Telecom at a Glance

A. TELECOM SCENARIO

Telecommunication has been recognized all over the world as a powerful tool of development and poverty reduction through empowerment of the masses. It is one of the key elements of the Sustainable Development Goals (SDGs) of the United Nations Agenda for Sustainable Development for 2030. The telecom sector exhibited strong growth over the last few years on the back of strong consumer demand and supportive policies of the Government of India. The government has ensured fair competition among service providers and a fair and proactive regulatory framework that has resulted in telecom services being available to consumer at affordable prices. Further it has made sustained efforts at encouraging telecom equipment manufacture. India currently has the world's second-largest subscriber base of 1.17 billion.

Tele-density, which denotes the number of telephones per 100 population, is an important indicator of telecom penetration. 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. The tele-density which was 75.23% in March 2014 has reached 84.67% 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.

The government has placed considerable emphasis on growth of internet and broadband in the country as part its Digital India campaign. There has also been accelerated growth in Internet traffic. 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. Rising consumption of data by increasing consumers has also created opportunities to reach out to weaker and marginalised groups and enable social progress by providing services that were previously not feasible.

Towers & BTS

The number of Mobile Base Transceiver Stations (BTS) are 23.98 lakhs as on 09.12.2022. The number of mobile towers are 7.4 lakh as on 09.12.2022.

FDI

FDI (equity flow) in the telecommunication sector during 2022-23 (April to September) was US$694 million compared to US$668 million during 2021-22.

B. PROGRAM, INITIATIVES AND PROGRESS

National Broadband Mission (NBM)

National Broadband Mission (NBM) was launched on 17th December 2019 with a vision to fast track growth of digital communications infrastructure, bridge the digital divide, facilitate digital empowerment and inclusion, and provide affordable and universal access of broadband for all. The objectives of the Mission are structured to lay strong emphasis on the three principles of universality, affordability and quality.

BharatNet

The flagship BharatNet project is being implemented in a phased manner to provide broadband connectivity to all the Gram Panchayats (approx. 2.6 lakh GPs) in the country. The Phase-I has been completed in December 2017 covering over 1 lakh GPs.
Under the project, as on 31.10.2022, 6,00,898 km Optical Fibre Cable has been laid, a total of 1,90,364 GPs have been connected by Optical Fibre Cable (OFC) and 1,77,665 GPs are Service Ready on OFC. In addition, 4466 GPs have been connected over satellite media. Total GPs service ready are 1,82,131.

Installation of mobile towers in LWE affected areas: On 20.08.2014 a project for provisioning of mobile services **(2G based)** in 2199 locations in LWE affected areas was approved. Subsequently in June 2016 the provision of mobile services for additional 156 sites were approved. Out of 2355 sites approved under **LWE-I,** 2343 sites are radiating. Upgradation of existing 2G sites to 4G has been approved. **Under LWE-II,** 224 mobile towers and associated infrastructure have been installed and commissioned covering 232 locations in the State Maharashtra, Chhattisgarh, Madhya Pradesh and Odisha.

Uncovered Villages covered with mobile services: In order to provide connectivity in villages in border areas of Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttar Pradesh, Bihar, Rajasthan, Gujarat, Uttarakhand, Karnataka and West Bengal, the Government has accorded approval to connect 354 villages. Till October 2022, out of 354 uncovered villages, 275 have been provided coverage by installing 254 Mobile towers. Further additional order for covering '55 uncovered villages' under this scheme has been approved. Till October 2022, out of these 55 villages, 19 villages have been covered by installing 19 mobile towers and associated infrastructure.

4G based Mobile service in 502 uncovered villages under Aspirational District Scheme: The scheme has been planned for provisioning of 4G based Mobile Service in 502 uncovered villages of Aspirational districts of four states -Uttar Pradesh, Bihar, Madhya Pradesh & Rajasthan. Till October 2022, 132 villages have been covered by installing 106 Mobile towers under this project.

The Government in November 2021 has further accorded approval to provide 4G Mobile service in 7287 uncovered villages of Aspirational Districts of 5 States namely Andhra Pradesh, Chhattisgarh, Jharkhand, Maharashtra and Odisha.

Saturation of 4G mobile services in uncovered villages across the country

Project for saturation of 4G mobile services in uncovered villages across the country has been approved. The project will provide 4G mobile services in 24,680 uncovered villages in remote and difficult areas. The project has a provision to include additional villages on account of rehabilitation, new-settlements, withdrawal of services by existing operators etc. In addition, 6,279 villages having only 2G/3G connectivity shall be upgraded to 4G.

The project is being executed by BSNL using Atmanirbhar Bharat's 4G technology stack and is funded through Universal Service Obligation Fund.

Comprehensive Telecom Development Plan (CTDP) for the North-Eastern Region:

The Government of India is implementing a Comprehensive Telecom Development Plan (CTDP) for the North-Eastern Region (NER). Under this scheme, Mobile connectivity on 2G is to be provided by setting up 2004 towers in the uncovered villages and along National Highways of Assam, Manipur, Mizoram, Nagaland, Tripura, Sikkim, and Arunachal Pradesh (National Highways only) of North-East region.

The project on Mobile Services in uncovered villages of Meghalaya and seamless coverage along National Highway was approved on 23.05.2018 and the work was awarded to telecom service provider for 1,164 uncovered villages and 11 sites along National Highways on 04.09.2020 for provisioning of 4G mobile services. The scope has been increased to cover 1,481 uncovered villages by installing 1094 towers. As of October, 2022, total 316 towers have been installed, covering 475 villages.

Another project for provision of 4G mobile services in 2,374 uncovered villages in Arunachal Pradesh and two Districts of Assam (Karbi Anglong & Dima Hasao) was approved. Survey has been completed. In Arunachal Pradesh, 19 towers have been commissioned covering 27 villages, while in Assam, 54 sites have been commissioned covering 67 villages.

For making available high quality and high speed internet access to the States of North Eastern Region of the country, Universal Service Obligation Fund (USOF) has signed an Agreement with Bharat Sanchar Nigam Limited (BSNL) on 18.08.2021 for hiring of 10 Gbps International Bandwidth for Internet Connectivity to Agartala from Bangladesh Submarine Cable Company Limited (BSCCL), Bangladesh. The first 10 Gbps link was commissioned on 26.11.2021 and the second 10 Gbps link was commissioned on 21.04.2022.

Provision of 4G Mobile Services in 85 uncovered villages & seamless mobile coverage along NH-4 (Erstwhile NH 223) in Andaman & Nicobar Islands (82+42 NH Towers)

Agreement signed for setting up of 82 towers to provide mobile services on 4G Technology in identified 85 uncovered villages with population >=10 and 42 towers for providing 4G mobile services to bridge the gaps in mobile connectivity along uncovered National Highway. As on date, 105 tower sites [Village: 58, Highway: 47] have been approved as against 124 tower sites survey reports.

Status of Satellite bandwidth at Andaman & Nicobar and Lakshadweep Islands

Andaman & Nicobar Islands: Satellite Bandwidth Augmentation to 4 Gbps has been successfully implemented by BSNL on 09.09.2021.

Lakshadweep Islands: Satellite Bandwidth Augmentation to 1.71 Gbps has been successfully implemented on 14.08.2021.

Submarine OFC connectivity between Kochi and Lakshadweep Islands (1869 km)

As per cabinet approval dated 09.12.2020, Submarine Optical Fibre Cable Connectivity is to be provided between Kochi and Lakshadweep Islands (KLI Project) comprising of Kavarati and ten other Islands, namely, Kalpeni, Agatti, Amini, Androth, Minicoy, Bangaram, Bitra, Chetlat, Kiltan and Kadmat. The project is targeted to be implemented by May 2023 i.e. within 1000 days from the date of announcement by Hon'ble PM on 15th August 2020.

Access points deployed under PM-WANI: The Government on 09.12.2020 approved the proposal to proliferate broadband through Public Wi-Fi Networks under the framework of Prime Minister's Wi-Fi Access Network Interface (PM-WANI).

Under the PM-WANI framework, total number of hotspots have reached 114069 as on 22.9.22.

Design-Led Manufacturing Under Telecom PLI Scheme: On 17.02.2021 the "Production Linked Incentive Scheme for Telecom & Networking Products" was approved with an outlay of Rs.12,195 crores for a period of five years. The scheme provides 4 -7% incentives on sales of specified products. The Scheme has been formulated based on Production Linked Incentive Scheme under "Atma Nirbhar Bharat Abhiyan" for boosting domestic manufacturing and exports while attracting investments in the target segments of telecom and networking products in order to encourage "Make in India".

Union Budget 2022-23 announced design led manufacturing for 5G products. It provided additional incentive of 1% over and above the existing incentives for products that are designed and manufactured in India. Accordingly, to facilitate design-led manufacturing of 5G products under PLI Scheme for telecom and networking products, the Department of Telecommunications has approved total 42 companies including 28MSMEs. Out of which 17 companies are approved for additional incentive of 1% under design-led manufacturing criteria. These 42 companies have committed investment of Rs.4,115 crores over scheme period. This is expected to generate additional sales of Rs.2.45 lakh crores of telecom and networking products and create additional employment of more than 44,000 over the scheme period.

Telecom Technology Development Fund (TTDF) Scheme: TTDF aims to fund R&D in rural-specific communication technology applications and form synergies among academia, start-ups, research institutes, and the industry to build and develop the telecom ecosystem. It also aims to promote technology ownership and indigenous manufacturing, create a culture of technology co-innovation, reduce imports, boost export opportunities and creation of Intellectual Property. It will help create the ecosystem for research, design, prototyping, use cases, pilots, and proof of concept testing, among others. The scheme entails grants to Indian entities to encourage and induct indigenous technologies tailor-made to meet domestic needs.

C. ENABLING POLICIES

Digital Communications Commission (erstwhile Telecom Commission) was set up by the Government of India vide the Resolution dated 11th April, 1989 with administrative and financial powers of the Government of India to deal with various aspects of Telecommunications. The Government, vide Resolution dated 22nd October2018, has re-designated the 'Telecom Commission' as the 'Digital Communications Commission'. The Digital Communications Commission consists of a Chairman, four full time members, who are ex-officio Secretaries to the Government of India in the Department of Telecommunications and four part time members who are the Secretaries to the Government of India in the concerned Departments. The Secretary to the Government of India in the Department of Telecommunications is the ex-officio Chairmen of the Digital Communications Commission. The full- time Members of the Digital Communications Commission are Member (Finance), Member (Production), Member (Services) & Member (Technology). The part-time Members of the Digital Communications Commission are Chief Executive Officer, NITI (National Institution for Transforming India) Aayog, Secretary (Department of Economic Affairs), Secretary (Department of Electronics & Information Technology) and Secretary (Department of Industrial Policy & Promotion).

The Digital Communications Commission is responsible for:

- Formulating the policy of Department of Telecommunications for approval of the Government;

- Preparing the budget for the Department of Telecommunications for each financial year and getting it approved by the Government; &

- Implementation of Government's policy in all matters concerning telecommunication.

National Digital Communications Policy-2018 envisions supporting India's transition to a digitally empowered economy and society by establishing ubiquitous, resilient and affordable digital communications infrastructure and services. It envisages three Missions viz **Connect India, Propel India and Secure India**. The broad strategic objectives of the policy include Broadband for All, creating additional jobs in the Digital Communications sector, enhancing the contribution of Digital Communications sector to India's GDP, enhancing India's contribution to Global Value Chains and Ensuring Digital Sovereignty.

In exercise of the powers conferred by the Indian Telegraph Act, 1885, the Central Government had notified on the 15th November 2016 the Indian Telegraph Right of Way Rules, 2016 to regulate establishment of underground as well as over ground telegraph infrastructure. These rules were amended in 2017 and 2021 to provide for seamless establishment of telegraph infrastructure across the country. These rules have been further amended through the Indian Telegraph Right of Way

(Amendment) Rules, 2022 to facilitate faster and easier deployment of telegraph infrastructure for enabling speedy 5G roll-out. These amended rules, inter-alia, incorporate provisions for usage of street furniture for installation of small cells and telegraph line. Fees and charges for seeking RoW permissions by the Telecom Service Providers (TSPs) and Infrastructure Providers (IP) have also been rationalized to bring uniformity across the country.

Revival package of BSNL

The Union Cabinet on 27.07.2022 approved the revival package of BSNL amounting to Rs. 1.64 Lakh Cr. Revival measures include infusion of fresh capital for upgrading BSNL services, allocation of spectrum, de-stressing its balance sheet and augmenting its fiber network by merging Bharat Broadband Nigam Ltd. (BBNL) with BSNL.

5G spectrum auction

The foundation for ushering 5G services in India was laid with the 8th Spectrum Auction, held in July 2022. Government of India had put 72,098 MHz spectrum to auction, of which 51,236 MHz (71% of the total) has been sold with bid amounting to Rs. 1,50,173 cr. This is the highest-ever auction revenue proceeds received from a single auction. Further, in this auction highest number of bands i.e., 10 different bands across 22 LSAs (Licensed Service Areas) were simultaneously put to auction (i.e., 600 MHz, 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz).

The telecom reforms and clear policy direction led to spectrum auction of 2022 garnering highest ever bids. The recent reforms like zero spectrum usage charges on spectrum acquired from 8th auction onwards, doing away with mandatory up-front payments, ability to surrender spectrum after a minimum threshold period (10 years), easy payment options like increased number of annual installments (20 annual installments), option for moratorium on past dues etc. has contributed to successful spectrum auction. Spectrum is very critical for telecom connectivity and with better availability of spectrum to Telecom Service providers, the quality of services is also expected to improve.

Launch of 5G Services

5G services were launched in India by the Hon'ble Prime Minister on 1st October 2022. 5G use cases developed by Telecom Service Providers and start-ups in Education, Health, Worker safety, Smart agriculture etc. are now being deployed across the country.

Indigenous 5G Test Bed

Keeping in view India's specific requirements and to take lead in 5G deployment, Department of Telecommunications (DOT) approved financial grant for multi-institute collaborative project to set up 'Indigenous 5G Test Bed' in at five locations viz. Integrated Test Bed at CEWiT/IIT Madras, IIT

Delhi, IIT Hyderabad, IIT Kanpur and IISc Bangalore.

The Indigenous 5G Test bed was dedicated to the nation by Hon. Prime Minister Shri, Narendra Modi on May 17th 2022.

Indian academia and industry can use the Indigenous 5G Test Bed to validate products, prototypes, algorithms, and services. As India becomes self-sufficient in 5G Technology, the development of this Indigenous Test Bed is a crucial step towards 5G Aatamnirbhar Bharat.

D. TELECOM REFORMS

Indian Telegraph Right of Way (Amendment) Rules, 2022

The Indian Telegraph Right of Way (Amendment) Rules, 2022 will facilitate faster and easier deployment of telegraph infrastructure for enabling speedy 5G roll-out. These amended rules, inter-alia, incorporate provisions for usage of street furniture for installation of small cells and telegraph line. Fees and charges for seeking RoW permissions by the Telecom Service Providers (TSPs) and Infrastructure Providers (IP) have also been rationalized to bring uniformity across the country.

Wireless Planning and Coordination (WPC) Reforms

The Government has brought the following procedural reforms on Wireless Licensing:

Delicensing of various frequency bands to promote innovation, manufacturing & export as under:

- Spectrum in 865-868 MHz band delicensed for facilitating IoT and M2M, RFID etc. applications.

- 9 KHz to 30 MHz band delicensed for contactless Inductive Charging etc.

- 433-434.79 MHz band delicensed for various Short-Range Devices (SRD) applications.

    The Government has also released National Frequency Allocation Plan 2022 which will give guidance to the users of the spectrum to plan their networks in accordance with relevant frequency and parameters provided therein.

Satellite Reforms

To propel growth and to accelerate provisioning of affordable services to the citizens in the fast-emerging area of satellite-based services, reforms have been undertaken to help in Ease-of-Doing-Business by limiting multiplicity of charges at different stages of rolling out satellite-based communication services.

Till now, the satellite usage has been mostly limited to static-use. The Government has enhanced the scope of the commercial VSAT license to enable the provisioning of User terminal station(s) on moving platform(s). These terminals can be:

- Vehicle-mounted "fully mobile" or
- simply briefcase size portable "pause and move" type.

To simplify the existing processes, vital changes have been made for streamlining satellite-related clearance processes. This will considerably shrink the existing time taking process in spectrum assignment and associated clearance(s). Self-certification has been introduced in order to save time in operationalizing the networks.

Launch of "Gati Shakti Sanchar" Portal to Streamline the process of Right of Way (ROW) Applications and permissions Across the Country

Universal and equitable access to Broadband Services across the country, especially in the rural area is one of the most important visions of Hon'ble Prime Minister of India. To fulfil this vision, it is imperative that backbone of infrastructure is created by facilitating smooth and efficient deployment of Digital Communications Infrastructure across the country. The "GatiShakti Sanchar" portal for Centralised Right of Way (RoW) approvals is now functional with all 36 States/UTs onboard and is also integrated with Min. of Railways, MoRTH and MoD-DGMO.

The portal acts as an enabler for "Ease of doing business" for telecommunications infrastructure works. The timely disposal of RoW applications of various services and Infrastructure providers shall enable speedy infrastructure creation especially for timely rollout of 5G Network also**.** The portal will enable applicants from various Telecom Service Providers (TSPs) as well as Infrastructure providers (IPs) to apply at a common single portal for Right of Way permissions to lay down Optical Fiber Cable and for erecting mobile towers. As it smoothens the process of RoW permissions as well as faster approvals; it will facilitate easy rollout of 5G services. For effective monitoring of RoW applications across the country, the portal even comes fitted with a potent dashboard showing State and District wise pendency status.

PM GatiShakti National Master Plan Platform for 5G rollout

The Telecom assets are being mapped on PM GatiShakti NMP (National Master Plan) platform. So far ~ 10 Lakh RKm (Route Kilometer) of OFC laid by PSUs viz. BSNL, BBNL, RailTel, GAIL, PowerGrid has been mapped. About 20 lakh Telecom Towers of all Telecom Service Providers (TSPs) have been mapped with details such as 'fiberized' and 'non fiberized'.

The tool developed by BISAG on PM GatiShakti NMP calculates the required length and route of the nearest OFC to a particular unfiberized tower. This helps in:

a) Fiberization of unfiberized towers i.e. for connecting the available nearest OFC with nearest unfiberized tower

b) PSUs having saleable OFC can easily showcase and sell their OFC.

c) Companies who want to explore the option of buying available OFC to connect their unfiberized towers can do so without much effort.

Further, the street furniture (like electricity poles, bus shelters, traffic lights etc.) laid by State Governments are being progressively mapped. The DoT NMP platform is being integrated with State NMP platforms so that various assets of States like street furniture, government lands etc. are visible on the NMP DoT plateform. Various tools on the NMP platform have been developed which will make 5G rollout easier for the TSPs. For example:

a) **Shortest Distance tool**: This tool shows the distance of the nearest OFC from the point of interest which may be a non-fiberized mobile tower or a new site for a 5G cell/pole.
b) **5G planning tool**: This tool generates grids of customizable size in a city of interest. By Overlapping the layer of street furniture & mobile towers, a TSP can see in which grid there is no asset for 5G pole installation and a new pole/infrastructure is required.
c) **RoW(right of way) tool**: Using this tool, a TSP can see which agencies like State local bodies falling under the route of OFC laying or mobile tower installation.

Public procurement Preference to Make in India (PPP-MII)

PPI-MII Portal for Telecom Products was inaugurated on 16th Nov, 2021. On this Portal, manufactures/vendors and other stakeholders can register their grievances and track the status of their complaints. The complaints received on the portal regarding Local Content in the locally supplied telecom goods, services or works are referred to the Committee constituted for complaints and independent verification of self-declarations and auditor's/accountant's certificates on random basis.

Research & Development

Centre for Development of Telematics (C-DOT), is an autonomous telecom research & development body funded by DoT. It was established under the Society Registration Act XXI in 1984 to design and develop indigenous switching technology. C-DOT is presently engaged in developing state-of-the-art telecommunication technology to meet the needs of the Indian telecommunication network. Besides research and development activities, it is also involved in implementation of technologies developed. It has successfully developed an indigenous 4G mobile network solution in partnership with Industry.

Telecom Engineering Centre (TEC)

The Telecom Engineering Centre (TEC) of DoT is responsible for formulation of Standards, Specifications and technical regulation in the field of telecom and the related ICT sector. It undertakes mandatory testing and certification to ensure conformity of various telecom equipment to specified standards and also facilitates development of indigenous capacity in standards and assessments. It liaises with International bodies on telecom policy issues and provides technical support to various governmental organizations and other stakeholders of the telecom sector. TEC has been very active in facilitating use-case applications for 5G technology and services in the country.

E. INDIA'S RANKING IN GLOBAL INDICES:

Network Readiness Index 2022 (released on 15-11-2022)

India jumped 6 ranks, from 67 in 2021 to 61 in 2022 in the NRI-2022. NRI score for India also improved from 49.74 in 2021 to 51.19 in 2022. The report was released on 15-11-2022.

F. PLANNING FOR THE FUTURE

Telecom Bill-New legal framework in Telecom Sector: The existing regulatory framework for the telecommunication sector is based on the Indian Telegraph Act, 1885. The nature of telecommunication, its usage and technologies have undergone a massive change since the era of "telegraph". We now live in the era of new technologies such as 4G and 5G, Internet of Things, Industry 4.0, M2M Communications, Mobile Edge Computing, etc. These technologies are creating newer opportunities for India's socio-economic growth. Therefore, India needs a legal framework attuned to the realities of the 21st century. The Ministry of Communications initiated a public consultative process to develop a modern and future-ready legal framework. In July 2022, a Consultation Paper on 'Need for a new legal framework governing Telecommunication in India' was published and comments were invited.

Based on the consultations and deliberations, the Ministry of Communications has now prepared a draft Indian Telecommunication Bill, 2022 which has been put in public domain for further consultations. While preparing the draft, relevant legislations in Australia, the European Union, United Kingdom, Singapore, Japan and the United States of America have also been examined in detail. The Bill aims to replace the existing legal framework governing telecommunication in India, comprising of the Indian Telegraph Act, 1885, the Wireless Telegraphy Act, 1933 and the Telegraph Wires (Unlawful Possession) Act, 1950.

Launch of Satellite Broadband Services: In areas where terrestrial connectivity is not available, satellite may be the only backhaul technology available. Satellite backhaul relies on satellite-based bandwidth providers to connect the most remote communities. Depending on the exact type of technology used, satellite backhaul can be deployed quickly, without the need to build the costly and technically challenging infrastructure required for other backhaul technologies.

Leading VSAT operator(s) are effectively leveraging the advancements in satellite technology by utilising the indigenous High Throughput Satellites and would be offering services in the North-East, J&K and other areas. BBNL and BSNL are also using ISRO's HTS satellites GSAT-11 and GSAT-19 under BharatNet project to provide connectivity to about 6700 GPs/areas which were not accessible through other mediums. Broadband services from LEO/MEO satellites is expected to be rolled out in near future raising the quality of broadband services in remote and mountainous regions.

Cyber Security through Telecom Security Operation Centre (TSOC): Department of Telecommunications has approved a scheme for the installation of Telecom Security Operation Centre (TSOC) with objective to predict and identify attacks on national telecommunications infrastructure.

TSOC is used for identifying the cyber-attacks on telecommunications network and the machines which are initiating such attacks or under attack. TSOC is also used for identifying the presence of blocked application, malicious communications provided by some applications, etc. It is also the main source for providing inputs to Telecom Computer Security Incident Response Team (Telecom-CSIRT), a framework established by the Department of Telecommunications to protect the national telecom infrastructure.

Consumer Protection through the Telecom Analytics for Fraud management and Consumer Protection (TAF-COP) portal: Department of Telecommunications (DoT) has taken several measures to ensure proper allocation of telecom resources by Telecom Service Providers (TSPs) to subscribers and protect their interests in ensuring reduction of frauds. As per existing guidelines, individual mobile subscribers can register up to nine mobile connections in their name. TAFCOP has been developed to help subscribers, check the number of mobile connections working in their name, and take necessary action for regularizing their additional mobile connections if any. However, the primary responsibility of handling the Customer Acquisition Form (CAF) lies with the service providers**.**

Statutory/Appellate bodies in the telecom sector

The Telecom Regulatory Authority of India (TRAI) is a statutory body. It is the sector regulator and plays a pivotal role in development of the telecom, broadcasting and cable services. It has worked towards providing a fair and transparent environment which encourages competition and level-playing field for service providers and protecting the interest of consumers and enabling technological advancement The Telecom Regulatory Authority of India (TRAI) Act, 1997 (as amended) provides for the establishment of the TRAI and the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) to regulate the telecommunication services, adjudicate disputes, dispose off appeals and to protect the interests of service providers and consumers of the Telecom, Broadcasting & Cable sector and to promote and ensure orderly growth of the Telecom, Broadcasting & Cable sectors and for matters connected therewith or incidental thereto.

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