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COMMUNICATIONS: REGULATION AND OUTSOURCING

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# Communications: regulation and outsourcing in India: overview

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## THE TELECOMMUNICATIONS MARKET

**1. Give a brief overview of the structure of the telecommunications market in your jurisdiction. Briefly set out any major recent developments, such as mergers and acquisitions, restructurings and insolvencies.**

### Market structure

The telecommunications market is heavily regulated with the government retaining the exclusive right to provide telecom services and allowing third parties to provide services only after receiving a licence from it.

India, according to the Indian Brand Equity Foundation (IBEF), is currently the second largest telecommunication market and has the third highest number of internet users in the world. As of 31 July 2017, wireless subscribers make up 98% of the 1,210.71 million telephone subscribers in India, and seven out of eight users access the internet on their mobile telephones.

When first launched, mobile telephones were restricted to a minor portion of the population due to the exorbitant cost associated with acquiring a handset as well as making and receiving a call. However, the introduction of low tariffs coupled with the easy availability of cheap handsets has catapulted the telecom market into consistent growth for the last ten years. According to IBEF's analysis of Telecom Regulatory Authority of India (TRAI) data, the Indian telephone subscriber base expanded at a Compounded Annual Growth Rate (CAGR) of 17.48% as of July 2017.

A recent factor driving the growth of mobile telephones has been the availability of the internet on the mobile. The mobile is now penetrating previously untapped markets in relation to data services and is simplifying internet access for first-time users. This has led to the launch of commercial services by a new operator Reliance Jio Infocomm Limited (Jio) who launched commercial services earlier this year with the strategy to provide low cost access to high speed internet via mobile phones.

In addition, the Indian government has embarked on an ambitious plan called "Digital India". The Government is utilising funds from the Universal Service Obligation Fund to build infrastructure to provide access to the internet. Digital India aims to transform India into a "digitally empowered society and knowledge economy." To do so, it seeks to stimulate growth in nine areas: Broadband Highways; Universal Access to Mobile Connectivity; Public Internet Access Programme; e-Governance: Reforming Government through Technology; e-Kranti - Electronic Delivery of Services; Information for All; Electronics Manufacturing; IT for Jobs and Early Harvest Programmes.

### Recent developments

The telecommunication sector has undergone a major process of transformation through significant policy and judicial reforms. Telecommunications in India, as elsewhere, started as a state monopoly. In 1985, the government created the Department of Telecommunications (DoT) to provide telecommunications operations in all regions other than Delhi and Mumbai, where Mahanagar Telephone Nigam Limited (MTNL) a government undertaking provided the necessary services.

In the early 1990s, the telecom sector, which was owned and controlled by the government, was liberalised and private sector participation was permitted through a gradual process. First, the telecom equipment manufacturing sector was deregulated. Then the government allowed private players to provide value added services (VAS) such as paging services. In 1994, the government unveiled the National Telecom Policy 1994 (NTP 1994) where it recognised that existing government resources would not be sufficient to achieve telecom growth and therefore private investment would be allowed to bridge the resource gap especially in areas such as basic services. Accordingly, private sector participation was allowed in basic services.

Since the government was unable to keep up with the demand for telephone connections, coupled with the fact that there was a waiting list for telephones, the government moved to involve or invite the private sector in telecom. Consequently, the government introduced the Cellular Mobile Telephone Service (CMTS) licence and the Basic Telecom Service (Basic) licence allowing private players to provide telecom services. The government then simplified the licensing regime and introduced the Unified Access Service (UAS) licence, combining the two licences, therefore allowing UAS licensees to provide both services under the ambit of one licence.

Subsequently, the government introduced the unified licence where it consolidated 12 categories of services, and an applicant could apply for the unified licence along with authorisation for any one or more of the 12 categories of services **listed below**. With this the government also delinked the licence from spectrum as was the practice previously and therefore spectrum now has to be independently acquired

The huge population of India that was without access to basic telephony services presented a lucrative market for global players who were otherwise experiencing stagnation in the growth of their subscriber base in other parts of the world. Therefore, more than US$12 billion of foreign investment from 2000 to 2013 was invested into this sector by various international telecom operators. This was primarily due to a unique market that presented a large number of subscribers, albeit with low average revenues per user (ARPUs).

In 2013, the government further eased the requirements for doing business in this sector by allowing 100% foreign investment as opposed to its earlier policy that required all foreign players to have a local partner for all telecom business.

While the industry was once considered a sign of the Indian growth story, some of this has faded in the last few years, and some operators have ceased operations on account of reducing ARPUs in a highly fragmented market. The launch of services by Jio at a low

prices has put further pressures on ARPU in this market leading to a spurt in consolidation activity amongst incumbent players.

Some significant developments include:

- In 2014, Bharti Airtel Ltd abandoned its INR7000 million plan to buy Loop Telecom for its Mumbai operations after the country's largest telecom operator failed to secure regulatory approval for the acquisition.
- 2015 saw Reliance Industries Ltd (RIL) investing INR850,000 million in Jio, its telecom unit, which commercially launched in September 2016. In 2017, RIL announced that the investment is planned to exceed INR1.9 billion.
- In March 2015, the TRAI published a Consultation Paper on Over-the-Top (OTT) services. This paper was published in the background of overwhelming concerns of telecom service providers (TSPs) regarding the cannibalisation of SMS and traditional phone call traffic by OTT applications and services such as Viber and Whatsapp along with the lack of regulatory oversight of these services. The paper raised questions on the need to regulate or license OTT services and specifically OTT services providing communication services. This paper also raised questions on the policy that the government should adopt on net neutrality. This paper received overwhelming public response in favour of net neutrality.
- In February 2016, the TRAI issued the Prohibition of Discriminatory Tariffs for Data Services Regulations. This regulation effectively prohibits internet service providers from offering data plans to subscribers on the basis of the content accessed by the subscribers. This regulation came in the wake of intense public and policy level debates on the issue of net neutrality and differential pricing for internet data packs.
- India's 2016 spectrum auctions concluded in October 2016, with the government raising INR657 billion from the sale of 965 MHz of spectrum. The 2017 spectrum auction is expected to involve 5G spectrum, with bands over 3000 MHz expected to be sold.
- 2016 saw the increased adoption of 4G led by various providers including Airtel, Jio, and Vodafone.
- In 2017, Idea Cellular and Vodafone announced a proposed US$23 billion merger that is expected to make it the largest telecom firm, with an expected customer base of 400 million and market share of nearly 35%. In July 2017, the Indian antitrust regulator (Competition Commission of India) approved the proposal. The merger is expected to occur in 2018.
- In 2016 and 2017, Reliance Communications Ltd (RCom, a separate player not to be confused with RIL) announced proposed mergers with Sistema JFC's Indian operation (Sistema Shyam Teleservices) and Aircel Ltd. While the merger with Sistema received the DoT's approval in October 2017, the merger with Aircel was called off with multiple factors cited as reasons.
- In 2017, Bharti Airtel reportedly agreed to buy Tikona Digital Networks Pvt. Ltd's 4G business, including its broadband wireless access spectrum and cellular sites in telecom circles, for approximately INR16 billion.
- In 2017, Bharti Airtel announced a proposed merger with Norway's Telenor, and received approvals from the securities regulator, company law tribunal, and the antitrust regulator.

In addition, TRAI has been issuing consultation papers on various topics regularly to solicit the views of the public on proposed approaches to regulation.

## RESTRICTIONS ON FOREIGN OWNERSHIP

**2. Are there any restrictions on foreign companies entering the telecommunications market in your jurisdiction?**

While 100% foreign investment is permitted for telecom services, any foreign investment beyond 49% is subject to prior governmental approval.

## REGULATORY FRAMEWORK

### *Legislation and regulatory authorities*

**3. Give a brief overview of the regulatory framework for telecommunications in your jurisdiction. Which authorities regulate telecommunications services in your jurisdiction? Is there a separate regulator for competition law issues in this sector?**

#### Regulatory framework

While there is no single legislation that covers all telecommunication laws, the following laws are primarily applicable to the provision of telecom services.

**Telegraph Act 1885.** This is one of the oldest pieces of legislation still in effect in India and laid down the law relating to telegraphs (which is any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electro-magnetic emissions, radio waves or Hertzian waves, galvanic, electric or magnetic means). Here a telegraph has been defined in a very broad sense and therefore continues to apply to and govern modern telecommunication services. Some of the salient features of this Act are that:

- The government has the exclusive privilege of establishing, maintaining and working telegraphs.
- However, the government is also authorized to grant telecom licences on conditions and in consideration of payments as it thinks fit, to any person to establish, maintain or work a telegraph within any part of India.
- It authorises the government to take possession of licensed telegraphs and to order interception of messages on the occurrence of any public emergency, or in the interest of public safety.
- Any dispute concerning a telegraphic appliance, apparatus or line between the telegraph authority and a licensee (for whose benefit the line, appliance or apparatus is, or has been provided) is determined by arbitration by an arbitrator appointed by the Central Government.

**Wireless Telegraphy Act 1933.** This was enacted to regulate the possession of wireless telegraphy apparatus, which has also been defined to include any apparatus, appliance, instrument or material used or capable of use in wireless communication. According to this Act, the possession of wireless telegraphy apparatus by any person can only be allowed in accordance with a licence issued by the telecom authority. The Act also levies penalties if any wireless telegraphy apparatus is held without a valid licence.

**Telecom Regulatory Authority Act 1997 (TRAI Act).** The TRAI Act provided for the establishment of the Telecom Regulatory Authority of India (TRAI) (see below, *Regulatory authorities, on the role and functions of the TRAI*). The TRAI Act was also amended by the Telecom Regulatory Authority of India (Amendment) Act 2000 to set up the Telecom Dispute Settlement and Appellate Tribunal.

**Information Technology Act 2000 (IT Act 2000).** In light of technological advancement, this was introduced to provide legal

recognition for transactions carried out by means of electronic data interchange and other means of electronic communication, referred to as "electronic commerce". In 2008, this Act was amended and a new provision was inserted which defines a "communication device" as a cell phone, personal digital assistance or combination of both or any other device used to communicate, send or transmit any text, video, audio or image. With this new provision, the telecom sector is now covered by the IT Act 2000.

### Regulatory authorities

The key regulatory bodies of the telecom industry are:

**Department of Telecommunications (DoT).** The Central Government acts through the DoT. Consequently, the DoT plays the dual role of the licensor as well as the regulator. Some of the other important functions of the DoT are:

- Issuing new telecom licences.
- Promotion of private investment in the telecommunications sector.
- Issuing regulations or rules applicable to the licensees.
- Promotion of standardisation, research and development in telecommunications.

**Telecom Regulatory Authority of India (TRAI).** While the TRAI was envisaged as the sectoral regulator, in reality, the DoT has retained most of the real powers of a sector regulator, leaving the TRAI with a limited role. TRAI's powers are recommendatory, mandatory, regulatory and judicial.

The important recommendatory powers of TRAI are (*section 11(1), TRAI Act*):

- Regarding the need and timing for introduction of new service providers.
- Relating to the grant of telecom licences including their terms and conditions.

The TRAI is the sole authority empowered to take binding decisions on fixation of tariffs and interconnection for provision of telecommunication services.

The recommendatory power of the TRAI must be viewed in light of the policy making powers of DoT. While the DoT is the sole authority for licensing all telecommunications services, it is mandatory for the DoT to have before it TRAI's recommendations on matters listed above over which TRAI has recommendatory powers. The DoT then can either accept or reject the recommendations of TRAI.

**Telecommunication Disputes Settlement and Appellate Tribunal (TDSAT).** The TDSAT was established in 2000 under an amendment to the TRAI Act. The TDSAT has been vested with exclusive powers to adjudicate any dispute between:

- The licensor and a licensee.
- Service providers.
- Service providers and groups of customers.

The TDSAT has also been granted powers to hear and dispose of appeals against certain directions, decisions or orders of the TRAI.

Any appeal from the decision of the TDSAT can only be filed with the Supreme Court of India, which is the apex court of the country.

Although the TDSAT was established by an amendment to the TRAI Act, it is a judicial and not a regulatory authority. The TDSAT is the forum where a challenge can be made against any regulations introduced by the DoT as well as certain orders passed by the TRAI.

**The Wireless Planning and Co-ordination (WPC) wing.** The WPC is an arm of the DoT that is the National Radio Regulatory Authority responsible for Frequency Spectrum Management, including licensing of wireless stations, and caters to the needs of all wireless users (government and private). It exercises the statutory functions of the Central Government and issues licences to establish, maintain and operate wireless stations.

The unified licence issued by the DoT does not confer any right to allotment and use of spectrum for which separate specific Frequency Assignment is required from the WPC.

**Standing Advisory Committee on Frequency Application (SACFA).** SACFA is a wing of the DoT that gives approval for radio frequency (spectrum) used by telecom service providers. In addition to the DoT and WPC, a clearance from SACFA is also required before commencing services. A SACFA clearance is typically granted after a detailed technical evaluation including field studies in order to determine, among other things, possible aviation hazards or interference between the existing and proposed networks.

The SACFA is also responsible for issuing recommendations on major frequency allocation issues requiring co-ordination among the various wireless users in the country. Importantly, the SACFA is also responsible for the formulation and review of the National Frequency Allocation Plan (NFAP), which is the national policy document that guides the manner that the spectrum should be used.

There is no separate sector specific regulator for competition law issues in this sector, the Competition Commission of India (CCI) continues to exercise jurisdiction on all competition law issues in the telecommunications sector.

### Competition law

Competition law is governed by the Competition Act 2002. There is no separate sector-specific regulator for competition law issues in the telecommunications sector. The Competition Commission of India (CCI) continues to exercise jurisdiction on all competition law issues in the telecommunications sector. However, the Bombay High Court recently clarified that the Competition Act is not sufficient to decide issues arising out of the provisions of the TRAI Act and the contract conditions under the telecommunications regulations. It held that the Competition Act cannot be used to interpret the contract conditions of the telecommunications sector arising out of the Telegraph Act and the TRAI Act, and that unless the terms of agreements and related issues are settled under those laws, the CCI cannot initiate proceedings under the Competition Act.

Competition law is governed by the Competition Act 2002 which prohibits or regulates the following.

**Anti-competitive agreements.** Section 3 of the Competition Act states that any agreement that causes or is likely to cause an appreciable adverse effect on competition (AAEC) is deemed to be anti-competitive. Any agreement on "production, supply, distribution, storage, and acquisition or control of goods or services which causes or is likely to cause an appreciable adverse effect on competition within India" is prohibited (*section 3(1), Competition Act 2002*). Although the Competition Act does not define AAEC and nor is there any rule to determine when an agreement causes or is likely to cause AAEC, certain factors for determining AAEC are specified (*section 19(3), Competition Act 2002*):

- Creation of barriers to new entrants in the market.
- Driving existing competitors out of the market.
- Foreclosure of competition by hindering entry into the market.
- Accrual of benefits to consumers.
- Improvements in production or distribution of goods or provision of services.

- Promotion of technical, scientific and economic development by means of production or distribution of goods or provision of services.

The Competition Act 2002 presumes that certain horizontal agreements, which are agreements to fix prices, limit production or bid rigging between entities engaged in the trade of identical or similar products are presumed to have an AAEC within India. Vertical agreements which are agreements in the nature of tie-in arrangements, exclusive supply or distribution agreements among enterprises or persons at different stages or levels of the production chain in different markets, are analysed to determine whether they cause or are likely to cause an AAEC in India.

**Abuse of a dominant position.** Section 4 of the Competition Act 2002 prohibits the abuse of dominant position. The term "dominant position" has been defined under the Competition Act 2002 as "a position of strength, enjoyed by an enterprise, in the relevant market, in India, which enables it to operate independently of competitive forces prevailing in the relevant market; or affect its competitors or consumers or the relevant market in its favour". The following is the list of activities that are deemed to be an abuse of dominant position (*section 4(2), Competition Act 2002*):

- Anti-competitive practices of imposing unfair or discriminatory trading conditions or prices or predatory prices.
- Limiting the supply of goods or services, or a market or technical or scientific development.
- Denying market access.
- Imposing supplementary obligations having no connection with the subject of the contract.
- Using dominance in one market to enter into or protect another relevant market.

**Combinations.** These are defined under section 5 of the Competition Act 2002. The acquisition of one or more companies by one or more people, or a merger or amalgamation of enterprises, is treated as a "combination" of enterprises and persons in the following cases:

- Acquisition by large enterprises.
- Acquisition by group.
- Acquisition of an enterprise having similar goods or services.
- Acquisition of an enterprise having similar goods or services by a group.
- Merger of enterprises.
- Merger in a group company.

Any combination that causes or is likely to cause AAEC in markets in India is void (*section 6, Competition Act 2002*). The Competition Act 2002 read with a Central Government notification dated 4 March 2016, has laid down the following thresholds where any combinations that cross those thresholds are required to be submitted to the CCI for its approval:

- For parties in India: assets of INR20 billion or turnover of INR60 billion.
- For parties worldwide (including in India): assets of US$1 billion or turnover of US$3 billion, including in India at least assets of INR10 billion or turnover of INR30 billion.
- For the group in India: assets of INR80 billion, or turnover of INR240 billion.
- For the group worldwide (including in India): assets of US$4 billion or turnover of US$12 billion, including in India at least assets of INR10 billion or turnover of INR30 billion.

In that notification dated 4 March 2016, the Central Government has exempted an enterprise whose control, shares, voting rights or assets are being acquired and has assets of a value of no more than INR3.5 billion or turnover of no more than INR10 billion, in India, from being considered under the aforesaid threshold criteria (and hence from requiring CCI approval) for a period of five years (until 4 March 2021).

Additionally, the DoT has also issued the Guidelines for Transfer/Merger of various categories of Telecommunication service licences/authorisation under Unified License on compromises, arrangements and amalgamation of the companies, that also must be complied with in relation to any transfers or mergers of licensed entities in the telecom sector (*No. 20-281/2010-AS-1, dated 20 February 2014 as amended from time to time*).

**Powers of the CCI.** The CCI has been established by the Competition Act 2002 to adjudicate on issues arising out of contravention of the Competition Act 2002.

The CCI can, among other things, issue a "cease and desist" order or impose a penalty not exceeding 10% of the average turnover during the preceding three years for an anti-competitive agreement or an abuse of a dominant position.

Similarly, where there is a failure to notify a combination, the CCI can among other things impose a penalty of up to 1% of the total assets or turnover of the combination (*section 43A, Competition Act 2002*).

### *Authorisation and licences*

**4. What notification, authorisation and licences are required to provide telecommunications services? What is the licence application procedure and fee?**

Historically the government issued separate licences for each kind of service such as the (*see Question 1*):

- Cellular Mobile Telephone Service (CMTS) licence.
- Basic Telecom Service (Basic) licence.

However, the Department of Telecommunications (DoT) in progressing its "One Nation, One Licence" plan as set out in the National Telecom Policy 2012, introduced the unified licence by consolidating licence terms for different telecom services under the ambit of a single unified licence.

The unified licence is an all-encompassing licence that must be applied for by anyone wishing to provide the services included under its ambit. Consequently, the applicant must obtain separate authorisation from the DoT for specific services that it wishes to provide. While one applicant can have only one unified licence, it can however apply for authorisation for more than one service or service area. The unified licences include the following services:

- Access service.
- Internet service.
- National Long Distance Service (NLD Service).
- International Long Distance Service (ILD Service).
- Global Mobile Personal Communication by Satellite Service (GMPCS Service).
- Public Mobile Radio Trunking Service (PMRTS Service).
- Very Small Aperture Terminal (VSAT) Closed User Group (CUG) Service.
- INSAT Mobile Satellite System-Reporting Service (INSAT MSS-R Service)

- Resale of International Private Leased Circuit Service (Resale of IPLC Service).

A one-time non-refundable entry fee for authorisation of each service and service area is payable before signing a licence agreement and then for each additional authorisation. The total amount is subject to a maximum of INR150 million.

As well as the entry fee, an annual licence fee as a percentage of adjusted gross revenue (AGR) is paid by the licensee. The licence fee is currently 8% of the AGR. In addition, a Spectrum Usage Charge (SUC) is payable, and is calculated as a percentage of the AGR. This varies depending on the spectrum bands licensed.

As well as the unified licences there is a separate licensing regime for voicemail, audiotex and unified messaging services that continue to remain independent of the unified licensing regime. The other service provider (OSP) registration has also been excluded from the ambit of the unified licence.

### 5. How long does a telecommunications licence typically last and what are the usual conditions attached to it? Can conditions be varied? Are licences available for public inspection?

The unified licence is issued for 20 years and can be renewed by the Department of Telecommunications (DoT) for an additional ten years at a time. The unified licence is split into two parts:

- Part one contains general conditions such as security and technical conditions that are applicable to all service categories.
- Part two contains specific conditions applicable to specific services.

The general conditions attached to a unified licence are:

- The applicant must be an Indian company, registered under Indian company law.
- The allocation of spectrum is delinked from the licences and must be obtained separately as per the prescribed procedure.
- The license and the authorisation under it are issued on a non-exclusive basis.
- Each company can have only one unified licence. At the time of applying for a unified licence, the applicant must apply for the authorisation of at least one service.
- The total composite foreign holding is governed by Foreign Direct Investment (FDI) policy of government as announced by Department of Industrial Policy and Promotion from time to time.
- The applicant company must have a minimum paid up equity capital and net worth of a particular amount depending on the service sought to be provided.
- The majority of the directors on the board of the licensee company must be Indian citizens.

In the event of holding or obtaining access spectrum, no licensee or its promoter(s) directly or indirectly can have any beneficial interest directly or indirectly in another licensee company holding "access spectrum" in the same service area.

The licensor has reserved the right to modify at any time the terms and conditions of the licence, if in the opinion of the licensor it is necessary or expedient to do so in public interest or in the interest of the security of the state or for proper conduct of the telegraphs (*Clause 5, General Conditions of the Unified License titled Modifications in the Terms and Conditions of License*). However, the DoT typically does not vary the terms of the licence for an individual licensee. Additionally, the licences issued to operators are not available for public inspection.

## *Penalties for non-compliance*

### 6. What are the consequences of non-compliance with the telecommunications regulations?

Under the principal legislation governing telecommunications (*Indian Telegraph Act 1885*) the establishing, maintaining or the working of a telecommunication network without proper authorisation by the government is punishable with imprisonment for a term of up to three years, a fine or both (*section 20, Indian Telegraph Act, 1885*). If on the grant of a licence by the government, a licensee commits a breach of any condition mentioned in the licence then the licensee is punishable with a fine of up to INR1000 and subsequent fines of INR500 per week for the duration the licensee is in violation of the licence conditions (*section 20A, Indian Telegraph Act, 1885*).

Additionally, any breach by a licensor of the terms of the unified license allows the Department of Telecommunications (DoT) to impose a financial penalty for violation of any terms and conditions of the licence agreement. This penalty is capped at different levels for different services, and the highest cap stands at INR500 million. The licence agreement states that the licensor can impose a suitable penalty, not limited to a financial penalty including terminating or revoking the licence agreement.

## *Appeals*

### 7. Can decisions of the regulators be appealed and on what grounds?

Decisions of the Department of Telecommunications (DoT) are appealable to the Telecommunication Disputes Settlement and Appellate Tribunal (TDSAT).

The TDSAT on an application by the government or any person can adjudicate the disputes between:

- A licensor and a licensee.
- Two or more service providers.
- Service providers and consumers.

The TDSAT also has the jurisdiction to hear and dispose of an appeal against any direction, decision or order of the Telecom Regulatory Authority of India (TRAI). However, the Supreme Court has recently clarified that any challenge to a regulation or rule enacted by TRAI under Section 36 of the Telecom Regulatory Authority of India Act must be made before the appropriate High Court.

Therefore, there is no jurisdiction of other courts in matters relating to telecom disputes and appeals against the order of the TDSAT lie only before the Supreme Court of India, and only when a point of law is involved.

## *Universal service obligations*

### 8. Is the incumbent provider or other large providers with significant market power subject to specific regulations? Do universal service obligations apply? Are there provisions for the structural separation of a network?

The unified licence guidelines provide that no licensee or its promoter(s) that holds or obtains "access spectrum", directly or indirectly can have any beneficial interest directly or indirectly in another licensee company holding "access spectrum" in the same service area. Essentially, the unified licence guidelines prohibit any sort of cross-holding in licensee companies operating in the same service area and works to prevent concentration in a market.

There are also very stringent rules laid down by the Department of Telecommunications (DoT) through the guidelines for the transfer and mergers of telecommunication licences on compromise, arrangements and amalgamation of companies (*No. 20-281/2010-AS-1, 20 February 2014*). These, in addition to requiring prior DoT approval also place a cap on the maximum spectrum the resultant entity can hold in an area. A similar cap on the maximum market share of the of the resultant entity and an obligation on the acquirer to pay the difference between the market price of spectrum and the price paid by the target has also been imposed to ensure fairness in the market.

Additionally, the Competition Act 2002 prohibits abuse of a "dominant position" by entities that would also be applicable in such a case (*see Question 3*).

However, universal service obligations apply under the unified license regime and have been subsumed as part of the adjusted gross revenue (AGR) payable to the government as licence fees. The funds collected in the Universal Service Obligation Fund (USOF)must be used to provide access to basic telegraph services to people in the rural and remote areas at affordable and reasonable prices (*Indian Telegraph (Amendment) Rules, 2004*). In keeping with this, funds from the USOF have been earmarked for the government's large-scale !Digital India" project (*see Question 1*).

### *General conditions*

#### 9. What general conditions apply to telecommunications services? Which other regulations must be complied with?

The Indian Telegraph Act 1885 prohibits anyone from providing, running or maintaining a telecommunication network without a valid licence issued by the Department of Telecommunications (DoT).

On receipt of a licence from the DoT, the entity must also obtain separate specific Frequency Assignment from the Wireless Planning and Co-ordination (WPC) wing if it wishes to use spectrum.

Some of the general conditions that are applicable to the provision of telecommunication services are as follows:

- The licensee cannot transfer to any person or place outside India:
  - accounting information relating to subscribers; and
  - user information.
- Remote Access (RA) to the network from locations abroad requires prior DoT approval for each location through approved location(s) in India. These RA facilities cannot be used for monitoring of content.
- RA cannot be given to the suppliers or manufacturers to access:
  - Lawful Interception System (LIS);
  - Lawful Interception Monitoring (LIM);
  - call contents of the traffic; or
  - other information specified by the DoT.
- The government has retained the right to access and inspect sites used for providing services, in particular:
  - leased lines, junction;
  - terminating interfaces;
  - hardware or software;
  - memories of semiconductor;
  - magnetic and optical varieties;
  - wired or wireless equipment; and
  - distribution frames.
- A licensee cannot employ bulk encryption equipment in its network without prior DoT approval. However, the responsibility of ensuring privacy of communication and preventing unauthorised interception of messages remains with the licensee.

Additionally, there are several reporting requirements that must be made in relation to the Telecom Regulatory Authority of India (TRAI) as well as the DoT.

## SPECTRUM USE

#### 10. Which authorities allocate spectrum use and how is it managed?

The Wireless Planning and Co-ordination (WPC) Wing of the Ministry of Communications, is the National Radio Regulatory Authority responsible for Frequency Spectrum Management, including licensing of spectrum.

The WPC exercises the statutory functions of the Central Government and issues licences to establish, maintain and operate wireless stations.

While deciding the manner of usage of spectrum, the WPC is guided by the National Frequency Allocation Plan, an overarching policy document that lays out the national policy that is formulated in accordance with international standards laid down by the International Telegraph Union Telecommunication Standardization Sector (ITU-T) on how spectrum must be used.

A no-objection from the Standing Advisory Committee on Frequency Allocations (SACFA) (*see Question 1*) is also required.

#### 11. Can spectrum use be traded or sublicensed?

The Central Government in 2015 introduced the 'Guidelines for Trading of Access Spectrum by Access Service Providers' (Guidelines). The Guidelines allow trading of access spectrum subject to certain restrictions, including the following:

- Spectrum trading is to be only between two access service providers, holding certain licence types, with authorisation of "access service" in a licensed service area.
- All access spectrum bands earmarked for "access services" by the government are tradeable. Spectrum trading is permitted only in certain block sizes.
- Only outright transfer of the right to use spectrum is permitted. Leasing is not permitted.
- There is a requirement of prior intimation to the government as well as a requirement to submit an undertaking of compliance. This is on the part of both parties.
- Since there are caps under the unified licence on spectrum holding by a licensee, all such transactions would need to be made such that the buyer's holding remains within these caps.

## INFRASTRUCTURE AND NETWORK MANAGEMENT

**12. Do communications providers have any powers to place their equipment on third party sites?**

The licensees have no inherent power to place their equipment on third party sites. However, the government has permitted private licensees to seek rights of way from any person (subject to complying with any conditions laid down by these persons) including a:

- Public authority.
- Public corporation.
- Autonomous body.
- State government.
- Central Government in the respective licenced service areas.

A right of way is required by service providers to establish infrastructure and the unified licence provides that the licensee company must make its own arrangements for a right of way. However, for private (non-government) sites, usually it is a negotiated commercial arrangement with the owner of the property that allows his property to be used to setup such an infrastructure.

In addition, licensees can also use the services of a registered Infrastructure Providers (Category I) for the inactive elements of the telecom network including dark fibres, right of way, duct space, and towers. There are detailed eligibility conditions and guidelines for these Infrastructure Providers who are not permitted to own and share active infrastructure except on behalf of licensees or under their own separate licence.

### *Access and interconnection*

**13. Does access to infrastructure and a network have to be given to other providers?**

As per the unified licence, a licensee must interconnect to or provide interconnection to all eligible telecom service providers to ensure that the calls are completed to all destinations.

The Telecom Regulatory Authority of India (TRAI) can regulate the manner of interconnection and has introduced various regulations that lay down the terms and conditions including revenue sharing among service providers for interconnection.

With regard to infrastructure, the unified licence permits the sharing of "active" antenna, feeder cable, Node B, Radio, Access Network (RAN) and transmission systems or "passive" infrastructure (building, tower, dark fibre, duct space, right of way) between licensees, depending on the nature of the service being provided by the licensee. For example, Access Service licensees can share active or passive infrastructure, and Internet Service licensees can share only passive infrastructure. However, all types of unified licensees can share passive infrastructure.

**14. Is the interconnection of networks required? Are interconnection prices regulated and how are interconnection disputes resolved?**

As per the unified licence, a licensee must interconnect to or provide interconnection to all eligible Telecom Service Providers to ensure that the calls are completed to all destinations.

The Telecom Regulatory Authority of India (TRAI) regulates the manner of interconnection and has introduced various regulations that lay down detailed terms and conditions including revenue sharing among service providers and interconnection usage charges.

All interconnection related disputes are brought before the Telecommunication Disputes Settlement and Appellate Tribunal (TDSAT).

### *Data protection and security*

**15. What data protection or consumer privacy regulations apply to the telecommunications sector, including both generally applicable and sector-specific laws? Are communications providers required to retain communications data? If yes, which data and for how long? What are the penalties for breach of these regulations?**

As per the unified licence, the licensee must maintain all the following in relation to the communications exchanged on the network:

- Commercial records.
- Call detail records.
- Exchange detail records (EDR).
- IP detail records (IPDR).

The records must be archived for at least one year and can then be destroyed unless directed otherwise by the Department of Telecommunications (DoT). The DoT can issue directions or instructions from time to time with respect to CDR, IPDR and/or EDR

There is an obligation on the licensee to ensure that the following is not transferred to any person or place outside India:

- Any accounting information relating to a subscriber.
- User information.

Additionally, there are certain obligations and duties on the licensee regarding confidentiality:

- The licensee cannot employ bulk encryption equipment in its network and must ensure protection of privacy of communication and that unauthorised interception of messages does not occur.
- The licensee must take all necessary steps to safeguard the privacy and confidentiality of any information about a third party and its business to whom it provides the service and from whom it has acquired the information by virtue of the service provided and must use its best endeavours to secure that:
  - no person acting on behalf of the licensee or the licensee divulges or uses this information except as may be necessary in the course of providing the service to the third party; and
  - no such person seeks such information other than is necessary for the purpose of providing service to the third party. This provision does not apply when the party to which the information relates to has consented to the information being divulged or used or the information is already open to the public.
- The licensee must take the necessary steps to ensure that licensee companies and its agents observe confidentiality of customer information.

Separately, the Information Technology Act 2000 (IT Act) also provides for a data protection regime that becomes applicable if the licensee is collecting any sensitive personal data or information as is defined under the IT Act.

Sensitive personal data or information of a person means personal information that consists of information relating to:

- Passwords.
- Financial information such as bank account or credit card or debit card or other payment instrument details.
- Physical, physiological and mental health condition.
- Sexual orientation.
- Medical records and history.
- Biometric information.
- Any detail relating to the above clauses as provided to body corporate for providing service.
- Any of the information received under above clauses by body corporate for processing, stored or processed under lawful contract or otherwise.

If a service provider is collecting sensitive personal data or information there are certain obligations on the collection, disclosure and transfer of this information in addition to reasonable security standards that must be implemented for the protection of this information.

## 16. What are the rules relating to the interception of calls? How and on what grounds can government authorities require disclosure of communications data? What are the penalties for breach of these rules?

The Central Government (or a State Government or any officer especially authorised in this behalf by the Central Government or a State Government), can direct that any message to or from any person or relating to any particular subject, brought for transmission by or transmitted or received by any telegraph, cannot be transmitted, or must be intercepted or detained or disclosed to the government, if satisfied that it is necessary or expedient to do so for the following reasons (*section 5(2), Indian Telegraph Act 1885*):

- Interests of the sovereignty and integrity of India.
- Security of the state.
- Friendly relations with foreign states.
- Public order.
- Preventing incitement to the commission of an offence.

Directions for interception of any message can be issued by an order made by the (*Rule 419A, Indian Telegraph Rules 1951*):

- Secretary to the Ministry of Home Affairs in case of Central Government.
- Secretary to the Home Department in case of a State Government.

In unavoidable circumstances, the order can be made by an officer that is not below the rank of a Joint Secretary to the Government of India, duly authorised by the Union Home Secretary or the State Home Secretary.

As per the unified licence, the licensee must provide necessary facilities to designated authorities for the interception of communications passing through its network and must also facilitate the government monitoring and interception at its cost and expense.

A licensee must provide suitable monitoring equipment for each type of system it uses, as per the requirements of the Department of Telecommunications (DoT) or other designated security agencies.

The grounds under which the authorities can require disclosure under the Information Technology Act 2000 (IT Act) are (*section 69, IT Act*):

- Interest of sovereignty and integrity of India.
- The security of the State.
- Friendly relations with foreign states.
- Public order.
- The prevention of incitement of offences.
- Investigation of any offence.

Penalties for breach:

- Heavy financial penalties for a failure to furnish "any document, return or report" to the government are authorised (*section 44, IT Act*).
- The interception of any information transmitted by computer is authorised (*section 69, IT Act*). Likewise, any person that refuses to decrypt his private information on official request faces up to seven years in prison.

A penalty of INR500 million per breach can be levied for (*Clause 39.11(ii), Unified License (UL)*):

- Inadequate compliance to the measures prescribed.
- Act of intentional omissions.
- Deliberate vulnerability left into the equipment.
- Deliberate attempt for a security breach.

Breach of these rules can also lead to revocation of operating licences. Besides the monetary penalty, liability and criminal proceedings under the Indian Telegraph Act, IT Act, Indian Penal Code (IPC), Code of Criminal Procedure (CrPC) can also be attracted/initiated.

## 17. Are there any network or data security obligations imposed on communications providers?

The licensee must:

- Maintain relevant security standards while procuring the telecom equipment.
- Maintain a list of features, equipment and software deployed, which must be open to inspection.
- Create facilities for intrusion detection and monitoring within 12 months of effective date of the licence.
- Submit its network security policy within 90 calendar days from the date the Department of Telecommunications (DoT) issues the licence or authorisation.
- Conduct a yearly audit on its networks from a security standpoint.
- Ensure that the network is not used for anti-national activities.

Only those network elements that have been tested as per relevant contemporary Indian or International Security Standards (such as ISO 27000 series Standards for Information Security Management) can be inducted. The certification can be done only from authorised and certified agencies or laboratories in India.

The telecom licensees must also conduct a yearly audit on their networks from a security standpoint.

The conditions on remote access also need to be complied with (*see Question 9*).

## PRICE REGULATION

### 18. How are prices and charges regulated?

The telecom regulator, Telecom Regulatory Authority of India (TRAI) is the sole authority empowered to take binding decisions on fixation of tariffs for provision of telecommunication services. The TRAI usually regulates tariffs by imposing a floor and ceiling on the prices that can be charged. The TRAI typically issues a tariff order that specifies the minimum and maximum tariff that can be charged from a consumer for a particular service and then monitors this process by requiring the licensees to submit regular reports on the tariffs imposed by them.

## TELEPHONE NUMBER AND SUBSCRIBER MANAGEMENT

### 19. How are telephone numbers allocated and managed in your jurisdiction?

Telephone numbers are allocated and managed in accordance with the national numbering plan that is the policy document that governs the use and assignment of numbers to telephone services. The plan also provides for assigning numbers to international services, trunk service, emergency services and special services such as voicemail.

Some features of this plan are:

- All mobile phone numbers must be ten digits long. Only the decimal character set zero to nine have been used for all number allocations.
- All mobile numbers in India have the prefix nine, eight or seven (this includes pager services).
- Each circle can have multiple private operators.

### 20. Does access have to be provided to certain services, such as the emergency services and directory enquiries?

The present Emergency Response System is based on telecom access to emergency services, such as the telecom service providers (TSPs) providing:

- 100 for police.
- 101 for fire.
- 102 ambulance.
- 108 Emergency Disaster Management services.

Providing an "Emergency and Public Utility Service" is a mandatory condition for grant of the access service licence to telecom operators and requires:

- The licensee must provide independently or through mutually agreed commercial arrangements with other TSPs all public utility services as well as emergency services including toll free services like police, fire and ambulance.
- It is completely within the licensor's power to declare any public utility or emergency number as toll free service from time to time.
- The licensee must facilitate the priority routing of emergency or public utility or any other type of user calls as per guidelines or directions as prescribed by the licensor.
- While providing access to the emergency services on the occurrence of disaster including police or fire as sometimes defined, the licensee must also take all measures to ensure that these calls are delivered to the designated control room of the concerned authority, as prescribed from time to time.

Beginning 2016, the Single Number Based integrated Emergency Communication and Response System was implemented, with the number 112. Calls to the erstwhile numbers 100 (police), 101 (fire), 102 (ambulance), and 108 (Emergency Disaster Management) are to be rerouted to 112.

Also in 2016, the Panic Button and Global Positioning System Facility in all mobile phone handsets Rules were issued under the Indian Wireless Telegraphy Act, 1933. They require that no mobile manufacturing company can sell feature phones or smart phones without a designated panic button. Pressing the panic button will cause calls to be directed to the emergency number 112.

### 21. Are there regulations relating to specific consumer services, such as acquiring and transferring subscribers, number portability, complaint handling, and nuisance and silent calls?

Regulations regarding subscribers, number portability, complaint handling and nuisance exist and are detailed below:

#### Acquiring and transferring subscribers (number portability)

The unified licence provides that the licensee must register a demand or request for telephone connection and or any other telecom service without any discrimination from any applicant and provide the service. The service provider must provide any person interested in acquiring services with a customer acquisition form (CAF) on a non-discriminatory basis, and accept the same duly filled with identifying information. In 2017, notifications were issued by the Central Government instructing all relevant licensees to use Aadhaar (a government-run biometric database) for customer verification of new and existing mobile phone subscribers. The requirement of mobile phone subscribers to be enrolled in Aadhaar is currently pending the decision of the Supreme Court of India.

As per the Telecommunications Mobile Number Portability Regulations 2009, subscribers can transfer their mobile network. Previously, there was limited mobile number portability (MNP) that only allowed intra-circle transfers. However, nationwide MNP was launched on 3 July 2015, where it allowed for inter-circle transfers, as well as allowing a subscriber to retain an existing number and transfer it to another service provider in any part of the country.

#### Complaint handling

The Telecom Consumers Complaint Redressal Regulations 2012 published by Telecom Regulatory Authority of India (TRAI), lay down complaint handling rules for telecom operators providing:

- Basic telephone services.
- Unified access services.
- Cellular Mobile Telephone Service.
- Internet services.

These regulations are not applicable to ISPs whose turnover is less than INR50 million or the subscriber base in any year did not exceed 10,000.

Broadly, under these Regulations, a service provider must:

- Establish a complaint centre for redressal of complaints and for addressing service requests of its consumers, providing assistance in both Hindi and English and accessible through a customer care number. A call centre setup by it is acceptable as a complaint centre.

- Set up a general information number for providing information to customers and publicise these numbers through public notices, website and sim updates.
- Establish a complaint monitoring system to enable the consumers to monitor the status of their complaints online.
- Ensure timely redressal of all requests or complaints according to directions as specified in the Quality of Service (QoS) regulations.
- Establish an Appellate Authority in each of its licensed service areas to dispose of the appeals by customers headed by a Secretariat who has to acknowledge appeals and put the provider's reply before the Advisory Committee. The Secretariat has to keep a record of all decisions and appeals.

**Nuisance: the Telecom Commercial Communications Customer Preference Regulations 2010**

The Telecom Regulatory Authority of India (TRAI) has introduced an opt-out regime that seeks to prohibit unsolicited commercial communications (UCC).

The Regulations define commercial communication to mean "any message, voice or SMS, which is transmitted for the purpose of informing or soliciting or promoting any commercial transaction in relation to goods, investment or services". Consequently, a UCC can be understood to mean any commercial communication that a subscriber has not opted to receive. These Regulations have prescribed the formation of a National Customer Preference Register where subscribers have been given the option of registering either under the fully blocked category or the partially blocked category depending on their preferences.

### 22. Are consumer telecommunications contracts subject to specific regulations?

The Telecom Regulatory Authority of India (TRAI) regularly issues regulations, directions and orders for protecting the interest of customers. The TRAI specifically issues regulations on quality of service and provides for penalties for violation of the same.

The TRAI has also issued:

- Rules towards illegal use of services.
- Conditions for termination of services.
- Form and manner of billing.
- Requirements for providing detailed bills.

### 23. Are there restrictions on the use of Voice over IP technology in your jurisdiction?

Under the existing regulatory regime, Voice over IP (VoIP) is typically provided under the ambit of two primary licences:

- The ISP licence.
- The access service licence.

Currently, only access service providers can provide full internet telephony via VoIP , which means they can terminate an IP call not only on the IP network but also on the Public Switched Telephone Network (PSTN). The ISP licence only allows limited internet telephony, that is, only connectivity between IP networks and termination of an IP call on the PSTN is not permitted.

### 24. Are there regulations relating to the maintenance of net neutrality in your jurisdiction?

As mentioned above (see Question 1), in February 2016, the TRAI issued the Prohibition of Discriminatory Tariffs for Data Services Regulations. This regulation effectively prohibits internet service providers from offering data plans to subscribers on the basis of the content accessed by the subscribers. This regulation came in the wake of intense public and policy level debates on the issue of net neutrality and differential pricing for internet data packs.

In addition, the unified license contains provisions that state that:

- The licensee must register demand or request for telephone connection and or any other telecom service without any discrimination from any applicant, at any place in the service area for the service(s) authorised and provide the service, unless otherwise directed by the licensor (*paragraph 30.1, chapter V, Operating Conditions*).
- The subscriber has unrestricted access to all the content available on the internet except for the content that is restricted by the licensor or designated authority under the law (*paragraph 2.1(i), Chapter IX, Internet Services*).

## OUTSOURCING AND TELECOMMUNICATIONS

### 25. Are there specific regulations for the outsourcing of telecommunications services or the management of these services?

The unified licence authorises a licensee to own, install, test and commission all the applicable systems for providing the telecommunication service and requires that the licensee must at all times be responsible for these systems. The unified license states that the licensee cannot, without the prior written consent of the DoT, assign or transfer the licence to a third party or enter into any agreement for sub-licence and/or partnership relating to any subject matter of the licence to any third party. However, licensees are permitted, for the provision of the service, to appoint or employ franchisees, agents, distributors and employees. Therefore, it can be argued that while the licensee continues to remain responsible for the applicable system, it does always not need to be managed by the licensee.

Specifically, as a market practice operators usually outsource non-core functions to third parties and retain sensitive functions such as legal interception or monitoring obligations. For example, network management is regularly outsourced to third parties that provide these services to multiple operators, whereas customer management is usually retained by the licensees themselves.

### 26. Briefly set out the current trends in outsourcing transactions in the telecommunications sector.

Bharti Airtel was among the first operators in the market that started outsourcing most of their functions in an attempt to scale up operations despite limited finances. They are credited with having discovered the Dollar per Erlang model where they only paid vendors on the basis of the amount of usage of the equipment and not for the actual equipment by itself. However, in the last few years Bharti has started insourcing many functions where they want to retain control and only outsource part of their operations. While the other players in the market continue to do larger deals, insourcing may start picking up.

Some examples of the recent deals in the market are listed below:

- Airtel outsourced its operations to IBM that started at US$750 million and has now reached US$2.5 billion.
- BSNL outsourced its billing operations to Convergys, and its legacy systems were replaced by Convergys Infinys rating and billing solution.
- Aircel outsourced its deploy applications, such as retail billing Infotech and revenue assurance for integration and management to Wipro.
- Vodafone outsourced its application development and maintenance operations, including billing, business intelligence and ERP systems, as well as data centre operations, and end user services to IBM.
- Idea outsourced its billing and credit collection, and Cellular frauds and customer relationship management to IBM.
- Jio was reported to be in talks to outsource its call centre and support operations, which would reportedly be among the most lucrative deals for the IT-enabled services industry.
- With the proposed US$23 billion Vodafone-Idea merger, it was announced that Vodafone began an exercise to extend its outsourcing contract with IBM to cover Idea as well, and began work to streamline and standardise its own IT processes before the proposed merger.
- In general, the consolidation trend in the industry is expected to have an impact on outsourcing arrangements, though it is not clear whether it will be positive or negative for the vendors.

Due to the scarcity of spectrum in the India, the DoT, on the recommendation of TRAI, introduced a virtual network operator (VNO) licensing regime in 2016. The DoT's purpose behind doing this was to move towards a unified license regime and facilitate the delinking of the licensing of networks from the delivery of services.

The basic features of the VNO licence include:

- That VNOs are treated as extensions of network service operators (NSOs) or TSPs and are not allowed to install equipment interconnecting with other NSOs.
- That a VNO license can be granted in respect of any one or more of the unified license services (see *Question 4*).

## 27. Who are the key providers of outsourced telecommunications?

According to a list published on the DoT's website, there were 61 VNO licensees in April 2016. Most of them are licensed to operate at a regional level, while very few are licensed to operate at a national level.

In addition, IBM, HCL, Convergys, Wipro and TCS are all primarily IT outsourcing companies and dominate the telecom outsourcing market.

## 28. What are the current technologies influencing or affecting outsourcing by telecommunications operators?

With the adoption of cloud based services, data retention as well as data accessibility has become easier, which in turn is allowing telecom operators to use big data and analytics in understanding customer usage patterns and in turn outsource services based on such data.

Additionally, with this renewed focus on retaining core competencies in-house by companies such as the Bharti Airtel, non-core functions such as human resources and value added services are being outsourced to third party vendors.

Recently, telecom companies have been reported to be exploring Internet of Things (IoT), smart cities, and even fintech as new avenues for growth, and have been partnering with suppliers to carry out the same.

## 29. From a contractual perspective, what are the key issues in a typical telecommunications outsourcing transaction in your jurisdiction?

A telecommunications outsourcing contract usually contains the following key issues:

- The telecom operator contractually requires the service provider to ensure compliance with the operator's licence conditions, as well as agree to be liable for any consequent penalties for breach of any of the conditions.
- The licence imposes an obligation on the licensee to ensure protection of privacy of communication and to ensure that unauthorised interception of messages does not take place. Specifically, the licensees cannot transfer to any person or place outside India:
  - accounting information relating to subscriber; or
  - user information.
- Therefore, an obligation is usually placed on service providers requiring them to maintain utmost confidentiality of any information that they receive under the outsourcing agreement. Also, the service provider must undertake to perform the services by itself so as to not further outsource the service along with a commitment that the information will not be transferred outside of India.
- The Information Technology Act 2000 (IT Act) provides for a data protection regime that becomes applicable in the event that an entity is collecting any sensitive personal data or information as is defined under the IT Act. In an outsourcing agreement, where this sensitive personal data or information is being transferred or disclosed to the service provider then the service provider is contractually prohibited from further disclosing the information as well as undertaking to at least maintain the same levels of data security as are being maintained by the telecom operator
- Since the unified licence places the onus on the licensee to have complete control over all the systems being used by them, they therefore prefer retaining ownership of equipment and so typically insist on assignment of intellectual property (if any) that is created by the service provider in favour of the telecom operator.
- The telecom operator usually insists on an indemnity for any loss that may be caused to it that can be attributed to the entity where work is being outsourced.
- Since the unified licence requires prior Department of Telecommunications (DoT) approval for allowing remote access to the network from locations abroad, typically service providers are prohibited from allowing access to their foreign teams and therefore most service providers typically staff a local team to assist for any on the ground assistance that may be required.

## ONLINE RESOURCES

Various departments of the Government of India regulating communications and their websites provide the relevant legislation, rules and notifications. Some are listed as follows:

**Department of Telecommunications, India**

**W** *www.dot.gov.in*

**Description.** The website contains both legal and general interest information relating to the department. The legal information is usually up-to-date and useful for tracking the subordinate legislation (such as regulations, circulars, notifications, office memos) of the Department of Telecommunications. The Gazette of India is the official source of law at the Central Government level.

**Telecom Regulatory Authority of India**

**W** *www.trai.gov.in*

**Description.** The website is up-to-date and contains links to various subordinate legislation of the Telecom Regulatory Authority of India, as well as its frequent consultation papers and the public responses to them. The Gazette of India is the official source of law at the Central Government level.

**Wireless Planning and Co-ordination, Department of Telecommunications, India**

**W** www.wpc.gov.in.

**Description.** The website is reasonably up to date but appears not as frequently updated as the websites above.

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