



Rights of Way (RoW) in India:

A submission from the GSMA relating to India Mobile Sector

September 2020



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Executive Summary

India aims to become a \$5 trillion economy of which US\$ 1 trillion expected from the digital economy. It further aims at becoming *Atmanirbhar Bharat* (Self-reliant India), encouraging local products, artisans through '*One District One Product*', leveraging emerging technologies and supporting economic backbone SMEs and MSMEs. Almost all of these goals and visions require high-speed digital highways.

Throughout the pandemic COVID-19, India has remained connected, economy functioning, people and students working from home, thanks to robust and resilient telecom network services. If anything, the pandemic has renewed focus on the value of connectivity. The exploding data traffic on networks is only going to grow with deployment of new technologies and work from home becoming common.

As connectivity emerges as a key component of economic wellbeing and cohesion, the ability of these high-speed networks to carry high traffic require deployment of more fiber, towers and spectrum (Backhaul & Front haul). The Telecom industry depends upon getting timely and affordable approvals for Rights of Way (RoW) permissions from authorities to accelerate infrastructure rollout.

However, industry faces serious challenges in getting the RoW permissions despite efforts by the Union government, hindering infrastructure rollouts at the last mile. This necessitates collaborative role that Union and state governments and industry must play to overcome this challenge.

Apropos, the GSMA has done this study that analyses the specific RoW challenges faced by Indian telecom operators. At the heart of the GSMA's efforts to come out of this study is to drive home the importance of streamlined and uniform RoW policies at the level of states, to help accelerate socio-economic goals and Digital India vision. It offers certain recommendations to address issues such as RoW approval timelines, denial of access (in commercial / residential areas), charges, non-uniformity in RoW approach, centre-state coordination and allocation of backhaul spectrum among others.

We also cover some innovative approaches to RoW followed in a few international jurisdictions that shows efforts of policymakers and governments to accelerate high-speed telecom infra rollout. We hope our examples provide the necessary inspiration by demonstrating how innovative policies and close cooperation among key stakeholders can improve the country's ICT/Telecom competitiveness. In this study, **the GSMA provide following recommendations to the governments (Union and state):**

- A single window clearance with deemed approval
- Replacing multiple RoW charges with only a single 'one-time' charge
- A "*Dig Only Once*" policy incorporating designing of *Utility Duct with implied RoW permission*.
- Making street furniture available across the country at very low or no cost at places
- Microwave spectrum allocation to MNOs to cope with surge on mobile networks
- Benchmark states on RoW as a key parameter including in Ease of Doing Business (EoDB) rankings.
- Permitting structured aerial fiber in dense urban environments and difficult areas
- Immediate need for uniform implementation of DoT's RoW Rules 2016 by all States.
- Meeting of Annual Targets of the National Broadband Mission¹

In short, it offers a blueprint and makes a case for making RoW permissions streamlined across India.

¹ <https://dot.gov.in/national-broadband-mission>



Rights of Way (RoW) in India

Background

The high-speed broadband using fiber and/or spectrum networks are increasingly becoming central to societies, communities, governments and economies. It enhances quality of digital life, augments the sustainability of local communities and economies. These high-speed broadband networks have become the backbone and growth engine of new age economies, and today, act as foundation for Sustainable Development. The telecom networks support recoveries during Disaster Management, as also witnessed in India during recent Odisha cyclone, and now, during the Pandemic-COVID-19. The country remains connected, 1.3 billion citizens entertained, working from home, the education and healthcare delivered through online mode.

India is already the second largest telecom network globally, home to 1.2 billion mobile subscribers and 2nd largest smartphone market. Many flagship programmes of the Government like Digital India, Skill India and Start-up India ride on telecom infrastructure. The success of JAM (Jan Dhan – Aadhaar – Mobile) trinity has been possible due to mobile networks that today reach nearly 99% of population.

The goal of **Atmanirbhar Bharat** (Self-reliant India) means further deepening of connectedness of people and integrating them with markets and opportunities e.g. various State Government are taking initiatives like '**One District One Product**' to encourage local products, handicrafts and provide artisans the access to wider market. Similarly, **SMEs and MSMEs** are backbone of any economy, more so of India, to not only grow in size and scale by finding new markets and opportunities but also provide more future jobs using power of digitalisation. **Digital India** has succeeded on the back of investment and rollout of 4G networks, and the future digital progress crucially depends upon the rollout of 5G and fiber. Under the five pillars of self-Reliant India, infrastructure has been recognized as an identity of the country. The rural economy needs to be further connected. India is getting ready for 5G, which along-with IoT, Big Data and AI will further play important role as horizontal enabler across verticals and sectors (e.g. Industry 4.0).

This also in line with global developments elsewhere e.g. the European Commission (EC) has just published a Recommendation calling its Member States to boost investment² in **very high-capacity broadband connectivity infrastructure**, including 5G, which is **the most fundamental block of the digital transformation and an essential pillar of the economic recovery. The timely deployment of 5G networks will offer significant economic opportunities for the years to come, as a crucial asset for European competitiveness, sustainability and a major enabler for future digital services.**

To cater to such varied needs of the economy, citizens and businesses that will generate further massive data, the proliferation of high-speed digital highways / fiber broadband are need of the hour. The means massive investment in high-speed broadband infrastructure, importantly in the fiber and backhaul spectrum infrastructure (enables faster roll out of services in rural and remote pockets as well as dense urban environment).

The National Digital Communications Policy (NDCP) 2018 states '**Broadband Highways**' and '**Universal Access to Mobile Connectivity**', as two of the nine pillars of 'Digital India', lay emphasis on the spread of broadband and mobile connectivity in the country. The NDCP included following key targets to be achieved by 2022:

- *Propelling India to the Top 50 Nations in the ICT Development Index of ITU from 134 in 2017*
- *Provide Universal broadband connectivity at 50Mbps to every citizen*

² <https://ec.europa.eu/digital-single-market/en/news/commission-recommendation-common-union-toolbox-reducing-cost-deploying-very-high-capacity>



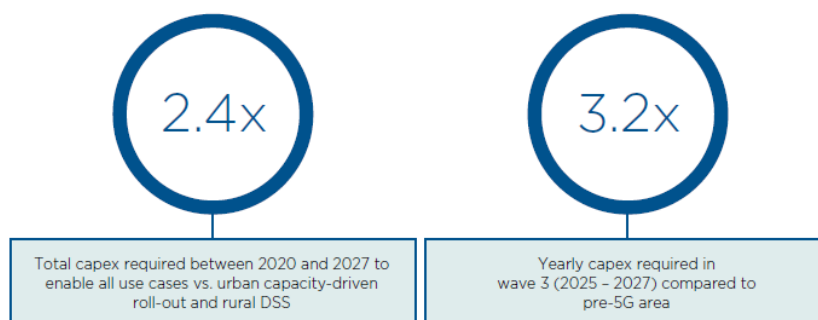
Rights of Way (RoW) in India

- Provide 1 Gbps connectivity to all Gram Panchayats by 2020 and 10 Gbps by 2022
- Enable 100Mbps broadband on demand to all key development institutions
- Enable fixed line broadband access to 50% of households
- Achieve 'unique mobile subscriber density' of 55 by 2020 and 65 by 2022

Today, the overall data consumption in India has reached a massive 700 Crore GB per month fuelling the backhaul requirement for a mobile BTS site from 4 Mbps (earlier) to 300 Mbps.

To sustain such a level of traffic India needs fiberisation and fiber densification. Due to such under-fiberization only 30% of mobile towers and 7% of Indian homes are connected with high speed fiber/ fixed broadband. This requires laying fiber and installing towers at speed across length and breadth of India. Installing duct / fiber (often underground, and majorly on public lands and areas which many a times may already be paved or developed) is an essential part in deploying broadband infrastructure and a significant part of this digging and trenching work requires access to public Rights of Way (RoW) in cities, towns. In the 5G era, the network densification will make RoW a critical enabler in accelerating important government visions such as Industry 4.0, Smart Cities. As per a recent GSMA study³ investments in the 5G era will be driven by need for large number of small and macro cells.

MASSIVE INCREASE IN REQUIRED INVESTMENTS DRIVEN BY NEED FOR LARGE NUMBER OF ADDITIONAL MACROS AND SMALL CELLS



The GSMA report highlights that cumbersome bureaucratic approval processes typically inhibit timely large-scale deployment of small cells. Some regulators are moving to facilitate next-generation infrastructure investments by streamlining approval processes. These measures include simplified, transparent, and standardised application and review processes for small cell siting, exempting small cells that meet certain set criteria from reviews of environmental and historic site preservation organisations; and accepting declarations of compliance for network operators without requiring routine post-installation measurement of power density.

³ REALISING 5G'S FULL POTENTIAL: SETTING POLICIES FOR SUCCESS, MARCH 2020



Rights of Way (RoW) in India

Accelerating digital infrastructure (5G ready and beyond)

As not only the Union government but also the state governments aim to usher in new visions of 5G, Industry 4.0, Smart Cities, creating local jobs and entrepreneurship; it is of utmost importance that all agencies whether at state level, local level or at union level; facilitate deployment of Telecom infrastructure in a holistic manner, and a very coordinated manner.

India's Department of Telecommunications (DoT) has taken several policy initiatives to facilitate infrastructure growth for delivery of quality services that has resulted in the number of BTSs for 2G/3G/4G-LTE services progressively reaching to 21.87 lakh, and number of towers to 5.94 lakh across the country⁴.

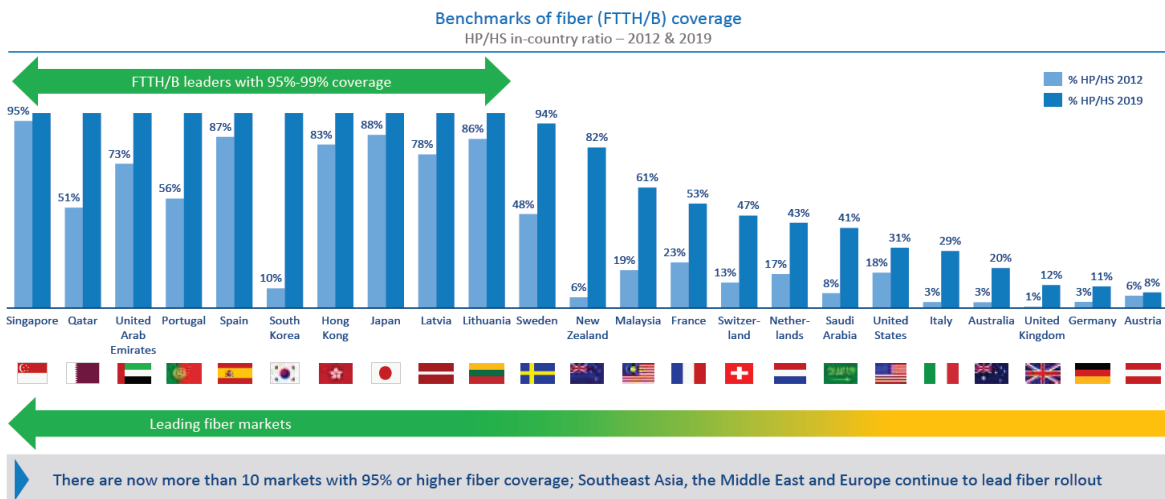
While such policy measures coupled with the efforts of telecom services and infrastructure providers' active participation – have increased the density of telecom towers, the fiberisation in India i.e. mobile towers connected with fiber, and, fiber to the home (FTTH) penetration, have remained poor.

The Government estimates that around 31% of the towers in country are fiberized⁵.

In some of the advanced countries, the percentage is said to be in excess of 60%⁶. China, Japan, Korea's massive and deep fiber penetration reaching over 99% of mobile towers, 70% homes and all of private and government buildings has enabled them to lead 5G deployments, usher in innovation, R&D and leveraging power of domestic market through high-speed connectivity and solutions.

A recent report⁷ on fibre deployments shows that in a group of countries fiber has become almost ubiquitous – covering more than 95 percent of homes (See chart below) in those markets.

Figure 2: FTTH/B households passed



Source: Arthur D. Little, FTTH Council Europe, MENA, Asia-Pacific, regulator reports, Discussions with individual telcos, ADL past case work
HS – Households in the country. HP – Households passed by FTTH/R. HC – Households connected by FTTH/R

⁴ <http://164.100.24.220/loksabhaquestions/annex/173/as358.pdf>, figures by 11th March 2020

⁵ <http://164.100.24.220/loksabhaquestions/annex/172/au3835.pdf>

⁶ "It is worth noting that in India, less than 25% of telecom towers carry fibre optics against the average in the US, China and Korea where it is as high as 65-80%. interestingly, total cumulative fibre deployed to population ratio today in the US is 1.4x, China 0.9x but only 0.1x in India, according to EY data..." <https://telecom.economictimes.indiatimes.com/news/right-of-way-rules-the-effects-of-implementation-delay-on-india-telecom-industry/59855964>

⁷ The race to gigabit fiber: FTTH opening the adoption of gigabit-speed internet (Arthur D Little, September 2020)



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As inferred from the report, deployment of high-speed fibre is helping telecom providers offer competitive, better and converged services in these countries.

Comparing the level of fiber penetration of these countries with India, there clearly are gaps. Even the microwave backhaul capacity available to operators seem insufficient to deal with the exponential data growth witnessed on the networks. With the further surge expected in traffic in the 5G and M2M era, this pressure on telecom networks' backhaul requirements is only going to exacerbate if not addressed in time.

In our view, the comparative slow progress in India with regards to fiber, in part can be attributed to the tedious, complex and many a times expensive RoW permissions, procedures at the state and local levels.

Although telecom is a Union government subject, the RoW permission is granted by the state governments (e.g. via local authorities like municipalities) in return for a fee. In many cases these charges have been argued to be high, RoW permissions delayed as local authorities follow their own interpretations and processes while granting such permissions.

The unfortunate pandemic Covid-19 has proven the critical importance of resilient telecom networks – demonstrating need for the governments to facilitate efficient RoW policies so that digital infrastructure can rollout at the last mile (fiber, towers). For this to happen, the rights of way permissions not only need to be affordable, reasonable if not free, they also need to be fast tracked, simplified, and made part and parcel of various government by-laws, building codes etc.

A recent Finance Ministry Task Force on National Infrastructure Pipeline (April 2020) covers this aspect of Union and state coordination, see below:

“...Creation of collaborative institutional mechanism between the Centre, states and local bodies for common right of way (RoW), standardisation of costs and timelines:

With continued increase in demand for data, additional telecom towers need to be installed so as to increase coverage in rural and non-metro cities and to expand capacity in metros. Additional towers take time to be installed mainly due to delay in getting permission from local authorities and other procedural issues.

As per industry estimates, an additional 10 lakh towers need to be established and an 30 lakh km of optical fibre cable (OFC) need to be laid by 2025. Typically, about Rs 50 lakh is the required investment for setting up a tower. Around 30% of the telecom towers in India are fiberized. In order to quicken the process of giving RoW permissions, adoption of India Telegraph RoW Rules 2016 by state/ union territory government and central agencies is required. There is an imminent need to develop innovative implementation models for RoW and to work with states/UTs for having consistent policies pertaining to expansion of digital infrastructure...”



Rights of Way (RoW) in India

Initiatives in India to facilitate deployment through Rights of Way (RoW)

Considering the importance of RoW to accelerate 5G and network rollouts and to overcome such challenges, the Government of India (Department of Telecom) on 15th Nov 2016 issued a Gazette Notification⁸ called 'The Indian Telegraph RoW Rules 2016' to speed-up and regulate the laying of underground (fiber) and over-ground telecom infrastructure (towers) in the country.

The Rules were created to facilitate establishment and maintenance of underground and over-ground telegraph infrastructure. The rules are applicable to the concerned local authorities in states (e.g. municipalities) and gives a framework for the states to follow while formulating their local RoW process. It prescribes that:

- Permission to be obtained from the competent local authority
- Authority to dispose the application within a period not exceeding **sixty days**
- Prescribed Charges/Fee/ Administrative Charges are as under:-
 - Underground: not exceeding Rs. 1000/- per kilometer
 - Overground: not exceeding Rs. 10,000/- (one Time)
 - For installation of towers: Rs 10,000/- per application (one time)

Under NDCP 2018, the Government decided to implement a '**Fibre First Initiative' to take fibre to the home, to enterprises and to key development institutions in Tier I, II and III towns and rural clusters**. This includes:

- According Telecom Optic Fibre cables the status of Public utility
 - Promoting collaboration models involving state, local bodies and private sector as necessary for provision of shared duct infrastructure in municipalities, rural areas and national highways
 - Facilitating Fibre-to-the-tower programme to enable fiberisation of at least 60% of telecom towers thereby accelerating migration to 4G/5G
 - Incentivising and promoting fibre connectivity for all new developmental construction
 - By making requirement for telecom installations and the associated cabling and in-building solutions mandatory in all commercial, residential and office spaces by amending National Building Code of India (NBC), through Bureau of Indian Standards (BIS).
- Till now⁹, around sixteen (16) states (**refer Annexure- 1**) have adopted the RoW rules and formulated their respective policies. These states are:
 - Jharkhand, Rajasthan, Tripura, Odisha, Haryana, Assam, Maharashtra, Tamil Nadu, Arunachal Pradesh, Uttar Pradesh, Uttarakhand, Meghalaya, Madhya Pradesh, Karnataka, Manipur, and Nagaland.

Additionally, fifteen (15) states/Union Territories are a "work in progress" for either aligning their existing policies or have come out with draft policies:

- Himachal Pradesh, Delhi, Sikkim, Punjab, Chandigarh, Gujarat, Goa, Chhattisgarh, Kerala, Andhra Pradesh, Telangana, Pondicherry, Bihar, J&K, Mizoram,

Another six (6) states / UTs (West Bengal, Andaman & Nicobar Islands, Lakshwadeep, Dadra & Haveli, Daman & Diu, and Ladakh) do not have any uniform policy.

⁸ https://dot.gov.in/sites/default/files/ROW_2016.pdf?download=1

⁹ As of August 2020



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- The industry is working on these with the respective state/UT governments, basis need and prioritization. Further, the industry is also exploring central agencies like – Ministry of Railways, Urban Development department, Ministry of Civil Aviation, NHAI, Ministry of Environment & Forest etc. to facilitate RoW under their jurisdictions.
- As per Ministry of communications¹⁰, steps such as consultation with State Governments / Union Territories, holding regional seminars and advocacy workshops have been taken up for facilitating adoption of Indian Telegraph Right of Way Rules, 2016 and roll-out of telecom infrastructure.
- Further, the local operator association COAI under its joint industry group named TIC, with all Mobile operators and Infrastructure providers as its members is steering local level coordination through its circle coordination committees (CCC). Periodically, TIC reviews progress at Pan India level in their meetings regularly and decide on priorities for faster implementation of RoW rules across India.

While, the RoW Rules, introduced in November 2016, aimed at expediting the building of telecom infrastructure, and such efforts, its implementation across States and local levels have not been on expected lines or satisfactory.

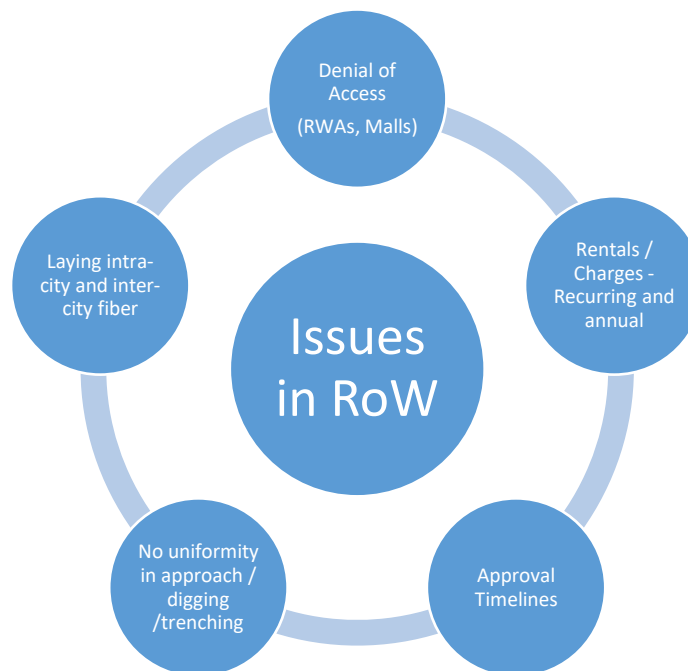
¹⁰ [HTTP://164.100.24.220/LOKSABHAQUESTIONS/ANNEX/173/AU2832.PDF](http://164.100.24.220/LOKSABHAQUESTIONS/ANNEX/173/AU2832.PDF)



Rights of Way (RoW) in India

Challenges to overcome in RoW

The network rollouts need RoW permission from state and local bodies for laying ducts for fiber cables and putting towers on public lands. The major reasons for low fiber penetration in India have been the difficulties, delays and costs associated with the process of obtaining RoW permissions. Different State Governments have adopted different rules, criteria, and timeframes with disproportionately higher charges causing significant amount of effort and delays in getting the necessary clearances. Some of the typical issues involved in the RoW permissions can be understood from the figure below:



As per our discussion with the industry, these concerns can be further explained as follows:

- a. In many States, the **policies are not aligned with the DoT rules** and in some cases there are **no policies at all (covered in previous section)**. This leads to **undue delay** in processing, non-uniform approach ultimately leading to connectivity impact for state and its citizens. The RoW process requires significant documentation. Again, the Finance ministry task force report captures the issue of delay:

*"...With continued increase in demand for data, additional telecom towers need to be installed to increase coverage in rural or non-metros and to increase capacity in metros. Currently, India has ~5.5 lakh towers and the industry believes the country will require additional ~1 lakh towers per year over the next 2-3 years to meet the estimated demand. Further, only ~25-30% of telecom towers are fiberized. India will need to fiberise over 50%-60% of its towers (ideally) before launching 5G. This **requires quick approval by state authorities for laying fibre**, especially in metros and Tier 1 cities. **This issue has resulted in continuing delays for operators in setting up the needed infrastructure...**" [Emphasis Supplied]*

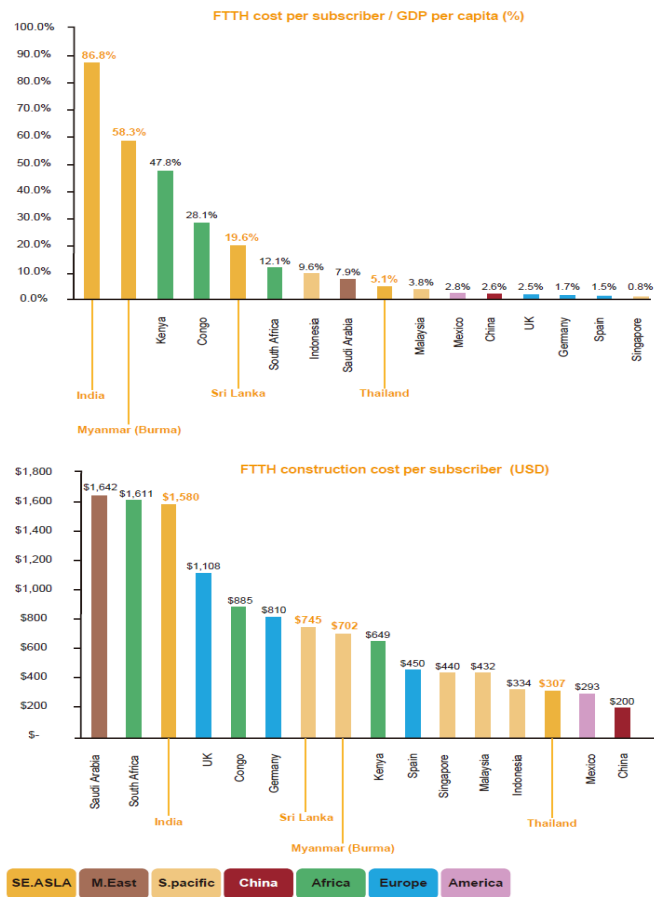


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- b. **Fee / rentals charged by city / local authorities.** In absence of holistic policy framework within states, these charges vary even within the state from city to city. It is understood that some states take one time charge, some recurring and some both. Basis of charging is also not explained or unclear. While the government encourages installation of BTSs on its buildings – often, the rentals are prohibitory and not prescribed properly. These RoW charges are a significant input cost towards digital connectivity.

A 2016 ITU White Paper¹¹ highlights the cost implications for FTTH capex for Indian subscriber e.g. “...These range from USD1,642 US per line in Saudi Arabia down to USD200 per line in China. These differences become even more marked when comparing capex per line relative to GDP per capita with India at 86.8 percent down to Singapore at 0.8 percent...”

➤ Exhibit 24: FTTH capex per line and capital expenditure per line/GDP per capita



Source: Towards a connected Cambodia, Smarter ways to develop broadband, CHEN, KUAN-HONG (Arthur), Director of Fixed network, Huawei

The same paper compares some countries’ costs of various components for rolling out broadband infrastructure. It shows India having high to very high cost on account of RoW and civil work.

¹¹ Broadband Regulation and Policy in Asia Pacific Region – Facilitating Faster Broadband Deployment, https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Documents/Events/2016/APAC-BB-2016/Final_White_Paper_APAC-BB.pdf



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➤ Exhibit 23: Cost of various components of broadband infrastructure in for selected countries: Thailand, India, Myanmar and Sri Lanka

Item		Thailand	India	Myanmar	Sri Lanka
OSP	Device	Low	Middle	Middle	Middle
	Fibre cost	Middle	Low	High	Low
	Civil work (including ducting deployment)	Low	High +	High -	High
	Fibre splicing	Middle	Middle	High ++	Unknown
	Rights of way	Low	High ++	Middle	High -
ISP	Fibre	Low	Low	Middle	Low
	ONT installation	Low	High	Unknown	Middle
	Civil work	Low	High	Unknown	High

■ Low/Middle
 ■ High -
 ■ High/High +/High ++

Source: Industry sources, 2016

The fees or charges often applied to raise revenue for the local / state governments rather than supporting the development of local economy or ease of living of local community. We believe this is a myopic view, antithesis to the development and progress in digital age.

- c. Another equally important issue is **denial of access**. It has been observed that many a times, the Residents Welfare Associations (RWAs), owners of commercial properties (buildings/ malls) deny the access to lay fiber or install telecom infrastructure inside the building premises. While it can be argued that aesthetics of the structure should not be deteriorated, the denial of access altogether is as bad as denying a service to a customer. Sometimes, the denial is indirect in form of exorbitant charges for giving permissions.

Service providers face such situations even in cities where fiber is available outside the periphery of such housing societies or commercial complexes thereby denying timely and cost effective connectivity to residential or commercial customers.

Coordination between Union and State Governments: Since the RoW also involves state involvement on public/private properties, the industry has to work with the state governments, local authorities to make sure that the respective rules of federal governments are aligned to the spirit and intent of the Union’s RoW rules i.e. to facilitate the rollout of telecom infra at reasonable cost. The Finance Ministry task force, in respect of RoW, notes that:

“Creation of the digital communications infrastructure requires coordination and alignment of the work of multiple stakeholders and agencies - the central ministries and departments, state governments, local/municipal authorities, industry and user communities to achieve the intended objectives. One of the major challenges is implementation of Indian Telegraph Right of Way Rules, 2016. The cost of fibre rollouts remains high in India due to complicated and uncertain right-of-way (RoW) policies across the country...”

We believe that high charges, coupled with inexplicable delays and/or longer duration for granting RoW permissions, is making India miss a cost effective broadband infrastructure deployment and affordable access.

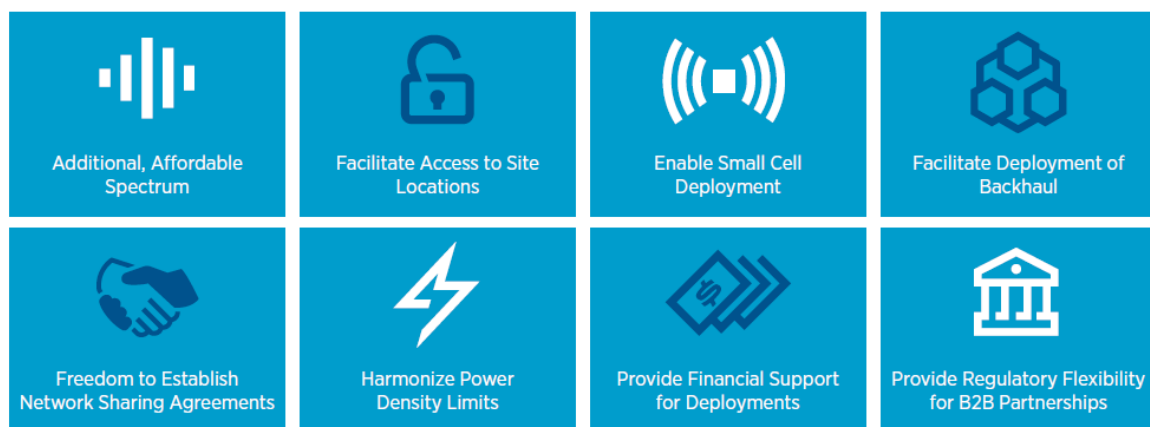


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The international deliberations and approaches

In the past, the GSMA identified six regulatory levers that can foster infrastructure investment. Governments around the world have taken concerted steps in most of these but they will need to do more to stimulate full 5G deployment. There are two additional areas in which action by policy makers and regulators can spur the rollout of 5G: providing adequate subsidies for deployments, and providing regulatory flexibility for vertical partnerships. Seizing the full macroeconomic opportunity of 5G requires concerted commitments from policy makers and the industry in all of these areas.

REGULATORY LEVERS TO ACCELERATE 5G INFRASTRUCTURE



The GSMA believes that processes and procedures are required to facilitate network deployment. As per a recent GSMA report¹², 5G presents an increasing need for densification, particularly in hotspots such as shopping centers, transport hubs, public facilities, and stadiums, where small cells are often the only viable solution to provide additional capacity. In many markets, local regulations make gaining access to site locations difficult, but some policy makers are now moving to make access easier.

“The IMDA in Singapore has required “mobile installation spaces”—typically rooftop spaces reserved for telecommunication equipment—be provided to network operators by building developers and owners free of charge.¹⁹ In Japan, operators can install 5G base stations on 208,000 traffic lights across the country.²⁰ Moreover, the Japanese government has proposed that the costs of using the traffic lights for 5G deployments be shared between operators and local administrations²¹ In a move to further its smart city infrastructure, the government also plans to equip traffic lights with communication functions for traffic data collection and processing and emergency communication. The UK’s Electronic Communications Code facilitates operators’ access to macro and small cell infrastructure on public and private land.

Granting access to public buildings and street “furniture,” such as bus stop shelters, lamp posts or traffic lights, owned by municipalities, at low or no cost removes a significant hurdle to site deployment. New street infrastructure that is manufactured and installed deployment-ready means operators can attach their equipment and connect to backhaul and energy networks.” [Emphasis supplied]

¹² Realising 5g’s Full Potential: Setting Policies For Success, March 2020



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- While the above are in context of facilitating the access to site locations, as regards enabling the Small Cell Deployments, the GSMA report highlights:

“...In 2018, the US FCC issued infrastructure rules aimed at streamlining and removing barriers at the federal, state, and city levels.²² These include the establishment of two new “shot clocks” for the reviewing of small wireless facilities deployments: 60 days for collocation on pre-existing structures and 90 days for new construction. Similarly, the EU has launched a consultation on light deployment regime for small cells, which will likely lead to regulation updates in the intermediate term.²³ The Danish Energy Agency is exploring guidelines (including best practice examples) for public authorities on how to deal with applications for permission to set up telecommunications infrastructure.²⁴”

- Many other markets too consider RoW as an important parameter for Telecom infrastructure developments, more so in 5G era. Some examples:
 - **In Australia**, the Telecommunications companies have some powers to enter land and install and maintain some types of telecommunications facilities^{13,14}, and some immunities from some state and territory legislation. These laws are designed to strike the right balance between the community's need to access reliable, affordable telecommunications services and ensuring that property owners, local governments and communities have a say in the deployment of infrastructure that affects them.
 - It is said that **Spain's**¹⁵ FTTH strategy (established in 2012) has become a model for cost-effective and fast FTTH deployment in Europe. Policies of the Spanish government have contribute to this success. Since 1998, the Spanish government has required that communications pipelines to be constructed for each new building, to provide the communication service. Since 2000, the government has stipulated a legal framework for cooperation between public utility companies and operators in terms of pipelines.
 - **Austria** has a very good approach to RoW, termed as Wayleave Right under the Telecommunications Act 2003. Under the Act¹⁶, the providers of a communications network can exercise wayleave rights on public property, such as streets, footpaths, public places and the airspace above, **free of charge**

¹³ [HTTPS://WWW.COMMUNICATIONS.GOV.AU/POLICY/POLICY-LISTING/CARRIER-POWERS-AND-IMMUNITIES](https://www.communications.gov.au/policy/policy-listing/cARRIER-POWERS-AND-IMMUNITIES)

¹⁴ E.G. low-impact facilities include some radiocommunications facilities, underground and above-ground housing, underground and some aerial cables, public payphones, emergency and co-located facilities....these low-impact facilities are needed for telecommunications networks to provide wider coverage and services. the strict type, size, colour and location limitations of low-impact facilities means that carriers can rollout networks with as little disruption to the community as possible during installation or operation. See

[HTTPS://WWW.COMMUNICATIONS.GOV.AU/POLICY/POLICY-LISTING/CARRIER-POWERS-AND-IMMUNITIES](https://www.communications.gov.au/policy/policy-listing/CARRIER-POWERS-AND-IMMUNITIES)

¹⁵ <http://www-file.huawei.com/~media/CORPORATE/PDF/white%20paper/Gigaband-Network-EN.pdf> (See Section 3.4.1 –e.g. *By the end of 2015, the FTTH deployment had covered 30 million households (including repeated coverage of multiple operators) and more than 3 million subscribers. Spain plans to achieve 100% household coverage by 2020... The Spanish government allows cable layout on the facades of buildings, reducing the home connection costs by about 20%. The Spanish government requires that the communications pipeline owners open the pipelines to all operators at a unified price. This encourages operators to use existing pipelines, improving the FTTH deployment efficiency...*

¹⁶ See section 2, Infrastructure Use, Wayleave Rights https://www.rtr.at/en/tk/TKG2003/Telecommunications_Act_2003_unofficial_.pdf



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and without special authorisation^{17, 18}. The specific exercise of this right must be coordinated with the administrator of the public good (eg the municipality). Since the end of 2015, it has also been possible to apply for a decision from the Telekom Control Commission if no agreement can be reached¹⁹. Importantly, the providers of public communication networks shall have the right to claim wayleave rights to private property subject to certain conditions²⁰.

- **In China**, the government's national broadband strategy in 2013 made FTTH as the main part of the broadband network²¹. Even provincial governments/ municipalities work towards its success e.g. Shanghai Municipal government has created broadband construction policies centered on FTTH deployment (e.g. new residential buildings), works closely with operators to determine the development goals and even helps with the FTTH publicity activities. China has also used a co-deployment²² models to lay and utilize ducts/fiber with various sectors e.g. Highways, high-speed railways. This model also saves a huge amount of cost.
- The **German Telecommunications Act**²³ entitles operators of public telecom to use (a right of use) Trafficways free of charge. Further, under the Act²⁴, the owner of a property cannot prohibit the setting-up, operation and renewal of telecommunications lines on his property subject to certain conditions.
- **The EU** recently adopted regulations²⁵ to accelerate 5G network installations by simplifying the deployment of small cell antennas that provide the last mile for 5G networks. The regulation defines the physical and technical characteristics of small cells, setting strict limits on their size and power, exempting them from planning permits (while retaining national oversight) and addressing their appearance to make them less visible. In a report for European Parliament, titled "*5G Deployment: State of Play in Europe, USA and Asia*"²⁶ in the factors considered for 5G success - in terms of ranking, after the technology capability, the key factor was reported as the ease with which a large number of small cells can be deployed in densifying the network.

¹⁷ The term "free of charge" as defined in this provision shall not affect the legal bases for the collection of charges in existence already on 1 August 1997. **Source:** https://www.rtr.at/en/tk/TKG2003/Telecommunications_Act_2003_unofficial_pdf

¹⁸ The TKG 2003 grants management rights to private property as well as to public property (such as streets, footpaths, public places and the airspace above). In contrast to those over private property, management rights over public goods are even free of charge.

<https://www.rtr.at/en/tk/Infrastrukturnutzung>

¹⁹ <https://www.rtr.at/en/tk/Infrastrukturnutzung>

²⁰ "...unless public considerations stand in the way of such rights and if 1. the designated use of the property is not (or is only marginally) limited by the exercise of such rights; and 2. the sharing of systems, lines or other facilities pursuant to Article 8 Par. 1, 1c or 2 is not possible or practicable...." **Source:** https://www.rtr.at/en/tk/TKG2003/Telecommunications_Act_2003_unofficial_pdf

²¹ <http://www-file.huawei.com/~media/CORPORATE/PDF/white%20paper/Gigaband-Network-EN.pdf> (see section 3.4.3. e.g. "...by May 2016, the number of FTTH users has reached 180 million, and 446 million households have been covered. Operators achieve this success with strong support of the government...")

²² <https://www.unescap.org/sites/default/files/Building%20Synergies%20through%20Co-deployment.pdf>

²³ See Part VIII –Use of Trafficways , Section 50 Principles for the Use of Public Ways, <https://germanlawarchive.iuscomp.org/?p=692>

²⁴ §57 Detriment to Property: (1) The owner of a property which is not a trafficway within the meaning of §50(1) sentence 2 cannot prohibit the setting-up, operation and renewal of telecommunications lines on his property insofar as 1. a line or installation on the property which is secured by a right is also used for the setting-up, operation and renewal of a telecommunications line and the usability of the property is not thereby additionally restricted on a lasting basis, or 2. the property is not or is only insignificantly affected by such use. **Source:**

<https://germanlawarchive.iuscomp.org/?p=692>

²⁵ <https://ec.europa.eu/digital-single-market/en/news/commission-adopts-implementing-regulation-pave-way-high-capacity-5g-network-infrastructure>

²⁶ [https://www.europarl.europa.eu/regdata/etudes/idan/2019/631060/ipol_ida\(2019\)631060_en.pdf](https://www.europarl.europa.eu/regdata/etudes/idan/2019/631060/ipol_ida(2019)631060_en.pdf)



Rights of Way (RoW) in India

The European Commission's recent Recommendation^{27,28} calls upon Member States to boost investment in very high-capacity broadband connectivity infrastructure, including 5G by reducing deployment costs through harmonised measures such as to:

- Support simpler and more transparent permit-granting procedures for civil works;
 - Improve transparency on existing physical infra, so that operators can access more easily all relevant information on the infra available in a certain area, and facilitate permit-granting procedures, through a single information point in the administration of public authorities;
 - Expand network operators' rights to access existing infrastructure controlled by public sector bodies (i.e. buildings, street lamps and those belonging to energy and other utilities) to install elements for network deployment;
 - Member States should exchange and agree on best practices to ensure that fees charged for the granting of permits for civil works that are needed to deploy very high capacity networks are objectively justified, transparent, non-discriminatory and proportionate to their intended purpose, and that they cover only the administrative costs incurred for the provision of such permits.
- **The United Kingdom** last year consulted²⁹ to permit development rights to support the deployment of 5G and extend mobile coverage. The result of the consultation published in July 2020³⁰ validates the importance of mobile infrastructure, and **takes forward certain in-principle proposals** (primarily, changes pertaining to deployment of taller and wider masts, building-based masts located nearer to highways etc.) which will be codified in various town and country planning Orders and legislations. The outcome also shows the coordinated Whole of Government approach taken among various regulators, governments and agencies to achieve the outcome³¹
- **In USA**, the US House of Representatives, Democrat Anna Eshoo of California and Republican David McKinley of West Virginia have proposed a ***Nationwide Dig Once Act of 2020***³². As per some reports³³, this *"...will reduce costs drastically and increase access for communities across the country,"* making it *"easier for states and broadband providers to enter new and underserved markets..."*.

²⁷ https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1603

²⁸ Refer streamlining permit granting procedures https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=69383

²⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/827162/proposed_reforms_to_permitted_development_rights_to_support_the_deployment_of_5g_consultation.pdf

³⁰ "...These changes will benefit communities and businesses and provide greater certainty to incentivise investment in mobile infrastructure..."

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/902836/Government_Response_Mobile_Planning_Consultation.pdf

³¹ *"...In developing the technical consultation, we will work with mobile industry representatives, other government Departments and relevant regulators – including Defra, DfT, MoD and Ofcom, representatives of local planning authorities and those representing protected areas, to ensure that the appropriate environmental protections and other safeguards are in place to mitigate the impact of new mobile infrastructure. This includes strengthening the Code of Best Practice on Mobile Network Development in England (the Code of Best Practice), which provides guidance to mobile network operators and local planning authorities..." [Para 10, Executive Summary]*

³² <https://eshoo.house.gov/media/press-releases/eps-eshoo-mckinley-announce-nationwide-dig-once-act-2020> (e.g. as per the Act the *"...dig once requirement"* means a requirement **designed to reduce the cost and accelerate the deployment of broadband** by minimizing the number and scale of repeated excavations for the installation and maintenance of broadband conduit or broadband infrastructure in rights-of-way...) [Emphasis Supplied]

³³ <https://arstechnica.com/tech-policy/2018/03/dig-once-rule-requiring-fiber-deployment-is-finally-set-to-become-us-law/>

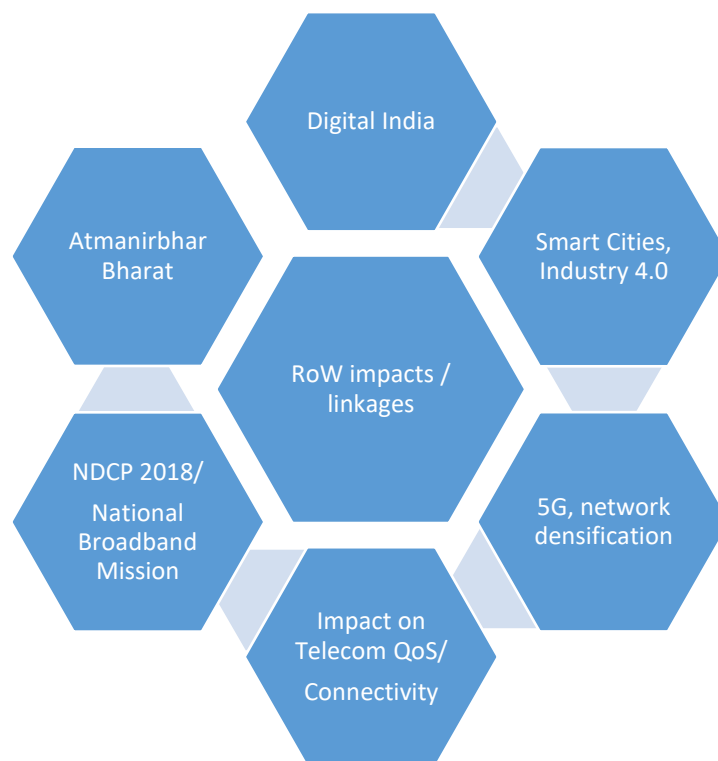


Rights of Way (RoW) in India

A well laid out RoW process on ground is fundamental to realise national and local aspirations

“Public rights-of-way are too valuable to be assigned haphazardly. Municipal officials should use all the tools at their disposal to manage these assets carefully, ensuring that their cities will have the broadband capacity they need for years to come.”³⁴

The critical importance of having a uniform and affordable public RoW policy at local level is fundamental to having good digital connectivity. Its impact can be understood from the figure below:



The Finance Ministry task force report recognises the importance of **connectivity**:

“...There is an urgent need to fast track the progress, necessitating fundamental changes in the way we operate, specifically with respect to creation of digital communications infrastructure, which faces several hurdles. This will enable us to reach a stage where digital communications is able to fulfil its potential of becoming a universal platform for equitable and inclusive growth across the country.

Several challenges delay the roll out of broadband services to the unserved, underserved, rural and remote regions of India. Investments in infrastructure need to be enhanced and universal last-mile connectivity needs to be promoted.”

³⁴ <https://www.kandutsch.com/articles/local-management-of-public-rights-of-way>



Rights of Way (RoW) in India

Looking at the challenges faced by the telecom service providers in RoW, the following can be argued:

- The RoW for establishing telecommunication infrastructure for a digital socio-economy is as important as Spectrum for mobile networks.
- As various visions of the governments – be it union or state – ride on the telecom infra, it should be duty of the government to Right to RoW as part of their approvals processes just as it gives right to spectrum.
- Devising a reasonable, affordable and enabling charging framework for RoW permissions is important. While ideally RoW should be provided free of cost, as it enables indirect local economy due to improved and enhanced connectivity; if that is not possible then a fair, transparent and non-rent seeking charge should be prescribed.
- The equally important factor of telecommunication network services is the backhaul spectrum whose current allocation is insufficient to cater to industry's growth requirements. To adequately deal with service and network quality at backhaul level, the network operators should be allocated wide and high capacity bands in existing Microwave Access (MVA) and E & V bands, as recommended by the Regulator (TRAI) in 2014.

We believe there is a pressing need to address these requirements so that India does not lose on the important national visions as indicated above.



Rights of Way (RoW) in India

Recommendations

We note that since under the five pillars of self-Reliant India, infrastructure is recognized as an identity of the country, the government has to recognise the importance of RoW policies for enhancing the digital connectivity, rolling out of tower and fibre infrastructure to support I4.0. The need is to bring a sense of urgency to hasten the digital infrastructure rollouts at the local levels and at affordable costs with consistency and uniformity. In view of international benchmarks and practices discussed above, it is clear that India needs to do more on the RoW front.

We therefore recommend the following specific measures to accelerate the Rights of Way (RoW) for quicker deployment of broadband infrastructure in the country:

- **Single window clearance with deemed approval:** All states should implement a single window clearance system with well-defined and monitored timeframe (e.g. 30 days) of granting all the RoW permissions. An unexplainable delay beyond the 30 days should be deemed approved. The Ministry of Communications / DoT can play the facilitative role for these approvals with state governments. These approvals should be fully automated and online (easy to navigate and user-friendly interface) in a unified national portal integrated with states.
- **Replace various RoW charges with only a single 'one-time' charge to recover direct cost of restoration and reinstatement** of the surroundings to their original state. There should be no other charges. This will accelerate broadband infrastructure deployment, boost investments and generate employment that can leapfrog India to the league of digital economies.
- **A "Dig Only Once" policy to incorporate designing of Utility Duct with implied RoW permission for Telecommunications in all infrastructure projects, building and housing bylaws.** Standardized provisions and specifications for installing utility duct/optical should be part of the construction design policies of all Central, State level authorities and agencies in-charge of all infrastructure approvals and projects whether private or public (e.g. NHAI/Urban Development Ministry/Housing Ministry/Public Works and local development authorities). In-fact, for the purpose of issuance of completion certificate of the building/infrastructure this can be a mandatory requirement.
- **Make street furniture available across the country** at very low or no cost at places such as bus stop shelters, lampposts or traffic lights, owned by municipalities, to help small cell site deployment. New street infrastructure that is manufactured and installed deployment-ready means operators can attach their equipment and connect to backhaul and energy networks
- **Microwave spectrum allocation**– the government usher in a more liberal usage policy and allocate more MW bandwidth to MNOs to cope with surge on mobile networks and to also being able to cater to further exponential data growth expected. The high capacity MW backhaul (i.e. E) Band should be allocated to industry at the earliest to deliver quality services to consumers and business.
- **Rank and benchmark states on RoW as key parameter including in Ease of Doing Business (EoDB) rankings** for broadband readiness, assessing their competitiveness, and attractiveness for investors and companies. The ease, duration and cost of getting timely RoW permissions in states and even districts (DHQs) can be part of the assessment (e.g. an annual / half yearly review).



Rights of Way (RoW) in India

- **Structured aerial fiber in dense urban environments & difficult areas:** Permit the cost-effective means of fiber deployment such as structured aerial fiber to enhance the backhaul capacities in dense urban and difficult geographies, with due consideration to aesthetics of surroundings.
- **Immediate need for uniform implementation of the RoW Rules 2016 by all States.** The states should issue their policies on underground and overhead infrastructure at the earliest, and consistent with 2016 rules issued by the DoT.
- **Meeting of Annual Targets of the National Broadband Mission³⁵** : Closely monitor the progress of work under this Mission through a centralised monitoring dashboard created by the DoT. This will help in effective and efficient tracking progress and reporting of the status of mission's annual targets.

By implementing these recommendations, we believe India can leapfrog into a Digital Society with much lesser social cost and massive benefits in healthcare, education, governance, and commerce.

³⁵ <https://dot.gov.in/national-broadband-mission>



Rights of Way (RoW) in India

Annexure 1

RoW Rules 2016 – Present Status as on August 2020

Policies notified		
S.No	State	Notified / Cabinet Approval Date
1.	Jharkhand	4 th Dec 2015
2.	Rajasthan	6 th Feb 2017
3.	*Tripura Govt.order	6 th Sept 2017
4.	Odisha	14 th Sept 2017
5.	**Haryana	6 th Oct 2017
6.	Assam	16 th Feb 2018
7.	Maharashtra	17 th Feb 2018
8.	*Tamil Nadu Govt.order	18 th Feb 2018
9.	Arunachal Pradesh	10 th May 2018
10.	Uttar Pradesh	15 th June 2018
11.	Uttarakhand	13 th Sept 2018
12.	Meghalaya	20 th Dec 2018
13.	Madhya Pradesh	8 th Mar 2019
14.	**Karnataka	29 th May 2019
15.	Manipur	28 th Nov 2019
16.	Nagaland	2 nd December 2019
* Detailed Policy is under discussion		
** Some clause not aligned with RoW Rules		



Rights of Way (RoW) in India

S. No.	Draft Policies released	S. No.	Existing Policy Under Advance Discussion	S. No.	No Uniform Policy
State / UT					
1	Mizoram	1	Chandigarh	1	West Bengal
2	Punjab	2	Gujarat	2	Andaman & Nicobar
3	Himachal Pradesh	3	Goa	3	Lakshadweep
4	Jammu & Kashmir	4	Chhattisgarh	4	Dadar & Nagar Haveli
5	Kerala	5	Andhra Pradesh	5	Daman & Diu
6	Sikkim	6	Telangana	6	Ladakh
7	Delhi	7	Pondicherry		
		8	Bihar		



Rights of Way (RoW) in India

Acknowledgements

For the purpose of this study, the GSMA had constituted a Committee (a task force based approach) to seek inputs on Rights of Way (RoW) issues from our operator members in India.

The GSMA would like to thank M/s Bharti Airtel, Vodafone Idea, Reliance Jio Infocomm, Bharat Sanchar Nigam Ltd and Mahanagar Telephone Nigam Ltd, for their contributions and deliberations on the topic. The Committee was chaired by Bharti Airtel.

We would also like to thank the industry association COAI for providing their valuable inputs.