environment, with increasing data volumes, IoT devices, and people using the internet. Further, users increasingly share high-quality digital data, such as videos, photos, and music. All of these factors, along with the increasing use of satellite communications, contribute to the emerging telecom trends with innovation in connectivity technologies.

5. G Network & Technology: 5G technology is the next big upgrade for telecommunication networks and devices. It provides a much higher speed, than previous cellular broadband network standards, and, most importantly, has much lower latency. Latency is very important for cloud gaming as well as VR content streaming. Massive machine-type communications that 5G networks provide enable the creation of high-density IoT networks, from IoT to smart homes. Such wide-spread applications make 5G one of the most important upcoming technology trends for the telecommunication sector.

4. Artificial Intelligence (AI): Artificial intelligence (AI) and machine learning (ML) are other big telecom trends impacting the industry. Digital transformation requires the extraction of meaningful information from data, gathered by IoT sensors and devices. At the same time, the expansion and complication of the internet create the need for high speeds and low latencies, prompting new solutions for internet connection management. To this end, startups develop AI solutions that resolve numerous problems related to network performance.

5. High-Resolution Content: The penetration of smartphones and reliable internet leads to increased consumption of high-quality, and often heavy-to-transfer, content. The growth in high-resolution content, in turn, drives improvements in the quality of traditional information media such as videos, pictures, and music. Novel telecommunications help businesses adapt to new types of information media, such as virtual, augmented, and mixed reality- (VR/AR/MR) and cloud-based gaming. These new types of content require not only high-speed transmission but also low latency, prompting start-ups to develop high-capacity telecommunication networks.

6. Cybersecurity: The increasing number of cyber-attacks and low-security IoT devices, new central processing unit (CPU) hardware vulnerabilities, and the growing dependence on computing infrastructure make tackling security risks challenging. In any industrial network, systems are continuously managed in an attempt to stay ahead of evolving cyber threats, but these methods often conflict with the network's core requirements of reliability and availability. Startups innovate industrial networks by allowing systems to remain dynamic when faced with attacks or vulnerabilities.

7. Cloud Computing: Cloud computing is a fast-growing technology trend within telecommunications. The spreading of IoT devices and the use of more sophisticated ML algorithms leads to the high demand for computing power. There are many benefits of migrating data, applications, and other business elements to a cloud computing environment. From equipment, platforms, infrastructure, and company functions, startups bring greater connectivity and integration solutions for businesses. All connected environments, from cities and factories to houses and cars, require improvements in cloud integration technologies.

8. Software-Defined Networks (SDNs): In today's increasingly digital environment, business applications require high-performing and extensive networking operations. Particularly for cloud computing, it is essential for businesses to deploy, manage, and support connectivity across a variety of environments. Typically, complex tools are required to build and manage modern software-defined networking technology. Some vendors only provide solutions that work on their equipment, which then limits the extent of communications capabilities. Startups develop SDN to improve network performance, monitor its performance, and enable centralized control.

9. Edge Computing: Edge computing brings data computation and data storage closer to the source of data instead of a centralized remote cloud. This reduces latency, increases bandwidth, and simplifies maintenance while it allows industrial manufacturing companies to expand their computing capacity by combining devices with edge data centers at lower costs. Lower latencies and high speeds are required for modern applications, like cloud gaming and VR. Edge Computing greatly improves the quality of experience for end-users and lowers data exchange requirements.

Major Milestones of The Indian Telecom Industry: The Indian Telecom Industry comprises of various segments that are an indicator of its growth and development. It is broadly divided into two segments, Fixed Communication and Mobile Communication. Nowadays, there is a rapid growth in the field of mobile communication as compared to fixed communication due to an increasing demand for cellular phones. The technologies like GSM and CDMA are adopted by the Indian Telecom Industry. Different service providers offer both fixed as well as mobile communication while operating in various service areas of India.

CONCLUSION

Gross revenue of the telecom is expected to be Rs. 64,801 crore in the first quarter of FY22. The global telecom infrastructure equipment market posted a 6% year-over-year jump in revenue during the third quarter of 2021, but annual growth is now projected to decline from 8% in 2021 to 2% in 2022. In India, there will be 840 million total Internet users (60% of the population) by 2022, up from 357 million (27% of the population) in 2017. According to a Zenith Media survey, India is expected to become the fastest-growing telecom advertisement market, with an annual growth rate of 11% between 2020 and 2023.The Indian Government is planning to develop 100 smart city projects, and IoT will play a vital role in developing these cities. The National Digital Communications Policy 2018 envisaged attracting investment worth US$ 100 billion in the telecommunications sector by 2022. App downloads in India is expected to increase to 18.11 billion in 2018 and 37.21 billion in 2022.

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